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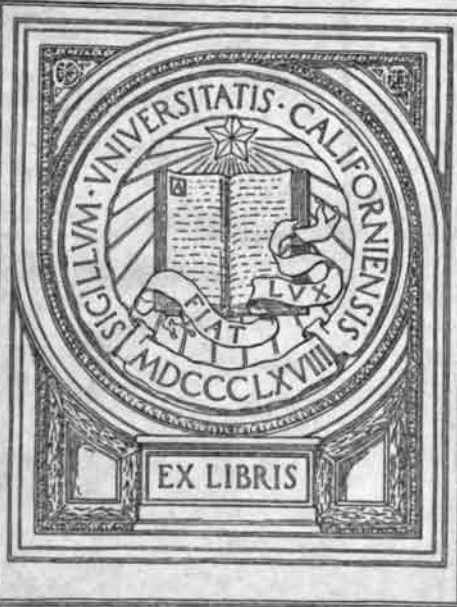
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An Ideal State Law for State and Federal Authorities in Work of Eradicating Contagious Animal Diseases*

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IT IS the duty of the Federal Bureau of Animal Industry to prevent the introduction or spread of the transmissible diseases of animals to or within federal territory under its jurisdiction. In accordance with state rights, it is presupposed that each commonwealth is prepared and equipped to handle such diseases within its borders.

The organic act of May 29, 1884, establishing the Federal Bureau of Animal Industry, specifically provides for the co-operation of states and territories in the eradication of contagious, infectious and communicable diseases and in the execution and enforcement of this act. It also provides that when the properly constituted state authorities signify their readiness to co-operate for the eradication of communicable diseases, the Department of Agriculture is authorized to expend for disinfection and quarantine measures so much of the appropriation as may be necessary to prevent the spread of the disease from one state or territory to another. Furthermore, provision is made whereby any individual may furnish information regarding diseased animals and may bring violations of this act to the attention of the United States attorney of his district whose duty shall be to prosecute such violations.

When from the nature and extent of the disease it is feared that it may get beyond the control of the local authorities and spread to other states and countries the federal government takes all possible precautions to prevent such an occurrence. The federal government has

a legal right to quarantine a state and to prevent interstate movement of livestock or anything that may carry contagion, endangering the livestock of another state or country. It cannot establish or enforce quarantine against livestock on premises or portions of territory within a state except as to the interstate movement of such livestock, neither can it force an entry or compel the destruction of animals or property. A state cannot do so unless it is provided with the necessary legislation.

Under the present organization of the federal bureau an efficient veterinary sanitary force is maintained at all times and is in readiness for emergency work. Under ordinary conditions this force of men renders valuable public service in the work of meat inspection, tick and scab eradication, and are able to conduct research work on many diseases. In the past, such work has proven of inestimable value to the livestock interests of the country. In cases of emergency it is always available for quick and efficient action. Each state should maintain a somewhat similar service. Such men could be used to advantage at all times. The federal government is not able to look after meat hygiene work in houses that are not doing an interstate business. It is reasonable to suppose that the poorest class of animals is slaughtered in places not under inspection. About 60 per cent of the cattle, sheep and hogs slaughtered in this country are subjected to a federal inspection. This leaves 40 per cent of the meat supply of every state which is uninspected.

Milk hygiene is even more important

*Presented at the Foot-and-Mouth Disease Conference, Chicago, November 29-30, 1915.

and very little is done in the various states on this subject.

The meat and milk hygiene service, and the minor transmissible diseases of animals, that should be looked after by the state would furnish an abundance of work for a good-sized veterinary sanitary police force. With such a force it would be possible for the state to furnish trained men to co-operate with the federal forces in case of emergency. In this respect most of the states have been remiss in the past and in a great majority of cases were able to furnish no experienced, well-trained assistants to co-operate with the federal forces.

Aside from the regularly employed agents of the state and federal governments, each state should have an abundance of well-educated and efficient veterinary practitioners who may be called into public service when needed. All veterinary practitioners should be compelled by law to report promptly all dangerous communicable diseases of animals. In controlling foot-and-mouth disease the private practitioner can render most valuable service. The state veterinarian in Pennsylvania is authorized to employ local practitioners to do any kind of work when it is deemed necessary. In this way a large number of competent men scattered over the state are in constant touch with the work of the live stock sanitary board. They are kept informed and are familiar with the laws and regulations, and most of them can be called upon for assistance in cases of emergency.

It is also important that the state furnish adequate means for a thorough veterinary education to a sufficient number of men to look after veterinary sanitary police measures. The day and generation have passed when men with business ability alone are considered prepared to be entrusted with matters which involve technical knowledge that they do not possess.

Practically every state loses more than five per cent of its livestock valuation each year from preventable diseases.

Veterinarians should not be criticised for inability to prevent such losses when the state provides inadequate means, or none at all, for properly training men in matters of animal hygiene and furnishes no money to control or eradicate these diseases. Very few of our states spend any money for veterinary education. If five per cent of the preventable losses were spent for veterinary education and veterinary hygiene work in each state, the work could be done satisfactorily and millions of dollars saved annually for other purposes.

The general plan of organizing the work of co-operation between the federal and state forces should be carefully planned and thoroughly understood by both sides when it is necessary to combine forces to handle unusual conditions, as is necessary in exterminating foot-and-mouth disease, or other possible diseases that are equally as important. This would depend to a great extent upon the equipment of the state. It is especially true in reference to the number of available men, their qualifications and experience. The outline of the work to be covered in foot-and-mouth disease, for example, is somewhat as follows:

1. Locating the disease.
2. Placing quarantines on premises and territory.
3. Appraising livestock and other property.
4. Preparing burial trenches.
5. Slaughtering diseased herds.
6. Disinfecting premises.
7. Farm-to-farm inspections.
8. Issuing permits.
9. Releasing quarantines.
10. Auditing and paying the bills.

The federal and state forces should each have a main office, and an efficient and sufficient office force to handle the business promptly and accurately. If the disease is widespread, the infected territory should be divided into districts and a competent, experienced man, who is familiar with the territory and the people, placed in charge of each district. It is best, perhaps, for both the federal

and state government to have a representative in charge of each district. If so, these men must understand each other thoroughly and work in absolute harmony. If this cannot be done, each had better be given a separate territory or separate duties and then held responsible for his part of the work. Where the work is done together, each should have free access to the other's records at all times and the field work should be routed and planned together so that duplications will be avoided.

The districts should not be too large. The men in charge should be in daily touch with the working force and at the same time keep the main office informed daily of the progress and new developments.

In reference to locating centers of infection, the main office should know where the suspicious shipments have been received and, by co-operating with the railroad officials, shippers, dealers, etc., this information can be obtained.

The general public should be informed through the public press, agricultural papers, fliers, posters, public meetings, etc., of the presence and location of the disease; the symptoms, nature and importance of the disease and the measures to be adopted to prevent and eradicate it. In most cases the owner will report suspicious symptoms, either to his local veterinarian or to the state or federal officers. This plan should be encouraged in every way possible. It has been very unusual for owners to hide or attempt to hide the disease and it is believed that if they can be assured of prompt and fair settlement, none would deliberately try to deceive the proper officials.

As soon as the disease is located, or where there is reasonable suspicion of its existence, and where susceptible animals have been exposed to the disease, a special quarantine should be placed at once. Local, federal and state agents should have authority to place such quarantines. If possible to do so, a guard should be placed over the premises. Curiosity on the part of stock-owners

and others to see how the disease looks is often responsible for its spread. A quarantine alone is not enough to keep such people away. Necessity often demand that the people on quarantined premises must leave the place. This might be done safely if a guard were present to disinfect their shoes, fumigate their clothing, etc. By this plan it would also be possible for children on quarantined premises to continue their school work safely.

Special quarantines, or those on a district or section of country, should be handled by the main office. The method adopted by the federal bureau in classifying territory as free, restricted, exposed and closed was considered satisfactory, and should be followed as closely as possible by the state authorities. It is not practical in all cases for the state and federal quarantined area to be divided in the same way. A state may consider it safe to move animals within the federal quarantined area for certain purposes, when the federal government could not permit such a movement across a state line. The state authorities may not be satisfied to accept shipments from out of the state when government regulations would permit them. The main office should look after details of this kind.

On the matter of appraisal, a representative each of the federal and state governments should work together. These men should be familiar with the breeds and prices of livestock, and be able to place a just valuation on animals and other property that is to be destroyed. In case the owner is unwilling to agree to the appraisal allowed, the Pennsylvania law provides for appointing sworn appraisers.

The slaughter method has been adopted as the best means for controlling the disease and the sooner it can be done the better. An experienced person should be selected to destroy the animals. If any safe way can be devised to slaughter exposed animals, and save the hides or the carcasses for food it

should be done. It is seldom feasible to manage the destruction so as to accomplish this saving, for the reason that it is not safe to move exposed animals to slaughter houses; there are seldom any facilities for conducting the work on the farm and moreover there is but a limited market for the meat slaughtered on the farm.

As soon as the animals are disposed of, the premises should be promptly disinfected. This should be carefully and thoroughly done under the supervision of a man especially trained for this kind of work. Re-infections occurred in very few cases during the past outbreak, yet much of the work was done in very cold weather and under adverse conditions.

Farm-to-farm inspections may be done by either state or federal men. The diagnosis should be verified in all cases and the most experienced and reliable men provided to examine all doubtful cases. There is perhaps more danger of diagnosing other conditions as foot-and-mouth disease than there is of failing to recognize and include true cases. The diagnosis is not always easy. It is especially difficult in those cases that have partially recovered, and in many instances at the beginning or the ending of an outbreak.

Permits for holding sales, moving livestock, hides, fodder, manure, etc., intra-state should be handled by the state forces. In most cases the state men are more familiar with the territory, people and the state regulations than the federal men.

Permits should be issued without expense to the owner, and by none except those specially authorized to do so. The federal men have rendered valuable assistance in an advisory capacity in the matter of issuing permits. All transportation companies, stock yard companies, shippers and newspapers should be promptly notified by the main office of any changes in the regulations.

Before starting with the actual work of eradication a thorough understanding should exist as to the payment of ac-

counts; not only as to the share of expense each party should bear, but as to the actual payment of same.

When it is decided that payment of claims is to be divided in a certain manner (as, for instance, each paying 50 per cent) instead of paying the claim by two vouchers, each for the exact share decided upon, it might facilitate matters and give more general satisfaction if such claims were paid in full at one time, either the State or Federal Department making the payment and being reimbursed by the other for its share of the expense. If a full understanding of the division of the expense were entered into before such expenses are incurred, no dispute would arise by this method, and better work might result. However, legal difficulties arising out of the prohibition against the federal government making loans must be avoided.

During the past outbreaks, claims for cattle, etc., were paid by two vouchers, one by the State and one by the Federal Department of Agriculture. It frequently happened that livestock were mortgaged to an extent of over 50 per cent. The share of neither department was sufficient to defray this mortgage, and as a result much confusion and delay took place in the settlement of such claims, with a corresponding degree of hardship and dissatisfaction on the part of the owners.

Funds should also be made available for the prompt payment of temporary laborers, such as men employed in the digging of trenches, the labor incident to disinfection, etc. Such funds were not always available during the past outbreak. It is extremely difficult to get competent labor quickly, and at a proper rate when the payment of wages is a matter of doubtful promptness. The majority of this class of workers are dependent upon their daily wage for their daily bread, and however good their claims might be they are not in a position to wait. This might be handled by special temporary disbursing agents, who

could be bonded and sent out with the field parties.

It is extremely important that definite plans be adopted for obtaining funds and for making prompt payment of all just claims when it is necessary to destroy livestock and personal property for the public good. In certain states the limit of appraisalment has justly been raised to full market value in cases of foot-and-mouth disease. Some states have neglected to set aside funds for meeting such appraisements, but have trusted to the generosity of future legislatures to appropriate the money. This plan is too uncertain and far removed to appeal to our practical breeders and livestock men. Many of them are unwilling, and cannot afford, to accept promises that are not bankable. Colorado has adopted a plan that seems reasonable and just. It is as follows:

The governor has authority, in emergency cases and under certain conditions, to issue certificates of indebtedness. These certificates are practically notes of the state carrying four per cent interest, and, under the constitution, the legislature is required to make an appropriation to care for such certificates whenever it meets. Under the law passed last winter in Colorado, in case of an outbreak of foot-and-mouth disease, or any other highly contagious disease, the stock board informs the governor and he authorizes the board to destroy such stock and property as may be necessary, after appraisement, and upon certificate from the board as to the indebtedness of the state, the governor causes certificates of indebtedness to be issued. As these carry four per cent interest and are certain to be cashed at the first session of the legislature, they are practically the same as cash and will be accepted by all banks the same as any other security.

Under this plan the credit of the state is used for any amount that may be necessary to stamp out any serious livestock contagion. The plan is simple and, it is believed, will be effective.

Co-operation of state and federal gov-

ernment officials must exist to the fullest extent if prompt and efficient work is to result. The system of dividing the matter of expense equally between the state and federal government, which existed during the recent outbreak, seems to have been just and equitable, and one that gave general satisfaction to all concerned. The actual work should be done on a fifty-fifty basis also, if possible.

The subject assigned for this paper was "An Ideal State Law for Co-operation Between State and Federal Authorities in Work of Eradicating Contagious Animal Diseases." The "ideal" is so difficult of attainment that some authorities define it as "visionary, or existing only in imagination." Therefore, while having an ideal in mind, I prefer to confine my efforts on this subject to a comprehensive law which may be tangible, rather than to an ideal which is only visionary. This is a matter which has received our attention and efforts for a number of years and has resulted in the adoption by the legislature of Pennsylvania of what is known as the Act of July 22, 1913.

The inception of the present law was the act of May 21st, 1895, which created a State Livestock Sanitary Board, and defined its duties. The original act has been amended from time to time and was finally codified into what has proved an efficient and comprehensive law, under which we have been enabled satisfactorily to handle several epizootics, as well as the ordinary run of transmissible diseases which are of daily occurrence. It has also given us power to impose restrictions upon the interstate movement of diseased and undesirable animals and enables us to secure assistance from the Federal Bureau of Animal Industry by a section which definitely provides for co-operation with the authorities of the national government (Section No. 34). Such assistance is not confined to interstate cases, but may be and has been, available for work within the state.

The federal employees are appointed agents of the State Livestock Sanitary

Board and issued identification cards. They then have the same authority as regular state agents, but receive no compensation from the state. In this way the federal men have rendered to the state valuable assistance. The board has never had occasion to regret that such authority was given, but has felt under deep obligations to the federal government for the valuable service it has rendered in exterminating two outbreaks of apthous fever.

In the discussion of an efficient livestock sanitary law we must first consider the foundation upon which it is to rest. There should be provided a livestock board or bureau in the Department of Agriculture. Such body must be composed of men who shall be well versed in livestock diseases and not of so-called practical business men or practical farmers, whose views will incline only toward minimizing the immediate financial losses occasioned by destruction of diseased animals. Under the direction of this body there must be an efficient corps of trained men whose services as sanitary police may be available at any time, upon short notice. For this purpose it is not necessary to maintain a large standing force, but a small corps of regular employees may be used in an emergency as a nucleus for the formation of a larger force to handle unusual conditions. Under ordinary conditions the regular employees may be profitably used in the work of meat and milk hygiene and in handling the usual run of dangerous diseases which are constantly encountered by owners of livestock. In order to be of greatest service the livestock authorities thus created must be provided with legal authority to enforce such requirements as may be deemed necessary.

Probably the most important requirements will be an efficient quarantine, which should be elastic as well as drastic. Such a quarantine could be made to cover all classes of animals, individually or collectively, and all materials which may convey contagion. It should also be made to apply to individual

premises, as well as to all premises and territory within described boundaries. In addition to quarantine, a comprehensive law must provide for appraisement and destruction of animals and property, when such action shall become necessary in order to prevent the spread of disease. Provision should be made for equitable and prompt adjustment of all losses thus sustained.

In order that such a law shall have force it is necessary to provide penalties for infractions of the statute itself, of quarantines, and of rules and regulations adopted pursuant to the law.

In formulating the Pennsylvania law these were the salient points around which were collected the auxiliary requirements necessary to place it on a workable basis.

While we do not presume to offer it as an "ideal," as we are aware of several minor points wherein it may be improved, we have found it to be sufficiently comprehensive to enable us satisfactorily to handle our sanitary work.

This law also empowers us to make rules and regulations for the enforcement thereof. Furthermore, it has been declared to be fair and just and has received the endorsement of the progressive and broad-minded livestock owners and breeders of our state.

The law should be broad in its terms; the powers conferred on the livestock board should be comprehensive; details should be omitted. Wide range of authority is essential if officials are to get efficient results, particularly in emergencies. An attempt to regulate minor matters in the statute itself is sure to lead to embarrassment and to hamper officials when they have to deal with unforeseen contingencies. No scheme which is elastic, and adaptable to all conditions, can be devised, unless it embraces power, lodged somewhere, to make changes and do unanticipated things, without the delay which would be unavoidable if an amendment of the law itself at the next session of the legislature were required before the board can move.

Vesting in the board power to make rules and regulations in the "ideal" provision for taking care of details. Such rules and regulations, of course, are not valid unless in harmony with the guiding principles prescribed by the statute.

The only serious inconvenience we have encountered in the operations of our law and regulations is the fact that in some respects they conflict with parallel laws and regulations of other states and those governing the Federal Bureau of Animal Industry. These discrepancies are very confusing and embarrassing to transportation companies and shippers; also to livestock owners living near state borders. A railroad agent may receive rules and regulations from the federal authorities and half a dozen or more states, from which his road draws its livestock traffic. All of these regulations may differ on essential points and it will be impossible for the agent to properly construe the intentions of the various authorities. Nearly every regulation which may be drawn will be provided with exceptions to cover various classes of livestock and various exigencies which may arise, as in the case of livestock for immediate slaughter being differentiated from feeding or breeding stock and subject to an exception of the general provision of the regulations. That which is permissible under an exception to a regulation of one state may be prohibited by a regulation of an adjoining state which has not provided for such an exception.

In one instance a shipper obtained a permit in Ohio to move and ship a load of cattle. When the railroad agent refused to accept the consignment on the ground that the Pennsylvania regulations prohibited the importation of such cattle, the shipper became incensed, threatened a law suit and to withhold his future patronage from that railroad. The shipper thought that by complying with the regulations of one state and obtaining an official permit, he was at lib-

erty to carry out the intention of his permit.

In another instance a shipper obtained a permit from a federal agent in New York to ship a load of dairy cows into Pennsylvania. After viewing the federal permit the railroad agent received and forwarded the consignment. At that time the Pennsylvania regulations forbade the importation of dairy cattle and when the animals arrived at destination, were quarantined and held under observation for six weeks, which occasioned loss and inconvenience. It was natural for the shipper in this case to assume that the federal authorities had jurisdiction over interstate shipments. His assumption was correct in so far that the federal authorities could forbid the interstate shipment, but was wrong in assuming they could affirmatively authorize it in conflict with Pennsylvania regulations.

If these objections can be overcome by the adoption of uniform laws and regulations by all states, in conformity with similar laws and regulations of the National Government, we will make rapid progress in the work of livestock sanitary control. There does not appear to be any serious difficulty in the adoption of a uniform national and state law, but when we approach the subject of uniform regulations we will probably encounter numerous perplexities and controversies, owing to differences of sanitary problems in various sections of the country. This will be especially true in regard to interstate movements by common carriers.

It may be of interest to refer to a difficulty of this nature which arose in our state during March, 1915, at a time when the foot-and-mouth disease outbreak was under control, and restrictions were being gradually lessened. Under federal regulations it was permissible to ship livestock, for immediate slaughter, out of federal modified and exposed areas. The Pennsylvania regulations forbade such shipments to enter our state, and

were even more drastic in forbidding such shipments to pass through the state enroute to other states.

A reference to the map will show the keystone position held by our state, as

such shipments could not reach New York, New Jersey or the New England states except by passing through Pennsylvania or Canada and, of course, Can-

(Continued on page 36)

Importance of the Study of Animal Parasites

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THE following on animal parasites is written in response to a letter asking me to contribute something to the AMERICAN JOURNAL OF VETERINARY MEDICINE that would be of value and general interest to the men in every day practice. I am not going to attempt to bring out anything new, but simply wish to emphasize, or rather re-emphasize, some of the problems, direct and indirect, of parasitisms that are far too often overlooked. I feel that the veterinarian, especially the younger one, while the mind is still actively receptive from his college work, and his belief in brotherhood welfare is still firm, and his enthusiasm to be a useful public servant is still uninjured and sensibilities unhardened by the trials of daily life, should start to make a systematic study of the parasites affecting the domestic animals in his community to the end that he may be able to handle the problem of animal parasites in the larger way. He should consider these points: How many parasites can I name? Give the location or migration in the host. Recognize from the morphology and give, even in a general way, the life history.

The term animal parasites is used in this case to include those forms of animal life, parasitic to our domestic animals, that are, with a few exceptions, visible in their adult form to the naked eye. During the last half century up to a few years ago investigation work in animal diseases had been conducted mainly, money, time and effort, along the lines of micro-organisms

and as a result other things did not receive the support and attention that their importance would seem to warrant, especially as to their economic importance. I do not mean that I would do less in bacteriology, serum therapy or biochemistry, but that I would do more on parasitisms. Take all the seniors in our different veterinary colleges at the present time and how many will you find that you could interest sufficiently to get to even consider spending another year in college, at a living wage, to take up the study of our more important animal parasites. The complete life history of some of our most common parasites is not well understood. This is essential if we are to successfully prevent diseases due to parasites that are found in or upon our domestic animals. We know that some parasites are always found in or upon our domestic animals. We know that some parasites are always found in the same species of animal and that others pass certain stages of their development in different hosts of entirely different species of animal—for example, tape worms in dogs must have previously lived usually in the form of a cyst or bladder body in the tissues of such animals as sheep and rabbits. Certain tape worms in chickens pass a part of their lives in flies and other insects upon which the chicken feeds, an intermediate host in such cases being absolutely essential for the parasite to complete its life cycle. In some cases, in one host, the parasite may be injurious and even

fatal while in the other host comparatively harmless. Yet it is quite often found that the stage at which the parasite can be successfully combated is during its life in the host to which it is comparatively harmless. At least we should attempt to combat the parasite at that stage of its development in which its further propagation is most readily checked. In treating dogs or chickens for tapeworms or pigs for round worms, how often is any attempt made to destroy the worms and eggs expelled by the action of the vermifuge? Let us be just as efficient in treating individual cases of parasitisms as our knowledge permits, but let us be equally efficient in preventing the further spread of the parasite by cutting off its development in the herd and in the community in so far as our knowledge of its life history, habits and resistance will permit. This means having in your mind or in available reference those methods applicable to the different species of parasites, for no two can be handled in exactly the same way. Some of the things that we must have in mind are the time that cystic forms will remain alive in the intermediate host; how long the adult forms will live or remain in their respective locations in the host and reproduce without any further infestation. Another important point and one that is lacking in fact is the life of the egg and conditions favorable and unfavorable for its continuation and development. While the lifetime of most adult forms of parasites is known to be comparatively short, encysted forms may live from one to three years, and it seems to have been demonstrated that the eggs of certain parasites will resist drying or atmospheric changes and remain alive for years. This possibly accounts for the appearance of certain parasitisms in enzootic or epizootic form in communities where no evident method of introduction is known.

Injurious effects: Parasites are in-

jurious to animals in various ways. Their mere presence upon the skin or in the intestinal tract or tissues often is a source of considerable irritation. They absorb or appropriate food material intended for the host or they may extract their nutrition from the body of the host. Those that puncture the tissues for the purpose of taking food and those that simply insert parts to hold themselves in place both mechanically injure the tissues and open the way for infection. Others rupture the tissues by their migrations and still further from mere numbers lower the normal vitality and resistance of the host, thus opening the way to infection for both specific and non-specific micro-organisms.

Parasitism is important not only because of the direct or indirect effect of the parasite upon the host, but because many are directly transmissible to man and others may produce injurious effects in the flesh of our food animals, making it dangerous and unfit for human consumption.

In attempting to state the gravity of an attack of any one of the different species of parasites it is necessary to know what injuries the individual parasite is capable of producing. We know that a large number of some species of parasites are comparatively harmless and that a comparatively few of other species are frequently very serious and often fatal. The presence of a few parasites in a particular locality may not in itself appear to be serious, yet we must keep in mind the fact that most of our animal parasites, conditions being favorable, multiply rapidly, and forms of parasitism that this year are economically insignificant may within a year or two become a growing menace to the live stock interests of that locality.

Our object then in dealing with ani-

mal parasites should be first to recognize the importance of the particular parasite and, knowing its life history, take steps to prevent its further propagation by combatting it at that stage of its development in which it is most easily destroyed. We are all agreed that the prevention of any disease is far more satisfactory than the treatment of disease, and in my opinion preventive medicine can be as successfully applied to parasitism as to any other diseases that we have to handle—in fact, unless we can prevent many of the diseases caused by animal parasites all other efforts to control or treat are very largely without results. Many of the parasites that are confined to the alimentary tract may be successfully treated by direct application, but those parasites that pass all or a part of their existence in the deeper structures of the body such as the muscle, brain, liver and circulation must in the majority of cases be dealt with during their existence outside of these places.

In attempting to bring out some of the more important phases of parasitisms, I will review a few cases that have come under my personal observation. The gizzard worm of chickens, *Spiroptera hamulosa*, *Dispharagus hamulosa* and *Cheilospirura hamulosa* (Ransom), a small nematode the presence of which is never known until the bird harboring it shows serious symptoms of ill health, and so far as known the parasite always causing the death of the bird. Due to its mode of action, isolation in the wall of the gizzard, it has seldom been found, or at least recognized, and we are inclined to think of it as of little importance. The presence of this parasite in poultry, being fed to fatten by a packing company was so common that it became an economic question. I personally examined twenty-four gizzards from suspected cases and in the first twelve found the nematode in eight. In the second twelve to be examined,

eleven revealed the parasite. All the affected birds were showing symptoms of unthriftiness, although being fed on a ration for fattening. A local (Ames, Iowa) breeder of fancy poultry bought a cockerel in New Jersey. The bird began to show signs of unthriftiness from time of arrival and was sent to the hospital for treatment, where it finally died. Post mortem revealed two mature worms in the wall of the gizzard, male and female. The female was full of eggs. Suppose this bird had been thrown out to decompose as is frequently the case, or even buried, the premises would undoubtedly have become infested and no one can tell to what extent such centers of infestation may spread.

While this parasite is comparatively rare, it has been found in chickens in Kansas, Iowa, Ohio, Indiana and New Jersey and possibly other states, and unless we become able to diagnose the condition and take the necessary precautions to prevent its further spread it will, no doubt, become a very serious menace to the poultry industry of this country. As we do not know the life history of this parasite, our only method of combatting it is to burn all birds affected with it and prevent further propagation.

To further illustrate the spread of animal parasites from one part of the country to another through the transportation of animals that are apparently healthy, let me cite a case where a dog was shipped from Illinois to Iowa. The animal was presented for treatment, but died before a positive diagnosis could be made. The post mortem showed numerous hook worms *anchylostomum trigenocephalum*. I had never found this parasite in a dog in Iowa before and so far as I know the disease does not exist, at least, is not common among dogs in this state. Are the chances of its becoming prevalent through cases like the above not worthy of our attention?

I had my first introduction to the

economic importance of animal parasites during the time that I was in Cuba (Jan., 1906, to Oct., 1909). To mention a few that were common distoma hepaticum (cattle), stephanurus dentatus and echinorhynchus gigas (pig) and strongylus micrurus (calf). No one can even approximately estimate how many animals in Cuba die annually from distomatosis. In the abattoirs seventy-five to one hundred per cent of the livers from cattle are found to be invaded, many so badly that total condemnation of the liver is necessary. I cannot recall a single post mortem in the field or examination in the abattoirs of native pigs when I failed to find the stephanurus dentatus or echinorhynchus gigas. The kidney worm, while usually in the pelvis of the kidney, was also frequently found in other organs, especially the liver, making condemnation of the organ in food animals necessary. Verminous pneumonia or pulmonary strongylosis was found to be common in calves in Cuba, especially in parts of the Province of Havana. While serving as chief veterinarian to the national board of health (Cuba) I was directed to go from Havana to Santiago de Cuba (600 miles) to see a herd of young stock that were dying supposedly from tuberculosis. I found many young animals in the last stages of verminous pneumonia. On a farm at Managua I removed from a yearling calf one gallon of lung worms. An actual count of the eggs in two females showed one to have 16,000 and the other 23,000. On a dairy and stock farm, Havana province, where about 400 to 500 head of cattle were kept, which meant two to three hundred calves yearly, 85 per cent of these were dying from the effect of lung worms. By controlling the water and feed, isolation of affected animals and actual scraping and disinfecting of yards and waste, we reduced the loss from 85 per cent to 15 per cent. True, we introduced medicines, intra-tracheal injections of benzene, turpentine, ether, iodine and so on, also gave

some by the respiratory tract through the nose. The administration of medicinal agents had its spectacular effect and the psychological effect on the attendants was perfect, but the real good came from our consideration of details in carrying out a campaign of prevention.

To come back to the issues at home. Take the most common parasite in Iowa affecting pigs, *Ascaris suilla*, generally spoken of as practically unimportant except when present in large numbers. We have frequently met with it invading the bile duct and liver. I have received from veterinarians samples of livers packed full of this worm with the request to examine for tuberculosis. On December 4, 1915, I posted a young pig that had died from invasion of the bile duct and liver by *Ascaris suilla*. This pig came from a herd of 600. Figuring on a basis of 9,000,000 pigs in the state of Iowa, if one in every 600 dies from this condition it would mean 15,000 pigs at five dollars apiece, a loss of \$75,000. That estimate is low and represents the loss from this parasite only in those cases where the parasite invades the liver. No one can estimate the drain upon the vitality of the host and the resulting economic loss. This is equally true of all parasites, including those that are seldom or never directly the cause of death. Is it right, even in a text on meat inspection, to say that their presence is so constant that it may almost be looked upon as normal? We should look upon the presence of the least harmless of the living things properly classed as parasites as an enemy to live stock and be prepared to do what we can to eradicate them.

Some time over a year ago I was in Winterset, Iowa, in consultation with Dr. J. G. Schoenenberger, and he took me to see some lambs that were suffering with acute helminthiasis due to the *Haemonchus contortus*. It took on the form of an infectious disease and resulted in the loss of a number of sheep. In one sheep posted in addition to the stomach worms we found nodular dis-

ease (*Oesophagostomum columbianum*) and *trichocephalus affinis* in the cecum and *cysticerci tenuicollis* in the viscera.

I recently held an autopsy on a chicken from New Providence, Iowa, that was showing some symptoms of chicken pox or *Epithelioma contagiosum*. Many in the flock had died having shown the same general symptoms, but no lesions of chicken pox. The autopsy revealed *Teniasis* (*Davainae cesticillus*), *Ascariasis* (*ascaris inflexia*), and *cheilospiriosis* (*cheilospirura hamulosa*). Another chicken from the same flock presented at the same time for post mortem was found to have generalized tuberculosis and a few *Heterakis papillosa* in the ceca.

Take the *Oesophagostomum dentatum* of the pig. I have found this nematode many times, and in every case there was more or less colitis, and the host was, if not sick, the inferior animal in the herd. A few other parasites that are seldom considered but that are feeding upon the domestic animals of the state and taking their toll, little or much, are *sarcoptes scabiei* of the pig; *Demodex folliculorum*, dog; *Teniasis* of horses (*mammillana* and *plicata*) and of dogs, chickens and sheep; *Phthiriasis* of pigs, chickens, horses and cattle; *Oesophagostomum inflatum* (calf); *Amphistomum conicum* (cattle). Under Dipterous parasites we cannot overlook the importance of the *Estridae* of horse, cattle and sheep, nor those species of *Muscidae* blow flees that deposit their eggs in wounds of animals.

The last parasite I am going to mention heads the list in importance and destructiveness to its host from an economic standpoint, the *Sclerostomum equinum* or *Strongylus vulgaris* (Ransom). It is impossible for me to state at this time the whole part that this nematode plays as a parasite. Briefly, it is very prevalent in the horses of the central west and causes very serious losses. In young animals six months to six years its action is more or less acute, the lesions being hemorrhagic inflammation of the cecum and colon, acute

verminous dilatations of the arteries, multiple emboli of intestines, spleen and lungs. The parasite is found invading the peritoneum, kidneys, spleen, scrotum, liver—in fact, no organ seems to be entirely exempt. The most serious structural change is in the arteries, but it opens the way to microbial infection, systemic and local, and produces conditions and symptoms that have been recognized clinically as colic, enteritis, influenza, pneumonia, forage poisoning, silage poisoning, septicemia, etc. If I were to attempt to name the three diseases that cause the greatest loss to the live stock interests of the state of Iowa I would name, leaving out tuberculosis, hog cholera, Hemorrhagic septicemia and sclerostomiasis. The losses vary so from year to year and from section to section that an estimate today does not hold six months hence.

Conclusions

1. If all the animals of the state harbor parasites in proportion to those that have come under my observation, then parasitisms is one of our major problems.

2. Some of the Agricultural Experiment Stations are taking up a systematic and economic study of animal parasites. The veterinary profession should keep informed regarding new details and the investigation work should be, at least, directed by men that have a veterinary education and are familiar with symptoms and lesions resulting from parasitic infestation.

3. In post mortem work I find many cases where parasites are directly the cause of death. Where they have invaded, injured, produced structural changes or even destroyed parts or organs. Where they have undoubtedly opened the way for infection, and again where those deep seated in the organs have produced lesions through their migrations, growth or have died and subsequent changes taken place that tax us to the limit to differentiate from specific and non-specific lesions due to other causes.

4. Our country is growing fast. It is

rich, yet there are many worthy people that are justly complaining especially of the cost of necessities. The price of food stuffs is high. The expert animal husbandry man, breeder and feeder tell us that the loss of animals is one of the big items in the cost of preparation for market. The veterinarian, more than anyone else, must be looked to to stop this loss of our live stock and thus make production less expensive.

I feel that many of the diseases of animals caused by animal parasites that are at present given little or no thought

should receive the same attention in matters of prevention and control as many of our infectious diseases. With more of them interstate shipment of live stock should be considered and when making examination for soundness. This might in some cases result in a hardship and loss to the owner, yet, to my mind, they should be handled the same as our specific infectious diseases and unsoundness on the basis that "the interests of the many shall dominate over the selfish assertion of individual rights."

The Practitioner's Relation to the Bovine Infectious Abortion and Sterility Problem

By **WARD GILTNER**, East Lansing, Mich.,
Bacteriologist, Michigan Agricultural College

IT may not be the function of the teacher and laboratory recluse to outline the relations of the practical men of the world to their problems. It certainly requires something approaching temerity for such a one to attempt to orientate the profession in a matter surrounding which there is an almost Stygian darkness of ignorance. And yet the practitioner must answer questions, either foolishly (?), those asked by his client, or wisely, those asked by himself. We will be pardoned for hoping that some day not too remotely distant a satisfactory explanation will be available for the present mysteries of infectious abortion and sterility of cattle.

We associate these two affections closely, since there are many reasons to believe that the latter is dependent in a large percentage of cases on the former. It seems perfectly safe to assert that there is a communicable disease of cattle caused by *Bact. abortus* (Bang) which frequently manifests itself by the disastrous effects of its action on the pregnant uterus. Abortion or premature birth must be recognized, how-

ever, as only a symptom incidental to the activities of the abortion microbe. The full significance of the action of *Bact. abortus* on the bovine animal is not thus far appreciated, but it is certain that the act of prematurely expelling a dead or living fetus from the uterus is not the sum total of the mischief done. We cannot help but feel that retained afterbirth, chronic or acute metritis, salpingitis, various affections of the ovaries with resultant temporary or permanent sterility and abnormal sexual excitement, and even peritonitis and death are all more or less directly traceable to the malignant influence of *Bact. abortus*. It is needless to call the attention of the cattle practitioner to the prolonged unthriftiness resulting from abortion and its effects on the milk flow are too well known to demand discussion. The effect of the infection on the milk itself, as a human food or for the rearing of calves and other stock, is a matter that has probably not received more than a passing thought from the practitioner and certainly has received only limited study by the scientist.

There may be other factors of grave importance involved in the inception of epizootic bovine abortion and in the production of its accompanying phenomena; but we are inclined to take the position that *Bact. abortus* is the pivotal causative agency about which all other factors revolve and play a rôle of secondary importance. If this is the correct attitude, the practitioner should, in justice to himself and to his client, thoroughly appreciate what is now available for utilization in the understanding of the microbe and its relation to the bovine host. It is probably safe to say that a full knowledge of the history of any outbreak or any occurrence (for its occurrence is not always in the form of an outbreak) of abortion of cattle is sufficient to form the basis of a satisfactory diagnosis, provided the state of affairs in the herd has not existed for any length of time. It does not appear to us that knowledge of the pathology and symptomatology (including anamnesis) of the disease is sufficiently advanced to warrant a positive diagnosis with a single case and with no further assistance. The use of "abortin," a product of the growth of *Bact. abortus*, analogous to tuberculin, cannot be recommended as a reliable diagnostic agent, and its use may give rise to confusion when attempts are made to utilize serum tests. The complement fixation and agglutination tests seem to indicate that the reacting animal is, or recently has been, acted upon by *Bact. abortus*. The reaction need not be proof of the presence of the organism in the animal at the time of the reaction, it does not mean that the pregnant cow will abort, or that the non-pregnant cow will not conceive, or, if conception takes place, that she will abort, or that the reacting cow or bull will surely transmit the disease to susceptible stock; but it is quite clear to us that a positive reaction does mean involvement of *Bact. abortus*. Now, just what this signifies, we are not in a position to state.

The results of the work of many in-

vestigators and especially the work of our former associate, Dr. E. T. Hallman, which has come forcibly to our attention, convinces us that infectious abortion (caused by *Bact. abortus*) is not a universal affection of cattle, although quite widespread, and that its disappearance, accompanied by or followed by the disappearance of reactions to serum tests, is an attainable goal, and one toward which the veterinarian should guide his client. We would advise following the history of the herd, i. e., the valuable herd, in the matter of serum reactions where the free services of a state laboratory are available. However, it would be very unfortunate to make use of the serum reactions unless there is a full realization of the significance of the reactions so far as that may be appreciated at the time. Certainly more will be known of this matter as time goes on, but knowledge will come faster if the practitioner works in hearty, intelligent co-operation with the laboratory.

It is interesting to note that several investigators, including Smith and Fabyan, Schroeder and Cotton, Evans and others, have determined that the milk of many aborting cows contains *Bact. abortus*. Its presence has been demonstrated by both culture and guinea pig inoculation tests. The former method is surrounded by difficulties and uncertainty, while the latter requires a long time to accomplish results. Mr. L. H. Coolidge, my associate, has shown that *Bact. abortus* is not only present in the milk of some cows, but that it may be present (in detectable numbers) in one or more quarters and not necessarily in all; and, moreover, that the milk of such cows gives the same reactions, viz., agglutination and complement fixation, as are given by the blood serum. It does not appear that every cow that gives a reaction when the blood is tested will give a reaction with the milk test; but, on the other hand, the milk may cause a reaction without the demonstrable presence of *Bact. abortus*. The effect of such unheated milk on calves or human beings

is not fully understood, but the work of Larson and Sedgwick and recent experiments conducted by Mr. Cooledge indicate that the consumption of milk from cows affected by *Bact. abortus* give rise to the presence of agglutins and complement fixing amboceptor in both children and adults. Further extensive studies are necessary to determine what is the real hygienic significance of milk from infectious abortion herds as a food for man. Also, it is not clear just what influence such milk has on

calves, but it appears that there is an untoward effect that may be overcome by pasteurizing the milk. The practitioner might do well to advise, on general principles at least, that such milk be efficiently pasteurized before being used for either human consumption or for calves.

The sterility problem is a superstructure built, most probably, upon the activities of *Bact. abortus*; therefore, it should be attacked at its foundation.

(Continued on page 75)

Infectious Pneumonia of Cattle*

(Hemorrhagic Septicemia)

By A. T. KINSLEY, Kansas City, Mo.

MANY complaints have been made to various state sanitary officers of a disease that occurs in cattle that have passed through public stock yards. This condition has prevailed in Missouri for five or six years, but has been more prevalent during October and November of this year than previously. Kansas experienced considerable difficulty with the same disease and the authorities were considering regulations to control the movement of cattle from public stock yards. Nebraska sanitary officers have investigated several herds in which the disease in question had been introduced by shipped-in cattle. Wyoming has had at last one outbreak. From Minnesota, Dakotas, Montana and Colorado similar reports have been obtained. The disease, according to reports, has recently occurred in Ohio, Indiana, Illinois and Oklahoma. This condition has been variously designated as shipping fever, strangles, influenza, catarrhal fever and infectious pneumonia. The disease usually manifests itself as a pulmonary disease, but an occasional animal in an affected herd evidence symptoms of digestive derangement.

This disease was investigated some four years ago in the state of Missouri and after a summary of the symptoms, lesions and microscopic findings, it was recognized as the pulmonary form of hemorrhagic septicemia.

Young cattle are more susceptible to the pectoral form of the disease than older cattle. The condition of the animal does not appear to be a factor in susceptibility, as those in good flesh are as frequently affected as those that are thin and emaciated.

Changeable weather predisposes to the disease, or at least more cases are observed in the fall and spring season.

The specific cause of the disease, according to the investigation in Missouri, is the *B. bovisepiticus*, an organism belonging to the *Pasteurella* group. This microbial agent appears to be universally distributed and therefore it is not uncommon to observe sporadic cases of the disease. It is probable that infection with *B. bovisepiticus* from all sources, excepting diseased animals, rarely produces disease unless the resistance of the infected animal has been diminished. The *B. bovisepiticus* from diseased animals are more virulent, and young animals exposed to such infection frequently become affected. The

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shipping of cattle during inclement weather causes them to become chilled and their lungs are especially affected by the inhalation of cold air and they are thus predisposed to pneumonia, and the omnipresence of the *B. bovisepiticus* almost insures infection and the possible production of the pectoral form of hemorrhagic septicemia.

The *B. bovisepiticus* may gain entrance to the animal body through the various mucous membranes, but especially the respiratory and digestive mucosa, and less frequently it may be introduced through the skin.

Three different types of this disease have been identified, viz., pectoral, abdominal, and exanthematous forms. The principal lesions of the pectoral form occur in the thoracic viscera, those of the abdominal form in the abdominal viscera, of the exanthematous form in the subcutaneous tissue.

Acute or peracute hemorrhagic septicemia is characterized primarily by hemorrhages which occur in the subserosa, mucosa and subcutis. The hemorrhages are usually petechial in size and they are very common beneath the epicardium and endocardium. In the subacute form there are hemorrhagic lesions and in the pectoral form there is usually evidence of an accumulation of serous fluid in the pleural cavity, and pneumonia, in which there is interstitial exudation. Areas of hepatization occurs in one or both lungs, these portions being red, brown or grey in color and of a friable consistency; other portions of the lung will appear hyperemic and hemorrhagic. The visceral pleura may be inflamed and in extreme cases it may be covered with fibrinous exudate. Subpleural hemorrhages are very common. The mediastinum may contain a gelatinous exudate.

The abdominal form is characterized by submucous and subserotic hemorrhages and a hemorrhagic enteritis and peritonitis in which there is usually a quantity of serous or sero-hemorrhagic exudate in the peritoneal cavity. In some cases the spleen may be enlarged.

The subcutaneous form is evidenced by hemorrhages and a marked accumulation of serous exudate in the subcutum, particularly of the inferior cervical region.

Reynolds and Munn have reported some cases in which there was a marked hemorrhagic meningitis. It is rather common to find two or more of the foregoing types of lesions occurring simultaneously.

The symptoms of this disease depend upon the type of lesions. The early stages of the disease are usually evidenced by depression, dullness and inappetance. The affected animals are usually stiff and have little tendency to move. There is usually a rise in temperature of from 2° to 5° F.

The pulse is increased and the character changed. In the pectoral form, respiration is increased and there is labored breathing. The affected animal has a dry, painful cough and there is a frothy serous or sero-sanguineous nasal and ocular discharge, the discharge later becoming of a purulent character. Pleuritic friction sounds and solidity of lung areas may be determined by a physical examination. Those cases in which there is involvement of the abdominal viscera show temperature circulatory and digestive disturbance, there is colicky pains and diarrhea, the fecal discharges being frequently streaked with blood. The exanthematous form of the disease is characterized by high temperature, circulatory disturbance and by subcutaneous inflammatory edema, especially of the inferior cervical region, although it may occur elsewhere. This tumefaction may interfere with circulation, deglutition and respiration, as well as with locomotion.

The meningeal type is manifested by disturbance of the brain functions. Animals so affected are usually nervous, excitable and sometimes vicious. In the subacute or chronic form of the disease the affected animals show marked emaciation.

Symptoms indicating the presence of a single type of this disease may be ob-

served, but it is not rare for the disease to affect the thoracic viscera in the beginning, and later the digestive viscera become involved. Such cases show a combination of symptoms.

Hemorrhagic septicemia may be acute or chronic. The very acute form of the exanthematous type usually terminates fatally in from 6 to 36 hours. The pectoral form rarely terminates fatally in less than three days. The prognosis in the acute form is unfavorable and should be guarded in the chronic form, as in those animals which recover from the pulmonary form a chronic lung affection usually persists. Quarantine

regulations are of value in controlling the spread of this disease and should be resorted to.

Medical treatment of this disease is of little value. Various drugs have been used in the different types of the disease, but the fatality still persists at about 90 per cent. Since the Bureau of Animal Industry advocated the control of this disease in the buffalo of Yellowstone National Park by the use of bacterin, the author has recommended it in the control of Hemorrhagic Septicemia of cattle, and those that have adopted this preventive treatment have obtained good results.

Modern Treatment

By I. E. NEWSOM, Fort Collins, Colo., Division of Veterinary Medicine,
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SINCE the beginning of time animals have made various attempts to alleviate disease, save themselves from suffering and restore conditions to the normal. I refer to such instances as the licking of wounds, lying in the mud and standing in water when fevered. It is often said in support of our modern drug therapy that animals eat of certain medicinal plants when ill. Be that as it may, much of our early treatment was based on what animals actually did, or were supposed to do, for themselves.

During the middle ages so-called remedial agents ran riot. There is no space and no necessity for quoting some of these old prescriptions, which contained as many as two hundred ingredients and took months to concoct. Many of them were garnished with such delicious morsels as goose dung, roasted snails and the juice of crushed spiders. Almost every conceivable substance was used for the cure of disease, both in man and animals. Men were bled for headaches, for gout, for typhoid fever and doubtless for anemia. All sorts of rattles, incantations and prayers were used to frighten away the evil spir-

its or call in the good. And in spite of all this the patients often recovered.

What is the explanation? There is inherent in each animal body—the accumulation since life began—that defensive mechanism which will protect them against most harmful materials. If this were not so they would not be here, since those that were not well fortified with this mechanism of defense fell at the first exposure and did not reproduce their kind. Inflammation, since the days of John Hunter, has been looked upon as nature's method of combatting an irritant and as a phenomenon to be expected and encouraged rather than to be combatted. Fever has been looked upon by Vaughan and others as a measure of the resistance and therefore not to be reduced by direct means.

Basically, I have for some time looked upon the treatment of individual cases, especially among breeding animals, as of doubtful value. It certainly is true that the more we treat the more susceptible animals become, and the more we will have to treat. I am firmly convinced that if we had never ex-

erted ourselves at all in the line of treatment of animals we would today have a hardier strain. I am also convinced that this statement applies to man as well as to the other animals. However, there is little use making these statements except to support a better system of breeding, because if a man have an animal sick, and there is any possibility of saving his life, he will surely be saved. All the more so is it true in human practice. It is well enough to say let the other fellow die, he is a weakling and will only be a drag on society, but in our own families it is a question of doing everything in our power to save life.

Our attention as veterinarians must then be directed to ways of combatting disease which have been by nature found to be most satisfactory and to assist or duplicate these methods as nearly as possible.

In animals the breeding out of disease offers the most reliable and satisfactory end results, but it is unfortunately the one least likely to be followed. Some years ago when the cantaloupe blight was especially bad in the Arkansas Valley, Colorado, Philo K. Blinn found in a whole field just one plant that was not blighted. From the seed from this plant he started a blight-resisting cantaloupe that is now generally grown where blight was at all troublesome. Nature developed a horse on the western plains, the broncho, that was seldom diseased and had more vigor than any other horse in this country.

As to medicinal treatment of disease we have advanced materially in the past one hundred years, but it seems probable that there is yet much of our treatment that inhibits rather than aids nature's chemical processes. To say the least, it is empirically administered. In this connection let me hasten to add that I realize that we are so constituted

that we do something for the suffering animal whether in the end it is bad or good, rather than stand around and let nature take her course because we can't see what metabolic changes are going on. Neither would I contend that we should refrain from injecting air into the udder of a cow suffering from parturient paresis, until we find out why it restores the animal to normal. I do believe, however, that we should have a more general realization of our ignorance of the various changes that go on in the normal body, that we know little about these changes during disease and practically nothing about the direct effect of remedial agents on these metabolic activities. Unfortunately, some of our veterinarians still feel that to be cock sure is to be professional. I recall one of my teachers who could diagnose a case of lameness by merely seeing the animal walked or trotted past him. I must admit that at first it filled me with great respect. Later it filled me with disgust. In view of the complex problems presented it is not only not unprofessional to admit ignorance, but it commands respect from those for whose respect we would pay most highly. Therefore while realizing the great advances made in medicine in the past fifty years let us not be over-confident, because after all no less a man than Simon of Baltimore says, "That the death rate from pneumonia is approximately the same among the millionaires surrounded by their corps of physicians as among the hoboes cared for by their brothers by the roadside." All of us are at times chagrined to find that a case we have given up has been successfully piloted through by some quack whose educational qualifications are not equal to our own. Let us not then be too sure that our pet treatment is in reality of value, but keep an open mind, remembering animals may recover without or in spite of anything we may do.

Mammitis in Cows and Its Treatment*

By JOHN F. MCKENNA, Fresno, Calif.

SEVERAL months ago the writer was asked by the Program Committee of this Association to prepare a paper on udder troubles in cows. Since that time I have sought, through the medium of the latest writings on this subject, to bring before the members of this Association the newest ideas on mammitis in cows, but my efforts in that direction have been almost in vain. I have read the article by John L. Tyler in the *AMERICAN JOURNAL OF VETERINARY MEDICINE*, the one by Mart. Steffen in his book on "Special Cattle Therapy," and that by D. J. Davis and J. A. Capps in the *Journal of Infectious Diseases*. While some new points are brought out in these articles, the treatment of this condition has for many years remained at a standstill among the general practitioners of veterinary medicine in this country. An increase in the price of dairy cows during the past two years has made this question a vital one to every practising veterinarian, and of all the non-fatal ailments of cows it is the most important to the dairyman of today.

Some writers believe that all causes of mammitis are of microbial origin, while others speak of sporadic mammitis.

After due consideration of the various forms and from the experience gained by personal work on this subject, I have arrived at the following conclusions, i.e., the two most common forms of mammitis of importance to the practising veterinarian are:

1. That form of mammitis due to a change in the condition of the udder which might take place from within or without the body. Under this class can be named such causes as trauma of any

form, pressure, cold, exposure, extreme heat, constipation, intestinal disturbances, or sudden changes of any kind.

Now I do not mean to convey the impression that the various forms of organisms usually found in the udder do not play some part in this form of mammitis, but do contend that these organisms can only become harmful after the resistance of the udder has been lowered by one or more of the above-mentioned conditions. Furthermore, that a number of bacteria heretofore described as the cause of mammitis were found in the affected gland by reason of their presence in the normal udder. I believe this form of mammitis is the type found in ninety per cent of the udder troubles in cows.

2. That form of mammitis which I shall classify as true infectious mammitis. By this I mean that form of mammitis in which an organism, or a group of organisms, are the initial causative factor, and are virulent enough to transmit the disease from animal to animal, or to produce this condition without the aid of some agent which will lower the resistance of the part. According to Herzog and Moore, the results of Kitt, Nocard, Bang and others, in which a bacillus, a micrococcus, a staphylococcus and a streptococcus have been found, indicate that a variety of micro-organisms are active in producing true, infectious mammitis.

Sporadic mammitis is most commonly found in cows which are heavy milkers, usually appearing in from a few days to two months after calving. At the onset of the disease the inflammation is usually confined to one quarter; later, both quarters on one side, or both front or rear quarters; sometimes three quarters are involved, but rarely the entire udder. There is considerable local heat, and the

*Read before the California Veterinary Medical Association, San Francisco, December 8th, 1915.

skin over the involved quarters appears reddened and tense. The lacteal secretion is diminished or suspended, and in place we find a straw-colored or bloody fluid. Many times, when only one quarter is affected, clotted milk and strings are drawn off during milking, while in severe cases, where two or more quarters are involved, often we find a brown-colored pus given off when the teats are stripped.

In a brief way I shall enumerate a number of symptoms which are found in this form of mammitis and though many of these are not constant, a number of them will be found in each case.

Stiffness in one hind leg; chills; constipation; elevation of temperature of about two degrees; loss of appetite; generally indisposed; inflammation of one or more quarters; lacteal secretions diminished; quarters involved appear reddened and tense; firm swelling which is painful under manipulation; secretions which come from the affected quarters vary from a brownish-colored, watery substance to that of pus, according to the duration of the case.

Symptoms in true infectious mammitis: high temperature (this is of considerable importance in differentiating between infectious and sporadic mammitis); lameness; swelling of gland; suspension of milk; as a rule two or more quarters are involved; secretions given off in the manipulation of the quarters are caseous, bloody and fetid; there is pronounced loss of appetite and general depression.

Treatment: During the past several years it has fallen to my lot to treat a number of cows suffering from inflammation or infection of the udder, and from this practical experience, and from the experience of my associates, I hope those of you who see fit to use a treatment along the lines suggested in this paper will receive as good results as we have. The local treatment should consist of hot water applications several times daily, and these can best be applied by the use of grain sacks or heavy cloth

made into a suspensory bandage; massage of the udder twice daily with olive oil.

Internal treatment: One ounce of fluid extract of echinacea given three times daily; eight to ten cc. of lymph gland extract (Archibald) given subcutaneously once each twenty-four hours; laxatives to be used as indicated.

Mild cases will respond in from two to three days to this treatment, while in severe types it is seldom necessary to use this treatment more than five or six days.

The above treatment has been used mostly in cases of sporadic mammitis, but in the few outbreaks of infectious mammitis treated by the writer, results have been very satisfactory, and, besides the practical results obtained, theoretically, the treatment outlined is directly indicated. Results cannot be expected in the treatment of a case that has been standing for some time where one or more quarters have become organized into a solid mass. If the treatment outlined in this paper is applied during the onset of this condition, a high percentage of cures will be effected.

In support of the agents which I recommend for the treatment of this condition, a brief outline of their therapeutic action is in order.

Echinacea

I have read the articles by Frederick N. Hyle and Merrill C. Hart in the July, 1915 number of the *Journal of the American Chemical Association*, and they tend to corroborate the report published by the Council on Pharmacy and Chemistry of the American Medical Association, which claims the root of *braunerica angustifolia*, commonly called echinacea, is without therapeutic value.

These writings are written from a chemical point of view, and I do not believe they should be given any consideration from a therapeutic standpoint, for, according to the testimony of such men as Stephens, Niederkorn, Fyle, Burnett, Walters, Wright, Ellingwood, Wheeler of

England and many others who have investigated the drug echinacea it is antagonistic to pus formation. It is able to influence for the better the opsonic index, raising it sufficiently to protect against the invasion of destructive bacteria. It does not accomplish this because it eliminates waste products, but for the reason that it converts them into benign forces. This drug actively opposes septic tendencies, stimulates the glandular organs, actively enforces secretion and excretion of the lymphatic system, and strongly acts upon the hemogenetic process when due to auto-infection of an acute type. In veterinary practice we have found this drug to be

one of the most valuable of the fluid extracts.

Lymph Gland Extract

It was originally thought by Drs. Moore and Archibald of the Western Laboratories, Oakland, Cal., in view of the histological character of lymph glands and their functions, that from them might be prepared an extract which could be used to advantage in certain types of diseases, particularly those wherein proliferation of new tissue and accumulation with organization of cellular exudates are prominent factors. That this reasoning was logical is upheld by the results that have been obtained as

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The Itinerant Horse Physician

By Himself

EDITOR'S NOTE: So much material for publication has accumulated as a result of the many veterinary meetings held recently that we are unable to devote any more space to *The Itinerant Horse Physician* at this time. Many like this story, and others think that it has no place in a strictly veterinary publication. The editor would like an expression of opinion from a great many on this subject. The manuscript has not nearly all been published. In addition to what was published a little more than a year ago and to what has been published recently. *The Itinerant Horse Physician* has written a long chapter in which he goes into his experience in detail in the government service, both in the quarantine in the Southwest where he met some "bad actors" and didn't come out second best either, in the packing houses in Chicago before the days of "The Jungle," and more recently in tick eradication work in the South. It contains a careful analysis of the advantages and disadvantages of government work and seeks to explain the cause for the dissatisfaction of some who are in this work. There is a further account of a trip made by *The Itinerant Horse Physician* and his brother as tramp veterinarians through Nebraska, North and South Dakota, Montana, Wyoming and Idaho, and while we feel we cannot spare any more space for this story, at least at present or in the near future, we are willing if a sufficient number desire the whole story, to publish it in book form and supply it at a cost of not more than \$1.00. What say you, shall we publish it or not? To every man answering this question, whether favorable to publication or otherwise, we will tell the name of *The Itinerant Horse Physician*. He is well known, at least by reputation, to most readers of *VETERINARY MEDICINE*.

III

A Town a Day in Oklahoma

WHEN a physician advised me to go to Hot Springs, Ark., in the spring of 1907, I sold my interest in the El Paso Veterinary Hospital and went. As I have related previously, the treatments at Hot Springs did not benefit me a great deal, and it is my opinion that the baths are not indicated in such infections as the one I was

suffering from; they are too debilitating. With an infection of the pus producing organisms, such as I had, this debilitating effect of the baths is really detrimental; at least, it was in my case.

However, I continued to take the baths as prescribed by the physician until I was sure that my condition was not improving; and at about the same time my money sack was getting rather flat. I concluded then that I

was losing at both ends and decided to move on.

This decision, to move on, was easily arrived at; but where to move on to was not so easy to decide.

I had sold my practice and had spent the few dollars I got for it. I was now over a thousand miles from home, among strangers, and with not enough money left to pay for painting a good "shingle," not to mention equipping an office.

So there was nothing left for me to do but to "hit the road."

From Hot Springs I went to Little Rock, where I tried to get on as assistant to some veterinarian, but was not successful. However, old Dr. Merchant advised me to go to Fort Smith, where he was quite sure I would find an opening with Dr. May.

Arrived at Fort Smith I immediately applied to that gentlemen for a position. While he had no opening for me just then he was good enough to give me permission to do a little work for him, enough to enable me to get a few dollars ahead. I did not care to do this, upon which the doctor made me a loan of \$25.00, saying I could pay him back when I could do so conveniently.

He sure was a regular good fellow.

With this money I left for Oklahoma City, thinking that I might find something to do there, but the town already had more veterinarians than it required and none of them cared to hire me. The town was too large to "work," and so I decided to go to El Reno.

My experiences in El Reno I have told in a previous article.

Leaving El Reno I traveled south over the Rock Island road, stopping off at every town along the route and with one or two exceptions from twelve to twenty-four hours was the length of my stay in any place.

When I could get absolutely no veterinary work to do in a town I would sell the local blacksmith or horse-shoer some of my "corn killer."

This corn killer stunt I learned from a veterinarian in Arkansas and it was a winner with the blacksmiths. It consists of a few crystals of iodine and a small vial of turpentine. When the corn in the horse's foot has been thoroughly pared out a few of the iodine crystals are placed in the cavity and a few drops of the turpentine poured on it. A miniature explosion occurs and the entire area in the foot turns a dark brown color at once. It really has value as a desiccant and antiseptic, as the resulting chemical change forces the iodine into every crevice of the horn.

The miniature explosion which occurs, bordering on the spectacular, makes it a good seller to horse-shoers. I would sell them enough for about three applications and then write down the ingredients for them, charging whatever I thought the fellow would stand for; if he looked like an "easy mark" I might charge him a five spot, making him promise on his honor never to divulge the secret. Maybe in the next town, if I could do no better, I would sell the same "secret" for one dollar.

So if there are some practitioners in Oklahoma now who are wondering where their blacksmiths got this dope they may know that the *Itinerant Horse Physician* "put them wise to it."

In many of these Oklahoma towns where no veterinarians had located as yet I was asked to treat cases of exceptional interest, most of them being chronic conditions requiring surgical interference.

One of the commonest abnormalities which I was given an opportunity to treat was extreme volar flexion of the fetlock joint in anterior limbs. Why this condition came to my attention so frequently I can not explain; however, in the thirty-odd towns I stopped in on this route I was shown at least fifteen or twenty such cases.

Some I endeavored to correct by performing tenotomy; others were ad-

vised variously for treatment or non-interference. What the result was in any case I am, of course, unable to say as I did not remain long enough in any particular vicinity to witness the outcome.

Another condition which I met with exceptional frequency was fistula of the withers, and some of the most "rotten" cases of this condition in my whole experience as a veterinarian I saw in that country. The regular treatment for this condition among the quacks and horse-jockeys there seemed to be a certain manner of filling the horse's ears with ground glass.

When I was making this trip there seemed to be a mania among the people down there for cutting the membrana nictitans out of their horses' eyes. I would feel safe to wager a good sum of money that there are more horses in Oklahoma and parts of Texas minus this part of their anatomy than there are in any other part of the world.

The condition for which they perform this operation is called "hooks"; just what "hooks" originally signified I have not been able to learn. At the time I was sojourning there "hooks" was almost anything which defied the diagnostic skill of the quack or the jockey. If a horse or a mule was ailing for a time and the usual dosage with Harlem oil or "punkin seed tea" did not fix him up he was charged with having the "hooks," and condemned to have his nictitating membrane cut out or extracted.

Speaking of "punkin seed tea" reminds me that in those parts this seemed to be the popular colic remedy. When "punkin seed seed" failed there was only one other hope for the patient. This last *hope* was a dose of fresh chicken guts. A chicken was hastily caught and killed and the horse drenched with the "guts" while they were yet warm.

To northern and eastern practitioners this sounds like a regular "made-

up" story, I know. But Oklahoma and Texas practitioners will verify the truth of my statements.

In one of these towns I was requested to treat two cases of open navicular or coffin joints. The patients had picked up street nails and the local quack had enlarged the openings, for drainage, with a brace and bit. In both cases he bored a half-inch hole directly into the joint.

Do you still wonder why I said in opening my chronicle that half the quacks in practice should be hung and the other half put in jail?

In one town a farmer took me out to his place to show me a sick mare. He said his "veterinary," who was a quack, had been treating the mare for about a week without doing much good. He said he was mighty glad I just "happened" in because he had heard that some of these college "veterinaries" was smart fellers in some things. "Old Doc," as he called the quack, was pretty good, he thought, seeing as how he just picked "horse-docterin'" up all by himself; but, somehow, in this case he didn't think "old Doc" was hardly smart enough. I asked him what sort of diagnosis "old Doc" had made of the case. "Well," said my new-found friend, "he says the colt is foundered in the mare." I asked the farmer whether "old Doc" used an X-Ray outfit to arrive at this diagnosis; he said not so far as he knew.

When we got to the place I found a pretty good sort of a mare, heavy in foal, with a rupture of the prepubian tendon; her abdomen was on a level with her hocks.

I advised the farmer in regard to giving proper assistance at time of foaling and described the exact condition he would find in the event that the mare should not survive the ordeal of parturition. I did the latter so that he might be able to "show up" the quack, which I am sure he did, if the mare died. He was one of those

"long-horns," with fire in his eye, and I bet "old Doc" got some information he didn't want.

In the same town, while I was at the depot waiting for the train, another farmer told me about a cow this same "old Doc" treated for him. The cow died, after "old Doc" had "worked on her" all day, from "Blue Fever" he said. The farmer described the case to me in detail, and if ever a description was given of a typical case of parturient paresis he gave it.

In one town I visited in Oklahoma near the Texas line I met an old quack who wanted to buy my diploma. He said that he had all the knowledge he or any horse doctor would ever require; all he wanted now was a diploma. I asked him how much he would be willing to pay for one. "Oh," he says, "I wouldn't mind spending five dollars on a thing like that."

I told him he could probably buy two or three good ones for five dollars from some colleges I knew and I gave him the names of a college for tonsorial artists and a college of elocution. I don't know how it ended.

An item of interest on this trip was the variety of peculiar "hangouts" some of the practitioners had.

In one town on inquiring the whereabouts of the local veterinarian I was referred to a second-hand store. There I found the honorable "Doc" dealing in second-hand furniture and stoves between calls. He had no sign displayed which would attract attention to his "curing" ability, other than a collection of extracted horse teeth and bottles full of "bots" and other specimens. These were carefully arranged in one front window along with a large rectal syringe and a mouth speculum.

In another town the local horse physician had his "office" in a barber shop.

In still another a small cigar factory harbored the "bot specialist."

But the fellow whom I located in a

small brewery had the best headquarters of all; and from the beautiful mixture of scarlet and Yale blue mingling in the epidermis of his nose I judged that he wasn't letting any chance go by to test the brew between calls.

One other odd headquarters for a "Doc" which I remember seeing there was in a photographer's place.

When I asked this quack why he had selected a photograph gallery for his "hangout" he said, "I done it to help elevate the perfession. It gives a man more prestige."

I recommended a padded cell for him.

One other interesting feature in connection with this part of my wanderings appertained to the peculiar "sidelines" which some of these practitioners had.

One of them sold sewing machines "on the side."

Another was a loan-shark on a small scale. He made a practice of loaning small sums to niggers, charging in the neighborhood of ten per cent a week interest. When a nigger came to borrow ten dollars from him he gave him only nine, holding out the \$1.00 interest in advance. At the time I met this quack he had around two hundred dollars loaned out in small sums in this manner. He seemed to feel quite proud over his financial engineering ability and although I was practically a stranger to him he did not hesitate to explain his scheme to me. Every dollar he could squeeze out of his veterinary practice he loaned out on this plan.

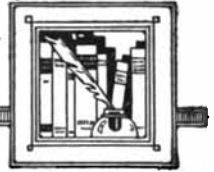
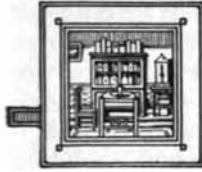
If he had been proportionately as successful in the veterinary end as he was in his money loaning scheme he would have J. P. Morgan backed off the board in a few years' time.

Still another of these quacks I met was a real estate agent on the side, and another put in his spare time as an insurance solicitor.

One quack I met was the king of

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Secretary Vrooman's Foot-and-Mouth Disease Conference

THE conference called by Assistant Secretary of Agriculture, Carl Vrooman, at Chicago, November 29th and 30th was probably the most remarkable free for all "talk fest" every held even in this windy city. For two days and one night, through five long arduous sessions, talk, talk, talk flowed incessantly. Department of Agriculture officials, State live stock sanitary officials, officials of breeders' organization, railroad officials, stock yards officials, packing house officials, breeders and veterinarians talked to their hearts' content, or more correctly, to the limit of their endurance; and all went away relieved, not a few feeling much "smaller" than when they came.

On the whole, the discussion was a remarkable victory for the veterinarians and others in charge of the eradication of the 1914-15 outbreaks of foot-and-mouth disease, and the men who went away feeling smallest were not the veterinarians by any means. Everybody, every method and everything connected with the work of eradicating foot-and-mouth disease came in for not a little criticism, but those who opposed the slaughter method in

dealing with this disease, and their number was few considering the noise they have made during the past fifteen months, received more criticism than all others combined, many prominent persons unhesitatingly branding them as the most undesirable citizens connected with the live stock industry.

In opening the conference Mr. Vrooman declared that it was the inauguration of a new policy on the part of the Department of Agriculture, as it expects in future to work with as well as for the farmer and all business interests connected with agriculture. The department does not know it all. It has the greatest corps of experts in the world working on all problems, but it wants the practical experience and the counsel of farmers, live stock associations and related business interests in working on these problems. It desires active co-operation in all its lines of work. From his investigation of similar departments in foreign countries he knows that our Department of Agriculture is the greatest in the world, but it is the ambition of its officials to make it yet better.

Continuing, Secretary Vrooman said:

"The federal, state and local authorities, working in co-operation, have stamped out the foot-and-mouth disease in twenty-one states and in nearly every county in Illinois. This is the most marvelous and successful performance of this kind in the history of the world. As a number of our states are as large as various European countries, this practically amounts to the same thing as the stamping out of the disease in twenty-one different countries. This is an unprecedented and unparalleled performance, and one of which the federal and state officials have a right to be justly proud.

"There can be and must be worked out a more perfect system of co-operation and co-ordination of effort between the federal, state and county authorities with the farm organizations and individual farmers.

"Secondly, the mechanism for stamping out this disease must be perfected down to the last detail and kept like a fire engine, always ready for use at any hour, day or night, in case the infection should again break out.

"Thirdly, both the state and federal governments should be more liberally supplied with funds. And legislative sanction should be secured for a more just and effective system of appraisal and compensation to the owners of slaughtered herds.

"The owners of pure-bred herds have felt very much aggrieved over the fact that the federal department has appraised and compensated them for slaughtered herds on the basis of their beef and dairy value, without taking into consideration their breeding value. The department has been criticised widely and severely because of this policy. This criticism is not fair to the department, for the simple reason that the department has no choice in this matter, the law definitely stating that the appraisal and compensation should be made upon the beef and dairy value of the cattle

without reference to their breeding value."

Undoubtedly many were forestalled in the criticisms they intended to make by the foregoing statement of Secretary Vrooman that it was unjust to criticise the officials for failure to pay the full market value of pure bred animals which had to be slaughtered, because the officials were bound by the acts of Congress, which prohibited such payment, much as the officials of the Department of Agriculture should like to have paid more for these animals, and notwithstanding the Secretary of Agriculture had used his greatest influence to induce Congress to permit a higher payment.

One thing that was gratifying throughout the meeting was the fact that with the exception of three or four, every speaker was evidently sincere in what he said, and when those few injected remarks intended for other ends than a better understanding of ways and means for controlling the future outbreaks, the disapprobation of those present was very evident, notwithstanding two of the speakers were prominent officials of important live stock associations. These men apparently came to the conference with but one end in view, and that was to get through a resolution or resolutions which could be used by political speakers in the next campaign in criticizing the present administration for removing the duty on wool, hides and beef. They came to the conference to argue the tariff question and were rightly "sat down upon" by Secretary Vrooman. A disappointment to many was the announcement by Secretary Vrooman at the opening of the conference that motions and resolutions would not be considered. He explained that the conference was called by the Department of Agriculture to give all classes interested in the matter an opportunity to present their cases. He stated that the Bureau officials de-

sired all information they could obtain on the subject to take back to Washington with them to work over, digest and use so far as practicable.

If there ever had been any probability that the chief of the Bureau of Animal Industry would be succeeded by a "practical stockman" or that the administrative duties of the office would be placed in the hands of practical stockmen, this conference exploded it by exposing the lamentable ignorance of the practical stock men regarding the necessities for diagnosis of disease, disinfection, and establishment of quarantines. There are numberless things upon which the practical stock man can give the veterinarian information, but these things do not include the diagnosis, management, control or eradication of disease—matters which even the most brilliant of the non-technical men showed an inability to comprehend.

A number of veterinarians were represented on the program. Dr. C. J. Marshall, State Veterinarian of Pennsylvania, read a paper (published elsewhere in this issue) on needed legislation for the co-operation between the Bureau of Animal Industry and the State live stock sanitary officials in the control of animal diseases. Dr. J. I. Gibson, State Veterinarian of Iowa, read a paper (it will be published next month) on quarantine units in the control of infectious diseases. Dr. V. A. Moore of Ithaca, N. Y., Dr. F. A. Bolser, Deputy State Veterinarian of Indiana, and Dr. T. A. Sigler, also of Indiana, likewise presented papers. Dr. Adolph Eichhorn and Dr. J. R. Mohler of the Bureau of Animal Industry, Dr. Fred Torrance, Veterinary Director of Canada, Dr. O. E. Dyson, State Veterinarian of Illinois, Dr. N. S. Mayo, of Chicago, and several others contributed greatly to the discussion.

United States Congressmen, State Senators, judges, lawyers, railroad traffic agents, veterinarians and breed-

ers in large numbers made speeches from the floor; but notwithstanding the eminence of many of the speakers, it was left for a veterinarian to make the most logical, forceful, telling and, judged by its oratorical qualities, the most splendid speech of the whole conference—the extemporaneous address of Dr. J. A. Kiernan of Alabama on the need for co-operation between the farmers and the officials engaged in cleaning up the infected districts.

Others presenting papers were A. F. Strycker, Superintendent of the Omaha Stock Yards, M. D. Munn, President National Society of Record Associations, A. J. Glover, Associate Editor of *Hoard's Dairyman*, Henry Wallace of *Wallace's Farmer*, Colonel G. W. French of Iowa, T. W. Tomlinson, Secretary of the National Live Stock Association, J. S. McFayden, Manager of the Pittsburgh Stock Yards, and many others.

In closing the conference, Secretary Vrooman said:

"The foot and mouth conference marks merely the beginning of a new policy to be inaugurated by the Department of Agriculture. Henceforth the department looks upon the live stock producers and all allied interests to help it solve many of the problems which confront the live stock industry of the United States.

"The people and the government must work out the problems of the live stock industry together. Co-operation must henceforth be the watchword of all interests."

He called upon each organization represented in the conference to file with the Department of Agriculture definite, complete and concise statements of fact relative to the foot-and-mouth situation and any suggestions which will be helpful in guarding American farms and ranches from this dread plague. He also urged the associations to appoint committees to meet in Washington and discuss live

stock affairs with the department heads.

"We have been against a new condition in this country, which none of us have thoroughly understood, and I feel that this conference, which is only the beginning of our work of co-operation, will have a good effect upon conditions. The disease is now near its end in Illinois, and, having been stamped out in other states," said Mr. Vrooman, "we must bend every effort to eradicate it in this state."

John H. Skinner, dean of Purdue University and Indiana Experiment Station, a prominent speaker before the closing session of the conference, declared that live stock men should not go away from the meeting with the idea in their minds that the veterinary profession seeks to tear down and the farmer build up the industry.

"Farmers and stockmen must get together with the Federal Bureau of Animal Industry, and state officials, and work in harmony for the welfare of the industry," said Dean Skinner. "We must go deeper and educate the farmer to the danger of infectious diseases among live stock. The farmer was not aware of the real danger of foot-and-mouth disease until it had struck this country. Henceforth if we work together we can more easily eradicate our troubles."

Delegates to the foot-and-mouth conference, as well as many who are attending the United States Sanitary Association, were guests of the Chicago Live Stock Exchange at the Stock Yards Inn at a smoker last night. Dr. S. E. Bennett, former inspector in charge of the Chicago district, was master of ceremonies. The feature of the evening was the singing of the "Veterinarians' Chorus," under the direction of Dr. J. I. Gibson, state veterinarian of Iowa.

MISSOURI TO BE AFFLICTED WITH QUACKS WITH UNIVERSITY BACKING

The following press notice sent out by the University of Missouri and published widely by the papers of that state, indicates the kind of competition that Missouri veterinarians are to have in the near future and, what is more important, a handicap that the live stock interests of the state must labor under.

The aim of this notice is, and it must be in some degree successful, to attract to the university short course, numbers of young men from over the state who have an inclination for veterinary work. These men are to have a few weeks' training in the agricultural department of the university and to be sent home with the idea that they are "in fact fair horse doctors," knowing the "symptoms and treatment of common diseases."

There can be no objection to legitimate veterinary instruction in the regular four-year agricultural course. Such an instruction is an advantage to the students receiving it, to the live stock industry in the localities to which these students are destined to go, and incidentally to the veterinarians in those localities; but to take students through an agricultural short course of only two terms of a few weeks each and then tell them that they are "fair horse doctors" with a knowledge of how to diagnose and treat common diseases, do minor surgical operations, vaccination for the prevention of hog cholera and tuberculin testing, is not only an imposition on the students but a rank injustice to the live stock industry of the state and a worse than waste of the tax payers' money devoted to such instruction.

The inference is that Dr. J. W. Conaway, head of the veterinary department at the university, is responsible for this, or at least that he could have

prevented such folly on the part of the school with which he is connected, and knowing the futility and even calamity of such a course, as he must know it, one cannot but feel that he has chosen it in a spirit of spitefulness because of the rough handling he has himself received at the hands of the veterinary profession of Missouri.

The following clipping is from the *Columbia (Mo.) Tribune* of October 25:

HOW TO DOCTOR STOCK

Students in Short Course Learn to Treat Animals

When cholera breaks out among the hogs or tuberculosis gets a start in the dairy herd, the farmer who has taken the two-year winter course in agriculture at the University of Missouri, at Columbia, will know what to do. How to control these diseases is part of the work in veterinary science given in the short course. The course this year begins November 1 and ends February 26, with a vacation between terms from December 17 to January 10.

The short course graduate is, in fact, a fair horse doctor. He knows the structure and functions of the animal body and the symptoms and treatment of common diseases. He has a knowledge of how to do minor surgical operations and can take care of an accident that occurs among the live stock. Casting animals, dressing wounds, making bandages and administering medicines is taught in theory and actual practice to the students in the second half of the first year.

In the second year, the student is taught to tell the age of a horse, to treat diseases of the digestive organs and to attend to diseases of injuries to bones, joints or skin. The methods of handling horses and how to feed and care for them is also given attention.

Lectures and laboratory work will be given the short course students in veterinary science. Practice in actual veterinary work will be furnished by minor operations and postmortem examinations. There will be as much practice as the student can do. The man learns how to do as well as why to do it in this course.

A card to P. M. Brandt, superintendent of short courses, Columbia, Mo., will bring a free bulletin telling about all of the courses offered.

REPORT OF THE SECRETARY OF AGRICULTURE

The report of the Secretary of Agriculture for the year ending June 30, 1915, is ready for distribution. Veterinarians will be gratified to note the large and important part in the work of the Department that has been accomplished by the Bureau of Animal Industry during the year. The report deals at length with the foot-and-mouth disease outbreak and with the subject of hog cholera and the manufacture of anti-hog-cholera serum.

As in the report by Drs. Melvin and Mohler of the Bureau of Animal Industry, published last March, the Department disclaims any blame or responsibility for the failure to recognize foot-and-mouth disease in Michigan during the early weeks of its existence. At the same time it lightens the responsibility of the Michigan authorities by the assurance that the disease first appeared in an exceedingly mild and atypical form, a form that was not nearly so highly contagious as this disease usually is, and because of this and of the existence of mycotic and other forms of stomatitis in the same locality at that time, its diagnosis was difficult.

The proposed plan for government control of serum production and for a government plant in which to test all of the serum produced, is a matter of great interest at this time.

A summary of the report on foot-and-mouth disease and hog cholera follows:

FOOT-AND-MOUTH DISEASE

The outbreak of foot-and-mouth disease, which appeared in Michigan in the fall of 1914 and spread to 22 states and the District of Columbia, is treated at some length in the report. This outbreak was the sixth in the history of the country. On the first three occasions—in 1876, 1880 and 1884—the resultant damage was comparatively trifling. In 1902 and 1908 the losses were more serious, involving a total cost to the Department of Agriculture in each case of about \$300,000. This does not include the

amounts which the states contributed to reimburse the owners of slaughtered herds. In 1902 the states paid 30 per cent of the value of the animals and the department the remainder. In 1908 the states paid one-third.

In the early outbreaks the contagion was introduced with imported animals. Since the establishment by the Department of Agriculture of a stringent system of inspection and quarantine of imported live stock no infection from this source has occurred. On subsequent occasions the disease evidently was brought in with contaminated products or materials.

Appearance of the First Case

Toward the end of August, 1914, the report says, the attention of the state veterinarian of Michigan was called by local veterinary practitioners to a disease resembling foot-and-mouth disease in two or three herds in Berrien County. It was not until October 15, however, that it was recognized positively in the department as the foot-and-mouth malady. This delay in diagnosis was due to a combination of circumstances, especially to the fact that the infection at first was unusually mild and the lesions were obscured or obliterated by lesions of necrosis, or decayed tissue.

After visiting the locality the state veterinarian, in company with an assistant veterinary inspector of the Federal meat-inspection force at Detroit, again examined the cattle on September 3. They failed, however, to recognize the affection at foot-and-mouth disease on account of its mild type, the absence of characteristic lesions, and the presence of lesions having the appearance of necrotic stomatitis, or sore mouth. The assistant inspector reported to the department that the lesions were characteristic of necrotic stomatitis and that the affection was not foot-and-mouth disease.

"A few scrapings forwarded to the Bureau of Animal Industry, at Washington, apparently indicated a form of stomatitis. They arrived, however, in such a condition as to render it impossible to make a positive diagnosis. In view of the diagnosis of necrotic stomatitis already made, the prevalence of that trouble as reported continuously by different branches of the bureau's service, and the absence of any hint of the presence of foot-and-mouth disease in the United States since 1909, the conclusion of the state veterinarian and the assistant inspector, both of whom had had experience during the outbreak of 1908-1909, was not questioned.

Difficulties in Diagnosis

"On September 24 the pathologist of the

State Live Stock Sanitary Commission visited an infected farm near Niles, made an examination of the cattle, and collected specimens, without arriving at a diagnosis of foot-and-mouth disease. Two days later the state veterinarian and the pathologist visited this same farm and several others. The pathologist expressed the belief that the malady was foot-and-mouth disease and suggested to the state veterinarian that he telegraph this opinion to Washington and request that, while awaiting the results of a laboratory examination, an investigation by an expert be made. The state veterinarian agreed with him as to the fact, but thought that the matter should be taken up with the local office of the Bureau of Animal Industry in Detroit instead of directly with the bureau at Washington. The pathologist took the specimens to Lansing, and on September 28 inoculated a calf. By October 1 the calf showed fever, drooling, and mouth erosions; but the case was not diagnosed as foot-and-mouth disease because of the absence of foot lesions. Neither these visits, these opinions, nor the results of the inoculation were made known to the department in Washington until October 10.

"On October 5 the state veterinarian of Michigan, the president of the Live Stock Sanitary Commission, and the inspector in charge of the office of the Bureau of Animal Industry at Detroit went to Berrien County to make another examination. A letter from the inspector, in which he included no diagnosis, but described in detail certain symptoms pointing to the possibility of foot-and-mouth disease, was received by the chief of the bureau in Washington Saturday afternoon, October 10. This was the first information to reach him giving ground for suspicion that foot-and-mouth disease might be present. The inspector at Detroit had not had any experience with this malady, and for that reason did not attempt a diagnosis. An expert was sent from Washington to Michigan on the first train after the letter was received, while calves were inoculated at the bureau's experiment station near Washington. In addition to physical examination, calves also were inoculated by the expert on the ground.

Spread of Infection

"Immediately after the discovery of the true nature of the disease a force of inspectors was dispatched to the infected locality. A thorough canvass disclosed, up to October 17, 39 infected herds in southern Michigan and 7 in northern Indiana. An order, effective October 19, was issued, placing under quarantine the counties of

Berrien and Cass, in Michigan, and St. Joseph and Laporte, in Indiana.

"The infection seems to have been carried in milk to the creameries at Buchanan, Mich. The skimmed milk was fed to hogs and the disease was communicated to them. A carload of the hogs, before these facts were known, was shipped to Chicago and doubtless carried the infection to the Union Stock Yards there. From that point it was spread by shipments of live stock to various parts of the country. Some of the large eastern stock yards became involved, and the disease was disseminated from them. It extended to the following states, besides the District of Columbia: Connecticut, Delaware, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Virginia, Washington, West Virginia and Wisconsin.

Union Stock Yards Quarantined

"On October 28, when the movement of stock from the originally infected center in Michigan had been traced to the Union Stock Yards, an order was prepared, effective October 31, quarantining those yards and permitting animals to be shipped from them only for immediate slaughter. Numerous other quarantine orders were issued from time to time, as infection was discovered or as other conditions warranted. They not only prohibited or restricted the movement of certain farm animals, but regulated the movement of hay, straw, and other possibly dangerous materials.

"Steps were taken to enlist in the work of eradication the aid of the authorities of the state affected. Satisfactory arrangements rapidly were made, and the work has been prosecuted jointly by the department and the states. The costs incurred have been divided about equally between the Federal and state governments."

Methods of Eradication

The methods of eradication, the secretary points out, were similar to those used in 1902 and 1908, with such improvements in detail as experience suggested. The movements of live stock from infected premises were traced, railway and stock yard records examined, cars that carried infected stock located and disinfected, farm-to-farm examinations made of all susceptible animals, local and general quarantines enforced, all diseased and exposed animals slaughtered and buried as quickly as possible, and the premises occupied by them disinfected. Before slaughter the animals were appraised by an official agreed

upon by the state authorities and the department, and the owners later were paid the stipulated amount. On June 18, 1915, the last herd known to be infected at that time had been slaughtered and buried and the premises disinfected. The report continues:

The National Dairy Show Herd

"The cattle exhibited at the National Dairy Show in Chicago, October 22-31, 1914, constituted a special problem. Before its opening the local inspector of the Bureau of Animal Industry warned the manager of the danger of holding it because of the recent discovery of foot-and-mouth disease. At the close of the show the department, as a precautionary measure, requested the state veterinarian to detain the cattle for a few days to determine whether they had become infected. On November 1 one of the cows developed the disease, and the herd immediately was placed under close quarantine by the state.

"This herd consisted of over 700 head of very valuable pure-bred cattle. Their slaughter would have been a misfortune. The conditions under which the animals were held made it possible to maintain a quarantine, and it was decided to try to save them. They were confined in a brick building, where it was practicable to establish hospital conditions and to prevent ingress and egress of persons and animals except under absolute control. All persons were prohibited from leaving the building until they had been thoroughly disinfected. No dogs, cats, poultry, or birds could gain access to the building. Apparently the animals made a complete recovery and were released from quarantine May 31, 1915, after very thorough tests had demonstrated that the herd did not harbor infection.

Recurrence of the Disease

"On August 8, 1915, the local inspector in charge of field work at Chicago telephoned to Washington that a case of foot-and-mouth disease had been discovered among 119 hogs and 4 cattle at Wheeling, Cook County, Ill., 22 miles north of Chicago. It seems certain that this infection was produced by contaminated hog-cholera serum prepared in Chicago in October, 1914, at an establishment where the disease had not been known to exist at any time. This material had been kept in cold storage and was not used until the quarantine restrictions had been removed in July, 1915, and after negative tests on hogs had been made. Pending investigation, all shipments of serum from Chicago were prohibited. It was found that some of the product of the establishment

had been used on 11 herds of hogs, 8 of which were in Illinois and 1 each in Minnesota, Michigan and Indiana. A few infected hogs were found in 8 of the herds, and all these herds, as well as the 3 in which no disease was found, were slaughtered at once.

"A portion of the serum actually used was procured from the owners of the hogs, together with samples of the remaining stock of the company. Pigs and calves, the animals most susceptible to the disease, were inoculated with these. The results again were negative, and after two series of tests had been made the Federal Public Health Service was asked to conduct a third series. This also was negative.

Infected Serum Thoroughly Tested

"Up to this time, therefore, four series of tests had been made, in which a total of 52 animals had been used, none of which developed foot-and-mouth disease. The inoculations afforded no evidence that the serum in any way was contaminated. Each series apparently only confirmed the test made before the material was permitted to be placed upon the market. The fact remained, however, that the hogs treated by the owners had developed the disease. A fifth test therefore, was made, and 10 days after inoculation a calf, which was the sixty-second animal used in the tests, developed characteristic lesions. The diagnosis of foot-and-mouth disease subsequently was confirmed by the inoculation of other animals with material from the infected calf.

"This is regarded as proof that the suspected serum actually was infected. Why the standard tests used on 61 animals failed to reveal this fact is a matter for scientific investigation, and the bacteriologists of the department are at work upon the problem. Experiments are being prosecuted vigorously with a view to discover a means of treating serum at the time of its manufacture which will kill the virus of foot-and-mouth disease. The results so far attained are promising, and the department hopes that a successful method soon will be evolved. In the meantime all infected serum in the hands of the manufacturer, as well as all other suspected serum manufactured in Chicago, has been destroyed. Furthermore, the department is prohibiting the shipment of serum from licensed establishments in the districts under quarantine for foot-and-mouth disease.

Appraisements of Animals

"In the handling of the problem difficulties arose because of the fact that the department in making appraisements of dis-

eased animals did not feel authorized to take into consideration their breeding value. In some cases fine herds were involved. In all the discussions of the matter before the Agricultural Committees of the Congress the beef or dairy value was indicated as the basis for appraisal, and in former outbreaks this basis was used. The suggestion was made that the department be authorized to take breeding value into consideration; but the Congress, in making an appropriation to reimburse the owners of the National Dairy Show herd for expenses incurred by them incident to the quarantine, specifically provided that the beef or dairy value only should be the basis of the appraisement. As the disease still prevails in certain parts of Illinois and there is no guaranty that it may not spread, it would seem that for the ensuing year an appropriation equal to the current one should be made. It may not be necessary to expend the appropriation; but it would be exceedingly unfortunate if the disease were to spread or reappear and the department had no adequate funds or authority. The estimates contain an item covering this matter. In connection with it the suggestion is made that in payment for animals hereafter purchased for slaughter the appraisement may be based on the beef, dairy, or breeding value, provided that in case of appraisement based on breeding value no payment for any animal shall exceed three times the beef or dairy value. Both equity and practical expediency justify taking breeding value into account."

Hog Cholera and Serum

The experiments of the department for the purpose of determining the best method to control or eradicate hog cholera, according to the report, demonstrate that by employing certain systems involving the use of hog cholera serum losses can be reduced to the minimum and the swine industry greatly benefited. The work also shows, however, that success over a large territory would require the employment of an immense force of men and the expenditure of enormous sums. In the circumstances, the secretary says that a country-wide campaign at the present time for the eradication of the disease would be ill-advised. The problem is not one for the Federal Government alone. Before an active campaign is begun the various states should have more effective laws relating to diseases of live stock and more extensive organizations for enforcing such laws.

The recent cases of infection of serum and virus with foot-and-mouth disease, the

secretary states, indicate that some more effective form of control over the production of hog cholera serum is most desirable. He says it is doubtful whether government ownership of serum-producing plants would accomplish the desired purpose, and suggests a substitute plan for consideration. In this connection the report reads:

"In round numbers there are produced annually in the United States 200,000,000 cubic centimeters of serum. Of this amount approximately 50,000,000 cubic centimeters, or about 25 per cent, are prepared by state governments. Serum is produced by the Federal Government for experimental purposes only. The remaining 150,000,000 cubic centimeters are manufactured by private establishments. It is probable that there are in operation in the United States between 90 and 100 such establishments. Of these 81 have secured licenses from the Department of Agriculture under the virus-serum-toxin act of 1913, and thereby are enabled to carry on interstate business. Of the total quantity of serum privately prepared it is estimated that more than 90 per cent comes from plants holding licenses from the department.

The Virus-Serum-Toxin Act

"The statute prohibits the shipment from one state or territory to another state or territory of any virus, serum, toxin, or analogous product which has not been prepared at a plant holding an unsuspended and unrevoked license from the Department of Agriculture. It also is made unlawful to ship interstate any virus, serum, toxin, or analogous product which is worthless, contaminated, dangerous, or harmful.

"In carrying out the act the department has issued regulations designed to prevent the interstate shipment of worthless, contaminated, dangerous, or harmful hog cholera serum, hog cholera virus and other products. Fifty-six trained inspectors are assigned to the work of inspecting the licensed plants and detecting violations of the law. A number of violations particularly shipments of serum not prepared at establishments holding licenses, have been discovered and successfully prosecuted. Notwithstanding the efforts of the department, apparently there have been shipments of contaminated or worthless serum by licensed companies. These occurrences have resulted in part from the ignorance or carelessness of the owners. In some cases they have been due, perhaps, to cupidity; in others, to novel situations presented by the unexpected outbreak of foot-and-mouth disease.

"There seems to be a widespread belief that the products of a licensed establishment in some way are certified or guaranteed by the Federal Government. Under the existing system it has not been possible for the department to assure users of the quality of such articles. The business of serum production is such that supervisory inspection alone, without complete control, and with power to penalize violations of the law only by revocation of licenses or by prosecution, is not sufficient to warrant the assumption by the government of responsibility for the products.

Control of Serum Production

"It has been suggested that effective control over serum production could be accomplished by government ownership. While there is much to be said in favor of such a plan, it seems doubtful whether it would be practicable. Certainly it would seem unwise for the government to produce the material unless it could control the entire output. Recent information shows that 21 states have established plants and now are engaged in the production of serum on a comparatively large scale. It is a question whether these states, with their active organization, would wish or consent to discontinue the work. Aside from this, the purchase of the establishment now in existence and the erection of others by the Federal Government would necessitate a large outlay. Even though this expenditure were made, it must be remembered that government officials are liable to error, and that Federal manufacture, though it secured honesty of methods, would not serve as a guaranty that no contaminated or worthless serum would be sold.

Government Test Station

"As a substitute for government ownership, the following plan merits careful consideration:

"(1) Continue the inspection service as at present constituted under the act of 1913, maintaining a sufficient force of inspectors so that all important processes of licensed establishments may be carried out under the constant supervision of department employees; and require that all products after preparation be securely locked up by employees of the department, whose duty it shall be to withdraw representative samples.

"(2) Provide by law for—

"(a) The establishment and maintenance of a 'government test station' for serum. The purpose of this station would be to receive official samples of all serum produced by licensed plants and to test

them for purity and potency. Upon completion of the test the official in charge immediately would make known the results to the inspector at the plant from which the sample was derived, and the material, if found potent and pure, then would be released with proper markings or seals to show that it had been tested.

"(b) The prohibition of the interstate shipment of any product a sample of which had not been tested and found pure and potent.

"(c) The imposition of a tax upon all serum, samples of which have been tested, with adequate provision for the affixing of tax stamps and marks prior to sale or shipment.

Control of Tests Necessary

"The available methods for determining purity and potency are not scientifically exact. Tests, however, are a necessary and most important part of any system of control. They are now made by the commercial establishments themselves on animals procured by them and at all times under their care. It is impracticable for the government to make them within privately owned and operated plants. Furthermore, so long as the plants conduct the tests, it is manifest that the government cannot select and know the complete history of the animals. In the preparation of the serum, the inspectors can see that the steps necessary to produce a good article are carried out. In this particular the inspection is adequate and effective. It appears, therefore, that the weak point at present is the inspection of the tests, and the department believes that these should be under government control. At the same time, not being absolute, they should be supplemented. Supervision at the producing plants of the methods of preparation and handling should be continued.

"It is probable that an adequate test station could be provided for about \$50,000. If several were found to be desirable, a suitable appropriation for each would have to be made. The cost of maintaining a station capable of testing the entire output of commercial serum in the United States probably would not exceed \$150,000 annually.

"The suggestion is made that a tax sufficient to cover the cost of maintaining the station should be imposed. This tax should not operate to increase the cost of serum to the farmer, because manufacturers would be relieved of the expense of conducting their own tests. While the plan indicated contemplates control only of serum in-

tended for shipment in interstate commerce, it is likely that the states would take similar action and apply similar rules to their own plants as well as to private establishments doing business wholly within the state. The plan probably would be effective and would require little additional expenditure of public funds."

A. V. M. A. TO DETROIT NEXT

At a meeting of the Executive Committee of the American Veterinary Medical Association held in Chicago, December 1st, it was decided to hold the 1916 meeting of the Association at Detroit, Michigan, beginning August 21st. This announcement was first made at the banquet during the meeting of the Illinois Veterinary Medical Association by Dr. C. M. Haring of Oakland, California, Secretary of the A. V. M. A.

In making the announcement, Dr. Haring commented upon the large number of veterinarians present and congratulated Illinois upon having perhaps the largest among the State associations. He then proceeded to the announcement referred to above, saying that next August there would be a national meeting of the A. V. M. A. at Detroit, and a moment later repeating himself, he perhaps inadvertently placed a great deal of emphasis on the word "national." A following speaker created more than a ripple of applause by saying that nothing he had heard during the evening so pleased him as the announcement from the Secretary of the A. V. M. A. that a *national* meeting of the A. V. M. A. would be held at Detroit next summer. He stated that two years ago he had attended a strictly *Eastern* meeting of the A. V. M. A. at New York and that only three months ago he had attended a *Pacific Coast* meeting of the A. V. M. A. at Oakland, California, and that while he was for the profession of the East and of the West, he was even more for the profession of the *whole* country, and the announcement that, after so long a time, we were now to have a *national* meeting of the A. V. M. A., was sweet music to his ears.

BOOK REVIEWS

Common Diseases of Farm Animals, by R. A. Craig, D. V. M., Professor of Veterinary Science, Purdue University, and Chief Veterinarian, Purdue Agricultural Experiment Station.

This is a semi-technical treatise on diseases of domestic animals intended for agricultural students and stock men. The discussion of diseases is rather more extended than in the similar work of Dr. Hadley, reviewed last month, and is somewhat less technical. Unlike Dr. Hadley's work, no attention is given to anatomy or physiology, and further some discussion of the diseases of animals other than the horse is given. We believe it is more within the grasp of the readers for whom it is intended and considerably less adapted to the use of veterinarians, for whom, of course, it is not intended.

A particularly commendable feature of this work is the large attention given to sanitation and the prevention of disease. This portion of the work will be very valuable to lay readers. The discussion of the symptoms, diagnosis and treatment of diseases is hardly more than suggestive, and the layman is wisely told to procure professional aid after disease has made its appearance.

The book is one of Lippincott's Farm Manual series, edited by Kary C. Davis, Ph. D. It is handsomely bound; contains 123 illustrations; 334 pages. Price, \$1.50. Published by J. B. Lippincott Co., Philadelphia.

Productive Feeding of Farm Animals, by F. W. Woll, Ph. D.

This is a work with which every veterinarian can profitably become acquainted. It is intended to cover the same field formerly occupied almost alone by Henry's "Feeds and Feeding," well known to most veterinarians, but is briefer than its predecessor and contains less of the "dry" tables and statistical matter. The reputation of its author is a guarantee of its authoritativeness.

Like the foregoing, it is another of Lippincott's Farm Manual series edited by Kary C. Davis, Ph. D. It is serviceably and attractively bound; 96 illustrations; 362 pages. Price, \$1.50. Published by J. B. Lippincott Co., Philadelphia.

BULLETINS EVERY VETERINARIAN SHOULD HAVE.

Proceedings of the Missouri Valley Veterinary Association, 1915. Edited by Dr. Richard F. Bourne, Secretary-Treasurer, Kansas City, Mo.

The Value of Meat Scrap, Fish Scrap and Skim Milk in Rations for Laying Pullets, Bulletin No. 182, Purdue University, Agricultural Experiment Station, Lafayette, Ind.

Report of the Veterinary Director General of the Dominion of Canada for the year ending March 31, 1914, Ottawa, Canada.

Legal Liability of Producers of Biological Products, by Charles M. Woodruff, Detroit, Mich.

Features of the Sheep Industries of United States, New Zealand and Australia Compared by F. R. Marshall, Bulletin No. 313, U. S. Department of Agriculture, Washington, D. C.

How to Perform an Autopsy on a Bird, by Dr. B. F. Kaupp, West Raleigh, N. C., Reprint from *The Poultry Item*.

Report of the Veterinary Department of the State of Iowa from July 1, 1912, to June 30, 1914, by Dr. J. I. Gibson, State Veterinary Surgeon, Des Moines, Ia.

Proceedings of the Iowa Veterinary Association, Feb. 9, 10, 11, 1915, Dr. H. B. Treman, Secretary, Rockwell City, Ia.

Instructions for Employees Engaged in Eradicating Foot-and-Mouth Disease, U. S. Department of Agriculture, Washington, D. C.

Report of the Secretary of Agriculture, 1915, Washington, D. C.

The Dog As a Carrier of Parasites and Disease, by Maurice C. Hall, Ph.

D., Bulletin No. 260, U. S. Department of Agriculture.

Colorado Plants Injurious to Livestock, by Geo. H. Glover and W. W. Robbins, Bulletin 211, Experiment Station, Colorado Agricultural College, Ft. Collins, Colo.

Brief History of the Cattle Tick Fight in Louisiana, by W. H. Dalrymple, M. R. C. V. S., Louisiana State Live Stock Sanitary Board, Baton Rouge, La.

Blackleg; Its Nature, Cause and Prevention (Sixth Edition), by John R. Mohler, V. M. D., Assistant Chief of the B. A. I., U. S. Dept. of Agr., B. A. I. Circular 31.

Annual Report of the Veterinary Director General of Canada, by K. Torrance, Department of Agriculture, Ottawa, Canada.

Proceedings, Colorado Veterinary Medical Association, 1915, by I. E. Newsom, Secretary, Ft. Collins, Colo.

The Dual Purpose Type of Cattle as Represented by the Red Poll and Devon Breeds, by W. H. Dalrymple, Louisiana State University and Agricultural and Mechanical College, Baton Rouge, La.

STATE LAW FOR ERADICATING CONTAGIOUS ANIMAL DISEASES

(Continued from page 8)

ada was closed to livestock from the United States.

From certain experiences we felt justified in adopting and enforcing our own state regulation; so far as we are aware no other state adopted a parallel regulation. Hon. Francis Shunk Brown, Attorney General of Pennsylvania, declared that we had legal authority under the sanitary law, to adopt and enforce such a regulation. Hon. Martin G. Brumbaugh, Governor of Pennsylvania,

upheld our action as being an advisable precautionary measure to prevent reintroduction of foot-and-mouth disease into the state. The regulation was also endorsed by various breeders' associations. Of course, the railroad authorities vigorously opposed our action, but after a conference, at which our position was clearly and forcibly stated, the railroads withdrew their objections and took immediate steps to comply. As far as practicable such situations as the above, and all other problems which may arise, should be anticipated and uniform regulations be prepared for adoption by the various state and national authorities.

Such uniformity should cover so far as practicable the transmissible diseases of animals, the manufacture, sale and use of biological products and meat and milk hygiene. Municipalities and local boards of health should adopt the laws and regulations of the state, and the states should follow the federal government.

Probably the best method for attaining the desired uniformity would be for the federal authorities to have supreme jurisdiction over livestock sanitary control work in each state, with the state organizations acting as auxiliaries and being in immediate charge of the field work. I realize that this proposition is somewhat visionary and approaches too closely to the "ideal," to be practical at this time. But I am convinced that a final solution of this problem of uniformity can, and probably will, be worked out along these lines, just as has been done in the case of the military forces of the various states.

The Pennsylvania law has stood the tests of the lower courts in a number of instances and its constitutionality has been upheld by the Superior Court. The opinion rendered by the learned Judge Or lady of the Superior Court will be gladly forwarded to anyone who may desire it.

Pictorial Review of Noted Veterinarians

By WINTHROP WORTHINGTON

The New Year in Our Biographical Department

With your kindly co-operation, gentlemen of the profession, we shall continue the writing of biographical sketches. We say, "with your kindly co-operation" advisedly. Because there is a partnership necessary for the continued success of the undertaking. From month to month the enthusiasm of the members of the profession for the continuation of our work has been waxing and we wish to here publicly express our thanks to those who have written us suggestions or communications of any sort.

Wherever possible, or whenever the suggestions could be made to fit in with the plans of the Department, all have been adopted. Some men have asked us to write some biographical sketches of past worthies, not now living. There is a rich field for study in that line of work and some time we may embrace the opportunity to entertain our readers with some short biographical remarks on celebrated men of the past.

But we prefer to speak of living men to living men. Human nature is eternally interesting. "One touch of nature makes the whole world kin." The touch of nature in which we are all most interested is that which we see before us in our daily walk of life. Men alive are a thousand fold more interesting than men dead. We would rather see, hear, or read about one living veterinarian, like those of which we have been writing, or about whom we shall write, than about a score of past worthies. Never a veterinarian has yet been written of by us but is known to scores, hundreds, thousands. He is alive; he stands before us; he is one of us. We recognize in him a man helping us; helping our profession to surge ahead. He is mind of our mind; thought of our thought; inflamed with our own aspirations. We shall, accordingly, continue to talk of our living colleagues in terms of friendship, respect and appreciation.

WILLIAM HADDOCK DALRYMPLE, M. R. C. V. S.

It seems to us that a delightful separate series of articles could be written on the Scotch as pioneers in veterinary science in America and as founders of the veterinary profession here. One

could speak at length, for instance, of McEachran, who did such great things for veterinary science in Canada in the early days; of Andrew Smith, who came over to Toronto, and whose name will

always live as a teacher in the Ontario Veterinary College and as a strong man who developed many veterinary leaders of today; of James Law, founder of the veterinary college at Cornell University, whose monumental works are the glory of our science, of John Gunion Rutherford, whom we spoke of in our last issue, and many other remarkable Scotchmen. Such a series would necessarily include William Haddock Dalrymple, whose success in veterinary work in the extreme south of our country has been as astonishing as that of his fellow Scot, Dr. Rutherford, in the country to our north. Both men are thorough-going Scotchmen with many of the traits of men of their "ain countrie," though some of the traits are less pronounced in one man than the other and vice versa.



Dr. Dalrymple is a lowlander, for he was born in the county of Wigton, Scotland, April 23, 1856. His county is on the Firth of Forth, an arm of the Irish Sea, and is blown over by the salt sea breezes, just as Dalrymple's present state of Louisiana is blown over by the salt breezes of the Gulf of Mexico. What more bracing than always to have lived in such an atmosphere? Dalrymple was trained in Glasgow Veterinary College in his native land and was made a member of the Royal College of Veterinary Surgeons, after he had finished his course, before he came to America a good many years

ago. As a young man he was in professional work in Dublin, Ireland, and he made such a mark in the city affairs that he was given a seat in the council. That was characteristic of him ever afterwards; for he is the kind of man who does the unusual, the uncommon, almost the unexpected. He emigrated to America while still a young man and soon was called to Louisiana as Professor of Veterinary Science in the State University and Veterinarian to the Louisiana State Experiment Station, a position he has held continuously for considerably over a score of years.

That is the gist of his career. Now, what has he done; what have been his endeavors; where lies his strength; what is his reputation?

Clear-headed, and with an insight which enabled him to see new conditions exactly as they were, Dr. Dalrymple arrived in the South, when first he went to Louisiana, when there was hardly a graduate veterinarian in all the stretch of the country along the Gulf of Mexico. He at once threw himself into the work of proving the value of his scientific knowledge to the practical stock problems of that part of the country. He studied closely the agricultural questions; the farm products used as feeds; the effects of climatic peculiarities on animal life; the special diseases found in Louisiana; the handling of animals in the South. He made himself master of entomological questions in their relation to diseases of southern animals; for he studied insects causing or transmitting diseases. Possessing literary gifts, which permitted him to write of the results of his studies kaleidoscopically, he wrote, equally fluently, articles for popular distribution to be sent out to help the southern sugar men, lumberman, planter, to understand the practically scientific side of their live stock troubles, or articles to be read before medical societies, veterinary societies, live stock associations. Whether the

speeches or articles were to be popular or closely scientific discussions mattered not. Dalrymple was equally at home in either kind. It is this singular gift, more than anything else, combined with his hard Scotch sense, his integrity, his readiness to place his time at the disposal of whatever interest in his section of the country which needed veterinary points elucidated, which made his services availed of and proportionally increased his reputation for intelligence in many phases of veterinary work. Indeed the name Dalrymple in Louisiana and adjacent states has signified a new attitude of the professional men towards the public. He early grasped an idea which The American Public Health Association and those who nowadays have adopted its tenets has widely promulgated—the lofty principle that the highest form of medical practice consists in disease-prevention, and that it is the duty of the public health officer to sacrifice monetary advantage to that end.

If we were to speak of all of Dr. Dalrymple's writings we would, we fear, have to take up nearly as much space as is allotted to us for a monthly installment of biographical sketches. He has been a man whose pen has been kept busy traveling from ink well to paper. Of a truth he is essentially an author. For many years, nineteen in all, if we remember rightly, Dalrymple was editor of the agricultural department of the thrice a week *New Orleans Picayune*, which means that the files of the paper contain a mass of his writings. We have thought that by this time Dalrymple must have lost count of what he has written and has lost sight of the whereabouts of some of his productions. Or does he, perchance, keep a record of them, like a mother of many little ones counting and casting about to see if she has lost any of her chickens? Dalrymple is not much on bookmaking; though he did write a book on obstetrics. He has been chiefly a pamphleter, a writer of bulletins, short

addresses, editorials, of what the Germans call "fugitive" writings, short productions that are scattered here and there like leaves. They are found here and there in the files of the Southern daily press, in the files of the American and British agricultural, veterinary, medical, periodicals. We would not dare to attempt to mention them all; much less to tell where they all are. We respectfully, gentlemen, refer you to the files of these journals:

"Files,
The files,
Office files.
Oblige me by referring to the files.
Every question man can raise;
Every phase of every phase
Of that question is on record in the files."

We venture to say that, if they were all enumerated, Dr. Dalrymple has, belonging to him, more titles than any other man in the veterinary profession in America. Honors and titles have swarmed upon him, particularly in recent years. We do not belittle the matter, for the Doctor is worthy of all the memberships in societies to which he belongs. The profession is proud that he has reaped what he has sown; that good work has merited the honors which he has won; particularly we are proud of his membership in The Author's Club of London, his Fellowship in The American Society for the Advancement of Science and his Fellowship in The American Medical Association. That being granted, we may say that we notice in Dalrymple that indigenous love of titles so pronounced in many Scotchmen, a trait which is oddly illustrated in a story told by Paxton Hood in his "Scottish Characteristics." "In the days of Bailie Nicol Jarvie's father, the office of deacon (chairman of a corporation of tradesmen) was esteemed no mean distinction. Two worthy incumbents, who fretted their little hour upon a stage not far from the banks of the Ayr, happened to

be invested with the above named dignity on the same day. The more youthful of the two flew home to tell his young wife what an important prop of the civic edifice he had been allowed to become, and searching the "but and ben" in vain, ran out to the byre, where,

meeting the cow, he could no longer contain his joy; but, in the fulness of his heart, clasped her round the neck, and it is even said, kissed her, exclaiming, "Oh, crummie, crummie, ye're nae langer a common cow—ye're the *deacon's cow*."

ALBERT THOMAS KINSLEY, M. Sc., D. V. S.

In the Central West there are a handful—four or five—veterinarians whom every other veterinarian, from the Mississippi Valley to the Golden Gate, either knows or knows about. Dr. Kinsley is one of these. Kinsley as a practitioner, pathologist, laboratory diagnostician, teacher, expert in serotherapy, skillful veterinary biologic manufacturer, projector of shrewd plans

him as a teacher, warmly support him at all times, carrying with them still the influential effects of his class room or laboratory work; many others know him to admire him as one who discusses freely, offhand, differential diagnosis of infectious diseases on the open forum at veterinary association meetings. It is through all of these avenues that men have come to learn of the Kinsley who, as we have said, is one of the half dozen best known veterinarians of the Golden West.



for veterinary institutional work, promoter through private channels of veterinary education, the Kinsley who can devise ways and means to push veterinary affairs of whatever sort, which he wishes to improve, is the Kinsley all Westerners know. Some have learned of him through his books, brief, terse, pointed; others know him through correspondence as the man to be relied upon to diagnose disease in his laboratory from specimens sent in; others have seen him in counsel with state veterinary officials as an expert called in grave outbreaks; still others have learned to value him for the reliability of preventive serum or vaccine that he has made; others again, who have met

Dr. A. T. Kinsley, born February 26th, 1877, was educated in the Kansas Agricultural College, the Kansas City Veterinary College and the University of Chicago. In the agricultural college he took his Bachelor's and Master's degrees in science. In the veterinary college he took the regular course leading to the D. V. S. In the University of Chicago he specialized in pathology. All parts of these studies combined to make him educationally what he is. But what inclined him towards a veterinary career, perhaps, was his early experience as assistant in veterinary science and chemistry at the Kansas Agricultural College.

We have indicated that Dr. Kinsley has been a remarkable man in more than one sense. Of course, it is well known that he is president of the Kansas City Veterinary College, pathologist and teacher of pathology, bacteriology and parasitology. He was deputy state veterinarian of Missouri, 1913-1915. He has been in much demand by the governments of various Western states and Central Western States. For instance, he was called to advise the state veterinarian in recent out-

breaks of anthrax in Texas and he was telegraphed for in 1911 in the outbreak of forage poisoning of horses in Kansas. Frequently he is a consultant because of the ripeness of his pathological knowledge. Traveling widely to give pathological information he has extended his acquaintanceship, which constantly grows with the increase of his fortunes. His popularity and success has brought the bestowal of offices upon him. He has been president of the Missouri Valley V. A.; vice-president and several times member of the executive committee and committee on diseases of the A. V. M. A. He has been chairman of the credential committee of the United States Live Stock Sanitary Association.

It would not be surprising also if he has made more than the usual success financially. As president of the Kansas City Veterinary College he is understood to have a large interest in the institution. His home is an excellent one in Kansas City. These be the

rewards of industry, where care in pecuniary matters goes along with ceaseless work of a kind for which a man has a liking, and which can be made profitable. To the reader we say go thou and do likewise.

Dr. Kinsley has always been a frequent contributor to veterinary periodicals. Every veterinary body in the Central West is aware that he has been ready to read papers, which, while they are more or less abstruse, and on scientific subjects, invariably have a practical turn, and Dr. Kinsley always points out distinctly the value to the practitioner of the scientific matter that he presents. Practitioners therefore gladly hear him and seek his advice. The biological laboratory that he maintains has increased his popularity with practitioners because of his diagnostic ability and reliability. If Dr. Kinsley is not a noted veterinarian, worthy to have his picture appear in *VETERINARY MEDICINE*, with this sketch, who, pray, is?

BURTON RAY ROGERS, D. V. M.

For this month's installment of biographical sketches we have chosen a very young man, a man somewhat more mature, and one of the older men of the profession. It is profitable, sometimes, to throw into juxtaposition youth and maturity; men with the young man's boundless enthusiasms, for whom life is yet something to be taken by storm, and men who have, perchance, tasted some of its bitterness and who have become stolid and conservative after the fitful fevers or the unconfined ebullitions of their younger days. Thus, we consider, in this issue, Dr. Dalrymple, who carries with him the full honors of a well-spent life, and Dr. Kinsley, the fruits of whose ripened experience is being availed of in the various lines of endeavor of which we have spoken. We now take up a man who is in the late thirties; who carries with him still a young man's undimmed ardour for his own

mental pictures, which have still for him their brightness of color, their sharpness of outline; their captivation. We refer to Dr. Burton R. Rogers, the



Dean of St. Joseph Veterinary College.

Dr. Rogers, born in 1879, after he had had his preliminary training in the

grade schools and high school at Ames, Iowa, entered Iowa State College and was graduated D. V. M. in 1899. Subsequently he studied at McKillip Veterinary College and Dearborn Medical College, Chicago. His active work in the profession has been confined chiefly to four branches of work and he has held in all, five positions. He was first of all a veterinary inspector in the Bureau of Animal Industry in Omaha, Chicago, Ottumwa, Cedar Rapids, Des Moines and Kansas City. For a time he was a laboratory worker in the Pathological Division of the Bureau of Animal Industry in Washington. He left the Government service to take a position on the veterinary faculty of the Kansas State Agricultural College at Manhattan. This he left to go to St. Joseph as Dean of the faculty of the veterinary college there. With the opening up of the serum business as a result of the investigations of Dorset, McBryde and Niles, Dr. Rogers headed a group of veterinarians who formed a company to prepare the product in St. Joseph. Thus he has been successively a practical veterinary inspector, laboratory worker, teacher and serum maker.

Laurence Sterne, the Irish humorist, who attained to fame in the days of Richardson, Fielding and Smollett, wrote, in that book which is full of oddities, *Tristram Shandy*, "de gustibus non est disputandum," which is, being interpreted, there is no disputing against hobby horses. Dr. Rogers is not a man who denies himself hobbies. On the contrary, he is not afraid to expose them to public view and admit their enthralment. He has more than once said he has two great ambitions: one, to secure sufficient funds, state or private, to conduct a county demonstration experiment to determine the feasibility, practicability and ultimate simplicity of his plan to automatically control and eradicate animal tuberculosis by ear-tagging marketed hogs; second, to make St. Joseph Veterinary College

rank amongst the best veterinary institutions. No one doubts his sincerity in this and in whatever other enthusiasms he may have. Dr. Rogers is a man, who, like many another, is enamored of his own conceptions of how to control animal tuberculosis and how to build up a veterinary school. He started an ear-tagging system for hogs, of the kind mentioned, when he was a veterinary inspector at Cedar Rapids, and his teaching experience should enable him to round out his ideal at St. Joseph. Why should anyone say, "Pooh, pooh; nay, nay"? "Opinion," as Carlyle said, "Rules the world." Fidelity to ideals has marked all thinkers from the beginning of time. The only question is, are the ideals worthy, and can they be actualized, made workable? Rogers has been a favorite teacher wherever he has been. What he may do, who can say?

Dr. Rogers, also, has stepped to the
(Continued on page 46)

THE ITINERANT HORSE PHYSICIAN

(Continued from page 24)

quackdom; he was not only a quack veterinarian. He was also a quack druggist, and a quack spectacle fitter.

One little "sawed-off" quack I bumped into on this trip made a sideline of supplying the wives of his clients with a "female regulator." He put it up in eight ounce bottles selling for \$1.00 and confided to me that his profit per bottle was around ninety-two cents.

One quack I met below the Texas line on this trip was a professional gambler! He pursued the veterinary game only when luck was against him and then just long enough to get a stake to begin to gamble on again.

In that day and time a remark that I once heard a veterinarian make fitted Oklahoma to a T: "Every darn fool that can't claim knowledge of anything else, claims to know all about sick horses."

Department of Surgery

By L. A. MERILLAT, Chicago,
Professor of Surgery in the McKillip Veterinary College,

Pitfalls

No. 12

(Continued from last month)

DO you castrate ridglings?" "Oh, yes, I have castrated a few, but have not had very good luck lately. Last year I castrated two and had no trouble, but this year the second one I tackled died ten days after the operation and the third one still has his testicle in his belly, but is not dead." "I would sooner call in some one who has had more practice and that's why I have you here."

The above is a verbatim reproduction of a conversation the writer has recently had with a young practitioner of five years' experience. He has a splendid practice, with still more splendid prospects of enlarging it, in a rich community, where every one seems to have great confidence in his ability as a physician, his skill as a surgeon, and his honesty of purpose. He maintains a neat office, a small but well equipped hospital, a supremely fine pharmacy, a comfortable, well furnished home for his wife and kiddies, a library that would reflect credit to an older man, and an automobile whose name is spelled with two syllables, a buggy and horse for winter use, a good set of books for his accounts, and all-around indications of sound prosperity. He does not overlook anything that would honorably increase his income. He

spays heifers and has preached the gospel of heifer spaying until many of his clients have quit selling their female calves because they did not want to raise cows, he caponizes cocks when he can spare the time, he does the radical operation for poll evil and fistula of the withers, performs cunean tenotomy for spavin, and has removed a foreign body from the stomach of a dog by gastrotomy. Obviously, he is not lacking in good judgment, in courage nor in skill. But cryptorchids! "No, he will never castrate another one," to use his own words.

If this man stood alone, and if it were not actually a fact that many veterinarians shrink from this operation precisely as our precluded hero has decided to do at the very morning of a promising career, there would be no good reason for introducing the subject of pitfalls in ridgling castration at this length, and if the cause of his "not very good luck lately" could be attributed to gross incompetency, then we would have been spared the trouble of introducing him as an able young man.

Everything we know or do is more or less difficult until it has been mastered, then it is manifestly simple. The difficulty of a task is its learning. Noth-

ing is difficult when it is once understood. The child has difficulty with his A B C's, the scholar with his theorems, the student with his logarithms, and the post-graduate with the fields he has been trained to cultivate, and so with this veterinarian in ridgling castration. He has found it difficult because he has not learned to do it, and he lacked the tenacity to keep on stubbornly until the obstacles were removed by experience. In ridgling castration he met his Waterloo. He met obstacles he imagined he could never surmount, for did he not say "I will never castrate another one"? He was whipped, floored, counted out by the difficulties he met. In other words, the pitfalls overwhelmed him so that he willingly relinquished this source of his income.

His teacher of surgery had laid down a certain more or less conventional routine, but this guide alone he found did not serve its purpose. He failed because mere verbal instruction is too crude to guide the complex movements of a fine handicraft. The guiding influence of verbal or written words fell short, as it always will fall short, when not enhanced by a sensual manipulative training. He was told the operation was easy to perform if he had but the courage to make the attempt, but he found this was erroneous because he had the courage and still failed. He should have been told the operation is difficult to learn and could only be performed by accurately executing a series of steps consecutively completed in obedience to rigid laws laid down for each, and that the slightest error, or the slightest neglect at any point, might spell failure. Then I think he would have started out with a better chance of becoming a ridgling castrator. In short, the pitfalls of the operation should have been illuminated as the guide toward the goal, and then with a view of their depths he would at once have seen the fallacy of deceptive state-

ments about the simplicity of the procedure.

There are pitfalls at every point of this operation, and bad ones at that. To belittle any one of them is to invite a high death rate and a large per cent of absolute failures in other directions.

There is no common operation we perform upon animals that has so many ugly sequelae, general and special, as ridgling castration. Let us enumerate them and then decide whether it is such a supremely simple procedure. Come, now, admit the truth, confess to the cases of death from peritonitis, prolapse of the bowels, failure to find the testicle, alarming funiculitis, casting accidents, shock, colics, hernia, transient and obstinate paraphymosis and even schirrous cord. At first these come with uncomfortable frequency. The hero of our story failed two times out of five attempts. What is your record for the first ten?

The two principal pitfalls of ridgling castration are found in the restraint and in the antisepsis. There are others which we shall enumerate, but these two are especially replete in this connection. Our hero failed in the restraint in one case and in the antisepsis in the other. Although he had a good enough method of securing patients for common castration and was aware of the importance of a special restraint for ridglings, he showed very plain in his attempt to secure the horse for my operation that his plan would not answer for a free manual invasion of the inguinal canal. The feet were too far forward and the legs were not flexed enough nor fixed as tightly as they should be to assure against shifting of the ropes. The American plan of castrating ridgling without anesthesia demands a restraint that will not only position the field to the best possible advantage, but also one that will maintain the position to an absolute certainty. I know this has been preached and preached, but the trouble is that it has

not been preached enough. To wade into the abdomen for a testicle with this handicap at the very start has been the downfall of many a novice and will continue to be the downfall of every one who will not first study out the right plan of flexing, fixing and parting the hind legs into a state of rigid helplessness from which no hindrance can possibly issue during the whole procedure.

The hind legs should be tied so that the feet rest just in front of the stifles. The dorsal face of the fetlocks approaches the patella. The legs are parted by crossing the back with the ropes and hitching them to the opposite pastern. The strength of several men may be needed to draw them down and then due care must be taken to prevent relaxation as the hitch is being made. It is right here in making the hitch on the pastern that the legs loosen. To prevent ropes from shifting forward the free ends should be wrapped figure-8 fashion around the folded pastern and tendo-Achilles. Mc-Killip prevents roaching of the back and also provides against spinal injuries by drawing a rope tight between the tail and collar. This "back rope," as he calls it, can also be hitched to the leg ropes where they cross each other over the croup to prevent them from shifting in either direction. With the fore limbs tied firmly with the foot against the elbow and a well instructed man to manage the head, one can go about the operation with some confidence of success.

Another point. Use ropes and not harnesses. The latter are unsafe except when new and made of good leather, and armed with exceptionally strong buckles and rings. Old leather harnesses, harnesses made from poor grades of leather and all those having buckles and rings of ordinary size are very unsafe. They break unexpectedly and often at a crucial part of the operation, and often they are found either

too large or too short for a given horse. A few days ago a veterinarian about to cast a horse for me in the country found the leather girth he had lauded so highly and which I had condemned was six inches too short to encircle the chest of our patient—a 1,600-pound mare whose girth measurement was deceptive. The same apparatus on a yearling reminded me of the street urchin who wears his daddy's old coats. Ropes are adjustable to all sizes of animals. The redundant ends laid aside are no inconvenience when they must be used on small subjects. They are strong, cheap, and reliable, and weakness from wear is always visible. They are handy alike for all sizes and all species of animals.

A pitfall of equal importance is that of operating under unfavorable conditions—conditions which, despite every care, will cause soiling of the wound. Ridgling castration should not be done too early in the spring. It is better to wait until the subject has shed its shaggy winter coat, has been on pasture for some weeks at least, and the weather is less likely to be inclement. At this time the patient is sleek and vigorous, the weather is fine, and a nice, dry, clean, grassy place can always be found upon which to cast the patient. Earlier hairs are released in clumps during the struggles, the legs are beaded with dung or mud and often the ground is so wet from a recent rain that the patient must be cast under a shelter. Such shelters are always abominably filthy, dusty, dirty, miserable, unthinkable places for an abdominal operation. Don't do it. There is a deep pitfall in every operation performed under such conditions. It is only the most skillful operator who is capable of avoiding disaster under such conditions, and even he will meet his Waterloo should any unexpected exigency prolong his manipulations. The novice who will fumble a little and probably withdraw the hand a few

times is sure to carry infected material into the depths of the wound, if not also into the peritoneum. With the patient clean after shedding and a run at pasture and with a clean place to operate, ridgling castration loses much of its terrors, threatening infections become the exception instead of the rule. The rest of the antisepsis has no pitfalls for the surgeon who exercises common sense in cleaning the field, the hands and the instruments. Forewarned of the dangers from hands that have recently been soiled with infectious material, from instruments that have not been sterilized, there is little chance indeed of serious consequences from a ridgling castration even when it was not done so very skillfully.

During last year the writer arrived at a town in an adjacent state on a rainy morning to castrate some ridgling. It was during the first week of May. The weather, previously fine, had turned into a cold wet spell that made the roads almost impassable even for horse-drawn vehicles. Arriving at the different farms where the operations were awaiting we found conditions very bad—mud, mud, mud everywhere. At each place we were compelled to operate indoors, sometimes on the barn floor, sometimes in an implement shed and at other times in the open part of the stable. The patients, although tied up awaiting us, had been in the wet pastures and were of course very dirty. The legs, the belly, the feet were full of dried mud, and some of them had only shed off in patches. Every experienced rural practitioner is familiar with the picture I am attempting to describe, and every one knows how impossible it is to perform a satisfactory operation under such conditions. It cannot be done no matter how much time is consumed in attempts to improve them. We operated on seven and lost two from peritonitis. Never again!

The third pitfall in ridgling castra-

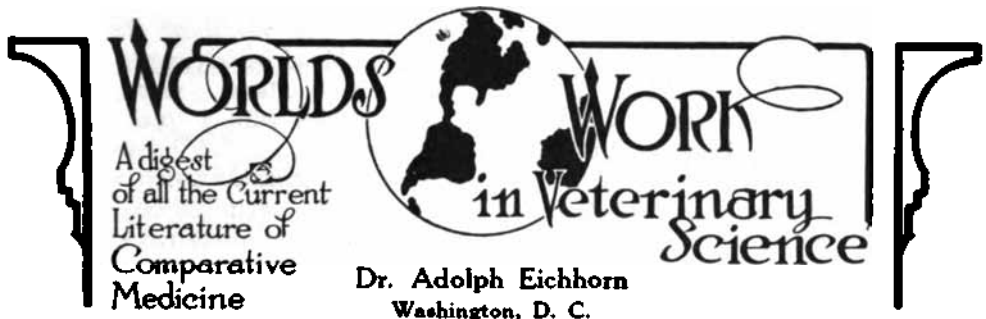
tion is that of perforating the abdominal wall in the wrong place. In reviewing the causes of failures to find the testicle by new operators, I have found that most of them were due to perforating too near the external abdominal ring. It is very difficult to locate a testicle unless the perforation is made beyond its attachment, because the finger can hook backward but not forward. Dr. Charles Frasier describes the point of entrance as "the upper-posterior quadrant of the internal inguinal ring area," an expression that appeals to me as especially lucid as a guide to the novice. The ring or the place it should occupy should be crossed with the invading hand and the perforation made just beyond. McKillip, after instructing his students to begin the invasion at the external abdominal ring, said: "Bury the hand six inches beneath the skin for small horses and nine inches for large ones." This too gives a fair idea of the point of entrance. The high invasion prevents prolapse, the low one invites this unfortunate accident.

A fourth pitfall is that of allowing the castrated ridgling to stand about in the pasture or in the stable. Exercise, forced exercise, is a very essential part of the after-care, because it prevents the accumulation of discharges in the canal—discharges which will putrefy if allowed to collect.

BURTO R. ROGERS, D. V. M.

(Continued from page 42)

front in organized veterinary work. He is assertive, insistent, determined that his opinions shall not be smothered. He has identified himself with veterinary associations wherever he has resided. He has been secretary of the Kansas Veterinary Association, and holds, or has held, memberships in many professional and other organizations. Still young; still with vim in him; still loyal to his opinions, he is the kind of a man who not only intends to do a thing, but tries to do it.



THE USE OF MORPHIN FOR ANESTHESIA OF HORSES

(Haan. Revue de Med. Vet. Militaire, No. 30)

A COMPLETE anesthesia and absolute quiet during an operation without a general narcosis may be obtained by the use of ordinary morphin, provided its analgetic effect is reinforced with the aid of sulfonal and chloral. In various experiments on military and civilian horses, the following procedure proved highly satisfactory: (Operations under such anesthesia may be undertaken with the same effect as would result from a general anesthesia, and it is therefore very extensively used at the present time on the horses of the various regiments.) (1) The evening prior to the operations the animals are not fed, but watered; (2) two hours before the operation 20 grams of sulfonal, which is suspended in 500 grams of water, is administered; (3) one-half an hour later a usual dose of chloral hydrate is given in the form of an enema; (4) fifteen minutes before throwing the horse, 50 centigrams of morphin hydrachlorate is injected subcutaneously.

Camphor for Intravenous Injections
(Rips. Zeitsch. f. Veterinarkunde. H. 3, 1914)

The author reports good results which he obtained from intravenous injections of saturated aqueous sterile camphor solutions in the treatment of exhaustions occurring in the course of febrile infec-

tious diseases. This solution is prepared by the firm of Merck, according to the directions of Professor Leo. The finely divided camphor is shaken for several days in a rotating shaking apparatus at room temperature; 100 c.c. of the sterile aqueous camphor solution contains 0.142 per cent camphor. The solution turns cloudy upon heating to 40°C. An injection of from 200 to 300 c.c. of such camphorated water produced in all cases of strangels, broncho-pneumonia and in pleuro-pneumonia a remarkable improvement. The writer therefore recommends this remedy very highly.

Picric Acid for Burns

The splendid healing effect of picric acid for burns has been known for a long time. When used immediately after a burn it prevents the development of a blister. In more severe and extensive wounds, caused by burning, it produces a protective scab very rapidly. Heuser has recently attained excellent results with the use of picrasin, which is marketed in vials each containing 2 grams of picric acid and 100 grams of glycerin.

Critical discussion of the methods of immunization in the prevention of anthrax. G. MASINI. *La Clinica Vet.* XXXIV.—According to the author, Pasteur's vaccine should be employed only for prophylactic purposes on animals which have not been immediately

exposed to the contagion. While it is known that by this method the resistance of an animal against anthrax is increased, it must be considered that this is not achieved to such an extent that the conferred immunity would protect the animal against severe infections such as at times result from drainage from tanneries. In such cases, vaccination by Pasteur's method does not produce the desired immunity. This is not due to the fact that the vaccine is not of sufficient strength, but because the infection is too malignant and of a virulent character. As suggested by Opperman, in this regard the spore contents of the vaccine play an important part. In the presence of anthrax infection the serum vaccination is of far greater value, since by this method the immediate losses following vaccination are eliminated. Through the use of anthrax serum the infection may be checked, even in cases where it is already in the process of development, especially so in cases where, besides the injection, the hygienic and sanitary measures are properly carried out.

COD-LIVER OIL AGAINST FLIES, MOSQUITOES AND TICKS.

According to the experiments of Lang, ordinary cod-liver oil kills flies, mosquitoes and ticks very rapidly and with certainty. For prophylactic purposes it is recommended to paint the parts on which they alight with a thin layer of cod-liver oil. Sores and wounds which are frequently contaminated by insects and maggots, thereby preventing the healing process, are also very favorably influenced by the application of cod-liver oil.

ANESTHESIA PRODUCED BY MAGNESIUM SULPHATE. Staub Oesterreich. Woch. f. Tierheilk. No. 31, 1915.

It has been known for a long time that the injection of magnesium sulphate under the skin produces a type of sleep. The author does not consider this as a narcosis, but compares it with the effect of kurara. In short, painful operations, the experiments could be made with subcutaneous or intravenous injections of magnesium sulphate.

The blood examination in the control of glanders. NEVERMANN. *Ber. Tierarztl. Wochensch.*, p. 522, 1914.—In Prussia, during the fiscal year of 1911-1912, the blood tests (agglutination and complement-fixation) were employed in 471 stables with a total number of 1,722 animals, of 114 horses giving a perfect complement-fixation without regard to the agglutination, only two were found on postmortem examination without lesions of glanders. Out of seven horses giving a perfect complement-fixation and with an agglutination value of 1,000 or more, as well as out of 15 horses with the same result in complement-fixation, but with an agglutination value under 1,000, all animals proved on autopsy to be affected with glanders. Out of 11 horses with incomplete complement-fixation and an agglutination value of 1,000 and higher, one was found free of glanders, whereas out of 16 horses with the same results in complement-fixation but with an agglutination value under 1:2,000, three were found to be free of glanders. No complement-fixation was obtained and the agglutination gave a value of 1,000 and higher in three horses of which on autopsy one proved to be affected with glanders. In 1,446 cases the complement fixation proved negative, and the agglutination value under 1,000. Out of these animals 32 were autopsied, and all found free of the disease. After the conclusion of the blood tests, which in some stables were repeated six times, not a single case of glanders developed.

CONTRIBUTION OF MEDICINAL TREATMENT OF INFECTIOUS VAGINITIS AND INFECTIOUS ABORTION OF CATTLE. Ber. Tierarztl. Wochensch. P. 536, 1914.

The author obtained the best results in the treatment of infectious vaginal catarrh with dusting powders prepared from acetate of zinc and from the various triphenylmethan dyes. (1.5:1-1:1.) He treats infectious abortion with internal administration of potassium or calcium chlorate and hexamethylentetramin. A single dose consists of 5 to 15 grams, a double dose from 10 to 50 grams. With this treatment the abortion is supposed to be checked immediately.

Therapeutic Digest

By MART R. STEFFEN, Brillion, Wisc.

LAST month we discussed in this department the value of various antiseptics in the presence of blood serum and other proteins and, copying again from the *Medical Times*, we will complete the subject this month by taking up the principles involved in the preparation of the hypochlorite solution.

Solutions of sodium hypochlorite always contain free alkali even when prepared with the greatest care. A so-called "neutral" solution of sodium hypochlorite has an alkaline reaction. This is due not only to the free alkali which may remain from the process of preparation, but also to the fact that the hypochlorite in solution undergoes hydrolytic dissociation, giving free sodium hydroxide and hypochlorous acid.



The irritating action of ordinary hypochlorites is largely due to this formation of free alkali.

By employing the feeble polybasic acid, boric acid, it has been possible to prepare a simple hypochlorite mixture which maintains approximate neutrality under all conditions, is practically non-irritating, and which when properly applied, has given most encouraging results in the antiseptic treatment of wounds.

The preparation of a solution of suitable concentration for direct application, containing 0.5 to 0.6 per cent of sodium hypochlorite, may be carried out very simply as follows:

One hundred and forty grams (not grains) of dry sodium carbonate, or 400

grams of the crystallized salt (washing soda) is dissolved in ten litres of tap water, and 200 grams of chloride of lime (chlorinated lime) of good quality is added. The mixture is well shaken, and, after half an hour, the clear liquid is siphoned off from the precipitate of calcium carbonate and filtered through a plug of cotton; 40 grams of boric acid are added to the clear filtrate, and the resulting solution is ready for use. The boric acid must always be added after filtering, never before.

The solution should not be kept longer than one week.

To obtain the best results it is essential to commence the antiseptic treatment of the wound at the earliest moment possible, and to bring fresh quantities of the solution in contact with all parts of the wound as frequently as possible for a considerable period of time.

The solution has the valuable property of assisting in the rapid dissolution of necrosed tissue.

Hypochlorites are extremely active substances chemically, and they should not be used in conjunction with other antiseptics nor with alcohol or ether.

The solution just described is that which was quite recently given so much notoriety through newspaper articles as having been newly discovered on the battle fields in Europe. The fact is that it has been known for years and only its employment by a prominent surgeon on the battle fields has now again drawn attention to it.

A Mountain of a Molehill.

The editors of a number of our American veterinary publications have recently gone into a series of commentary fits, or convulsions, over an editorial which appeared in an August number of the *New York Medical Journal*. This editorial had for its title the words "Are You a Veterinarian?" and in the body of the article was given the reason why the French War Department does not accept surgeons who do not speak the French language, namely, "they would be little better than a veterinarian." I would suggest to those veterinary journal editors and others who took offense at this statement that, when they come out of their fit, they peruse the article thoroughly and with a broader mind than they did at the time. In my opinion they owe the editor of the *New York Medical Journal* an apology. The statement that the surgeons in question would be little better than veterinarians does not in the least reflect on the skill or professional worth of the veterinarian, as anyone who reads the article with a clear head and sufficiently educated mind will affirm. It has reference wholly to the knowledge of French from the standpoint of suggestive therapeutics. It is an undisputed fact that psychology plays an important part in human therapeutics, and from this standpoint the editorial is written. In summing up, the editor makes especial mention of the fact that the veterinarian who would depend on suggestive therapeutics would soon lose his practice.

The comments on this article made by various veterinary writers can only have the effect of impressing medical men with the fact that the article was "too deep" for veterinarians. We would suggest that the editors of these veterinary publications make it a point to print the article in question in full in their next issue, so that their readers may be able to satisfy themselves of the true sense of the editorial.

We, in this department, never hesitate to "call" medical writers for slurs on the veterinary profession. BUT—"be sure

you are right and then go ahead," is our motto.

OXYGEN GAS TREATMENT OF TETANUS. Three cases of tetanus which were treated successfully by the subcutaneous administration of large quantities of oxygen are reported in the *Presse Medicale*.

Lobeks Biorisation of Milk. This method of sub-sterilization of milk is said by Schmitz to be reliable. It consists in the main of rapidly bringing the milk to a temperature just short of the boiling point and immediate and just as rapid cooling. This is done by throwing the milk into cylinders in the form of spray and was recently described in detail in this JOURNAL.

Schmitz reports state that pure cultures of virulent tubercle bacilli added to milk for the purpose of testing the efficacy of the method were satisfactorily killed by it.

Despite the bactericidal potency of the method it does not, in any way, alter the taste of raw milk; nor does it, in any way, detract from the raw milk properties which are essential to its nutritive value.

Spores are not destroyed in the process of biorisation.

The Medical Review of Reviews reports an article by Newburgh which was published in detail in the *American Journal of Medical Science*, in which article the author arrives at the conclusion that "neither pharmacological nor clinical evidence justifies the use of strychnine in the treatment of acute or chronic heart failure." He bases this assertion on experience gained in the treatment of eight cases in the Massachusetts General Hospital.

The Medical Council says, "Mackenzie does not believe that strychnine has any special action on the heart, its clinical effects being upon the nervous system."

A Correction.—Last month, in this department, a report was given on the
(Continued on page 76)

Queries and Answers

The editor will reply to queries appearing here, as he is able and as opportunity permits, but he does not want, nor cannot undertake to monopolize this portion of the department. Any reader who can furnish further and better information in reply to any query is urgently requested to do so. Where the treatments advised in these replies is adopted it is hoped that those employing them will report their results whether good or bad. In all cases give the number of the query when writing anything concerning it.

Query No. 187.—Will some one please give me a name for the following condition? Called to see two-year-old horse at 9 p. m. Symptoms: Heart beating very violently and about 60 per minute; temperature 103° F.; constipated; breathing labored and shallow; *unable to swallow; lips paralyzed; dilated pupil; staggering gait*; visible mucous membrane blanched; pulse ceased to beat; eyes glassy.

Diagnosis: Nervous palpitation of the heart. I put the horse on morphin and chloral hydrate. Called again 10 a. m. next morning. Condition same. I put the horse on morphin and aconitin. In about six hours, the voluntary muscles became rigid, and the horse appeared to be in great misery. The owner ordered me to chloroform him. I did so till he relaxed and in a few hours seemed to be improved. Left him for the night. Died at 6 a. m. next morning; was sick 36 hours. Post mortem examination showed septum of right auricle ruptured, right side of the heart soft and flabby, *liver and spleen congested, small intestines and floating colon had inflamed patches, kidneys soft and enlarged*, left kidney badly congested, lungs in good shape. This horse was conscious at all times. He was taken sick at the plow. Was this due to over exertion?—C. C. R.

REPLY BY DR. E. L. QUITMAN.—This was the so-called cerebro-spinal meningitis or forage or mould poisoning. The rupture in the heart was secondary due to falling.

REPLY TO QUERY 189.—I have just read in the November issue of VETERI-

NARY MEDICINE the reply to Query No. 189 by Dr. Kaupp, relative to the life history of the "grubs" found in the muscles of wild rabbits. Evidently Dr. Kaupp did not understand what was wanted. By referring to bulletin No. 5 of the United States Department of Agriculture, Division of Entomology, entitled "Insects Affecting Domestic Animals," you will find on page 108 a full description with illustrations of the rabbit bot fly, and on page 110 one of the cottontail-bot. The latter species has been found in rabbits in Illinois. Its scientific name is *Cuterebra fontinella Clark*.

Only last week I removed a specimen from the sub-cutaneous tissue of a rabbit. In order that there might be no mistake in identifying it, I conferred with Professor Pearse, the zoologist at the University of Wisconsin, who confirmed the diagnosis.

F. B. HADLEY,
Dept. of Veterinary Science,
Madison, Wis. University of Wis.

FROM THE QUESTION BOX AT THE RECENT ILLINOIS MEETING

Query No. 195.—In posting a cow, do you place her on her right or on her left side?

REPLY.—On right side.

Query No. 196.—In examining a beef carcass, should the finding of considerable lesions of tuberculosis in the mediastinal lymph glands only, condemn the whole carcass or any part of it?

REPLY BY DR. L. E. DAY.—I don't

know what is meant by "considerable" as that is a word I am unable to define. Our inspection regulations at the present time are to the effect that when the lesions are well encapsulated or apparently so and are quite firm, we condemn that organ; but I don't think we would find what might be considered "considerable lesions" in the glands.

Query No. 197.—Does the presence of a pint of fluid in the pericardial sac necessarily mean a serious condition?

REPLY BY DR. L. E. DAY.—Yes.

Query No. 198.—Is median or digital neurectomy of benefit in a chronic case of laminitis where the feet are distorted and tender?

REPLY BY DR. L. A. MERRILLAT.—It would be absolutely contraindicated. A man who would perform neurectomy under such conditions ought to be jailed. There is no neurectomy indicated unless you have an absolutely good foot, and no veterinarian should practice neurectomy when there is no foundation to support it. Never perform an operation for laminitis in any instance where there is a deformed foot from any cause.

Query No. 199.—Is it possible to procure the U. S. Department of Agriculture regulations on meat inspection? If so, how?

REPLY BY DR. L. E. DAY.—I think if you will write to the Department, they will forward to you the regulations of inspection. They are not secret at all.

Query No. 200.—What is the best method of controlling hemorrhage from the palatine artery?

ANSWER BY DR. J. H. BLATTENBERG.—In such cases, the horse usually keeps up a constant licking with the tongue, and I have put in a large pack of cotton saturated with Monsel's solution and buckled the mouth shut. It would create a coagulation there and stop the bleeding entirely. The mouth should be thoroughly packed and buckled close so that the horse can't move his tongue.

Query No. 201.—What does Dr. Merrillat think of his molar separator in aiding in the extraction of difficult molars?

REPLY BY DR. L. A. MERRILLAT.—I use it every time I extract a molar. I couldn't get along without a molar separator. The tooth of a horse that can't be loosened and loosened well so that you can almost rotate it in its cavity is seldom extracted without a fracture. About every other molar you try to extract you don't extract—part of it is left in, and you fail absolutely, and the reason you fail is that you try to use traction before the tooth is properly released. A molar separator is designed to assist in effecting this loosening process. I consider the extraction of a molar as a kind of major operation, an operation that requires a recumbent restraint on an operating table or on the ground, using a good speculum with a deep commissure that allows free instrumentation in the mouth, and the head turned up to the proper angle against the operator, where with the aid of a light, the exact character of the tooth can be examined. It includes the washing out of the mouth and picking with picks, and then when you have determined what kind of tooth you have to deal with, the next step is to loosen it. You can in this way extract teeth that would break under any other means. If you undertake to extract a tooth of that kind with a forceps, you can't do it. They all break, and the job is not satisfactory. For that reason I preach the gospel of the molar separator for doing this work on the teeth. The subject was probably suggested because of the imaginary damage it might inflict on other teeth, but this is not to be considered if the instrument is not used too harshly. I have never loosened an adjacent tooth with the molar separator.

Query No. 202.—How should camphorated oil be used in the treatment of pneumonia?

REPLY BY DR. E. L. QUITMAN.—Regarding the use of camphorated oil in the treatment of pneumonia, will say that it is rather limiting the use or putting the application in a somewhat erroneous light. The value of camphorated

oil consists mainly in its cardiac stimulating effect. However, it has its bactericidal action. Camphorated oil or camphor hypodermically is not a quick acting cardiac stimulant. It acts slowly but is one of the nicest cardiac stimulants we have, as it stimulates the cardiac muscle through, of course, the medium of the intracardiac ganglia and going farther back than that, the vasomotor centers. It acts powerfully, and its action is long continued on the cardiac muscle, and then, of course, it is a stimulant expectorant. While I should hate to pin my faith on the hypodermic action of camphorated oil in pneumonia, there is no doubt of its great value. I sometimes administer a dram and sometimes two drams of camphor dissolved and diluted, that is, a dram to an ounce of olive oil, allowing it to cool down to a degree of safe administration. It is only necessary to administer the camphor according to the dose you use, once or twice daily in order to maintain cardiac action. It is also a respiratory stimulant. However, in some cases we prefer a dram dose every four or six hours. It is serviceable in certain types of horses, particularly bronchos. They may be extremely low with pneumonia, yet they will fight the taking of medicine by the mouth, so that no matter how you administer it, you feel you are doing more harm than good. The hypodermic administration of camphorated oil with strychnin sulphate will bring them through nicely. I would simply treat them by the administration of camphorated oil and strychnin. The action of the camphor is prolonged, usually lasting for six or eight hours, and I use two drams—one dram administered twice in two or three hours; two dram doses once in four or six hours is sufficient. I prefer diluting it in the ratio of one to eight.

Query No. 203.—How can you give a hog medicine when it will not eat?

REPLY.—The hog may be turned upon its back, when it will begin to squeal and the medicine given in the form of a thick

syrup so as not to cause strangulation. Some give it in the form of capsules and use an ordinary pilling gun or a rubber hose and a funnel. Still others employ a dose syringe with a short nozzle, holding the hog between their knees and injecting the medicine slowly.

Query No. 204.—Are the digestive ferments organic or are they inorganic substances?

REPLY BY DR. E. L. QUITMAN.—The pepsin or the analogues of pepsin are organic, and the hydrochloric acid that goes to make up the gastric juice is inorganic. The same applies to the digestive ferments farther back in the stomach—they contain both inorganic and organic substances.

Query No. 205.—Cannot salicylates be used without getting the irritating effects of free salicylic acid?

REPLY BY DR. E. L. QUITMAN.—Regarding salicylic acid, I want to say that a horse stands salicylic acid remarkably well—I mean when it is kept up on him in large doses for a rheumatic condition, he certainly stands salicylic acid remarkably well. I don't mean when he gets one or two doses as in colics. I have had horses on salicylic acid or salicylates without having them show any ill effects whatever as to digestion or appetite. The secret of giving salicylic acid either in man or the lower animals to reduce irritation to a minimum, is to give it about two hours after a meal when digestion is well established and then to give it well diluted, that is to say, let the animal be thirsty enough so that it will drink a liberal amount of water, or if it is a man, in order to reduce gastric irritation to a minimum, he should drink as much water as he can stand, three or four glasses at least after taking a dose of salicylate.

Query No. 206.—Will you discuss the best line of treatment for puncture of stifle joint, synovial fluid escaping and infection taking place—puncture made by nail; animal in great pain; temperature 104° F.

REPLY BY DR. A. H. BAKER.—I look

upon that case very seriously indeed. An open infected stifle joint is a grave matter. I think the only way out of the woods in a case of that kind would be to introduce a bistoury and lay the wound wide open. Make the opening in the joint at least an inch long and the outer edge of the wound at least two inches long. Sterilize the joint by thorough irrigation with bichlorid of mercury, and keep up the irrigation for fifteen or twenty minutes. Rinse out with normal salt solution and inject an iodine solution. Put on an antiseptic pack on the outside, not a very heavy pack, but put it on so it will stay and keep up almost continuous warm water bathing night and day for three or four days. Dress the wound about twice a day. I have seen similar cases where this treatment has been used. I get this suggestion originally from a little book entitled "How We Treat Wounds Today," by Morris, and this is the treatment he applied to the human knee. The main thing is to make a large opening. You can't treat wounds such as that with a small opening. If the wound is infected, you don't lessen the chances of success by having a large opening, and the means of treatment are greatly facilitated. Put the animal in slings and give him acetanilid, nitrate of potash, laxative soft feed, and if weakness develops, nux vomica or strychnin. I never tried bacterins in these cases. In acute involvement, I doubt very much if bacterins would have any effect.

REPLY BY DR. W. J. MARTIN.—In regard to an open stifle joint or in fact any other joint of the body, I will say that in the last few years, these wounds have lost considerable of their terrors for me. I had one case last spring—a mare that was kicked in the knee joint and was placed in the care of another practitioner for ten days. When I came to the case, the joint was full of coagulated synovia. I immediately drained out the cavity, and as Dr. Baker has said, I laid the whole area open, cleaned it out thoroughly, flushed it with iodine, packed it

with prussic acid and absorbent cotton, administered large doses of bacterins and continued treatment for about ten days. This mare has a good leg today and is working on the farm. In regard to stifle joint, I treat it the same way. Don't be afraid to cut into them, because if you don't cut into them, the patients will die from septicemia and the intense pain. As soon as you make a large incision, it relieves the intense pain, and before I had bacterins, I used to fill the cavity with a mixture of red mercury and iodine combined, and I have had the same splendidly satisfactory results in these cases. I had a case of a hock joint in a mare cut open by a pulverizer and split down about four inches. The synovia was discharging and the mare had laid down and saturated the wound with the moisture and urine of the barn. This joint was treated the same way, only there was no blister applied. I thoroughly scraped it off, filled with iodine and put on a compress of prussic acid. The mare made a complete recovery. I think in these cases the main thing to do is to lay the cavity open, clean it out thoroughly, fill it full of iodine, and if you can, apply a prussic acid compress, and then give immense doses of bacterins.

Query No. 207.—Are kidney petechiæ the most conclusive lesion of hog cholera? Are they ever found in any other condition?

REPLY BY DR. L. E. DAY.—It is very true that in chronic or semi-chronic cases of hog cholera you usually find petechiæ. In acute cases, you seldom find them. I don't know of any other condition that causes as extensive petechiæ of the kidneys as hog cholera. There are cases of inflammation of the kidney especially where the glomeruli are involved, where they are filled with blood so that they cause a form of petechiæ. I would not depend upon the kidney alone in making a diagnosis of hog cholera. I have seen in cases of advanced tuberculosis petechiæ of the kidney that looked very much like hog cholera when no cholera

was present. It makes no difference what infection you have, you are liable to have petechiæ of the kidney. These go along with other infections, especially if they happen to be of septicemic character. My experience in the packing houses has been with a very large number of cases of hog cholera where there were no petechiæ. I have held post mortems on hogs injected with hog cholera virus that have died very rapidly after having been taken sick and I have found no petechiæ of the kidneys. I have found, however, a very blanched condition. They were very susceptible, and the toxin of hog cholera destroyed them before any petechiæ were formed.

Query No. 208.—What are the opportunities in private and general practice in the South, and in Georgia in particular?

REPLY BY DR. PETER BAHNSEN.—I presume that conditions in Georgia are very much like they are in Illinois. It depends upon the man rather than the locality. In many instances we have had a young graduate veterinarian go into a community and fail to get support from the people, when they would support a quack. Two or three changes were made, and subsequently a graduate ousted the quack. It depends on the man rather than the locality. We have, I think, about fifty-one registered graduates in Georgia. When we passed our practice act in 1908, it provided that all who had practiced for three years at the passage of the act, if they made application, would be permitted to practice without examination. We kept this quiet, and as a result only six were admitted under the exemption plan. Since then quite a number have made application, but they have to go before the board to be examined. The law provides that a graduate from an accredited college does not have to take examination.

Query No. 209.—Will chloral hydrate given orally produce sufficient anesthesia for major operations?

REPLY BY DR. J. H. BLATTENBERG.—I have never found it sufficient. I have

given it in such quantities that they would go down apparently unconscious, and yet I could tell when performing the operation that the subject retained sensation enough to make it very unsatisfactory.

Query No. 210.—Is any special form of shoeing beneficial in incipient navicular disease and also in incipient bone spavin?

REPLY BY DR. F. M. CAHILL.—I would say that in these conditions I at once take the animal to the shop and have its shoe removed, and contrary to the practice of most veterinarians, I bend the bar of the shoe, so as to get an active spring there, which tends to widen the foot, and then I put on a rolling motion shoe with a raised heel. The animal is then taken to the hospital or to the barn and given complete rest for two or three weeks, the foot in the meantime being kept protected. I use an oak leather pad and pack with tar and oakum from the fetlock down. I want to create a condition here so that no pressure from the bottom can come upon the frog or sole. I have been fairly successful in the early stages of navicular joint disease with this line of treatment. When it comes to shoeing for bone spavin, raise the heel just slightly and take particular pains to have the inside heel part lower than the outside. The idea is to take the strain off the unhealthy part and have the healthy part do the work. That gives us some results but not much.

Query No. 211.—What amount of strychnin can be relied upon to kill a horse weighing 1,200 or 1,400 pounds?

REPLY BY DR. JOSEPH HUGHES.—I have been in the habit of giving six grains for any sized horse, and I have never seen a horse that has not succumbed to it. I had a party on one occasion, who I thought could administer it, endeavor to get the needle into the jugular and he didn't succeed, and we had one terrible time. The horse broke loose and went down and lay struggling, and there was no subsequent possibility of getting the injection into the jugular as the muscles

were contracted. I have never seen a horse, however, that six grains did not have a prompt effect upon if given in the jugular vein.

REPLY BY DR. L. A. MERILLAT.—We had a demonstration of that this morning before the association. We gave a horse seven grains of strychnin sulphate in three drams of warm water in the jugular vein and waited fifteen minutes, and the horse only danced about the floor. We gave him seven more grains in the pleural cavity, and he died a few minutes after but made a bad scene. If you want to kill a horse, don't use strychnin. A 38-caliber revolver is the only sane way of killing a horse. Perhaps 45-caliber is better.

REPLY BY DR. N. S. MAYO.—The most satisfactory plan I have followed is to put a cloth over the horse's head and hit him with a spiked hammer.

REPLY BY DR. DUNNING.—If you have the horse in a barn or any place else, administer chloroform in a bag until the horse will roll or lie down. Get him completely under the anesthesia and close his nostrils and the horse will succumb. I have used that method every time, and it is very well thought of by the community. You have the satisfaction of telling the owners of the horse that you have chloroformed him.

REPLY BY DR. E. L. QUITMAN.—The subject of killing horses is one that comes up with great regularity. The nicest way to kill a horse with chloroform is an intravenous injection of it. You should use a four-ounce syringe. You don't have to have a special outfit, if you have the ordinary four-ounce dose syringe and have the needle of proper caliber for intravenous injection. Four ounces of chloroform given into the jugular vein will kill a horse very nicely. There is no struggle, and even if the death is prolonged for three, four or five minutes, which it may be in some cases, the animal does not struggle. It simply goes into a sleep and passes away. It is something that doesn't cost you much.

You can't always use the hammer method. The chloroform should be injected quickly, the quicker you get it in, the quicker the horse will die; but even if death is prolonged, it is a nice, easy death. As regards strychnin, I most emphatically disagree with Dr. Hughes on strychnin as a killer for a horse. The horse varies considerably in its susceptibility to strychnin, and I think I can give an intravenous injection, but I have given ten grains intravenously where it took the horse twenty minutes to die with most horrible convulsions, and I remember one case where Dr. Hughes said a horse given ten grains of strychnin ran all over the pasture.

Query No. 212.—Has anyone here attempted to destroy a horse by the introduction of air in the jugular?

REPLY BY DR. E. L. QUITMAN.—I tried that method by blowing air directly into the carotid artery, and my classmate and I took turns in blowing into this horse until we were blue in the face, and we couldn't kill the horse by all we could blow into it.

REPLY BY DR. H. F. PALMER.—I wanted to try that method of killing a horse, and I took a bicycle pump and put on the vein of the horse, but we had to use an axe to kill the horse afterwards. I don't think it is a safe way to kill a horse.

REPLY BY DR. H. JENSEN.—Strychnin seems to work very nicely with us. At very low temperatures, you can't kill a horse with strychnin. Excessively low temperatures seem to overcome the action of strychnin. I was called once during the winter to kill a horse in a stone quarry, and I made a solution of strychnin containing ten grains. I got it into the horse and went to the house, when shortly the boss came and told us the horse was still alive. We gave him another ten grains, but he didn't die, and it took an axe to kill him. Ordinarily, however, strychnin has worked very well with me when used in a warm solution.

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

Succedanei for Certain Drugs Whose Prices Are Prohibitive for Veterinary Use*

"Succedanei" (singular, succedaneum) means "a substitute for," not an adulteration but the next best thing, or many times something better than that for which it is substituted.

Salol and Naphthalin

One of the first drugs that comes to my mind to suggest a succedaneum for, one that has gone up in price, is salol, which is used as an intestinal antiseptic. Many seem to think that salol is the only intestinal antiseptic. It is away up in price—about \$8.00 a pound. Now I will name a drug that will cost you for the refined product, only twenty cents a pound, regardless of the price of salol; one that is far superior to salol as an intestinal antiseptic; it is naphthalin. The refined or resublimed product will cost you only twenty-one or twenty-two cents, and commercial naphthalin is selling for eight cents a pound. The commercial grade may be used in horse or cattle practice, but I suggest using the resublimed. The dose averages about three drams for severe cases and two drams for less severe cases. It should be administered every four hours. It is

perfectly safe and I consider it is superior to salol. If you want to prove it for yourself, pick out an animal whose fecal matter is of the most foul character, and if you can deodorize the foul passages with any other drug as quickly as you can with naphthalin, I am willing to buy you the best dinner that this town affords. I might say to those of you who are not familiar with naphthalin that it may be given in capsules or may be put in the mouth as a dry powder or administered in the form of an electuary. It is soluble in alcohol but precipitates as an emulsion, and I advise administering it in capsules, dry in the mouth, or as an electuary. There is a great saving in price over salol and the medicinal value is greatly in favor of this drug.

An Inexpensive Skin Antiseptic

There is another drug for which many are casting about for a substitute. There are some conditions, of course, where iodine can not be replaced. But take as a skin antiseptic, I am going to give an inexpensive antiseptic that is quite as effective. Bacteriological examination and the verdict of some eminent eastern surgeons who are using this antiseptic on their hands, have caused many surgeons

*Extemporaneous discussion by E. L. Quitman, Chicago, at annual meeting of the Illinois Veterinary Medical Association, Chicago, December, 1914.

to discard rubber gloves. Tincture of iodine costs from \$1.75 to as high as \$2.25 a pound. This antiseptic I will give can be made up at a cost of \$1.00 per gallon. For internal administration, it is, of course, out of the question. It is not original with me but originated with an eminent eastern surgeon in collaboration with others, and the formula is this:

Pixel, 2 parts,
Commercial acetone, 40 parts,
Denatured alcohol, 60 parts.

Pixel is a high grade coal tar antiseptic. I dare say any other high grade coal tar antiseptic might do as well. Acetone is a substance very similar to ether and one of the greatest solvents there is, outranking alcohol as a solvent. It belongs to the ether series. I said commercial acetone because it seems to do just as well as the chemically pure acetone with a great difference in cost. Denatured alcohol can be purchased at about sixty cents a gallon. This mixture will cost just about \$1.00 per gallon. It makes up a ruby solution, pleasant in odor and in appearance resembles dilute iodine. It has the advantage of not staining the hands or clothes. It should be applied to the part either with or without friction for a least half a minute—better still, a minute. In the east where these surgeons are using it, they rinse and wash their hands in it for one minute, allowing half a minute for extra good measure. It is ascertained by deep skin scrapings, as deep as they can be made, taking scrapings from the finger nails, that they are absolutely sterile. This substance seems to be absorbed deeply into the skin, deeper it is claimed than iodine. The logic of it is this. Acetone is a fat solvent; so is benzine. (There is benzine in denatured alcohol. Denatured alcohol consists of 89% grain alcohol, 10% wood alcohol and 1% benzine. Of course, if it comes from a barrel of denatured alcohol which has been opened frequently, the benzine may have evaporated)—these dissolve the fat and permit the free passage of the alco-

hol, which you all know is a good antiseptic, deeply. That is the theory of the action of this mixture. Many human surgeons have discarded rubber gloves on account of the sterility of the hands obtained by rinsing or immersing them in this solution. I have used it in practice, and I have used it in laparotomies, and I find clinically it has demonstrated that it is all that is claimed for iodine.

While on iodine, outside of the value of potassium iodine in azoturia, so far as its resolvent action goes, there is another iodide that will cut the expense just in half. I am speaking of potassium iodide as a resolvent or alterative. The drug costs about the same as potassium iodide but is more effective. I would suggest to the veterinarians that they try calcium iodide in cases where they are now using potassium iodide. Calcium iodide is a more effective salt than potassium iodide and a much more serviceable alterative in acute and chronic blood dyscrasias than is potassium iodide. I consider the minimum dose of potassium iodide two drams, and the maximum dose of calcium iodide one dram. By repeated use of the drug in one-half to one dram doses, I have found after I get above one dram, even fifteen grains over the dram, I very quickly get a case of iodism to deal with; so that the gist of the matter is that one dram of calcium iodide will do at least as much good as two drams of potassium iodide. They cost the same per pound, but the dose of calcium iodide being only 50 per cent of that of potassium iodide, there is a saving of one-half in price.

Belladonna

Belladonna is another drug that has gone up, being about \$26.00 a gallon. In small lots, say pints, it would be considerably more. There are cases in which nothing takes the place of belladonna, but in most instances stramonium will replace it. Stramonium is a somewhat neglected drug in veterinary practice. There are some who use stramonium regularly, and others scarcely

know there is such a drug. In its physiological action, stramonium parallels belladonna, except it has a more specific action in bronchial affections and a more powerful effect in overcoming the spasms of the circular muscular fibers of the bronchioles. It is less poisonous though it may produce more delirium than belladonna. It does not have the vasomotor action that belladonna has, nevertheless in most cases where belladonna is used, you will find stramonium takes its place very nicely. I suggest where you give a 40 minim dose of belladonna that you give a 60 minim dose of stramonium and in that ratio. As an antispasmodic it is certainly the equal of belladonna. In cases where you have been using belladonna, substitute stramonium, and you will get as good or better results and save money besides. On account of the belladonna being such a powerful vasoconstrictor, it tends to inhibit the secretion of the salivary glands, which makes you combine some other drug with belladonna to prevent that action. With stramonium you do not have this action.

Sodium Cacodylate Cheapest for Acclimation Fever

I am going to name another drug, about fifteen or twenty cents' worth of which will do everything that \$5.00 worth of quinin will do. Quinin is quoted all the way from \$1.25 to \$2.60 an ounce. There is no real market price for quinin. You go to a wholesale drug house, and one house will say \$2.60; another \$3.80, and some probably \$5.60. I tried that out one day, so it is impossible to say just what the market on quinin is today; but I doubt whether you can get any of it for less than \$1.25 an ounce. You really can't afford it for the larger animals. A forty or forty-five grain dose of sodium cacodylate will do everything than an ounce of quinin will do. You will find that hypodermically forty or forty-five grain doses of sodium cacodylate are sufficient for a horse weighing 1,400 pounds. Inasmuch as it

is usually unnecessary to repeat the dose, it makes a very inexpensive medicine. You can treat your influenza cases with twenty cents' worth of medicine.

Saving Money on the Cost of Nux

If you haven't used acetic acid fluid extract of nux vomica, let me suggest that you ran right there save another 50 per cent. It is every bit as effective as the alcoholic fluid extract. You can not, of course, use it in some mixtures, particularly where you have alkaline substances. The acetic acid fluid extract of nux vomica will cost about \$2.50 per gallon, just about half what the official fluid extract costs.

Question from audience: What about salicylic acid?

There is no drug that will take the place of salicylic acid. Even though it gets ten times as expensive as it already is, I shall use it to stop fermentation in the stomach in cases of indigestion and colic.

Question from audience: Is there any substitute for cocain?

We find that quinin-urea-hydrochlorid, if used in much stronger solutions than at first we were taught to use it, will give very good results. We started out to use from $\frac{1}{4}$ per cent to $\frac{1}{2}$ per cent solutions. We are now using it in 4 per cent or more, often 5 per cent solutions, and we get quicker results. You get profound anesthesia in most instances in about fifteen minutes. Absolute anesthesia will require about twenty minutes. With a 2 per cent solution it will require about one hour to get profound anesthesia.

If you read human literature on the subject, you will find they claim that using a stronger solution causes a fibrinous deposit in the parts injected, and while they do not claim any great harm from this deposit, they say it often remains for months. So far as my personal observation goes, I have not noticed any such condition in the lower animals. I use a 4 per cent and 5 per cent solution both in dogs and horses

and do not have any trouble from this so-called fibrinous deposit. The trouble with quinin-urea-hydrochlorid is that it does not desensitize the skin unless perhaps you inject it directly into the skin and get direct desensitization by pressure. There is no drug that fully fills the entire action of cocain. You can give practically an unlimited amount of the quinin-urea-hydrochlorid. You can inject a quart in a horse or cow and several ounces into a dog without injury.

Question from audience: What is the difference between the Russian and Spanish fly?

The only genuine cantharides are Russian cantharides. The Spanish ones are spurious. They are just like much of the pepper on the market, which is not pepper, or at least it was not before the days of the national drug and food law. While this is called "Spanish fly," the genuine is a Russian fly. In some instances there are other beetles and flies that do have some irritating properties but nowhere near the irritating property of the real cantharides, which are Russian flies.

DO PUBLIC DEMONSTRATIONS RELATIVE TO VETERINARY SCIENCE BEAR FRUIT?

The question may be answered either in the affirmative or negative, according to the viewpoint of the one addressed; should he be, for instance, a dairyman with a suspicious herd of cows and the tuberculosis question arises, he would be quite inclined to take the negative view, especially so unless perchance he be very broad-minded.

Once the same individual having been through the fire of a campaign directed against the industry in which his profits are at stake, has established a herd free from disease; then propound the same question and your answer will invariably be in the affirmative.

Such being the case, we must construe the negative answer as not being

the true measurement of his opinion; such must be our conclusion; unless we provide for him one avenue of escape—ignorance.

The veterinarian who is audacious enough to demand publicity of existing conditions reaps his reward primarily in sarcasm, ridicule and censure; he is accused of having monetary motives and efforts are made by his opponents to injure him in various ways.

A certain element found within and without the professional ranks express the opinion that every one knows that cows have tuberculosis and consequently demonstrations reveal nothing new; the word reveal means to uncover; to make known; and when you do this you create a mental picture in the mind of the onlooker never to be erased; it means to them the difference between a theory and a reality and as such calls for immediate preventative measures.

Do demonstrations get results; by results we mean a better milk supply and eradication of diseased animals from infected herds, the ultimate welfare of the dairy industry and the public health which it serves?

One instance of a demonstration held in the state of Washington at a little place called Sumner; conducted by Dr. W. D. Garratt of Puyallup and myself, representing the State Department and held on January 9, 1915, was attended by approximately eight hundred people, the majority of whom remained throughout the day.

Six animals were killed, having previously reacted to the subcutaneous tuberculin test; the animals were inspected by Dr. J. Madsen of the Federal Department of Seattle with the result that five were totally condemned and one passed for food; this a calf eight months of age, the lesions were confined to the retro-pharyngeal gland.

The interest was intense throughout the demonstration; arguments waxed hot, pro and con, on all sides and much

sentiment was directed against us for permitting the public a glimpse behind the scenes.

What I wish to call to the readers' attention, are the fruits brought forth as a direct result of this demonstration.

The city of Tacoma had a short time prior passed a milk ordinance calling for milk from tuberculin tested cows; the enforcement of which, to all appearances, would have been exceedingly difficult and of a lukewarm character, due to lack of support in certain directions.

The demonstration supplied the fuel and created a veritable wall of sentiment against which retreat toward the old methods was impossible.

Results: A clipping from a Tacoma paper of recent date in which Mr. Bothell, Federal milk and dairy inspector, is quoted as saying, that he had scored some thirty odd dairies supplying milk to the city of Tacoma and the score was so good that he was incredulous and a rescore was made, proving the first to be correct, and with the supplemental statement that they were nearly good enough to score as certified milk.

A year ago one dairy supplying milk to Tacoma had seventy-three diseased cows out of a total of one hundred and twelve animals; another had thirty-one with a clean bill of health out of a total of one hundred and thirty-two animals, and still another with sixty reactors out of eighty odd cows. (These figures are a matter of record and in addition several more dairies in which the diseased animals were numerous could be named.)

The question as to whether or not demonstrations pay, when answered from the standpoint of the public, must be in the affirmative, and from the standpoint of the dairyman the answer must ultimately be the same; however, we must admit that the initial remedial measures carry a solar plexus punch

for the dairyman with a diseased herd. "Verily, the world do move."

Puyallup, Wash. J. T. SEELY.

GETTING THERE!

"Well, Doc, yuh don't need to git out; th' mare seems all right now, an' she's eatin'!" used to be a common greeting in the olden days of horse and buggy. The rancher seemed to think that if one did not get out, the bill would be so much less. Even now in winter, with the auto blocked up awaiting next spring, the above tidings are still to be heard. Fortunate, indeed, is the veterinarian who can run his car the year around, and "get there" when wanted.

That a car is a trade-getter, one must own a car for awhile to fully realize. To be at a rancher's place, five or ten miles out in the country, twenty or thirty minutes after being called; to relieve a writhing animal of its pain, while chance for recovery is good, and to win a client at the same time, is what an auto will accomplish. And even in case of a funeral, the rural verdict will be:

"Well, me an' Doc done all we could, fer I got him right away!"

The question the prospective car owner wants to know first of all is:

"How much will it cost per mile?"

Forget this query. If there is a veterinarian who has kept strict account of all his auto expenses, let him send his photo to Dr. David Roberts for publication. Looking back over old paid bills is as merry an occupation as spending the night in a country cemetery. Outside of horse trading, perhaps more lies have been told about the upkeep of autos than anything else. The only criterion by which one can judge the vagaries of a car is to pay the bills.

My car is a Buick roadster; it has been run about 4,500 miles this season. This is a very hilly, mountainous country, but the roads are kept pretty good. The monthly bill for gasoline, oil and repairs varied from ten to thirty-five dollars. Gasoline is 25c now, but was

20c all summer; oil, 80c; a new all-weather tread tire, \$16.30. And by the way, always have rough-tread tires all around. The first month the brakes were nearly burned out in descending a seven-mile grade, which drops down some two thousand feet. This was due to not understanding the mysteries of "compression." The second month about six punctures occurred, requiring three vulcanizations. The third month the writer's wife tried to push the garage off the main street into the alley by missing the front door. One fender and the front axle were slightly disfigured, but still in the ring. The next month the writer nearly had a general smash-up on a mountain road, due to the earth giving away on the lower side, and landing up against a tree. The other fender was bent to harmonize with its partner, and one front wheel lost its girlish form. From time to time, to vary the monotony of life, punctures occurred, but no blowouts. Never once did the engine fail, even with our accidents; no hills or mountains were found that the little car did not go up, and even on sheep inspection trips, far up in the forest reserves, only stumps in the trail stopped us. The self-starter worked perfectly all summer, and not a call was lost due to refusal of the car to go when wanted.

There are a number of good cars on the market, and it pays a veterinarian to get the best he can afford. Purchase one with a good, obliging agency and service station, and half the woes of being married to a car will be side-stepped. Listen not to the seductive words of the salesman, who declares:

"I ran my demonstrator forty-seven thousand miles on two dollars and thirty cents' worth of repairs!" or

"I never get less than twenty-nine miles to the gallon!" and,

"You know the road to Walla Walla, how hilly it is? Well, sir, I made it on muddy roads without ever changing gear!"

Shun him as you would an old maid with an ailing poodle pup!

To summarize: An auto will double one's practice and size of territory; it will decrease one's mortality enough to make him forget repair bills; it will win more friends in a year than five with a team and buggy. It is an absolute necessity to the practicing veterinarian. Next to a good education, it is the most valuable adjunct to the practitioner's equipment.

To "get there" in time will "get the money," and, next to rendering real service to our clients, that is what we live for.

E. T. BAKER.

Moscow, Idaho.

A PECULIAR CASE OF STOMACH TROUBLE IN THE HORSE

On a warm evening last August, I was hurriedly called into the country, at about seven o'clock, to see a beautiful, big percheron mare, the condition of which had greatly worried the owner.

The mare with her mate, had worked on an ice wagon, in a neighboring village from six in the morning until five in the evening, showing no signs of illness and being fed and watered as usual.

When the animal was unharnessed in the evening, the owner noticed that it was breathing very rapidly. She refused absolutely to notice food or water. When I arrived I found the respiration fifty-five to sixty, shallow, but not labored, there was no sound other than that caused by the air, rushing in and out of the nostrils, auscultation of the lungs was negative. Pulse, seventy, rather small and hard. The mare was sweating profusely and had a drawn, anxious expression of the face. There were no other signs of suffering. I continued my examination for at least twenty minutes, observing closely each manifestation and vainly questioning the owner, who maintained that the mare had been acting exactly the same since five o'clock. Finally, while auscultating the right flank, I noticed that normal peristaltic sounds were absent, but there was an occasional musical tinkle, as if some portion of the intestine were over-distended with gas.

I then decided to use the stomach tube and determine what the stomach contained.

After pumping in about a quart of warm water there was a return flow of a liquid which had very much the appearance of sweet cider, this had a slightly sticky feel, and although there was no distinct odor to this fluid, smelling it seemed to slightly nauseate one. There was no food or other sediment in the fluid, it filled two stable buckets and flowed softly and slowly into the bucket as would oil.

Within fifteen minutes the respiration was practically normal and the mare was nibbling at hay, she went to work the next morning and has not been sick since. I am at a loss to know the cause and name of this trouble.

It would have been easy for a careless man to have pronounced this a case of acute pulmonary disorder, but if it had been treated as such the results would probably not have been so gratifying. In the past six years I have found the stomach tube to be, not only a wonderful curative agent, where indicated, but also a most valuable aid to diagnosis. I never leave the hospital without one in the car, for its uses are many and they often manifest themselves very suddenly. Through the mouth, with the aid of the speculum, has, with me, proven itself to be the most practical method of introducing the tube in every day practice. The best tube is a ten-foot piece of half-inch garden hose of good quality, this is stiff enough to be passed, without the aid of the bothersome stylet and it seldom costs over sixteen cents per foot. For cows it will be found better to use one-inch hose, passing the tube in the cow is much easier than in the horse, but the contents of the rumen of the cow are by no means as easily syphoned as those of the stomach of the horse, but in the cow I have often seen the tube cause copious vomition which is at times very gratifying it its results.

What I have just said about the stomach tube is, of course, well known

to the majority of veterinarians, but there are a great number in active practice today who ridicule the use of the tube, however, I sincerely believe that each day that they put off its employment is very liable to loose them a valuable client.

A. T. GILYARD, D. V. M.

Waterbury, Conn.

LUXATION OF THE FLEXOR-PEDIS PERFORATUS TENDON WITH PARTIAL RUPTURE

This patient was a thirteen year old mare, weighing 1,250 pounds and used for farm and breeding purposes. She was seven months pregnant when brought to the clinic on January 3rd.

HISTORY. About three weeks previous she had slipped in drawing a load and was immediately very lame, in the right hind leg. Swelling appeared at the point of the hock, but with application of liniment the lameness and swelling disappeared.

SYMPTOMS.—In moving, the animal showed no lameness, but when weight was placed on that limb the ankle descended and the tendon of the flexor pedis perforatus slipped from the summit of the os calsis to the outer side of the hock. When at rest the tendon again assumed its normal position on the os calsis. Extreme flexion of the leg also caused the misplacement of the tendon. This luxation of the tendon was possible because of the rupture of its attachment to the inner side of the os calsis. The external attachment was apparently intact.

TREATMENT. An area, about one inch square, over the outer side of the tendon and two inches below the head of the metatarsus, was shaved and a corrosive sublimate, 1-1000, pack was applied. After twenty-four hours the pack was removed, the area disinfected with tincture of iodine, local anesthetic injected and the tendon severed subcutaneously. When the tension was removed the tendon immediately assumed its normal position, on the point of the

os calsis, with a snap that could be distinctly heard. A 1-1000 corrosive sublimate pack was applied and changed daily until the external wound was healed. After two months' rest the animal was again put to work.

On the second of November, or ten months after the first operation, the animal was again presented at clinic with luxation of the flexor pedis perforatus tendon of the left leg. The right leg was now apparently normal except for a very slight extension of the metatarsophalangeal articulation. The same operation was performed on the left as had been performed on the right leg. Recovery was complete and after a rest of two months the animal was again put to work. When seen several months later the patient was working satisfactorily and it would be difficult to tell that the tendons had ever been ruptured.

Ithaca, N. Y.

J. N. FROST.

STRAINED TENDONS AND LIGAMENTS IN THE HORSE

J. Victor Lacroix, D. V. S., Kansas
City, Mo.

Many veterinarians are wont to consider strains or sprains as a peculiar condition resulting from some form of injury and without giving the subject further thought, the assumption is that such involvements constitute injuries, the course of which is bound to be erratic and the prognosis uncertain. When considered in the true light, strains are to be thought of as fibrillary fractures of soft structures, and in such fractures with respect to the reparative process which nature supplies, there is little difference between fractures of soft structures and fractures of bone.

The course of such injuries is always variable. Muscular injuries recover more promptly than do injuries of tendons and ligaments. The more dense, less vascular structures are necessarily more slow in recovery from an injury than are tissues that are well supplied with vessels. Like-

wise there is usually a proportionately greater amount of injury done to any dense structure in strains than to muscular tissues so involved. A strain of the deep flexor tendon of the digit of the horse will not recover completely in less than several weeks and even in favorable cases months may be required for the reparative process to be completed; whereas an injury causing a strain of the superficial flexor tendon runs a more favorable course. The difference in the course and prognosis of the two cases just cited is due chiefly to the function of the two tendons. Serious involvement of the deep flexor tendon is unlikely to result in complete and permanent recovery, that is even though an animal may be returned to service, there is usually enough hypertrophy of the injured structures to constitute a permanent blemish.

When we stop to think that sprains are simply fibrillary fractures of soft structures, or aseptic subsurface and partial destruction of tissues, usually effected by a tensile strain, it is obvious that for recovery to result, nature's process of repair is the only recourse. Complete rest, then, is the principal factor to be made use of in the treatment of such injuries and if possible a complete immobilization of the affected parts should be obtained. This may be done by means of supporting bandages, splints of leather, or even casts. In other cases it is advisable to support the subject with a sling, or if the horse can get up and lie down without great difficulty and a sling is not employed, a large, comfortable well-bedded box stall should be provided for the subject. In some instances, because of the restless disposition of the subject, quiet must be enforced by restricting exercise. This may be accomplished by confining the animal in quarters which will not permit of his exertion, or by the local application of agents which are vesicant.

In a general way, then, the treatment of all sprains is such as to favor in every way possible nature's reparative process. During the acute painful stages of

the injury, the local application of cold is favorable. Bandaging an extremity with cotton and saturating the dressing every thirty minutes with a half-gallon of ice water and this continued for ten or twelve hours is sufficient to materially reduce a painful inflammatory condition of this kind. In the later stages, the application of heat may be employed in a similar manner and the client is in many instances better satisfied if charged with this work, than if other and different means were employed. The local application by friction of liniments of various sorts is indicated in some cases, whereas in other instances the application of a vesicant is advisable; but in all cases one should not lose sight of the fact that every rational effort put forth for the purpose of hastening recovery in cases of sprains is simply adjuvant. The actual process of repair is the direct result of nature.—J. V. Lacroix, Kansas City, Mo., in *The Alumnus*.

DO NOT DESPISE THE YEAST CAKE

I have a copy of "Colics and Their Treatment," and I assure you I prize the little book very much and consider it worth many times the price paid. I wish to give my experience with a physic that does not gripe, that does not produce nausea, but sharpens the appetite and has a marked effect. If known how and when to be given, many simple remedies can be found in the average pantry. Last fall I had a number of cases in which I decided to test the efficacy of the yeast cake, and I have yet to find a case where the action has not been all that could be desired, in impaction such as you find caused by changes in feeding as from hay to straw or from oat straw to wheat straw, etc., also in impaction from overloading the bowels in animals well fed and not receiving sufficient exercise. We frequently meet such cases, the bowels becoming sluggish and the feces having a most disagreeable odor, sometimes the odor being so very offensive as to make one gag.

The yeast cake is a valuable adjunct in one's satchel. I usually pound two half-ounce Royal Crown Yeast cakes in the mortar, then add carbo ligni half ounce. This added to a pint of warm water constitutes a dose for a medium sized horse. It can be repeated in four hours if necessary. This cleanses the bowel, is a food tonic, and increases peristalsis.

I remember a couple of years ago a client having an Aberdeen Angus bull suffering from impaction. He had been overfed on oat sheaves, etc., and had been given about four pounds of magnesium sulphate in all and a half pound of ginger. He did not respond until given three ounces of yeast. The owner was sure the bull was a "goner" but he responded, although he had become so emaciated that he could not rise without assistance. After the action of the above, the animal made a rapid recovery and was walked four miles to be shipped, weighing eighteen hundred pounds.

When you become acquainted with the action and use of yeast, you will not despise it. How often have you been away from your office on a call and wished you had an aloetic ball with you! Think of the yeast cake and get busy. I have yet to have a failure.

I may state I use sal volatilis and fluid extract of belladonna in conjunction with the yeast when pain is present. Aged animals do well when given a little yeast on their chop a couple of times a day. Yeast has also been serviceable as a vaginal douche in cows and mares that would not conceive.

J. S. CLARK, V. S.

Russellman, Manitoba.

SOME NOTES ON PARTURIENT PARESIS OR FORAGE POISONING SIMULATING IT

In relating some of my interesting cases, I shall mention parturient paresis as such cases are very numerous throughout the country, but rather unusual in this section of South Carolina. Most writers do not consider these of

much concern, but to me they have caused much worry—not so much in getting the animals up and about as in restoring them to normal conditions.

On March 13th I was called to see a cow that was down in the pasture. The history was as follows:—heavy milker; calf eleven months old; not with calf; well as usual in morning. In the evening she was started with other cows toward home and when a few rods from the barn fell in the position we all know. I found she would struggle some when stretched out.

Treatment.—Inflated udder and as soon as she was able to swallow gave some fluid extract of nux vomica. She went home in about four hours. Next day I gave nux vomica, gentian and ginger and in a few days she was on full feed.

On June 14th, I had another case of a cow that calved the day before and was down in the stable. I inflated the udder and used fluid extract of nux vomica. She was on her feet in about twenty-four hours and remained so about the same length of time. She had a relapse and was down again for thirty-six hours. This time I used one-half grain strychnin. A week passed before she would eat and then she gradually regained her appetite, but slowly. One-quarter of the udder was inflamed for some time, due to a bruise and not to faulty technic.

Another case was called to my attention on the morning of November 9th, but I could not answer until noon. The owner had inflated the udder with a quill and bicycle pump. This was her third attack, she having had four calves. I administered subcutaneously one-fourth grain atropin and in fifteen minutes one-half grain strychnin. She soon became brighter and in about one-hour was up and soon on her feed.

Another case was on November 10th, where the cow was stretched out. I inflated the udder, gave her one-half grain strychnin and in fifteen minutes one-fourth grain atropin, and in about one-half hour, another one-half grain strychnin.

Of all the “near” funerals I have ever had, this was the nearest. I applied artificial respiration, and she finally regained consciousness and has done well since. The lesson to me is never to give a Jersey more than one-half grain strychnin in the same two hours. The dosage is all right for beef cattle but too much for the finer skinned milkers.

In summing up, would say that milk fever usually comes with the second to fifth calf in heavy milkers. If they go down quickly, they usually react quickly; if slowly, they will be some time in getting on their feet. It is true that a cow with milk fever seldom has trouble in calving or retains an after-birth, but this does not always hold true. An attack may come at any period but very seldom in a colored man’s cow or one poor in flesh. The prognosis is favorable if they will eat.

TREATMENT.—Inflate udder; give one-half grain strychnin at once and one-half grain atropin every thirty minutes until they get up; keep as quiet as possible; leave stimulants to be given by owner; if appetite is not restored in few days, give one-half pint hydrogen peroxid twice daily until desired results are obtained.

M. R. BLACKSTOCK, D. V. M.
Spartanburg, S. C.

CHOKER IN A COW

On the morning of November 30, 1915, I received a hurry call to a choking cow. I arrived in a few minutes to find the cow bloated and endeavoring to dislodge a turnip. The owner and neighbors had tried a few remedies of their own. The obstruction was in the upper third of the esophagus but refused to move with gentle massage. As tympanites and suffocation were not threatening at the moment, I decided to risk a few hours of “watchful waiting.”

I gave the cow four ounces of raw linseed oil and gently massaged the turnip downwards. She retained the oil a few minutes and then coughed it up. In half

an hour I repeated the treatment. This time the cow retained most of the oil. I left a trocar with instructions to tap if absolutely necessary, and to repeat the four-ounce dose of oil every hour. I warned the owner against the use of broomsticks and such, and to keep hands off the throat.

In the afternoon I was informed that a few minutes after the second dose, the bloat suddenly left and the turnip was gone.

ROYAL KLOFANDA, D. V. M.
Brillion, Wis.

AMPUTATION OF THE RECTUM WITHOUT SUTURING

At about ten o'clock on the evening of October 15th, I was called to see a large sow, suffering with eversion of the rectum and vagina. She had recently given birth to nine strong pigs. Approximately seven inches of the rectum had everted and showed serious inflammation and laceration. The entire vagina was everted. I succeeded after some difficulty in replacing both the everted organs, retaining them by means of padded broom handles secured by a harness and further fastened to the tail. The animal was given a narcotic, to allay some of the straining.

The following morning, I found the vagina still in place, but the rectum had again everted without misplacing the padded broom handle. This organ was now lacerated and inflamed and so inflamed as to discourage any attempt toward replacement. Without further procrastination, I proceeded to remove the entire portion of everted rectum, with one clean cut of a sharp scalpel. Very little hemorrhage resulted. The animal's condition was unquestionably serious. I, however, advised everything possible in the way of treatment, hoping to prolong the animal's life for the sake of the pigs.

To date the sow is living and nursing nine pigs. Such results are more than pleasing. This animal is doing well despite at least fourteen inches of missing rectum.

There is a moral to this case report, which may be interpreted in whatever way it will do readers the most good.

H. L. COTTON, D. V. M.
Albion, Mich.

PENIS AMPUTATION IN A BULL

On November 21, 1915, I was called to see a bull, which I found in the condition shown in the illustration. The owner found him in the feed lot with the sheath and penis in this condition and no apparent cause. The skin and fascia were all torn loose from the belly for about four inches on either side of the penis, and the penis and sheath dropped down, being attached in front by the skin and posteriorly by only the penis.

I cast the animal and amputated the penis about three inches anterior to the scrotum. I ligated the arteries, made a V-shaped incision in the urethra and applied a dry dressing.

I saw the owner on December 6th and he said the bull was doing fine, filling up and apparently all O. K. He expects to castrate him when the healing is completed and feed him with the other steers.

This is the first case of this kind I have come in contact with and thought perhaps it would interest others.

T. R. ALLISON, D. V. S.
Winfield, Kansas.

A BENEVOLENCE FOR UNFORTUNATE VETERINARIANS AND THEIR DEPENDENTS

The vocation of the veterinarian is to help those who cannot help themselves. Why not apply this rule to the indigent members of the veterinary profession?

The Bible is full of suggestions and commandments for the care we should render to those less fortunate than ourselves. Matthew VI, verses 19-20, in part says, "Lay not up for yourselves treasures upon earth, but lay up for yourselves treasures in heaven," or paraphrased in the vernacular of today, we might say that self or selfishness is a curse and blot upon a man's character.

Those words were written by Matthew, who was the financier of the apostolic band, he himself having been a tax collector before he became a disciple and he well knew the value of money and treasure. "Treasures" in Hebrew signifies anything collected together; hence the wise men "opened up treasures," that is, their pockets to offer presents to the Saviour. The more I think about that most wonderful sermon, the sermon on the mount, the more I think that some ways and means ought to be devised for caring for the indigent members of the veterinary profession.

I treasure that a man gives for such a purpose will show that "where the treasure is there will his heart be also."

We are all born but not buried. Who knows when or how he is going to end his days? Is it not time for us to look ahead and formulate some plan to relieve suffering and worry to some of our brethren and families? When we sit and think how easy it is for one of our members to meet with an accident or sickness on account of the extra hazardous duties of our profession, it brings thoughts that I think should be carefully studied out and some conclusion arrived at. Also when I think of the high ideals of the veterinary profession today as compared with those of years ago, it would seem to me that such a project would no more than meet a long felt want.

Now men, can we sit and be told of one of our members suffering from accident or sickness in need of support and say why we have no means of helping one of our members or his family who is dependent upon this man? I for one say, "No."

Very few people are rounded out on all sides alike. In our own profession, some adapt themselves to surgery, some to general practice, some to pathology, etc., and with all these brain racking effects, the business or financial side of his nature is dwarfed. He is busy today and being well paid for his professional skill and knowledge and forgets that the day may come when he cannot stand the

strain of weary night vigils and long drives in all kinds of weather and all kinds of roads.

Many of our members would be cared for if it were necessary through fraternal organizations, but there are a large number who are not so blessedly affiliated. It is no fault of a man not to be associated with a fraternal organization, and those of this number who become unfortunate enough through no fault of their own, seem to me, ought to be cared for, and how little would be the annual expense for the eligible veterinarians of such an organization as may be adopted to put their hands in their pockets and give up a little treasure for such a charitable act.

It makes a great difference whether or not there is something in sight for all parties concerned in the way of finances in regard to the care, etc. of one who needs medical and surgical aid. There are members in this profession who through pride would not ask aid—they would rather die or suffer untold agonies than to make known their personal condition; but if there were funds at hand that were due any member who was unfortunate to be sick or disabled, or at the worst, dead, he or his family would be entitled to the sum just as much as though it was due him for some professional duty.

I believe this act would be a great help for veterinary associations. Their membership would greatly increase, as we all know that there are a great many veterinarians who think they do not get value received in such work, so they do not join a society—a weak argument, but it is a fact just the same. Now, in something like this, in order for them to get the benefits, they would have to be affiliated with some veterinary association and be well recommended.

My ideas may be a little in advance of the times, but I believe in time such a procedure will develop, and I hope I may live to be able to help such an undertaking.

W. G. HOLLINGWORTH.

Utica, N. Y.

FISTULA OF THE WITHERS IN A COW

On Sept. 6, 1915, I was called to see a cow. The owner, on my arrival at the farm, gave me the following history of the case.

Last spring, in the month of March, they noticed that the cow was reluctant to move. A few days later a swelling appeared in the region of the withers. It continued to increase until it became quite prominent. Then it began to recede and finally disappeared. About the first of August, it began to reappear and continued to increase in size until the second day of September, when it broke. Four days later I was called.

On examination I found a tumefaction in front of the anterior border of the left scapula and extending up over the withers to the dorsal angle of the scapula. About two inches posterior to the dorsal angle of the scapula was a space about four inches square which was devoid of hair. This area showed extensive necrosis of the skin and a fistulous opening which was discharging a thick yellow pus. The aspiration of air into the cavity gave rise to a whistling sound when the animal walked. On examination with a probe, I found a tract extending downward and forward about twenty-two inches.

I made an incision four inches long and about three inches deep, anterior to the scapula and at the lower extremity of the tract. Through this opening, I was able to remove a section of necrotic ligamentum nuchae. This cavity was then packed to stop the hemorrhage. The owner was instructed to remove the packing after twenty-four hours and irrigate the cavity with a weak antiseptic solution once a day.

Ten days later when I called, I found the discharge from the superior opening had ceased, but I located a pus pocket posterior to the lower opening. This I gave liberal drainage and

packed the cavity with cotton saturated with a solution of chromium tri-oxid in order that the parts of necrosed tissues which I had been unable to remove manually might be sloughed out. This packing was removed after twen-



ty-four hours and the irrigations continued.

When I saw the case again the flow of pus had entirely ceased, and there was but a small cavity about two inches in depth at the lower opening.

The owner informed me since that this opening had entirely healed and the cow is doing fine.

F. M. WILSON, M. D. C.

Mechanicsville, Iowa.

RUPTURE OF THE UTERUS FOLLOWED BY DEATH IN TEN DAYS.

On November 8th, about seven in the evening, I was called to see a very large two-year-old Holstein heifer in her first labor. This was quite a valuable cow, the owner having paid \$350 for her. I was told she had been sick all day, that she had been bred February 10th, and that they had been milking her for ten days.

I found her down, very feverish and panting, but showing no signs of labor, there being no enlargement nor swelling of the vulva. On examination, I found the hind feet of a very small calf in the vagina, the os uteri being rigid around them. I tied a small rope

around each hind leg, and on pulling, pulled the legs off at the pelvis, the calf was so decomposed. I then put the rope around the body and pulled it in two, and so with each foreleg, pulling them off at the shoulders. After putting on the rope a fourth time, I managed to get the rest of the calf.

I could find no placenta nor any cotyledons, but felt a hard mass about the size of an ordinary wash basin. I started for home about 9:30 p. m., leaving medicine with the attendant, but told him I did not think the cow would live a great while and that I should like to post her. The next morning he called me and said she died between three and four.

Post mortem examination showed the following: A hole about six inches across, in the floor of the uterus, which was black and very hard. It had collapsed and the walls were two and one-half inches thick. This was the hard mass I had felt the night before. On laying open the uterus, I found just enough of the cotyledons to show there had been some, and a small amount of dirty fluid. The abdominal floor was badly congested, while the intestines looked normal. It appeared to me as though the calf had been dead for at least ten days, that the uterus had been ruptured and the calf had gone through into the abdominal cavity.

I have had a number of queer cases in obstetrics but have never had anything like this before and thought it might be of interest to others.

F. N. DAVIDSON, M. D. C.

Petoskey, Mich.

DOUBLE MONSTER DELIVERED VIA LAPAROTOMY.

I was called November 10th to deliver a fetus from a cow three miles in the country. I found four legs presented, two fore and two hind, with breach presentation. I pushed the forelegs forward and corded the posterior ones, but could not deliver the calf, so,

upon further exploration, I found that I had a monstrosity to contend with.

I found a double calf with only one head. I could not deliver it through the natural opening, so I proceeded with secarean section. This calf had two distinct and separate bodies, each with four legs, one being a male and the other a female. Each one had a separate cervical vertebra, each merging into one head. The head was normal except at the supro-posterior part there were an extra nose, two ears and one eye, the eye being under the nose and between the ears. This calf was alive when I began the delivery. The cow died.

H. F. DAVIS, M. D. V.

Mattoon, Ill.

POST-MORTEM EXAMINATION

There is no question but that the legal phases of veterinary practice are increasing rapidly in importance. While this brings some advantages in the elimination of the unqualified practitioner, it also brings increased responsibilities to the qualified veterinarian. Several suits for malpractice have been instituted against veterinarians during the past year, and stock owners generally are aware of the fact that veterinarians as well as physicians may be liable for malpractice.

While we labor under some disadvantages because of the inability of our patients to respond verbally to our inquiries, there is one compensating feature, that they do not lie to us, nor mislead us by imaginary "tales of woe." Another advantage that we have is the almost unrestricted opportunity for autopsies when our patients take the "long trail." The opportunities that post-mortem examination offer are not appreciated as they should be by most practitioners, particularly in a country district. A well conducted autopsy, even on a common disease, will give much valuable and practical information to a close observer. Not only can the cause of death be determined but the progress

of the disease can usually be traced and, very frequently, the information thus obtained may be the means of saving other animals for your clients.

Do not think that because you have held a few autopsies on animals that have died from the same disease you have nothing more to learn. Practically every case differs in some particular from the usual appearance as described in the text-books, and every practitioner should be familiar with not only the usual but also with the variations.

Where there is any responsibility involved it is the duty of the veterinarian to make a careful autopsy, and if possible, have professional assistance. There is no one thing that will convince a skeptical or dissatisfied client more quickly than to see with his own eyes. Show him. This applies with equal force in other states than Missouri. The fact that you are desirous of holding an autopsy is evidence to the average man that you are particularly interested in the case and that you want to learn all that is possible regarding it.

A well conducted autopsy is often a valuable means of creating an interest in the health of animals; not only does this apply to transmissible, but to sporadic diseases also. Many years ago one of the writer's first cases of equine pneumonia was not improving, and as the horse was a valuable one, belonging to an influential man, to lessen the criticism that was feared (for it was not necessary to confirm an unfavorable prognosis), a shrewd old Scotchman who had practiced in an adjoining city for many years was called in consultation. He advised me to announce that there would be an autopsy if the horse died, as he probably would, and he also told me just what lesions would be found. The neighborhood turned out to the autopsy. The conditions were explained as well as possible so that the loss of this case, instead of a hindrance, proved a help in building up a practice.

In dealing with transmissible diseases a public autopsy is often of great value

in creating a public sentiment that will be of great assistance in controlling the disease. No public post-mortems should be held when there is any danger of disseminating the disease by such procedure.

Be very cautious about holding public autopsies on animals condemned by the tuberculin test, because the reaction does not indicate the degree of infection. The average layman is not favorably impressed when a fine looking cow is destroyed and a tubercular area the size of a pea is found. A clinical case, however, makes a very impressive demonstration.

A veterinarian is frequently called to make a post-mortem examination of an animal that has died under what the owner considers suspicious circumstances. Malicious injury to stock is rare, and it is well not to place too much dependence upon such surmise. Poisoning by forage, death from lightning, from getting cast, and accidental gunshot wounds should always be considered.

Before beginning an autopsy study the surrounding circumstances carefully—the position and condition of the animal and all other factors that may have caused death. Do not be influenced too much by the story told by the owner. Let them talk all they can for they will frequently, but unconsciously, drop a hint that will solve the problem.

Remember, that with post-mortem examinations, practice makes perfect. Go at it correctly and confidently and it will make a good impression and be helpful to you. Have proper instruments for the purpose. Don't chop the cadaver up with the ax from the farmer's woodpile. Do it surgically and professionally.

Conducting a post-mortem is disagreeable work and there is always some risk. Always take thorough precautionary measures to protect yourself and others against contagion. We are inclined to be lax in this respect—"familiarity breeds contempt."

Recently two well-known veterina-

rians have died from anthrax contracted while holding autopsies.

Finally, don't jump at conclusions. In case of doubt be on the safe side—be sure you are right and go ahead. Report your findings to the veterinary journals for it will be helpful to you as well as to your fellow practitioners.

Chicago.

N. S. MAYO.



The above is a picture of a pig suffering with ichthyosis hystrix.—L. A. Winter, D. V. M., Eau Claire, Mich.

IMPACTION OF THE RUMEN FOLLOWED BY DEATH DUE TO DEGENERATION OF THE HEART

On September 6th a client telephoned that one of his cows had impaction of the rumen and requested me to come as soon as convenient. On my arrival, I found one of the best cows in the herd—a nine-year-old Jersey that had produced over 15,000 pounds of milk (930 pounds of butter) in the previous eleven and one-half months—affected with impaction of the rumen. There was also a slight inflammation of the right half of the udder, which I was informed had first appeared on the previous day.

There was no history of any value.

The cow was handled and fed as other cows on test at the same time, and prior to September 5th, when she did not eat all of her midday rations and refused her night rations, she had apparently been in perfect health. A dose of epsom salts had been given the previous evening. Temperature, 102° F.; respiration slightly accelerated (which I attributed to the heat); pulse 55, feeble and thready; visible mucous membranes pale.

Strychnin was given hypodermically, and a stimulant containing fluid extract of nux vomica, fluid extract of digitalis, spirits of nitrous ether and alcohol, was left to be given every three hours. A well diluted saline purgative was given, and the man in charge was instructed to give several enemas throughout the day and to massage the rumen frequently. Treatment was prescribed for the mammitis.

In the evening, I found the contents of the rumen somewhat softer and the cow appeared brighter. The temperature was 102° F. and the pulse a trifle stronger, but still very weak. A large dose of oil was given, and it was suggested that the use of enemas and the massaging of the rumen be continued. A heart stimulant was given hypodermically and the use of the stimulant was continued throughout the night.

On the morning of the 7th, the condition of the rumen had greatly improved, but the general condition of the cow was worse. The temperature was 103.6° F., and the pulse 60, irregular and so weak that difficulty was experienced in taking it. The heart sounds were normal; respiration 25; lungs apparently not congested as air could be heard throughout both lungs; visible mucous membranes very dark red. The cow was lying down most of the time. A hypodermic stimulant was given and a stimulant was left to be given throughout the day.

In the evening the rumen seemed in normal condition, and the cow appeared a little stronger. The man in charge reported that at midday he thought the

cow was dying, but she quickly rallied and seemed to be getting stronger. The temperature at 4 P. M. was 105° F., 5 P. M. 106.2° F., 7 P. M. 105° F.; pulse somewhat stronger than in the morning; respiration 38; signs of stasis had appeared, there being congestion of the lower portions of the lungs and slight discoloration of the skin over the right side of the udder. The rumen was apparently in normal condition. A hypodermic cardiac stimulant was given and continued throughout the night at three-hour intervals. At 9 P. M. the cow got up and drank a pail of water, the first she had taken since the 5th.

On the morning of the 8th, I found the cow in a very serious condition. When I saw her at 7 A. M., her temperature was 103.8° F. (at 3 A. M. it was 103.2° and at 6 A. M. 102.8°). She was stretched out full length on her right side. The pulse was hardly perceptible; heart irregular, and heart sounds very weak; visible mucous membranes pale; skin over the udder of dark purple color; respiration very labored. After the administration of stimulants, the cow seemed stronger, but shortly after 10 A. M. she became delirious and died at 10.40 A. M.

Autopsy—All abdominal organs were in normal condition. On opening the thoracic cavity, the pericardium immediately attracted attention, owing to its peculiar reddish brown color. The pericardium and heart diaphragm were examined for foreign bodies, but none were present. The pericardium contained no fibrous membranes nor any excess of fluid. The only change I could see was in the color. The walls of the ventricles were brown in color and flabby. The endocardium and the heart valves were apparently normal. Both lungs were congested. The right lung was greatly congested (mostly hypostatic) while the left was only slightly congested in its lower portion.

It is my opinion that this condition of the heart, whatever it was, had been developing for some time and only needed

some additional strain, such as this digestive trouble, to cause these symptoms to appear.

M. RAY POWERS, D. V. S.
Norwalk, Conn.



The accompanying photo shows a two-headed calf that I delivered from a Jersey cow on October 11, 1915. Both heads are fully developed, and the rest of the calf is normal.

Darlington, Ind.

M. H. LIDIKAY, V. S.

SCALMA*

History—A contagious and infectious febrile disease of the horse, often confused with other diseases. Affects the bronchi, trachea and larynx, with coughing, varying irritability of the animal's disposition. If the cough is very pronounced, in their paroxysms it very much resembles whooping cough in the human. It was first described by Prof. Dieckerhoff, of Berlin, in 1885. It has been reported for the last two years in Missouri, parts of Iowa and Nebraska. I have treated a number of cases this

*Presented at third annual meeting of the Illinois Veterinary Medical Association, Dec. 17, 1915, Belleville, Ill.

fall and hear of other places on the western border of this state. The Germans employ the name (*Heimtückische Krankheit*) meaning treacherous or mischievous sickness.

Etiology—The specific cause of this disease has not been identified. Changeable weather is a predisposing cause to the trouble. The condition of the animal does not appear to be a factor in susceptibility, as those in good flesh are as frequently affected as those that are thin and emaciated. The period of incubation is from five to seven days; spreads through a stable slowly. One attack usually renders immunity.

Symptoms—May appear in different forms. 1st. High fever, 104° to 107° F.; pulse and respiration only slightly accelerated; diffuse inflammation of bronchi, trachea, larynx, pharynx, or may extend to the nasal fossae. In two or three days a grayish albuminous discharge comes from the nostrils, which in a few days becomes purulent or rusty. Cough is short, rough, painful and spasmodic in its attacks. Sometimes stand with the fore legs far apart; may choke and fall down in these attacks, reviving in a few minutes. Mucous membranes are reddened. Appetite remains good. Percussion of lungs reveals nothing unless diffused pleurisy has set in. On auscultation mucous rales are heard. More or less nervous irritability shown when grasping the skin over the loins and on the sides, will lay the ears, try to kick or bite. Course is from five to eight days. Cough may continue for two or three weeks. Sometimes the first symptoms are sleepy appearance, eyes half closed, very weak on legs, changing positions frequently, temperature about 103° F., legs below carpus and hocks slightly stocked, inclined not to lie down, but when they do go down they positively refuse to get up or make any attempts whatever to rise. But no matter how well they behave when down, usually eat and drink well, they should be raised. Prof. Dieckerhoff names these last described symptoms as typhoid

symptoms. I have seen mules behave very well when down—eat, drink and apparently are well, but would have to be raised every morning for quite a while. Some horses when down are very restless and develop decubital sores and septicemia in a short time and die.

Complications—These consist of excessive spasms of coughing and pleurisy. Pleurisy occurs when the animal has been kept at work after the development of the disease, having high fever and is probably in no way specific, but the result of work on an animal with high temperature. The additional symptoms are those of any effusive pleurisy.

Diagnosis—Is based on the elevation of temperature without much change in pulse and respiration. Retention of appetite, irritability of temper, spasmodic cough and typhoid symptoms.

Differentiation—From influenza by other colored mucous membranes while in *scalma* they are red and congested, also typhoid symptoms not found in influenza.

From strangles, by want of enlarged lymphatics and abscesses.

From pneumonia, by the shorter duration of the high temperature.

From pernicious anemia, by the great difference in mortality.

Prognosis—Is usually favorable. If pleurisy has developed, prognosis should be guarded. Keep the horse from work for 10 days to three weeks. Sometimes the irritable disposition hangs on longer, but eventually disappears.

Treatment—Isolation and disinfection. Hygienic measures of cleanliness, fresh air, frequent rubbing and grooming, bandage legs, and good food. The digestive tract is to be regulated by small doses of sodium bicarbonate and sodium sulphate. If appetite is waning, small doses of gentian and quassia. If cough is excessive, give antispasmodics as camphor, lobelia and stramonium. If great irritability manifested, some advocate bathing with real warm water all over, hot packs to the loins and immediate blanketing. During high tempera-

tures give quinin and salicylic acid. Ordinary cases will yield to the following prescription after giving them a capsule of quinin and salicylic acid, four drams of each:

R

01. turpentine oz. 4.

01. Tar. dis. 4.

Phenol, oz. 1.

Linseed oil, Qs. oz. 16.

M. Sig.: I oz. every 4 to 6 hours, undiluted.

L. B. MICHAEL,

Collinsville, Ill.

INFECTIOUS ABORTION AND STERILITY

(Continued from page 15)

The eradication of the presumably causative factor in epizootic abortion is the logical aim for the accomplishment of which every effort should be put forth, at least, until it appears clear that the universality of the disease, due to the supposed (by some) ubiquity of the microbe, renders the task hopeless. We prefer to assume, for the time being, that *Bact. abortus* is susceptible of practical eradication. Judicious use of disinfectants on the exterior of the cow and on everything contaminated by her, isolation and quarantine, and revised methods of breeding and calf rearing are the first steps. Extreme care must be exercised in the use of antiseptic irrigations for the uterus and vagina. Two per cent Lugol's solution of iodine is strongly recommended. We have had favorable results with cultures of lactic acid organisms. A broader knowledge and application by the practitioner of Prof. W. L. Williams' methods of ovarian manipulation and uterine antisepsis will undoubtedly result in restoring many temporarily sterile cows to a useful breeding condition.

In conclusion, it may be confidently stated that no chemical or drug (carbolic acid, methylene blue, etc.), and no bacterial vaccine or anti-serum has yet proven worthy of recommendation. The

practitioner should study the subject constantly and with receptivity, apply with discrimination, assist the laboratory workers to solve the unknown problems as quickly as possible, and demand cooperation and assistance from the laboratory.

MAMMITIS IN COWS

(Continued from page 21)

well as the results of hundreds of experiments on experimental animals.

The injection of lymph gland extract into any animal, or to be more specific, into a cow while suffering from mammitis, increases to a very marked degree the lymphocytes or mononuclear leucocytes. The lymphocyte or mononuclear leucocyte is very active in the control of infections inclined to run a chronic course, and is also very active in the elimination of toxic end products. It is the source of an enzyme of marked activity which produces a rapid and complete digestion of partially organized exudates. It is not easily destroyed by toxins and is therefore a very successful barrier to extensive invasion of the tissues. The elimination of toxic end products in mammitis is an important factor, and as this is one of the functions of the lymphocytes, their stimulation and increase in number is certainly indicated.

The fact that milk secretion is suspended or impaired at the outset of an attack of mammitis also should receive some attention from the therapist. The large amount of protein matter that normally passes out of the body in the milk must be cared for by the system in some manner when the functions of the milk-producing organs become impaired.

It is reasonable to assume that both these agents would be of value in assisting to eliminate these surplus protein substances and thus induce a more rapid convalescence.

The deduction that can be drawn from the combined use of echinacea and lymph gland extract in the treatment of this

condition is: ability to work in harmony, one with the other, each being an adjuvant to the therapeutic action of the other.

THERAPEUTIC DIGEST

(Continued from page 50)

treatment of hemorrhagic septicemia with iodine and potassium iodide. The dose there given reads "a grain each." It should be "a gram each."

DIGITALIS THERAPY.—In concluding an article on this subject Dr. Marek says in the *Deutsche Thierärztliche Wochenschrift*: "The oral administration has the advantage because when given in this manner there is practically no cumulative effect. One point in the oral administration of digitalis preparations which might be considered a disadvantage is that, due to the slow process of resorption of the drug in the intestine, its effect does not begin until near the end of the first day and under certain conditions the full digitalis action is not attained before the termination of several days.

"In ruminants the action of plant ferments may so act on the drug in the rumen that it becomes practically inert; therefore, the oral use of digitalis can not be looked upon with favor in such patients." He says further, "that one great disadvantage of all digitalis and strophanthus preparations is the fact that they have a marked tendency to produce anorexia. This effect is less prominent when the agents are exhibited subcutaneously or intravenously."

In remarking practically on this subject, I would say that digitalis is probably the most doubtfully active drug in existence. Unless the individual practitioner has succeeded in working out a sure dosage and thoroughly understands the vagaries of the drug he can do himself the most good by leaving it out of his medicine case. Human medical practitioners are not so very sure of their control of this drug, and each authority on materia medica and therapeutics seems to have his own ideas about action, dosage and so on.

Every advantageous effect that can be obtained from digitalis can be had with less danger and fewer disadvantages from sparteine sulphate.

Memories of Old Doc Stone

By His Assistant

III

[EDITOR'S NOTE: The "Memories of Old Doc Stone" was written by a shrewd observer to answer among other things the questions that have been raised by the discussion of the "The High School Kid vs. The Sturdy Farm Boy." Watch for the answer, it will be conclusive.]

BREAKIN' IN

After I had been with Doc Stone a few days, he gives me to understand that the sooner I begins studyin' a little the better will it be for me. He says to me as how I can study enough anatomy and a little materia medica and some physiology, so that I won't have to work so hard in my freshman year in college.

Doc had a mounted skeleton of a horse layin' in the attic of the hospital,

and I gets permission to take it apart and use the bones to study on. I orders myself a Strangeways anatomy and begins; every half hour or so that I gets to myself, I puts in on Strangeways and the bones.

My, but the start of that there stuff was hard pickings!

When we was out makin' calls or when Doc was treatin' cases in the hospital, I takes every chance I gets to ask him to tell me all the anatomy and

the physiology mixed up in the case he was treatin' at the time. Old Doc seems to like this; he says it don't only learn me somethin' but it helps to keep himself brushed up on it.

In a few months I gets the rough anatomy of the horse down pretty good and I begin to feel like I was somebody, and I wants to broaden out some more. Doc gives me an old copy of Finlay Dunne's *Materia Medica*, and I dived into that. I looks up all the drugs that I see Doc uses most, and pretty soon I knows their actions and doses fine. I remembers how the first one I learns is Nux Vomica—Quaker Button, Dog Button; next I takes gentian, and then I spends a long time on Belladonna.

All the time I was doin' this studyin' I was learnin' practical work, too. I will never forget how I begins to learn how to give a ball; in them days the Vets give more aloes balls in a week than they do now in a whole year, I guess. Most every case of sickness we starts out with a aloes ball, in them days; and many times now I think we done wonders with them, and we ought to get back to giving more of them again.

Well, anyhow, as I was sayin', I had a hard time learnin' how to give one of the darn things. You know, old Doc, he wouldn't stand for no speculum or no ballin' gun business; no sir, he says, a feller what can't put his bare hand in a horse's mouth and drop a ball in his pharynx ain't no Vet.! And, he says to me, I wants you to learn this business correct.

And he *made* me learn how, and not on no skinny old subject with fake pills either! Whenever Doc gets a case that he wants to have a aloes ball, he makes me give it. First he shows me just how to hold the horse's tongue with one hand; then, how to hold the ball in the other hand, and just how to use just the correct, snappy motion to drop the ball in the pharynx, and so on. Then he stands behind me and

makes me keep on tryin' until I gets it right.

My hands got pretty much chewed up at first; but, gradually I gets the hang of it, and the nerve; and I rather give a ball bare-hand than anything I know.

Another thing we done pretty regular in them days was givin, big drenches. Many days I poured as high as ten or fifteen gallons of oils and other dope into as many horses; most of old Doc Stone's mixtures was to be given in a drench.

Now, that drenchin' business is another stunt that must be learned. In the years I've been in business for myself, I see many Vets drenchin' horses and but mighty few knows it right. You can't write instructions how to learn correct drenchin', on paper; I wish I could. Anyhow, old Doc showed we how to drench, and he makes me drench horse after horse until I can get every drop down 'em fast, and without makin' 'em cough, too. And when you do it right you don't touch nothin' but the bottle with the dope in it; and the bottle don't touch nothin' but the roof of the horse's mouth.

Since then I seen some Vets what pours stuff through the horse's nostril, and some what pours it in the mouth starts pinchin' and squeezin' the larynx and rubbin' on the neck, to make 'em swallow. All them guys don't know their own business and ought to be outlawed. I seen one Vet one time, and him supposed to be a good one, too, who pours the dope in the horse's mouth and then soaks him three or four hard raps on the trachea with a broom handle. I asks him what in blazes kind of a treatment does he call that. "Why," he says, "I does that to make him swallow." "Oh!" I says, "is that it? I thought you took him for an A. P. A."

"Well," he says, "how do you give it to 'em?" "Just like old Doc Stone learned me," I says. Then he wants a

demonstration. When I gets through he thinks he knows somethin', but I know he doesn't; a feller, and especially a hybrid like he was, can't learn drenchin' from one demonstration.

Then there is that little stunt of holdin' the twitch. Just like with drenchin', it can be done two ways: right and wrong.

Old Stone shows me how to get the full benefit out of the twitch on a horse's nose! And if you seem to think there is no difference I hopes I can be around some time when you gets ready to fire a tendon or somethin'. I say a man what knows the psychology of the twitch and how to apply it is worth a gallon of eight per cent cocaine solution!

You probably notices I says the *psychology* of the twitch. That is just what I wants to say; because in the correct application and manipulation of the twitch we have the one instance in

our business where we can make some use of what human doctors calls psychology. Yes, sir; old Doc Stone he proves it to my satisfaction, and I learns the stunt from him afterwards. And, just like drenchin', it's one of them things a feller can't write down so it can be understood; it's got to be learned first hand.

And there three items, givin' a ball, drenchin', and holdin' a twitch correct, was very important in them days; and is very important today, for that matter!

Once in a while, when I goes visitin' some of my neighbors and friends in the Vet business, I takes in some of these things. And Doc, there is feller after feller who is about as handy at these little things as a ridgeling is at keepin' quiet among a bunch of mares in estrum.

I see fellers get dragged all over the barn floor, tryin' to get a capsule or a

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ball into a patient, when they should have it done before the nag knows anything about it. And when they finally gets it done they got the poor horse's tongue tore half out, or they got a finger chewed up, or they breaks their nice little ballin' gun, or they can't get the speculum closed. And then, about an even break, the horse chews the pill up on 'em; they didn't drop it in the pharynx, after all!

nd most of these same fellers would, maybe, laugh at Doc Stone, because he talked plain United States.

Old Doc Stone had more than 90 per cent of the swell coach horse business on the east side, and I knows that the only reason why he did *was because he has the little things down pat*. Them there fine coach horses like they was in them days had to be handled nice, and a feller had to look out so he didn't put no marks on 'em.

Speakin' about this coach horse business makes me think about how hard I

used to hate most of them there coachmen. They was the crankiest, puffiest, most prevaricatin' breed of human beings there ever was. A Vet had to charge about three prices for his work in order to have fifty cents left for himself after givin' them darn coachmen their hand-out.

If the coach horse business ever comes back I hopes it is without the coachmen. Don't try to tell me there was good fellers among 'em, too; I seen about every grade and style of 'em there was in them days, and I wouldn't give you a rotten fourth upper molar for the lot of 'em! And you know how easy it is to find one of them rotten fourth uppers.

Even if you at last found a coachman who was no robber, then he would turn out to be one of them there smart fools. He would always have an idea or two of his own about how your dope should be used, or "when he was in services at Astor-Dolwarfs" doctor

BE SURE!

IMPERIAL Hog Cholera Serum is far the **Safest** because far the **Best**. **YOU** want that kind, **Doctor!** We have an attractive book about it that will be sent to you free. Write for it today.



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Omaha, Nebraska, Branch, W. G. Cleveland, Manager.
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Springfield, Mo., Branch, C. C. Hankins, Manager.
Hamilton, O., Branch, D. Bourne, Manager.

“Nacylin”

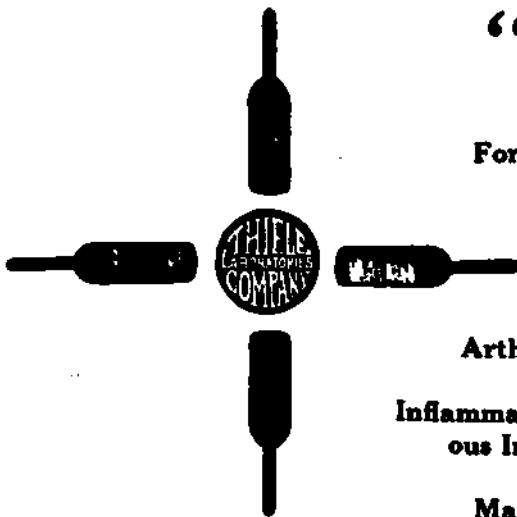
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For Hypodermatic Injection

*Recommended
for Use in*

Arthritis, Lameness, Phlegmon
Lymphangitis,
Inflammation of Tendons, Parenchymatous
Inflammation of the Cornea,
Orchitis, Epididymitis,
Mallanders and in Cicatrices

Package containing 1/2 dozen—10 cc—ampoules \$2.50



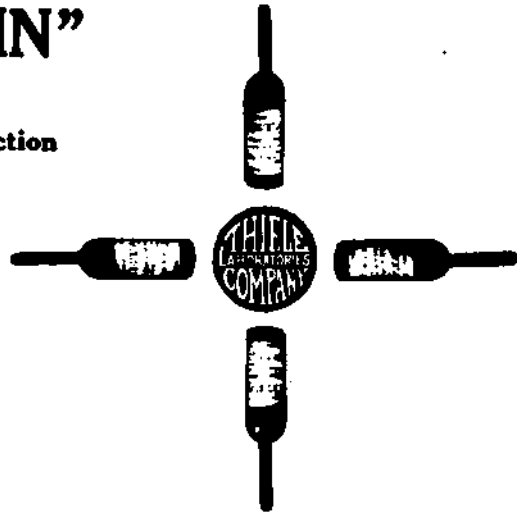
“METARPHIN”

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For Hypodermatic Injection

*Recommended
for Use in*

Toxemiae
Forage Poisoning
Cornstalk Disease
also
Omphalophlebitis



Package containing 1/2 dozen—10 cc—ampoules \$2.50
Package containing 1/2 dozen—20 cc—ampoules \$4.00

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Columbus, Ohio

Jones always did so and such. Or if you tells him don't give this here horse absolutely nothin' to eat for a day, he always gives him "just a mouthful" because he can't bear to "ave 'im go 'ungry"! Blokes they was; every one of 'em.

MICHIGAN VETERINARIANS TO MEET AT LANSING

It is reported in the Michigan papers that the meeting of the Michigan State Veterinary Medical Association, February 8th and 9th, will be held at Lansing, and not at East Lansing, as heretofore.

ILLINOIS VETERINARIANS MEET

The Illinois State Veterinary Medical Association held its thirty-third annual meeting at Chicago, December 2, 3 and 4. Over five hundred veterinarians were in attendance. The first day was de-

voted to a business session and the reports of committees. The blue cross was adopted as the official emblem of the organization.

On the morning and afternoon of December 3rd, papers and addresses were presented by Drs. N. S. Mayo, Geo. B. McKillip, W. J. Martin, H. A. Pressler, A. T. Peters, J. F. Devine, Goshen, N. Y., C. A. Zell and O. E. Dyson. In the evening a banquet was given at the Lexington Hotel, where Dr. H. L. Palmer gave a lecture on the manufacture of serums, vaccines and bacterins, illustrated by motion pictures. The following also made short talks on various topics of interest: Drs. A. H. Baker, E. L. Quitman, H. Jensen of Kansas City, Geo. B. McKillip, H. Preston Hoskins of St. Paul, and O. E. Dyson.

The meeting convened at the Chicago Veterinary College on December 4th, where Drs. E. L. Day and L. A. Merilat demonstrated a classical autopsy on a horse. Dr. J. H. Blattenberg of

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This pattern is made in two other sizes.

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Wilmot Castle Company

Manufacturers of

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Lima, Ohio, exhibited several innovations in surgery, and Dr. Geo. B. McKillip gave a demonstration of the new electric firing iron, in an operation for roaring. A question box was conducted throughout the meeting, in charge of Dr. D. M. Campbell and Dr. E. L. Quitman.

Dr. F. H. Burt of Chenoa was elected president for the ensuing year. The secretary holds office for five years in this association and there was no vacancy. Dr. J. F. Devine of Goshen, N. Y., was elected to honorary membership.

THE NATIONAL LIVE STOCK SANITARY MEETING

The annual meeting of the United States Live Stock Sanitary Association, held December 1st and 2nd, followed immediately after the close of the agricultural conference called by Assistant Secretary of Agriculture Vrooman to consider methods for controlling future

outbreaks of foot-and-mouth disease, and perhaps the majority of the members were present at the preceding conference whose discussions may be said to have extended to some degree into those of the live stock association.

The program of this association comprised the usual quantity of highly scientific papers, marking the progress in sanitary medicine during the year. Papers of particular note were "Summary of Investigations on Immunization Against Anthrax," by Adolph Eichhorn, Washington, D. C.; "Infectious Pneumonia of Calves Shipped from Public Stock Yards," by A. T. Kinsley, Kansas City; "Hog Cholera Investigation," by M. Dorset, Washington, D. C.; "Official Control of the Production and Distribution of Commercial and State Serum," by C. J. Sihler, Kansas City; "Tick Eradication," by C. A. Cary, of Alabama; "Disinfection of Local Stock Yards and Farm Premises," by F. A. Bolser, of Indiana, and a number of others.

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Our method of final bleeding ONLY, and the careful selection of the VIRUS used, insures the highest potency. Our products are free from dangerous infections because they are all made by experienced bacteriologists in modern sanitary laboratories. We can give you the best of service because we are located in the heart of the hog and corn belt, and have the best of express service to all points. We sell to Veterinarians exclusively.

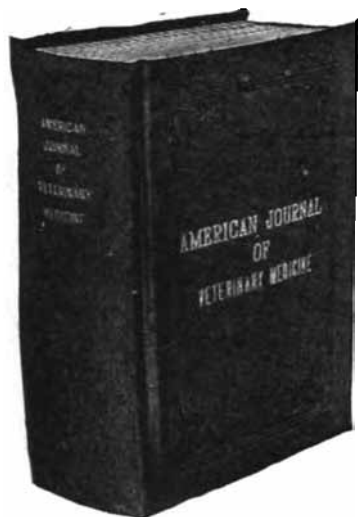
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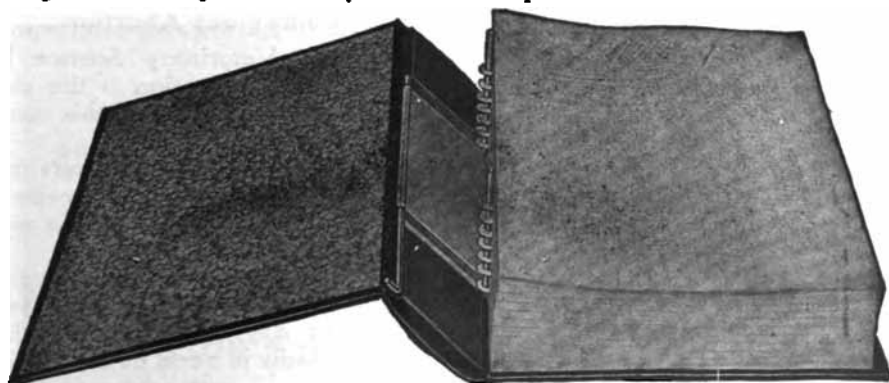
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The American Journal of Veterinary Medicine
Evanston, Illinois

The report of the Committee on Legislation by Dr. John R. Mohler, Washington, D. C., was especially valuable, giving as it did a resume of the laws enacted by all of the various states during the year affecting live stock sanitation and the interstate movement of live-stock.

Dr. O. E. Dyson, state veterinarian of Illinois, was elected president for the ensuing year, and Dr. J. J. Ferguson was re-elected secretary.

REPORT OF COMMITTEE ON RESOLUTIONS OF THE NORTH EASTERN INDIANA VETERINARY ASSOCIATION

Obituary

Dr. William Frederick Myers, was born in Fort Wayne, Indiana, November 15th, 1864 and died in St. Joseph Hospital, November 27th, 1915, from a gun shot wound received while hunting on Thanksgiving day, and was buried from the old home in which he was born,

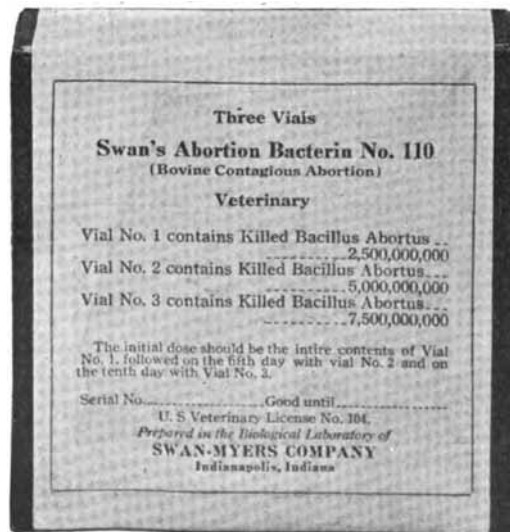
November 29th, 1915. He was graduated from the Chicago Veterinary College in the Class of '89 and immediately entered practice in Fort Wayne, Indiana. This practice he continued until his death.

He was a member of the American Veterinary Medical Association, the Indiana Veterinary Medical Association, the North Eastern Indiana Veterinary Association, and at the time of his death was President of the Indiana State Board of Veterinary Medical Examiners.

He was an ardent sportsman and especially was he a skilled fisherman and it was his delight to bring in the first catch of bass in the early Spring. He had an old-fashioned cottage, "The Old Kentucky Home," on the very brink of Lake Barbee, whose walls, floor and ceiling were covered with relics and skins, and it was his great delight to entertain visitors, giving the history of each article, and if none existed, he would manufacture one, that would make the hearers gasp for breath. He had a genial dis-

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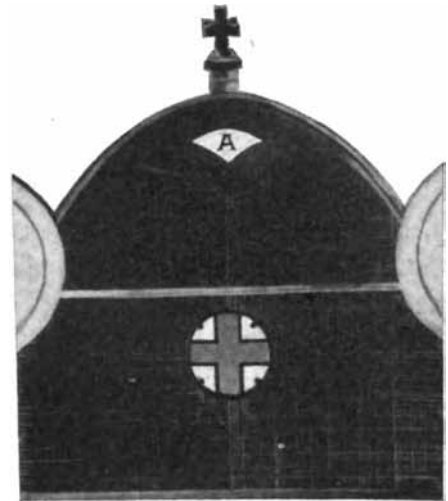
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position, a kind word and a sunny smile for every one, and best of all a heart as tender as a girl's. It was the privilege of the writer of this sketch to be one of his intimate friends, and no one feels his loss more keenly.

WHEREAS, It has pleased the Almighty in His infinite wisdom to remove from our midst our beloved friend and brother, Dr. Williams F. Myers, it is fit and proper that this Association should record its feeling of grief, therefore be it

Resolved, That in the death of our friend and brother, this Association mourns the loss of a valued member; and be it further

Resolved, That we extend to the family, our heartfelt sympathy in this, our common bereavement, and that a copy of these resolutions be spread on the records of this Association.

A. H. STOKER,
O. G. WHITESTINE,
O. L. BOOR,
Committee.

WYOMING VETERINARY STATISTICS

Data For the Fiscal Year—November 25, 1914, to November 25, 1915.

During the year there have been 4,568 horses tested for glanders; probably two-thirds of these were horses that were shipped interstate; the remainder were horses that remained in the state. As a result of these tests seven cases of glanders were found.

Approximately 15,000 horses have been shipped out of the State of Wyoming during the past year. The greater part of this number were horses for European war purposes.

1,677 head of cattle have been tested for tuberculosis. Five cases of tuberculosis were found.

Approximately 120,000 cattle were shipped to market from Wyoming.

11,211 hogs have been shipped out of the state.

Cooperating with the Government we have tested 640 head of horses for dourine in the counties of Campbell,

My Best-Paying Prescriptions AND How I Use Them

By MART R. STEFFEN, V. S., M. D. C.

Author of Special Veterinary Therapy and Cattle Therapy.

In this new book, which has just been published (and which is probably also the last book we will get from the pen of Dr. Steffen, as he has lately retired from practice), the author gives in detail every prescription which he has used with any special success, and a careful direction for the indications and use of each one. IT IS A BOOK WELL WORTH HAVING AS IN IT ARE EMBODIED MANY SUCCESS-MAKING TRADE SECRETS, as well as the best practical collection of formulas ever printed in one book. Considerable space is also devoted to subjects lacking detail in previous writings, and which have been the subject of many inquiries.

This book is not large, but from the money-making standpoint it is, no doubt, the best book the author has ever written for practitioners. About 100 pages. Pocket size—with pliable cover—Morocco finish.

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Discard "equine cough syrups," "fever mixtures," and similar relics of the dark ages. Get results! Get your money's worth! Get busy! Get GUAIALYPTOL. Price: Pint, \$1.25; 5-Pts., \$4.50; Gallon, \$6.00.

EUCAMPHINE

This well known preparation solves entirely the Antiseptic question. Don't let anybody talk you into buying something else because the "something else" costs less for the same quantity. It isn't cheapness, but economy and satisfaction that you want, and that is just what you get with EUCAMPHINE. Same prices as before the war:

5-Pts., \$2.00; 1-Gal., \$3.00; 2-Gal., \$5.50; 5-gal., \$12.50. Antiseptic; Antiferment; Antispasmodic; Antiperiodic. "Every veterinarian likes EUCAMPHINE—that GOOD preparation." The same as you have been getting for nearly 6 years.

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Sheridan, and Johnson. Of this number, nineteen reactors have been found. Diseased horses are appraised and destroyed—the state paying 50% and the Government 50%—the Government's share not to exceed \$100.00 for any one horse.

Four outbreaks of hog cholera have been investigated since the first of the year, and all hogs were vaccinated under state supervision. Our loss from this disease is not great, as we have no thickly settled farming communities.

Our autumn dipping of cattle affected with or exposed to scabies is now about finished. The total number of cattle dipped last spring and this fall is 91,194. The total number inspected is 227,115.

A. W. FRENCH,
State Veterinarian.

Cheyenne, Wyoming.

INDIANA VETERINARY MEDICAL ASSOCIATION MEETING

The attendance at the annual meeting of the Indiana Veterinary Medical Association, December 8th, is said to

have been the largest of any meeting that has been held. Twenty-seven new members were added and several good papers were discussed. The 9th of December was devoted to clinics. The following officers were elected: President, Dr. C. E. Call, Roachdale; vice-president, Dr. Roy B. Whitesell, Lafayette; secretary, Dr. A. F. Nelson, Indianapolis; treasurer, Dr. J. W. Klotz, Noblesville. No action was taken as to the date of the next meeting, which will be decided by the Executive Committee, on which the following members were appointed: Dr. O. L. Boor, Muncie; Dr. Chas. Morris, Rushville; Dr. Chas. S. Mummert, Young America; Dr. T. M. Hall, Thorntown; Dr. H. A. Sailors, Wabash.

JANUARY AND EARLY FEBRUARY VETERINARY MEETINGS

Kansas Registered Veterinary Association (non-graduates), Herington, Kan., Jan. 4th and 5th.

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KANSAS CITY, MO.

Central Illinois Veterinary Association, Bloomington, Ill., Jan. 5th.

Kansas Veterinary Medical Association, Kansas City, Kan., Jan. 5th and 6th.

Southern Illinois Veterinary Medical and Surgical Association, Centralia, Ill., Jan. 5th and 6th.

Mississippi State Veterinary Medical Association, Columbus, Miss., Jan. 10th and 11th.

Alumni Association, College of Veterinary Medicine, Ohio State University, Columbus, O., Jan. 12th.

Maine Veterinary Medical Association, Biddeford, Me., Jan. 12th.

Minnesota Veterinary Medical Association, St. Paul, Minn., Jan. 12th, 13th and 14th.

Veterinary Medical Association of New Jersey, Trenton, N. J., Jan. 13th.

Virginia State Veterinary Medical Association, Richmond, Va., Jan. 13th.

Ohio State Veterinary Medical Association, Columbus, O., Jan. 13th and 14th.

Iowa Veterinary Medical Association,

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ASSOCIATION MEETINGS

The information given below is up-to-date and has been furnished by the secretaries of the various associations listed. Secretaries are requested to supply us with data regarding their associations after each meeting; otherwise, the association will necessarily be dropped from the list. We ask secretaries to kindly co-operate with us in keeping before the members of their associations the date and place of the next meeting.

Name of Association	Date of Meeting	Place of Meeting	Secretary
Alabama Vet. Med. Assn.	Usually Feb. or March.	Not fixed.	C. A. Cary, Auburn, Ala.
Alumni Assn., Col. of Vet. Med., O. B. U.	Jan. 12, 1916.	Columbus, O.	W. E. Hobbs, O. B. U., Columbus, O.
Alumni Assn., N. Y. State Vet. College.	June 10, 1916.	New York.	P. K. Nichols, Fort Richmond, N. Y.
Alumni Assn., U. S. Col. Vet. Surg.	April 16, 1916.	Washington, D. C.	Chas. M. Mansfield, 1344 Newton St., Washington, D. C.
Arkansas Vet. Med. Assn.	January, 1916.	Little Rock.	R. M. Gow, Little Rock.
B. A. I. Vet. Assn. of So. Omaha.	2nd Monday of month.	So. Omaha, Neb.	J. W. Giffce, c/o B. A. I. So. Omaha
California State Vet. Med. Assn.	Dec. 8, 1915.	San Francisco, Cal.	C. L. Roadhouse, Univ. of Cal., Berkeley.
Central Canada Vet. Assn.	Not decided.	Ottawa, Ont.	H. D. Sparks, 448 Wellington St., Ottawa.
Central N. Y. Vet. Med. Assn.	June.	Syracuse, N. Y.	W. E. Switzer, Oswego, N. Y.
Chicago Vet. Society.	2nd Tues. of month.	Chicago, Ill.	Glenn Brown, 3806 Lowell Ave., Chicago.
Colorado Vet. Med. Assn.	January 18.	Denver, Colo.	I. R. Newson, Ft. Collins, Colo.
Connecticut Vet. Med. Assn.	1st Thurs. in Feb.	Hartford, Conn.	A. T. Giffard, Waterbury, Conn.
Genesee Valley Vet. Med. Assn.	January 27.	Rochester, N. Y.	O. B. Webber, 154 Andrews, Rochester.
Georgia State Vet. Assn.	Aug. 23, 24, 1916.	Savannah, Ga.	Peter F. Bahnsen, Capitol Bldg., Atlanta.
Hudson Co. Vet. Practitioners' Club.	Monthly.	Jersey City, N. J.	B. D. Blair, 782 Montgomery St., Jersey City, N. J.
Idaho Assn. of Vet. Practitioners.	February.	Idaho Falls, Idaho.	J. R. Fuller, Weiser, Idaho.
Illinois State Vet. Med. Assn.	July 19, 1916.	Peoria, Ill.	L. A. Merrill, 1811 Wabash Ave., Chicago.
Illno Vet. Med. Assn.	Not decided.	Belleville, Ill.	L. R. McKinley, Freeburg, Ill.
Indiana Vet. Med. Assn.	Dec. 8, 9, 1915.	Indianapolis, Ind.	A. F. Nelson, Indianapolis, Ind.
Iowa Vet. Med. Assn.	Jan. 17, 18 and 19, 1916.	Ames and Des Moines.	H. B. Truman, Rockwell City, Ia.
Kansas Vet. Med. Assn.	Jan. 5-6, 1916.	Kansas City, Kan.	J. H. Burt, Manhattan, Kan.
Kentucky Vet. Med. Assn.	December.	Lexington, Ky.	Robt. Graham, Lexington, Ky.
Keystone Vet. Med. Assn.	2nd Tuesday of month.	Philadelphia.	L. B. Davis, 557 E. Girard, Philadelphia.
Los Angeles Vet. Med. Assn.	3rd Wed. of month.	Los Angeles.	J. A. Dell, 16th & Pacific, Los Angeles.
Maine Vet. Med. Assn.	October 18, 1915.	Biddeford, Me.	M. E. Maddocka, Augusta, Me.
Manitoba Vet. Assn.	Not decided.	Winnipeg, Man.	W. Hilton, 275 James St., Winnipeg.
Massachusetts Vet. Assn.	4th Wed. each month.	Worcester in Sept.; Boston rest of year.	E. A. Cahill, Boston, Mass.
Michigan State Vet. Med. Assn.	1st Tues. & Wed. after 1st Mon. in February.	Lansing, Mich.	W. Austin Ewalt, Mt. Clemens, Mich.
Minnesota State V. M. Assn.	Jan. 12, 13, 14, 1916.	St. Paul.	G. Ed. Leach, Winona, Minn.
Mississippi State Vet. Med. Assn.	2nd Tues. & Wed. Jan.	Columbus, Miss.	E. B. Norton, Greenville, Miss.
Mississippi Valley Vet. Med. Assn.	January, 1916.	Galesburg, Ill.	W. Lester Hollister, Avon, Ill.
Missouri Valley Vet. Assn.	Feb. 1, 2, 3.	Kansas City, Mo.	R. F. Bourne, 1295 E. 15th, Kansas City.
Missouri Vet. Med. Assn.	Feb. 1, 2, 3.	Noebo, Mo.	C. D. Folsa, 1334 E. 15th St., Kansas City.
Montana Vet. Med. Assn.	Last week in July.	Bozeman.	A. D. Knowles, 203 S. 4th St., West, Missoula, Mont.
Mont. Assn. B. A. I. Employees.	2nd Mon. in Aug., 1916.	New York City.	S. J. Walker, 185 N. W. Ave., Milwaukee.
Nebraska Vet. Med. Assn.	Dec. 7, 8, 1915.	Lincoln, Neb.	S. W. Alford, Lincoln, Neb.
New York State Vet. Med. Society.	Not decided.	Ithaca, N. Y.	C. P. Fish, Ithaca, N. Y.

No Iodism

No Gastric Disturbance

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Iodine in organic combination. One teaspoonful estimated to be equal to ten to fifteen grains of Potass. Iodide, in therapeutic action. Contains no Alkali, and no free Iodine. Produces the maximum effect with minimum amount of drug.

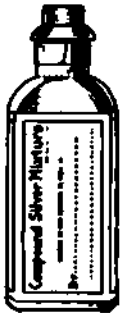
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1/2 " " two "	8.00
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Name of Association	Date of Meeting	Place of Meeting	Secretary
North Carolina Vet. Med. Assn.	June, 1916.	Wrightsville Beach, N. C.	J. P. Spoon, Burlington, N. C.
North Dakota Vet. Assn.	3 days, last week July.	Fargo, N. D.	W. J. Mulrooney, Havana, N. D.
Northwestern Ohio Vet. Med. Assn.	July, 1916.	Not decided.	Paul E. Wood, Ottawa, Ohio.
Ohio State Vet. Med. Assn.	Jan. 13, 14, 1916.	O. S. U. Columbus, O.	F. A. Lambert, care O. S. U., Columbus
Oklahoma Vet. Med. Assn.	Usually in January.	Oklahoma City.	B. H. Giller, Norman, Okla.
Oregon Vet. Med. Society.	June, 1916.	Probably Corvallis, Ore.	B. T. Simms, Corvallis, Ore.
Pennsylvania State Vet. Med. Assn.	March, 1916.	Pittsburg, Pa.	B. H. Yumlan, 2344 N. 15th, Philadelphia
Schuylkill Valley Vet. Med. Assn.	Dec. 15, 1915.	Reading, Pa.	S. W. Allen, Wistarown, S. D.
South Dakota Vet. Med. Assn.	January 18, 19, 1916.	Sioux Falls.	C. R. Fostlager, Reading, Pa.
Southern Aux. Cal. State Vet. Med. Assn.	3rd Wed. Dec.	Los Angeles.	J. A. Dell, 15th & Pacific, Los Angeles
Tenn. Vet. Med. Assn.	Nov. 17, 18, 1915.	Chattanooga, Tenn.	J. H. McMahon, Columbia, Tenn.
Texas Vet. Med. Assn.	March, 1916.	Not decided.	Allen A. Foster, Marshall, Tex.
Twin City Vet. Med. Society.	Not decided.	St. Paul.	C. C. Palmer, St. Paul, Minn.
U. S. Live Stock Sanitary Assn.	Dec. 1, 2, 1915.	Chicago.	J. J. Ferguson, U. S. Yards, Chicago.
Vet. Med. Assn. of New Jersey.	2nd Thurs. in Jan.	Trenton, N. J.	E. L. Lobelin, New Brunswick, N. J.
Vet. Med. Assn. of N. Y. City.	1st Wed. ea. mo. except July, Aug., Sept.	New York City.	B. S. MacKellar, 351 W. 11th St., N. Y.
Vet. Med. Assn. of Geo. Washington Univ.	1st Sat. each month.	Washington, D. C.	C. W. Rippon, 2115 14th St., N. W. Washington, D. C.
Virginia State Vet. Med. Assn.	Jan. 13, 1916.	Richmond, Va.	W. G. Christman, Blacksburg, Va.
Washington Vet. Med. Assn.	June, 1916.	Seattle, Wash.	Carl Costar, Bellingham, Wash.
Western N. Y. Vet. Med. Assn.	2nd week Dec., 1915.	Buffalo, N. Y.	F. F. Fahr, 36 Prospect Ave., Buffalo
Wisconsin Vet. Med. Assn.	January 18, 19, 20, 1916.	Madison, Wis.	W. A. Wolcott, Madison, Wis.
York Co. Vet. Med. Society.	1st Tues. after 1st. Mon. of each month.	York, Pa.	E. S. Beusticher, 335 Newberry, York, Pa.

Ames and Des Moines, Ia., Jan. 17th, 18th and 19th.

Colorado Veterinary Medical Association, Denver, Colo., Jan. 18th.

South Dakota Veterinary Medical Association, Sioux Falls, S. D., Jan. 18th and 19th.

Wisconsin Veterinary Medical Association, Madison, Jan. 18th, 19th and 20th.

Genesee Valley Veterinary Medical Association, Rochester, N. Y., Jan. 27th.

Illinois Veterinary Medical and Sur-

gical Association (non-graduates), Decatur, Ill., Jan. 27th and 28th.

Montana Veterinary Medical Association, Bozeman, Mont., Jan. 28th and 29th.

Connecticut Veterinary Medical Association, Hartford, Conn., Feb. 1st.

Missouri Valley Veterinary Association, Kansas City, Mo., Feb. 1st, 2nd and 3rd.

(Continued on page 96)

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Fort Dodge, Iowa

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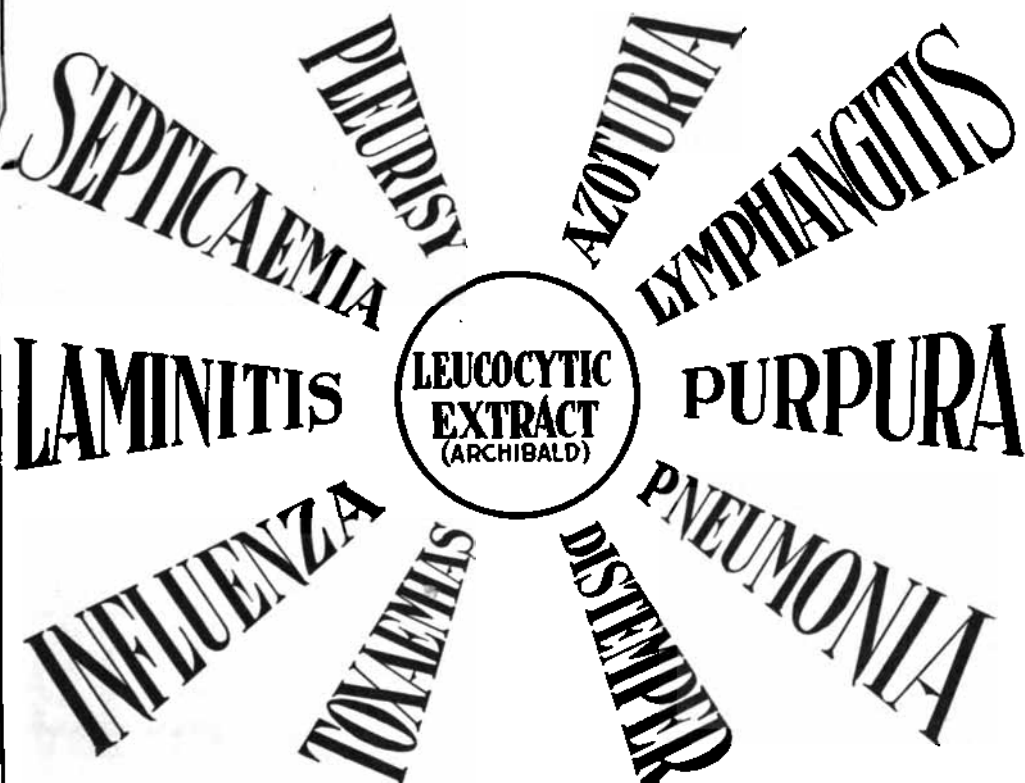
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Increases number of leucocytes—Stimulates phagocytosis*

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50 c. c. Vial, for large
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FEBRUARY MEETINGS—Cont'd.
Michigan State Veterinary Medical Association, Lansing, Mich., Feb. 8th and 9th.

Ohio Valley Veterinary Association, Terre Haute, Ind., Feb. 8th and 9th.

RAISING GUINEA-PIGS FOR PROFIT*

Large numbers of guinea-pigs are used for scientific purposes, chiefly in the testing of medicinal products. This insures a constantly increasing demand for guinea-pigs of certain sizes at profitable prices. They multiply rapidly, are easy to raise, and eat almost any kind of vegetables and grain. They are relatively free from disease and thrive well in small pens without special attention.

Selection of Stock.—The ordinary smooth-haired guinea-pig is the best type to raise for laboratory use. There is no special preference in regard to color, although guinea-pig raisers generally believe that those of mixed color are more hardy than those of pure colors. The breeding of pure whites, or albinos, should be avoided. It is necessary to secure animals for stock that have not been used for the testing of any drug or for any scientific purposes, for the reason that susceptibility to some substances is transmitted to the offspring and renders them undesirable for laboratory use.

A full grown guinea-pig will sometimes weigh nearly two pounds, and this weight will be attained within about eighteen months. Animals so heavy as this are not usually desired in laboratories, and are kept by guinea-pig raisers as breeders. Guinea-pigs will frequently have their first litter of young at the age of four months, and will average twelve young a year. The young guinea-pigs are salable at the age of about six weeks, when they weigh seven to nine ounces; there is always a demand for guinea-pigs somewhat heavier than this, or between ten and fourteen ounces.

Guinea-pigs should be kept warm and should never be subjected to drafts, as

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Blackleg Vaccine

Single Treatment:

Per dozen tubes of 12 granules, each.....\$7.50

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Send for free booklet "Bacterins and Their Indications."

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they readily take cold and frequently die in large numbers from this cause. A temperature of about 65° is ideal. They are therefore usually kept in pens which, in cold weather, can be artificially heated. Separate enclosures are made for the housing of six female guinea-pigs and one male guinea-pig. There are two methods of constructing these separate enclosures: (1) to build them as hutches; (2) to construct them in the form of open courts.

Hutches.—The hutch is merely a box with a wire netting door in front and a wire-netting window in the rear, for proper ventilation. In the back portion of this box is a shelf six inches from the floor, on which the seven animals can sleep. A space under this shelf forms a convenient retreat for the females with young. These hutches or boxes should be about 20 inches in width, about 3½ feet in depth, and about 18 inches in height. It is advisable to have the boxes of one size so that they can be stacked up in tiers, to save space. In stacking them the back portion should, of course, not be put against the wall, as this will obstruct the rear windows and interfere with ventilation. The guinea-pigs can be kept in these hutches all the time, as it is not necessary to allow them a larger enclosure for exercise. The young ones are removed at the age of about four to five weeks, and put in separate hutches, each sex by itself. It is sometimes convenient to have several larger hutches to accommodate the young ones. The pens should be cleaned at least once a week.

Courts.—Courts are simply flat boxes open at the top and arranged in rows and tiers. The courts may be 3 to 4 feet square and about 1 foot deep, and provided with wire netting which can be placed over them at night.

Food.—A constant supply of dry grain, such as wheat, oats, bran, etc., should be kept in the pens, together with a small piece of rock-salt and a pan of water. Some raisers do not give the pigs water at all, but in that case they should have plenty of fresh vegetables. There should always be a supply of hay, which the ani-

G. R. TINKHAM,
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This book is written by an American author and is based on American methods. It should be invaluable to every practitioner and student of veterinary science. It not only describes but illustrates each step of the operation of castrating and spaying, including their complications and sequelae as applied to the stallion, colt, mule, bull, boar, ram, dog, cat, fowl, mare, cow, sow, ewe and bitch. The chapters on Cryptorchid and Monorchid castration alone are well worth the price of the book. 260 pages with 209 illustrations mostly from original photographs.

RESTRAINT OF DOMESTIC ANIMALS

By the same author.

Over 100 pages, with 322 illustrations, made from drawings by one of the best pen artists in the United States. It illustrates and fully describes every known means of restraint of the horse, ox, dog and hog. This is by far the best illustrated book ever written in America on any branch of veterinary science. These books are published by the author. For sale by all veterinary book sellers. Sent post or express prepaid to any address upon receipt of price.

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Tires Tubes		Tires Tubes	
20x2 in.	\$ 6.00 \$2.75	32x4 in.	\$17.00 \$4.00
22x3 1/2 in.	10.00 4.10	32x4 1/2 in.	21.50 5.00
22x3 3/4 in.	12.75 4.20	36x4 1/2 in.	22.50 5.75
24x4 in.	16.75 4.20	37x4 1/2 in.	23.00 4.50
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mals eat in large quantities, and they should be given daily some kind of green food, such as carrots, beets, cabbage, celery tops, lettuce, fresh-cut clover of alfalfa, spinach, etc. A good winter food is cabbage, which may be stored in a pit and taken out as wanted. As much care should be taken not to overfeed guinea-pigs as to give them sufficient for their needs.

Guinea-pigs are not susceptible to many diseases. Improper or irregular and insufficient feeding causes inflammation of the stomach and bowels, which may become serious. Sudden changes of temperature, particularly cold and improper ventilation, are common causes of pneumonia, which is *very* fatal among guinea-pigs. The guinea-pigs should not be allowed to become wet, and the pen should be carefully protected from dampness and drafts. Rats will kill the young guinea-pigs and frequently attack the full-grown ones, and the pens in which guinea-pigs are kept should be protected by strong wire netting or other means.

The raising of guinea-pigs requires very little outlay to start; not much room is required for their accommodation, and they are hardy and easily managed. With ordinary care they should be a profitable animal to raise.

VETERINARY MENTION FROM THE GENERAL PRESS

Drs. Donald D. Dickover of Chicago and W. H. Wetsell of Cleveland reported to the Indianapolis office of the U. S. Bureau of Animal Industry on December 6th, where they were assigned to duty.

Dr. W. R. Sanderson of Hillsboro, Texas, reported to the Chicago office of the U. S. Bureau of Animal Industry on December 13th and commenced his work as veterinary inspector at the Union Stock Yards.

The Department of Agriculture issued an order effective December 11th, raising or modifying the foot-and-mouth quarantine in Bureau, Cook, DuPage, LaSalle, Livingston and McDonough Counties, in Illinois. This left the closed area in the state, from which no live stock can be shipped, confined to specified portions of Fulton, Marshall, McDonough, Stark and Warren Counties.

The ten-year-old son of a farmer near Jerseyville, Illinois, was attacked by an eagle while playing in the barnyard on December 6th. A neighbor chased the bird away with a fence rail, but it returned and carried away a fifty-pound pig. There is said to be a large colony of eagles near Brighton, Illinois, but no one dares to touch them on account of the game laws, which forbid the shooting of eagles.

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Cattle or Horse hide, Cat, Dog, Deer, or any kind of skin with hair or fur on. We tan and finish them right; make them into coats (for men and women), robes, rugs or gloves when ordered. Your fur goods will cost you less than to buy them, and be worth more. Our illustrated catalog gives a lot of information which every stock raiser should have, but we never send out this valuable book except upon request.

It tells how to take off and care for hides; how and when we dye the bright best ways; about our safe dyeing process which is a tremendous advantage to the customer, especially on horse hides and cat skins; about the fur goods and game trophies we sell, taxidermy, etc. If you want a copy send us your correct address.

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3. Endometritis and Leukorrhoea.
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7. Skin abrasions and eruptions, as Eczema and Mange.
8. Disinfecting site of operation, hands, instruments and operative wounds, especially valuable in castration-wounds and the like.
9. Eye lotion and wounds about the eye; it does not irritate.

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1. Dysentery of calves and foals.
 2. Flatulence, as colic in horses and bloat in cattle.
 3. As a steaming agent in combination with oil of eucalyptus in the treatment of Laryngitis, Bronchitis, Pneumonia and particularly in Influenza and Distemper.
- Therapogen has no competitor. It is in a class by itself and is the most valuable preparation for every Veterinarian's Medicine Case. Numerous laudatory reports from prominent practitioners prove its sterling worth in medicine. Obtainable from your jobber or druggist or direct from

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The **DOUBLE** vaccine, introduced by us into America in 1895 and successfully used by veterinarians on over 75,000,000 animals, is still used wherever possible as the best known preventive of this disease.

The **SINGLE** vaccine is rapidly winning in popularity with those having large herds and where double vaccination is a burden. The single Anthrax Vaccine has been used in all parts of the world on over 25,000,000 head, with the best of satisfaction.

Anti-Anthrax Serum

(Institut Pasteur, Paris)

makes it possible to immediately immunize animals preparatory to using the vaccine, thus saving a large number of animals that would otherwise die before the vaccine alone could take effect.

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Original and Only Genuine Pasteur's Anthrax Vaccine, discovered by Profs. Pasteur, Chamberland and Roux.

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Disinfectant and Antiseptic for Internal and External Use

The veterinarians' reliable standby.
Frequently honored with imitations.
Never equalled in quality and reliability.
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Dr. Charles Gruber of Fort Wayne, Ind., has been named to succeed the late Dr. W. F. Myers as a member of the Indiana board of veterinary examination and regulation. Dr. Gruber is inspector of Indiana for all interstate shipments of cattle and horses purchased there for government purposes. He will fill out the unexpired term of Dr. Myers, dating from Dec. 3, 1915, to April 19, 1917.

Dr. H. M. Snyder and Miss Alpha Lloyd of Farmersville, Ill., were married at the home of the bride's aunt in Taylorville, December 8th. Dr. Snyder is a graduate of the Indiana Veterinary College and located in Farmersville a little over a year and a half ago. He has a good practice there and has made many friends.

Dr. and Mrs. H. C. Carver, of Higginsville, Mo., announced the arrival of Hubert, Jr., on November 23, 1915.

Dr. J. Warninger and Dr. C. Hoey of Bemidji, Minn., have combined their offices, and the partnership will be known as Drs. Warninger & Hoey.

D. A. Taylor, a farmer of Allen, Mich., lost several hogs from a mysterious malady during the early part of December. An expert from Lansing was called and it was his opinion that the hogs had died from poisoning caused by table salt, which it had been the custom of the farmer to place in swill barrels.

Dr. D. F. Luckey, Missouri State Veterinarian, has reported that during November there was only a fourth as much hog cholera in Pettis County as during the same month last year. Pettis County is said to be the first county in the United States to take up the work of hog cholera control. When the experimental work was begun, July 1, 1913, conditions were unfavorable. Various methods were tried, according to Dr. Luckey, but the results were unsatisfactory up to July, 1915. The methods then put into effect are proving successful.

The government appropriation asked for the next fiscal year, beginning July 1st, for the eradication of foot-and-mouth disease is \$2,500,000. The Secretary of Agriculture is given authority to pay one-half of the expenses incurred to owners of the herd of show cattle in quarantine at Hawthorne Park, Chicago.

Dr. John R. Dawson of Monroe City, Mo., died on November 30th as the result of taking an overdose of headache tablets. The tablets were said to contain hyocin, mor-

ANNOUNCEMENT EXTRAORDINARY

After extended experiments in Europe, Prof. LeClainche, chief of the Sanitary Bureau of the French Department of Agriculture, and Prof. Vallee, Director of the Veterinary School at Alfort, France, have perfected the first improvement made in more than a decade in the prevention of blackleg.

These recognized veterinary authorities have devised an absolutely reliable and positively attenuated

Liquid Blackleg Vaccine

that is ready to inject as sent out by us. This will revolutionize blackleg vaccination, and places it on an ethical basis that should appeal to the veterinary profession. In their experiments, Profs. LeClainche and Vallee have vaccinated 3,500,000 cattle with complete success.

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which we also have the pleasure of supplying, all outbreaks of Blackleg may be controlled immediately and many animals saved.

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phin and cocain. Dr. Dawson was 33 years old and had been practicing at Monroe City for twelve years.

A. J. Glover, associate editor of *Hoard's Dairyman*, Ft. Atkinson, Wis., in a paper read before the conference of state and federal authorities at Chicago, Nov. 29th, stated that the foot-and-mouth disease in the United States caused a direct loss of \$5,000,000 prior to July 1st. He valued the animals slaughtered at over \$4,000,000, the cost of burial \$150,000, and property destroyed in disinfecting \$220,000.

A man said to be suffering from rabies, but more likely insane, escaped from a Pittsburgh hospital and bit six policemen and three hospital attendants, November 25th. He was finally quieted and died in a few hours. He had been bitten by a dog about two months before.

Dr. A. A. Carlson, recently of Jordan, transferred his office to Milan, Minn., November 29th. He is a graduate of the Kansas City Veterinary College, class of 1915.

Alfred Jennings, a cattleman near Ellsworth, Kansas, is said to be suffering from foot-and-mouth disease. He is supposed

to have contracted it from a Chicago or an eastern stockyards. Dr. Rupert Blue, surgeon general of the United States public health service, was notified and a quarantine established.

Dr. A. M. Henderson of Aurora, Ill., has brought suit for \$25,000 damages against Dr. O. E. Dyson, State Veterinarian, Dr. S. E. Bennett, government inspector, Drs. F. L. Brown and B. J. Shanley, live stock commissioners. It is charged by Dr. Henderson that Dr. Dyson and the other defendants conspired to ruin his private practice and prevent him from getting the business of stockmen in Kane and DeKalb counties after he gave a clean bill of health to a herd of cattle at the Geneva State Home for Girls.

Dr. J. H. Ressler of Fostoria, Ohio, has a broken thumb after being kicked by a sick hog.

The first horse cemetery in Illinois has been opened near Frankfort by Levi Doty. He has dedicated a half acre of ground for the purpose. All persons who do not wish to have their dead horses sent to the rendering works, will be permitted to bury them in the cemetery. Doty buried the first horse there on November 25th and a

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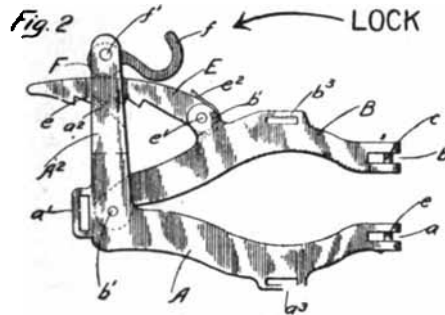
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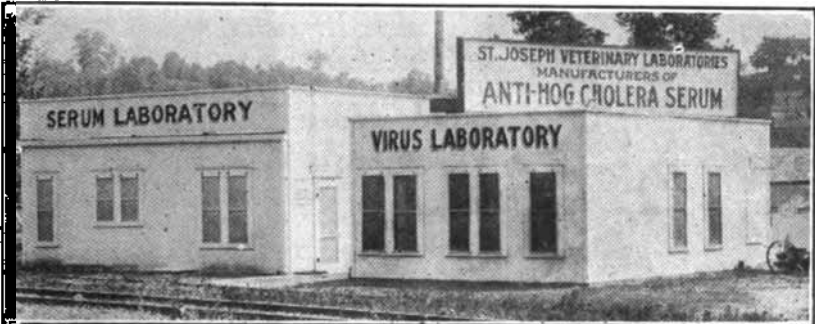
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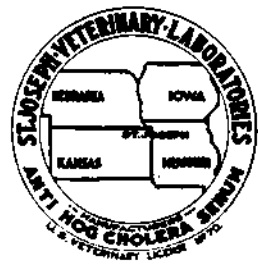


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suitable monument was placed over the grave.

Dr. Elmer L. Grant, of Loraine, Ind., has a prize brood sow that recently became the mother of seventeen pigs, all of which lived and are fully developed.

The Wisconsin State Department of Agriculture has appointed a new board of veterinary examiners in that state, consisting of the following members: For the three year term, Dr. T. H. Ferguson, Lake Geneva; for the two year term, Dr. J. A. Abbott, Marshfield; and Dr. V. S. Larson, Berlin, for the one year term. Dr. Ferguson is a graduate of the Ontario Veterinary College, class of 1896, as is also Dr. Abbott, class of 1907, and Dr. Larson is a graduate of the Chicago Veterinary College, class of 1910.

Dr. E. H. Riley, veterinarian for the Montana stallion registration board, traveled 8,000 miles by automobile through eastern Montana last summer, inspecting the stallions and seeing to the enforcement of the stallion registration law. His tour included every town and village in Montana east of the Rocky Mountains. Dr. Riley reports that there are now close

to 1,500 registered stallions in the state and that the number is rapidly increasing.

A report has come from San Francisco that the Negrito tribe in the Philippine Islands originated the present fad in society of carrying dogs. Remarking on this, the Kansas City Post is of the opinion that some credence might be taken in it, were it not for the firm belief that all Filipino tribes which show any regard for dogs carry them in their stomachs.

Miss Anna Jones, 2448 Michigan Avenue, Chicago, claims she invented a medicine for the cure of foot-and-mouth disease and that H. R. Beardsley, formerly a private detective, bought the patents and rights and agreed to pay \$12,500 by notes. Beardsley afterwards disappeared and failed to take up any notes.

At a meeting of the Montana State Board of Veterinary Examiners at Helena, Nov. 15th, the license of H. R. Higgins of Hamilton as farrier was revoked because of alleged violation of the state law governing veterinarians. It is alleged that Higgins advertised himself as a veterinarian. A farrier's license is issued to those who are not graduates of a college for

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veterinarians. Diplomas are necessary in order to obtain licenses of veterinarians. At present there are about 80 licensed veterinarians in Montana.

Damages and a permanent injunction are asked in a suit filed in the federal court by the Pitman-Moore Co., of Indianapolis, against the Federal Serum & Chemical Co., and the National Live Stock Insurance Co. The Pitman-Moore Co. claim the other concerns have copied their literature.

The death of a girl in New York, believed to have been infected with anthrax germs from a neckpiece made of cats' fur, caused the State Bureau of Industrial Hygiene, to start an investigation on Nov. 20th of 200 furmaking shops in that city. The cat farms on Long Island and other sections near by were also examined, and all suspected animals were killed.

Tests made by the state veterinarian showed that nineteen out of the twenty-six cows at the Kearney, Neb. industrial school, were tubercular. The tubercular patients in the Nebraska tubercular hospital have been using butter and milk from the cows, as have also the boys of the industrial school.

Dr. Frank Ford, 512 Walnut St., New Orleans, La., was injured by an automobile on November 27th while crossing the street. His leg was painfully lacerated, but the injury is not serious.

A Chicago woman had a dog with weak eyes, and she read the advertisement of an Elmira, N. Y., firm offering spectacles for dogs. She bought a pair, which she found to be worthless as the dog could see no better than before. She lodged a complaint with Federal District Attorney Charles F. Clynne, who said that he had never heard of glasses for dogs before.

Dr. Will Shimer, superintendent of the pathological laboratories of the Indiana state board of health in his report for the year ending Sept. 30, 1915, states that a slight increase was shown in rabies cases in the state during 1915. Of the total number of brains examined the number showing a positive reaction were as follows: 180 dogs, 10 cats, 9 cows, 1 hog. There were 239 persons bitten who took the Pasteur treatment at the state laboratories.

Students of the St. Joseph Veterinary College were special guests at church services at the First Baptist Church on Dec.

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5th, and Dr. J. E. Dillard, the pastor, preached on "Footmen and Horses." The school has an enrollment of more than 125.

A new Spanish journal, *Revista de Veterinaria Militar*, devoted exclusively to army veterinary work and published monthly at Toledo, Spain, issued its first number in October, 1915.

SPECIAL COURSE FOR VETERINARIANS

A special course for licensed veterinarians will be given in the School of Veterinary Medicine at the University of Pennsylvania, Philadelphia, during the week beginning January 24th. The course will include lectures and demonstrations in medicine, surgery, pathology, milk hygiene, stock judging, etc.

TENNESSEE VETERINARIANS CONVENTION

The seventh annual meeting of the Tennessee Veterinary Medical Association was held at Chattanooga, December 17th and 18th. About one hundred veterinarians were in attendance, among whom were several from Alabama and Georgia. A clinic was held at a local dog and cat hospital, and a number of interesting surgical and medical cases were presented for diagnosis, operation and treatment. Another clinic was held at Fort Oglethorpe.

Readjustment of live stock rates north of the Ohio and Potomac rivers and east of the Mississippi was ordered by the Interstate Commerce Commission, December 13th. Many increases are allowed, principally on live stock, except horses and mules, eastward from points west of Pittsburgh and Buffalo; advances on cattle to points east of Pittsburgh and Buffalo and in New England, and fresh meats from the middle West to the East and New England. It is expected that the additional revenues to the roads will be several hundred thousand a year.

The Beebe Laboratories, St. Paul, Minn., have issued a very attractive booklet giving descriptions and prices of their extensive line of veterinary biological products and drugs.

"A Technique for the Administration of Serum Treatment for Hog Cholera" is the title of a neat little brochure put out by the Pitman-Moore Co., Indianapolis. The subject of serum administration is treated in a brief, concise yet adequate manner, and the pamphlet is well worth the attention of any veterinarian engaged in this work.



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Official Control of the Production and Distribution of the Commercial and State Serum*

By DR. C. J. SIHLER, Kansas City, Mo., President of the Sihler Serum Company.

THE wonderful progress of the United States along commercial lines is due to its stupendous resources, inventive genius, the ability and willingness of the people to discard that which seemed good enough to our fathers, and adopt newer and improved methods, to get quicker and better results, and encourage a desire among our people to excel along particular lines, no matter what they may be.

The farmer wishes to excel with his fine cattle, sheep or hogs, if only to have something a little better than his neighbor; and if he learns of something that will protect his valuable herds, he willingly spends his money therefor.

Anything that will inspire confidence, promote a feeling of security on the part of the purchaser or consumer, and a satisfactory pride on that of the manufacturer or producer of any product, is worthy of the highest thought and consideration.

For a number of years past there has been developing a marked paternalism, both in national and state governments. This paternal evolution is a matter of much concern to many citizens who give the subject any thought. A continuous evolution of such policy will find governmental officers taking up the usual business vocations of the people generally, such as raising bread stuffs and supervising the distribution thereof; the promotion of commerce by the establishment of centers of exchange, and fixing the rates of commission, brokerage, interest, also supplying the funds, needful in

the conduct of such business; caring for the sick and afflicted in providing physicians, needful remedial agencies, nurses, etc., and so and so on, throughout the activities of human kind.

The production and gratuitous distribution of vaccines by the federal government for the control of communicable animal diseases were also taken up by numerous state governments, thus in a measure duplicating this phase of governmental service. As an instance of this, I may mention the production and distribution of blackleg vaccine, it being perhaps the most widely used.

With the marvelous growth of this country in the past one hundred years, no other industry has grown so rapidly, nor is there any of so great importance to the agricultural interests as the hog industry, and this in the face of a greater loss to the producer from the ravages of disease than any other agricultural activity.

Hog cholera has, in the past and is still, taking a heavy toll from the growers of this country and were it not for the scientific research and the fruitful result of the investigations of the Bureau of Animal Industry, the toll would be still heavier. Statistics show that the discovery of the anti-hog-cholera serum has reduced the loss from hog cholera in the one state of Iowa from twenty-seven million dollars to less than seven million dollars within a year.

In these premises, the production and distribution of serum, in the way that best conserves the interest of the producer and consumer, requires able, intelligent and consistent consideration.

*Read at 19th annual meeting of the U. S. Live Stock Sanitary Ass'n, Chicago, December 1-2, 1915.

The manufacture of serum and analogous products is in the embryonic stage, but is making rapid progress in the field of commerce. The hog raiser everywhere has his interest aroused, as soon as he learns of something to his pecuniary advantage, and is perfectly willing to "be shown."

During the 1913 epizootic of hog cholera, many concerns were incorporated for the sole purpose of availing themselves of the great pecuniary benefits to be quickly realized from the manufacture of hog cholera serum, and did so purely with a "get-rich-quick-Wallingford" intention, without regard to results.

These "moonshine rangers" did to the serum business just what was to be expected—brought the serum into disrepute and cast opprobrium on serum producers as a whole, placing the careful, conscientious and scientific manufacturer on a plane with themselves, and causing the state and federal officials to look with suspicion on everybody and everything connected with serum-virus production.

Federal inspection has proved to be a great good and is desired by all reliable serum producers, as it inspires a confidence in the product. Supervision by the federal authorities insures uniform rules and regulations for the manufacture of a potent serum thus restoring public confidence in its use.

The solving of the methods of production and use of anti-hog-cholera serum by the federal government has led numerous state governments to conclude that it is the function of such states to produce and distribute this serum at public expense, and have asked legislatures to appropriate funds for this purpose. In many states appropriations have been made for the establishment and maintenance of serum producing plants, with the provision that the products shall be sold to citizens in the state at the actual cost of production, leaving out of consideration the investment in the plant and the salaries of the employees, and in some states these employees not only

produce the serum, but go to the farms and apply it at the expense of the state.

This feature of paternalism might be justifiable were it not that the commercial interests of the hog raiser could be protected through his own individual efforts in procuring needful serum and competent veterinarians to administer it. The raising of swine is an agricultural business and making it profitable should depend upon the intelligently applied energies of those engaged in it, rather than on the paternal care of the state, especially as anti-hog-cholera serum, a temporary essential for the hog raising industry, is now on the market as a commercial product and in adequate quantity.

It is conceded that if further experimental work is needful to perfect the material for eradication and control of disease, it comes properly within the purvey of state governments to carry on such experiments to demonstrate to the public, not only as to how such material may be most economically produced, but also how most economically applied, but it is not conceded that it is good public policy for such governments to enter into the commercial manufacture of this product. Rather, the state should encourage the citizens to enter the field of production as a private enterprise. The individual should not be discouraged by governmental competition in the production of anti-hog-cholera serum any more than in the production of shoes, automobiles, chemicals or any other article of commerce.

The state should regulate and direct in a general way the manner and conduct of all private enterprises, to the end that the public good may be conserved, and as applied to anti-hog-cholera serum or any other product of intrastate commerce, the state should protect the public against fraud, the result of either design or ignorance, and we welcome wholesome regulation of the sale of serum, which shall determine its purity and potency and adequately safeguard both the public and the producer.

At the present time there is no real necessity for states operating serum plants for commercial purposes. The primary reason for the commercializing of anti-hog-cholera serum by the state was *quantity and to regulate the price of the product to the consumer.*

That time has passed. The production has grown so rapidly and competition so keen, that the price to the consumer is much lower than the state plants can or do sell to the consumer.

The federal and state governments should have one policy, and the changes, if any, should be well considered before enforcing.

Frequent changes demoralize business, cause losses and when rules are made and enforced without positive knowledge as to their effect from the official and commercial standpoint, a great injustice will be done to the producer, and undoubtedly a greater one to the consumer.

And for that reason, the state and federal institutions ought to be confined in their operations exclusively to experimental lines.

The production of serum is legitimate and is so recognized by all states and the federal authorities. The production is supervised by inspectors prepared and

schooled for that special purpose; and serum plants doing an interstate business are inspected and this inspection is mandatory. Hence, the products from these plants should have the stamp of approval of the United States Department of Agriculture and be allowed to be sold in any state without restrictions; without bond deposit or any hindrance whatsoever. The serum-virus or simultaneous treatment has proved wherever used extensively that it is the only practical method of control and should be encouraged by all state authorities.

Further, it is the consensus of opinion among those engaged in the manufacture of serum virus that the rules and regulations as laid down by the Bureau of Animal Industry should be adopted by each state for its government of the manufacture of this product, thus leaving no doubt in the mind of those engaged in the business as to what is required of them.

When we consider the great benefit to the farmer in the protection of his hogs and the consequent cheapening of the hog product to the poor consumer, it would seem that all should work together harmoniously for the control of this great scourge among our domestic animals.

DISCUSSION: A government should be interested in and have jurisdiction over those things only that affect the community or nation as a whole, but should not meddle with private enterprises. It is not in keeping with this principle of democracy for the government to go into the manufacture of serums and vaccines for free distribution to individual livestock producers.

The contention may probably be made that the livestock industry is a matter of concern to the whole nation or community and that, therefore, governmental aid should be given to those who engage in that enterprise. This, however, would be overlooking the fact that there are

two principal elements involved in the operation of any industry.

There is, of course, the relation that the undertaking has to the public at large, and to safeguard the interests of the people in that relationship, it is quite proper for the government to take a hand. But there is also another side; namely, the interest of the individual producer of a commodity, and his interest is not to be confused with that of the people as a whole. His welfare should be permitted to be dependent upon his own initiative in the pursuit of his vocation, because being already in possession of the means by which he can produce something, he should be considered

as sufficiently well situated to be able to dispense with the help of the state, for which there is a greater need in other quarters.

When it comes, therefore, to the manufacture of serum, all that can properly be held to be within the jurisdiction of the government is the regulation and supervision of the methods of preparing such a commodity for the market, as well as the inspection of the commodity itself, for in so doing, the governmental authorities are seeking to protect the general public from the results that would ultimately follow from an impure or deteriorated product.

It should not, however, be the part of the government to play the commercial role of manufacturer and distributor of such serum at public expense, because the breeder of domestic animals is conducting a private enterprise for the sake of his own individual gain, and if his business is worth while at all, his rewards from it ought to be enough to put him beyond the need of government charity. If it is for the sake of the common good that a state engages in the anti-hog-cholera-serum business, can it not be maintained on the same grounds that the state should enter into the business of raising pure bred hogs and distributing them gratis as foundation stock for improved herds?

The prevention of hog cholera by the state increases the output of hogs for the market and thereby adds to the financial benefit of the hog raiser, whose profits do not go into the public cash register, although the investment responsible for his increased profits was taken out of it.

Perhaps some may think that the prevention of disease is not properly to be considered as a part of the process of bringing up domestic animals but that it is an extraneous provocation under which the livestock owner is entitled to dig with both hands into the public purse. This may be the attitude of serum paternalists, but if they were logical, they would see that all the activities of the

livestock grower are mainly concerned with measures of prevention. He must prevent his animals from going without food and water, from exposure to inclement weather, from accidental injury, etc. If it is his duty to stand all the expense of such preventions, why is it not also within his province to pay the total cost of the prevention of disease by the use of serum?

Furthermore, it is to be remembered that the private serum plant enters into the question. Why should the government go into competition with a certain private industry? The manufacture of serum is quite as legitimate a field for individual enterprise as any other, and while it is proper for the government to regulate and inspect that industry, yet there seems to be no sufficient reason for the state and nation to become actually engaged in making the commercial product. The farmer and livestock grower are in business just as much as the private serum manufacturers are, and since the government does not compete with the former, why should the latter be the recipients of less fair treatment. The national and state agricultural experiment stations do not produce crops and livestock on a large scale for free distribution nor for sale at cost. If they did, they would be competing with the farmer and livestock grower in precisely the same manner as the state and national serum plants are competing with the private manufacturers. If private enterprise has a right to dominate one field, it should have an equal right to maintain itself in the other.

Besides the results of state owned serum plants, rather than contributing to the common good in the suppression of disease, are more likely to be detrimental to the very interests they profess to serve. It is not unusual to hear of the spread of hog cholera in various states owing to the inability of the state serum plant to meet the need for its product. The financial appropriations for the enterprise of a state are dependent upon the whims of its legislature, and

very often the amount appropriated for the state's plant is not sufficient to provide adequate facilities for producing the necessary supply of serum. Since accepting charity speedily becomes a habit, the user of serum depends upon the state to meet his needs in this respect, and if the serum is not immediately available, he decides to wait, with the result that he waits too long until the disease has

spread through his whole herd. On the other hand, if the serum was bought from a private serum company and their supply was exhausted, it could readily be obtained from another company, the supply in private hands always equaling the demand, since an increased demand would there immediately result in increased facilities of production.—G. G. Florine.

Quarantine Zones or Units*

By DR. J. I. GIBSON, Des Moines, Iowa, State Veterinarian of Iowa

THE subject assigned me is a very important one, as all who have been engaged in the control of foot-and-mouth disease know full well that quarantine units, zones and radii, have been the subject of considerable controversy. I hope it will not be expected of me to suggest quarantines that will prove satisfactory to all parties concerned (especially those who are placed in quarantine). I have never yet been either praised or complimented upon the placing of any quarantine, by those most interested and most affected by the quarantine nor by those protected. Thunderbolts would be mild shocks to a quarantine officer, compared with the shocks he would experience at receiving kind words, compliments, or congratulations.

Before offering my suggestions relative to the areas that should be quarantined in order to control foot-and-mouth disease, I want to say a few words about co-operative quarantine:

This country is called the United States of America; I am wondering if the country as a whole is really true to its name? Are we united as states, under the national sanitary authorities of the Bureau of Animal Industry,

United States Department of Agriculture? I hope we are, as I believe we must be, if we are to achieve the greatest success in combatting foot-and-mouth disease, which we believe is the most serious and the most difficult disease of live stock, which we are called upon to control and eradicate.

In order to successfully combat a widely spread outbreak of foot-and-mouth disease, and in order to place our quarantine lines for the safety of the live stock industry of this country we must have a competent sanitary surveyor to indicate just where the quarantine lines should be drawn. The question next in order, is as to who shall make this survey? My answer is, our national live stock sanitarian, the Chief of the Bureau of Animal Industry, United States Department of Agriculture.

When this quarantine line is drawn upon a state line, the United States Department of Agriculture should rigidly enforce the quarantine. When the quarantine lines are drawn so as to include a number of counties in a state, the sanitary authorities of the state so divided should, in my opinion, enforce the quarantine, and the eradication of the disease should be carried on in compliance with the methods, rules and regulations adopt-

*Presented at the Foot-and-Mouth Disease Conference, Chicago, Nov. 29-30, 1915.

ed by the Bureau of Animal Industry, and in this work, the state sanitary boards and officers, should give their most hearty co-operation in all the details of the field work.

When quarantine lines are established, as indicated above, there should be no other quarantine placed in effect. All free area, outside the quarantine line should be, *in fact*, free area, and the live stock business should be carried on in the usual way in all the territory not included in the co-operative quarantine lines. By this I mean there should be just as thorough co-operation on the part of the bureau officials and state authorities in the free area of the country as there is, or should be inside the quarantined area.

This kind of co-operation within and without the quarantined area would make it unnecessary for states several hundreds of miles distant from the quarantined area to call their sanitary boards in session to place unnecessary embargos, as has been done in this recent outbreak. This very action has caused a very large percentage of the losses to the live stock industry of the country. These individual state embargos have seriously handicapped and discouraged the live stock breeders of our country in particular, and have caused a great loss to those breeders, all of which I claim was unnecessary.

Certain states have placed embargos against other states which were entirely free from foot-and-mouth infection, and have maintained those embargos for months. This procedure I condemn, because it is entirely wrong. The incentive for the placing of such embargos, seems to be a lack of confidence in the Federal and state authorities who are called upon to control the outbreak in the quarantined area. If we could have perfect co-operation on the part of both Federal and state authorities and of all of the people in the quarantined area, I

believe the sanitary officials of the states outside the quarantined lines might be led to place implicit confidence in the integrity and ability of those called upon to control the outbreak and if that confidence did in fact exist I do not believe any of these injurious and unnecessary embargos would be placed.

When foot-and-mouth disease is found to exist in any considerable portion of a state I believe the first move should be to quarantine the entire state until the extent of the outbreak can be determined. The placing of the entire state in quarantine for a short time would prevent a stampede of doubt and fear on the part of adjoining states as well as those more remote from the state infected. As soon as the extent of the outbreak is determined the quarantine lines should be narrowed down to the county or counties infected and should be rigidly enforced on sufficient territory to protect all territory outside the quarantine line from possible infection.

For my part, when a state is in quarantine because of the existence of the infection in portions thereof, I do not believe in any special privileges permitting *intrastate* movements, when such movements *interstate* are prohibited.

When a portion of a state is declared free area, I do not believe any special permits should be granted allowing movements of stock from any closed class of quarantine area, into free area. In other words, I believe quarantine should be held sacred and that no shipments across such lines should be permitted. If quarantine is enforced this way, the lines might be narrowed down to quite small areas.

States, counties, and townships are the most convenient units to be included in a quarantine. The proposition of maintaining strict quarantine upon a 3, 5, or 10 mile quarantine zone is very difficult, because the line is always more or less in doubt and there is always more or less intentional as

well as unintentional violation of such lines.

The most difficult part of the quarantine work, is the maintaining of the closed quarantine area, surrounding the individual outbreaks and the violation of these individual quarantines, whether through carelessness, ignorance or malice, delays the work of eradication, and tends to keep the disease spreading.

What is needed, is perfect co-operation, with implicit obedience on the part of all the people, as this would permit the authorities to narrow these individual zones, but the lack of complete co-operation, and disobedience to the regulations, makes it necessary to close the larger zone.

The maintenance of a perfect quarantine around an individual infected farm, is practically an impossibility. The fact that the carriers of the infection are so varied, and that such a large percentage of these carriers are not under control, are the elements that I claim make a perfect quarantine an impossibility. A military guard, with a man stationed every rod around the infected farm; said guard to be on duty day and night, with searchlights trained upon the guarded line, would still render it impossible to control the carriers in the air, on the ground, and under the ground, so in my opinion, there is no quarantine that could be placed upon the individual farm that would be sufficiently rigid to control an outbreak of foot-and-mouth disease and to prevent its spread to the adjoining farms, in many instances.

In many instances, when the disease is found to exist upon a certain farm, the infection has already been doubtless carried to other farms immediately adjoining, or even to farms some miles distant, depending upon the movements of the people and their business intercourse. The inhabitants of the farming community of this country make wider movements and have daily business intercourse with

their neighbors at a greater distance than they did in former years. The inter-urban lines through the country and the automobiles on so many farms have widened the territory in which the people live and do business and have daily intercourse. Therefore I deem it impossible and unsafe to attempt to control an outbreak of foot-and-mouth disease in any farming community without taking in a radius as large as a township, at least, when the infection is located in the center of said township.

Much of the difficulty encountered in connection with the enforcement of quarantine on the closed area is due to the fact that the people do not understand the nature of the disease; the ease with which it is spread and, further, they look at the business end of it, for the immediate moment, not taking into account the business of the months and years to follow.

After all, the question narrows itself down to one of knowledge, or education, coupled with co-operation. I admit, it is impossible to make any fixed rule or to enact any specific statute defining just what shall be done, or just how it shall be done, or defining exactly what is necessary in order to control an outbreak of foot-and-mouth disease. Conditions vary in different localities, making it necessary to apply different rules.

I have heard criticisms of the manner of procedure because the rules differed in different states and the size of the closed zones were different. These differences are necessary, however, and it is therefore important that those who direct the work shall be sufficiently versed in the nature of the disease and those elements that enter into the spread of the disease, that they may at once see where the rules must be changed, in order to meet the conditions in each community.

A quarantine placed upon a farm infected with foot-and-mouth disease should prohibit all the occupants leav-

ing the premises and should forbid all people to enter upon the premises. The infected live stock should be corralled immediately in the smallest available space, under cover, if possible, away from all public highways and line fences until appraised, and slaughtered and buried at the earliest possible moment.

I believe a police officer should be placed upon every infected farm, with rifle, and shotgun, and riding horse, if necessary, so that he might prevent all outside carriers, such as dogs, cats, pigeons, crows, buzzards and rodents from coming upon the infected premises and returning again to uninfected area.

The quarantine upon the surrounding closed zones, should close the public schools and prohibit all public gatherings for a period of 30 days. It should prohibit the intermingling of the people within the closed zone.

In Great Britain, the closed zone is called the "stand still zone" and includes a radius of 15 miles. I would prefer to change the name to the "stay at home" zone. In this closed zone, all live stock should be kept centrally upon the farm, and in no case should be allowed to go upon or along the public highway.

If the people of this country were highly educated as to the nature and virulence of the foot-and-mouth disease, they would, voluntarily, put all the requirements I have mentioned, into force.

No man interested in his own welfare, especially if he understands the nature of foot-and-mouth disease would do any of the ridiculous things that have been done in connection with our recent outbreak.

In one instance, I call to mind, a farmer suspected the existence of foot-and-mouth disease affecting his cattle, and he so informed a neighbor; the neighbor said "I will come over and see;" he did so, made a careful examination of the cattle, mouthed them,

and had a good look at the lesions in the mouth. When he had finished his examination, he thought he knew what foot-and-mouth lesions looked like, so he immediately returned to his own home and gathering up his cattle, mouthed them to see whether or not any of them had foot-and-mouth lesions; he did not find any lesions at that time; of course, our inspectors found lesions a few days later.

The actions of the man just mentioned illustrates I suppose what has happened in scores of cases during this outbreak, and for this reason I believe it to be the duty of the sanitary officers of the various states; the extension departments of the various agricultural colleges, etc., to give some time to the discussion of foot-and-mouth disease, in all its phases, and to tell the people how it is spread, and what is necessary to be done in order to prevent its spread.

There has been altogether too much harsh criticism in connection with this outbreak. We should all be united when confronted with the possible invasion of our country by an enemy, and we should be just as solidly united when confronted with an enemy to our farms and our cattle like foot-and-mouth disease.

I wonder if those who have been loudest and most harsh in their criticism of the Bureau officials and the state officials, have ever stopped long enough to think, or to imagine what would have been the consequences, and what would be the conditions in this country today, if we had no Bureau of Animal Industry, and the live stock sanitary boards, and the state veterinarians of the country who went forth to attempt to control foot-and-mouth disease in their own various ways? There is no question—that without the co-operation and foreknowledge of the foot-and-mouth disease on the part of the Bureau officials, this dread disease would have spread all over the United States, and the live stock industry of

this country would have been ruined.

Sam Jones once said, "It takes less sense to criticize, than to do almost anything else in the world." I believe his statement is correct when applied to the criticisms, or otherwise, flung at the Bureau men and others.

I move, Mr. Chairman, that all criti-

cisms cease, and that we get together on a friendly and co-operative basis, and, when we are so united, there is no doubt—that our efforts to control and eradicate foot-and-mouth disease will be successful, as they doubtless will be in the case of all other communicable animal diseases.

Animal Breeding*

JOHN F. DEVINE, D. V. S., Goshen, N. Y.

THE word "breed" brings to our mind different terms which are applied to man, animals and plants to denote the same idea. We speak of men as a race, of domestic animals as a breed, and of wild animals or plants as a specie or variety. When we speak of an animal as being "pure-bred" we mean to infer that by selection of its ancestors it has been bred along lines that so fixed its type as to give it power to transmit certain characteristics to its progeny. The most obvious fact about living beings is their variability. Not only do species differ from each other by many and widely different characters but individuals within the species are distinguished by what is readily discernible at least by the trained observer. However, to the trained eye there are characteristics in different breeds of animals which are very apparent even at first sight. To illustrate: one who is familiar with the various breeds of cattle could readily pick out the Holstein from the Durham, or the Durham from the milking strain of the Brown Swiss. Likewise one could readily differentiate between a Guernsey and Ayrshire, or Guernsey and Jersey, even though there is great similarity in the size and in a way in the general make-up of the three former and of the three latter breeds.

*Presented at Annual Meeting Illinois Veterinary Medical Association, Chicago, December, 1915.

This is equally true in the equine family, a practical horseman could tell at a glance the difference between a hackney and a thoroughbred, and so on with the various breeds of other animals, such as sheep, pigs, dogs, etc.

It is true that environments and geographical conditions have considerable influence upon the characteristics of a race or breed, but such environments are perhaps not of such vast importance as some would have us believe. As an example of this we might cite the characteristics of the Hebrew whom we are told was "doomed to wander the earth" and is found in most climes and mingling with all classes, but still has through all these years maintained his individual peculiarities, particularly as to facial form and characteristic nature.

We who are interested in the breeding of animals should first determine the kind of animals that we wish to breed, and in determining that we should take into consideration local conditions, markets and the like. If we had in mind the breeding and rearing of horses, we should breed and rear the breed which is best adapted to our locality, to our soil and to the market. To illustrate: there are certain sections of N. Y. state that seem to have been adapted for the raising of the Hackney and the Hunting horses. I refer principally to Livingston County. Here conditions seem

to be right for the proper training of the hunters and custom has established a market where people in search of such class of horses are apt to go. Consequently, the raising of the heavy draft horses in this locality would not be advisable or good business sense. Again there are other localities in the state, particularly Orange County, that has been noted for a century or more for the breeding of trotting horses. Here the natural grass lands and the improved race-tracks have made it a spot where those in search of high class trotting animals wend their ways. And then again another section of the state, possibly a little rougher in character, would be best adapted for the raising of heavier horses. Like conditions would also be necessary to consider for those who would be interested in the breeding of pure-bred cattle. In our natural grass lands, near milk depots, where the methods of marketing milk are improved and handy, it would not seem good judgment to raise and care for the Ayrshire or Channel Island breeds. Again if we were in a locality where the land was considerably hilly and the pasture not so plentiful, it is a known fact that one of the hardier and lighter breeds such as the Ayrshire, would be more adapted and perhaps more profitable for such localities.

In selecting a breed it is first necessary that we choose the right kind of animals to breed from. For instance, we would not choose a mare or stallion with badly curbed hocks or congenital ringbone or with faulty conformation, particularly in breeds of animals in which conformation means so much. Neither should we choose a cow of an objectionable type unless she is known to be of special individuality from a productive standpoint. Neither should we head our herd with a bull that is the son of an unknown dam.

After we have decided upon the

breed most adapted to our wants let us remember first, last and always to stick to that breed unless we have very positive reasons for changing. At any rate do not attempt by cross-breeding to improve our wants, since theoretically cross-breeding seems very inviting to the misinformed, with the hope perhaps of improving the size of the Jersey or butter fat of the Holstein, which in reality might be done in an occasional instance, but the offspring of such individuals if carried on are apt to lead us to ruin. If we wish to improve certain qualities, we should do so by selecting individuals of the same breed to accomplish our desire. We should bear in mind that it is not well to breed animals that are too young. The reason for this is plain if we stop to consider. The immature animals requires the added amount of nutrition that is available in the body in addition to that required to sustain life, for the proper growth and development of that body and, therefore, to ask of the young animal the maintenance and proper growth of the embryo at a time when the body is still exacting certain nutrition for proper development, is unwise and unreasonable. It is the exception rather than the rule that we see the first born of extremely young parents as remarkable in the things that go to make merit either in the human or animal family, as we do those born at a time when parents are more matured.

This leads us to the proper nourishment of the young during the period of gestation. Unfortunately, in the past the average breeder has not given the necessary attention to the pregnant animal. It has been the supposition that the straw stack was quite good enough for the pregnant dairy cow or brood mare, when as a matter of fact the mother that is expected to furnish nourishment for the unborn young and at the same time maintain a strong physical condition of her

own body, should receive as much attention at that time, in the case of a brood mare as if she were performing regular work, or in the case of a cow, as if she were producing in a dairy. We should never lose sight of the fact that if we wish to have our young stock come into this world in a healthy condition ready to start a vigorous growth, the mother of such animals must be properly nourished during the period of advanced pregnancy. If our various animals were kept on proper rations and received proper amount of nutrition during the last few months of pregnancy, instead of being allowed to decrease in vitality, the serious complaints of our breeders of the loss of calves, loss of colts and loss of lambs, would be reduced greatly. Let us assume that

there has been brought into the world a young animal, bred from proper parentage, vigorous in body and in constitution; we should immediately begin to give such attention to that animal as to produce a strong, healthy growth, since much thought to the future of an animal of quick development depends largely upon its condition at birth and the subsequent attention for the first year or 18 months.

In conclusion we are justified in advising our clients to give special attention in the selection of individuals of the breed or breeds of their fancy, and breed from the best, and the best only, since by so doing they are augmenting their own interests and profits, which in turn stimulates greater care and sanitary precautions both of the parent and offspring.

Remarks on Dr. Devine's Paper.

Mayo: I am sure my friend, Dr. Devine, will pardon me for just a statement I may make regarding him as a very successful practitioner in the little town of Goshen, N. Y., where he lives. I think he has at least three, if not four, assistants, and I believe that one of the secrets of his success as a country practitioner is the fact that he is able to advise his clients along the lines which he has indicated in this paper, and I believe it is a subject we ought to consider very seriously.

In these days when they are getting farm advisers and county superintendents of all sorts of things that interfere more or less, usually more, with the practice of the average veterinarian in country regions, I believe one way of holding our own with these is to be able to advise our clients along animal lines as well as the country supervisor does, and we ought to be able to do it much better. There used to be in Kansas an old politician by the name of Chester Thomas, whose

remarks became famous in that state, and one of his political advices was "If you can't beat them, jine them" and I would say, if you can't beat the county adviser, join him and go on the same lines, and I believe it will prove of great value to the average practitioner.

One thing that I wish to call your attention to particularly, in speaking of breeds as the author did; he spoke of pure bred animals and not thoroughbreds. To any one who is familiar with the fundamentals of breeding, the use of the word "thoroughbred" as applied to pure bred animals is painful. The thoroughbred, as you know, is a race of horses, one of the oldest breeds of running horses, and it is just as improper to speak of thoroughbred chickens as to call them shorthorn chickens. They have been using that term "thoroughbred" as applied to pure bred animals, but as veterinarians, let us never use it except as applied to horses known as thoroughbred.

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The Actual Cautery as a New and Efficient Method for the Relief and Cure of Roaring

By G. B. McKILLIP, M. D. V., Chicago

OF late years many surgical methods have been employed for the relief and cure of roaring. The removal of the ventricle mucous membrane, in the larynoplasic operation has been the one most widely adopted and has probably given the most satisfactory results. This method in the majority of cases is successful if properly carried out. However, it requires skill and judgment in execution, that the membrane may be completely removed, without mutilation of the deeper structures and without production of too severe inflammatory reaction, satisfactory results often dependent upon the perfection with which this is done.

Having experimented with many methods for the removal of the ventricle mucosa noting in many cases the results of the operation after the patient had been returned to work and by autopsies in the dissecting room. I found some cases did not make a complete recovery while others suffered from various complications and sequels. I devised a method which I found to minimize the dangers of complications and sequels, removal of the mucous membrane of the ventricle by the application of the actual cautery in the laryngo-ventricle. The method has in its favor these points:

1. The membrane can be completely and uniformly removed.
2. Trauma to deeper structures can be easily avoided.
3. The wound left is sterile and the inflammatory reaction from the operation while very severe imme-

diately following the operation, is transient and superficial as compared to that resulting in a septic field.

4. The effect of the cautery destroys the mucosa of ventricle completely and evenly distributes the inflammatory reaction, resulting in a cicatrization that is ideal for obliterating the ventricle, anchoring and fixing the arytenoid cartilage to the laryngeal wall.

5. The subsequent infection of the area is difficult or impossible on account of the eschar, this, of course, preventing any severe or prolonged inflammatory reaction that in cases operated by other methods so frequently leads to cartilaginous or muscular distortions that make operations failures.

6. There is no intra-laryngeal hemorrhage which so frequently follows other methods.

7. That it has affected a cure after other methods have failed.

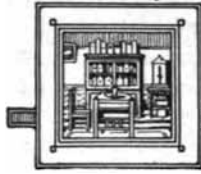
Technic of Performing the Operation

The operation may be performed in decubitus or standing position. I prefer the standing position, the possibilities of injuries in casting and of the badly afflicted animals from asphyxiating are eliminated.

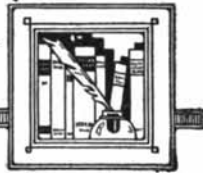
Preliminary to operation the patient should receive a dose of choral hydrate. Large animals one and one-half ounces in capsule given by the mouth. Small animals one ounce. To enhance the action of the choral it should be moistened with one-half an ounce of alcohol.

After the lapse of an hour the ani-
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The 1915 Outbreak of Foot-and-Mouth Disease Over

THE outbreak of foot-and-mouth disease which appeared in Northern Illinois about the first of August, 1915, from the use of contaminated anti-hog-cholera serum, and rapidly spread to hundreds of herds in an area comprising nearly two-thirds of the state, many confidently be said to be over at this time, no new outbreaks of the disease having occurred since December 14th. Sporadic cases may appear for some time, but with the precautions being taken to early recognize and circumscribe the disease, there is little probability that it will become widely extended again, although some infection may yet remain in the recently affected area.

The precautions that are now thrown around the manufacture and testing of anti-hog-cholera serum make it extremely unlikely that this agent will again carry the infection, the requirements being that the serum be made from hogs that there is every reason to believe come from clean territory and that it be tested, not only for potency, but on calves for foot-and-mouth infection as well.

It is unnecessary here to mention the magnitude of the problem that confronted our live stock sanitary authorities dur-

ing the 1914 and 1915 outbreaks of this disease or to say that the major portion of the credit belongs to the veterinary profession for accomplishing this task, the like of which has been accomplished nowhere else in the world. When we consider that England and Ireland, countries smaller than most of the states that were infected in this country, were many years, some say forty years, in eradicating this disease, and that other European countries have not succeeded in its eradication, it is evident that the credit due the American veterinarians for this work is not a small one. Foot-and-mouth disease appeared in Denmark at about the time it appeared in this country in 1914 and still exists there. Notwithstanding all the handicaps that American veterinarians had to work under in the way of lack of organization, insufficient funds, hostility of the livestock interests, etc., and the enormous territory over which this disease spread, the loss from this disease in Denmark is already greater than the cost of its eradication in this country.

Senatorial Investigation

Since the holidays, the committee appointed by the United States Senate to

investigate the source from which the infection reached this country and the methods used in its control, has again taken up its work. A session of the committee was held in Chicago, and much testimony taken from those engaged in the work of eradication, transportation companies and livestock men in whose herds it occurred. Nothing new was brought out in this investigation, except the startling statements of Dr. Glenn Brown of this city, who testified under oath that he knew the hogs, were infected with foot-and-mouth disease when the serum, which caused the 1915 outbreak, was made in October, 1914, by the Chicago Serum Company. He testified that he frequently discussed this serum with Mason S. Peters, president of the company, and assured him that it would cause foot-and-mouth disease if used, and that when doing field work for the company and some of the serum was sent to him to use, recognizing it by the serial number, he returned it to the laboratory and insisted upon having clean serum. He admitted upon cross questioning that he never divulged the information that the serum was infected to the state or national authorities or to any one else—a strange conception of his duty to the public!

Dr. Dunphy's Open Letter

Dr. Geo. W. Dunphy, State Veterinarian of Michigan, has written an open letter to Secretary of Agriculture Houston, in which he severely criticizes a number of statements in the Secretary's report, summarized in our January issue and again brings up the question of the responsibility for the failure to recognize the disease during the first seven weeks after its appearance in Michigan in 1914. The criticism of the daily and agricultural press at the time has doubtless made Dr. Dunphy oversensitive in this matter, because a careful examination of the report of the Secretary does not lead the impartial reader to the conclusion that Dr. Dunphy is censured by the Department of Agriculture or that he is blamed

for failure to recognize the disease upon its first appearance.

The report states that early in its appearance, the disease was exceedingly mild, that it ran an atypical course, differing greatly from the usual form of the disease in its most characteristic symptom, that of being exceedingly contagious. The stand that Secretary Houston takes, and we think very properly if the statements in the report are true, is that the Bureau of Animal Industry is not to blame for the failure to recognize the disease in the beginning of the outbreak. Briefly summarized, the contentions of the Department and of Dr. Dunphy are as follows:

Statement of the Secretary of Agriculture

When Dr. Dunphy's attention was called to the disease, he telephoned the local office of the Bureau of Animal Industry at Detroit. The inspector was away that day, and the assistant inspector in charge, responded to the call and with Dr. Dunphy visited the affected herds. As already stated, the disease was present in an atypical form. The assistant inspector diagnosed it as necrotic stomatitis. Dr. Dunphy told him he suspected it was foot-and-mouth disease, and they agreed to submit a sample to the laboratory at Washington to decide the matter. Scrapings from the lesions were taken and sent to Washington. They were found to contain molds often present in outbreaks of mycotic stomatitis, which was widespread over the United States at that time. No history of the outbreak that would lead one to think of foot-and-mouth disease, was supplied. In fact, the history of the outbreak up to that time was not that ordinarily presented by foot-and-mouth disease.

Inoculations and experiments by the Bureau were negative so far as the specimens sent them were concerned, and the virus of course could not be found by microscopic examination; has never been found and is probably ultramicroscopic.

The report of the pathologist, therefore, was that this was mycotic stomatitis, and this was reported to Dr. Dunphy. The disease continued to spread, and several weeks later Dr. Dunphy again called upon the local office of the Bureau at Detroit, and this time with the inspector in charge, visited the affected herds. A second batch of material from the lesions was sent to Washington along with a history of the outbreak that now began to resemble foot-and-mouth disease. Upon receipt of this, the Bureau at once dispatched Dr. Eichhorn to the seat of the outbreak and proceeded with inoculation experiments, which ultimately proved the ailment to be foot-and-mouth disease, not, however, until many days after Dr. Eichhorn had reached the seat of the outbreak and positively diagnosed the ailment as foot-and-mouth disease, and quarantines and machinery for the control of the outbreak had been started.

Dr. Dunphy's Statement

Dr. Dunphy's statement is that when first called to this outbreak at Niles the latter part of August, 1914, the history, symptoms and lesions which he found were not typical of foot-and-mouth disease but yet were such as to lead him to suspect that that was what the disease might be. He called the Bureau's representative in Michigan, the inspector at Detroit, to the scene, and the inspector being away, the assistant inspector answered the phone and Dr. Dunphy asked him if he was familiar with foot-and-mouth disease. The assistant inspector stated that he had been through the outbreak of 1908 and was thoroughly familiar with this disease. Together they visited the infected herds with the result above stated.

Immediately after returning from this visit to the affected herds, Dr. Dunphy was injured in an automobile accident and confined to his bed. While in bed, he received the report of the Pathologist of the Bureau of Animal Industry at Washington, positively diagnosing the disease as mycotic stomatitis, and being

physically unable to make any further investigation himself, he accepted this report.

The disease continued to spread, and as soon as he was at all able to leave his bed, he again visited the outbreak with Dr. Hallman, pathologist of the Michigan Experiment Station, who took specimens from the lesions, returned to Lansing and inoculated a calf with them. Dr. Dunphy states this calf speedily developed foot-and-mouth disease; that this information was communicated to Washington and led up to the correct diagnosis by the Bureau.

He blames the assistant inspector at Detroit for pretending to be able to recognize foot-and-mouth disease when he was not. He blames the pathological division of the Department at Washington for stating that it was not foot-and-mouth disease upon the results of a negative laboratory finding, and he blames the Secretary of Agriculture for minimizing the responsibility of the Department for the failure to recognize the disease, thus indirectly magnifying his own (Dr. Dunphy's) responsibility.

Michigan Laws Probably to Blame

An examination of both reports, we believe, leads the impartial investigator to infer that Dr. Dunphy erred in not wiring the Department direct when he suspected the presence of foot-and-mouth disease, instead of taking the matter up with the local office at Detroit. The Department maintains a laboratory for the diagnosis of disease and experts whose ability is unquestioned, but manifestly they cannot maintain such laboratories or such experts throughout the country. They are located at Washington, and their services are instantly available to any livestock official throughout the country.

Secondly; the assistant inspector at Detroit blundered in undertaking something he evidently did not understand.

Third; the pathological division at Washington erred in making a diagnosis

from negative findings, something that can never be done with assurance.

But the greatest misfortune of all was the failure to quarantine the infected herds upon the first suspicion that the disease might be contagious, and this probably goes right back to the quarantine laws of Michigan. The writer is not informed as to just what they are, but in Illinois and many other states, the livestock authorities are much restricted in their discretion concerning quarantines of this kind. In fact, in this state, they may be made only upon proclamation by the governor.

If a state veterinarian were as free to institute public quarantines as a practitioner is to institute private quarantines among his clients, and he should be, this outbreak would never have spread beyond one county in Michigan and one in Indiana. When a practitioner is called to see a horse, a cow or other animal, even a chicken, on a farm on which there are many other animals of the same kind, and finds an ailment of which he has the slightest suspicion that it may be contagious, he immediately informs the owner of his suspicions and takes such means as are necessary to prevent the spread of the disease. If at a later visit, he discovers that the disease is not contagious, a thing that occurs very frequently in private practice, the quarantine measures are dispensed with. The owner has been put to no cost beyond a slight inconvenience and his interest has been protected. He thinks all the better of the veterinarian for the mistake he has made because it has shown him to be careful and to be looking out for the interests of his client. Had the laws of Michigan been such, that Dr. Dunphy could have quarantined the herds without giving a reason and could have held them in quarantine without interference from politicians for a few weeks, a positive diagnosis would in time have been made and the disastrous outbreak of 1914 prevented. Dr. Dunphy states in his letter that from the very first he suspected foot-and-mouth disease but that he did not

(Continued on page 126)

OFFICERS AND COMMITTEES, AMERICAN VETERINARY MEDICAL ASSOCIATION

The list of the committee appointments of the A. V. M. A. for the coming year has been announced by Secretary Haring, and is given below.

A study of these committees reveals some curious and some rather startling things. In a study of the distribution, to go no further than the Executive Committee, the governing body of the association, we find, considering it in its entirety, that is, with the elective and appointive members, that California has three representatives on the committee; New York, two; and Pennsylvania, two. In other words, three States have one-half of the representation. More astounding still—of the fourteen members, only one is a practitioner.

To carry further the matter of the non-representation of the bulk of the profession—the practitioners—on other committees, an examination reveals that of the five members on the Committee on Intelligence and Education, not one is a practitioner. The same condition exists with reference to the Committee on Diseases. The Committee on Finance has one member, a college dean, who devotes a part of his time to practice.

General practitioners are further without representation in the Committee on Resolutions (except for one school man practicing "on the side"), the Committee on History, the Committee on Journal, the Committee on Veterinary Remedies, the Committee on the Revision of Anatomical Nomenclature, or among the appointed delegates to the Pan-American Scientific Congress!

Of the seven members of the Salmon Memorial Committee, three are practitioners; of the fourteen members of the Committee on Bovine Tuberculosis, one is a practitioner; of the six members of the Committee on Glanders, two are practitioners; of the five members of the Committee on Reorganization, one is a practitioner; of three members of the

Committee on Agricultural College Investigation, one is a practitioner. On only one committee, the Committee on Legislation, are practitioners in the majority.

Out of 106 members of all committees, only 15 are engaged in practice to the exclusion of other lines of veterinary work. A half dozen others give more or less attention to general practice; but their chief interests lie in other branches of veterinary work.

Considering that the practitioners make up a large majority of the members of the association, and, of course, are the main support of the association in the payment of dues, they do not seem to be doing their share of the work that the progress of the association involves, it being well understood that most of the work accomplished by the A. V. M. A. or by other associations of its size is accomplished through committees. A detailed report of the make-up of the committees follows:

AMERICAN VETERINARY MEDICAL ASSOCIATION

Officers and Committees 1915-1916

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BOOK REVIEWS

Lymphatic Glands in Meat Producing Animals, by P. Godbille, Section Chief of the Sanitary Veterinary Inspection of Paris, translated by Alexandre F. Liautard, M. D., V. M., F. R. C. V. S., and D. Arthur Hughes, Litt. M., Ph. D., D. V. M.

This book is primarily intended for meat inspectors as many diseases affecting domestic animals are most readily detected, especially in their early stages, by an examination of the lymphatic glands, and heretofore there has been no adequate treatise on the subject in English such as this volume affords.

The book is divided into two parts, five sections, and sixteen chapters with sixteen pen sketches illustrating the text. Part I deals with the anatomy of the glands, and Part II with the appearance

of the normal glands, the changes that occur in disease and the pathological conditions presented in the various diseases. The different glands of the thoracic cavity, anterior leg, neck, head, abdominal wall, pelvic cavity, hind extremity and viscera are considered in their turn as they manifest themselves in cattle, swine, horses and sheep during health and disease.

While the book is short, yet it seems to be fairly complete and should be of interest not only to meat inspectors but to veterinary practitioners as well.

Cloth, 176 pages; price \$2.00. Wm. R. Jenkins Co., New York.

Kriegstierseuchen.—Epizootics during War and Their Control. A Guide for Army Veterinarians, Government veterinarians and practitioners. By Dr. Hermann Miessner, Professor of Hygiene and Director of the Hygienic Institute of the Royal Veterinary College in Hannover. With 37 Illustrations. Hannover, 1915, M. & H. Schaper.

This splendid little book describes in condensed form the infectious diseases of animals which have been found of greatest importance during the present war. In view of the fact that there are many good books upon the subject of infectious diseases already in existence, it would not seem that there was need of any further works of this kind, but experience has shown that it is almost essential for the veterinarian in the field to have a small volume which he can carry with him at all times for reference—a thing which is impossible in the case of the larger textbooks.

Of course, in a book of this kind it is not possible to take up all infectious diseases, and only those are considered which are of most importance in war. Thus, for instance, glanders, which causes such terrible epizootics, is described at length. It is also evident that in a book of this kind diagnostic methods are given the greater share of space. While in the chapter on influenza of horses the arsenic treatment is fully de-

scribed, other facts which it may be presumed are almost common knowledge among veterinarians, are touched upon only lightly.

Since the animals concerned in war are mainly those which are used for transporting, namely, horses, the greater portion of the book is devoted to the diseases of these animals. Diseases of cattle, however, have also received attention, since these animals are also used for transport purposes and as meat supplies; consequently space has been devoted to such diseases as rinderpest (cattle plague) and Lungenseuche (contagious pleuro-pneumonia).

Prevention of epizootics being more important than their control, the methods for the eradication of epizootics are discussed at length, all resources being mentioned which are necessary for the early detection and control of infectious diseases. The equipment of hospitals and depots, and laboratories for blood examinations are fully described. The question of disinfection, which is of so much importance, is also taken up.

This is a splendid little book and should be of value not only to the veterinarian in war, but also should be of help to the veterinarian in times of peace, since he must deal with the problem of the transmission of infectious diseases and the control of epidemics.

Medical and Veterinary Entomology,

by William B. Herms, Associate Professor of Parasitology in the University of California, Consulting Parasitologist for the California State Board of Health, and formerly Professor of Zoology and Parasitology in the San Francisco Veterinary College.

No work more important than this to veterinarians has appeared in a decade. Students of veterinary medicine early recognized the importance of lice, flies, ticks and mites as sources of irritation to horses, cattle, hogs, sheep, chickens, etc., and mosquitoes and flies have for centuries been looked upon as a source

of extreme annoyance to the human family; but that insects and arachnids could be transmitters of disease was not seriously considered until the latter part of the last century, and that certain species could be the sole transmitters of certain diseases was scarcely suspected until within the last few years.

From the work of scientific research in the various departments of medicine, veterinary medicine, bacteriology, hygiene, zoology and entomology, there has been evolved the science of medico-entomology, a science that shares a portion of the field of entomology, pathology and bacteriology.

The economic importance of insects and arachnids can scarcely be realized. The California State Board of Health, as we are told in the work under consideration, estimates that malaria costs the state of California \$2,820,400 annually, and yet the state is largely free from that disease. An attempt to estimate the loss due to malaria in any one of the states of the south would produce staggering results.

The reduction in the value of real estate in mosquito invested regions is incalculable and at the same time unnecessary, since the mosquito nuisance can be remedied at a comparatively low cost.

L. O. Howard estimates that the expense incurred in the United States in the purchase of fly traps, sticky fly paper, fly poison, etc., exceeds \$2,000,000 annually and that the cost of screening in the United States is over \$10,000,000 a year. The United States Department of Agriculture estimates that the loss from Texas fever, transmitted solely by the fever tick, amounts to more than \$100,000,000. Ransome estimates the loss from the ox warble fly at from \$55,000,000 to \$120,000,000 per year for the United States alone. No effort has ever been made to estimate the loss caused by screw worms, horn flies, buffalo gnats, the tabanids, or by poultry lice and mites.

This work takes up the whole subject of medical and veterinary entomology in a systematic manner, giving the de-

scription, the life history and the means of eradicating or controlling animal parasites or lessening the nuisances caused by them.

It goes further and gives a description of the methods that have been found successful in educating the public to the need of measures for controlling insect life in the community and obtaining funds for work of this kind, and likewise directions for carrying out sanitary surveys, draining ponds and swamps, cleaning alleys, clearing away driftwood and overhanging boughs from streams, oiling pools that cannot be drained, etc., etc.

A large number of illustrations of insects, arachnids and bacteria cultures are given, as well as proper and improper forms of privies, manure boxes and barns, methods of draining swamps, contrivances for oiling stagnant water, the construction of dipping vats, etc.

The book contains twenty chapters as follows:

Chapter I, Introduction; Chapter II, Parasites and Parasitism; Chapter III, Insect Anatomy and Classification; Chapter IV, Insect Mouth Parts; Chapter V, How Insects Carry and Cause Disease; Chapter VI, Cockroaches, Beetles, Thrips; Chapter VII, The Lice; Chapter VIII, Bedbugs and Cone-noses; Chapter IX, Mosquitoes; Chapter X, Mosquitoes as Disease Bearers; Chapter XI, Mosquito Control; Chapter XII, Buffalo Gnats and Horseflies; Chapter XIII, The Common House Fly; Chapter XIV, House Fly Control; Chapter XV, Blood-sucking Muscids—Tsetse Flies, Stable Flies, Horn Flies; Chapter XVI, Myiasis; Chapter XVII, Fleas and Louse Flies; Chapter XVIII, Ticks; Chapter XIX, Mites; Chapter XX, Venomous Insects and Arachnids—Bees, Wasps, Spiders, Scorpions, etc.; Appendix I, General Classification of Bacteria and Protozoa.

Cloth bound, well illustrated; 400 pages; published by The Macmillan Co., New York. Price \$4.00.

Experiments in Vaccination Against Anthrax by Adolph Eichhorn. Bulletin No. 340, U. S. Department of Agriculture, Washington, D. C.

Investigation of Live Stock Conditions and Losses in the Selby Smoke Zone by C. M. Haring, in co-operation with K. F. Meyer. Department of the Interior, Washington, D. C.

Umbilical Necrobacillosis in Lambs by Winfred B. Mack, D. V. M., University of Nevada. Reprinted from *American Veterinary Review*, August, 1915.

Some Fertility Experiments by Dr. B. F. Kaupp, West Raleigh, N. C. Reprint from *The Poultry Item*, No. 6, December, 1915.

Water, Its Sources, Uses in the Body and Quantities Consumed by Fowls, by Dr. B. F. Kaupp, West Raleigh, N. C. Reprint from *The Poultry Item*, No. 5, November, 1915.

Some Interesting Studies of the Fowl, by Dr. B. F. Kaupp, West Raleigh, N. C. Reprint from *The Veterinary Journal*, London, December, 1915.

Fattening Western Lambs, Bulletin No. 184, Purdue University, Agricultural Experiment Station, Lafayette, Ind.

Winter Steer Feeding, Bulletin No. 183, Purdue University, Agricultural Experiment Station, Lafayette, Ind.

Poultry Investigations, Bulletin No. 182, Purdue University, Agricultural Experiment Station, Lafayette, Ind.

Proceedings of the California State Veterinary Medical Association, December 8, 1915. Dr. John F. McKenna, Chairman Publication Committee, Fresno, Cal.

The Value of Virulent Salt Solution in the Production of Antihog-Cholera Serum by the Intravenous Method, by Robert Graham and L. R. Himmelberger. Reprint from *The Journal of Infectious Diseases*, No. 1, January, 1916.

THE 1915 OUTBREAK OF FOOT-AND-MOUTH DISEASE OVER

(Continued from page 120)

dare to institute the quarantine unless he was positive. The laws of Michigan may be such that he would have been held personally liable for the damages had he quarantined the infected herds and had it later developed that there was no need for quarantine.

What of the Future?

Unfortunately in this country, the positions held by livestock sanitarians in most of the states are political ones and changes occur frequently. Another outbreak of foot-and-mouth disease five years from now would likely find new livestock sanitarians in authority in most of our states. The present authorities will be sorely remiss in their duties if they do not right now, while the matter is fresh in their minds and while the men who have had the experience in fighting the disease and know its requirements are yet in control, institute plans and perfect an organization for taking care of future outbreaks. An organization should be built up in every state. Veterinarians who have had experience in this outbreak in so far as possible should be assigned to certain districts to have charge there in case of another outbreak. As fast as vacancies occur in these positions as the years go by, they should be promptly filled, so there would be at all times a force ready, every man of which knows his duties should an outbreak occur.

Quarantine proclamations should be prepared to be ready for filling in the boundaries, printing and posting on a day's notice—yes, on an hour's notice. All details of these plans, with the men who are to have charge, copies of the quarantine proclamations, copies of articles for the newspapers, etc., should be furnished the Bureau of Animal Industry, which in its turn should have equally elaborate plans for handling outbreaks of this disease for undoubtedly in future outbreaks as in the past, it will be necessary for the Bureau of Animal Industry to co-operate with the

authorities of the various states in handling the matter.

We believe we can confidently say that some action of this kind will be taken by Illinois, and there is little question but that it will be taken by the Bureau of Animal Industry. Let us urge it upon the livestock sanitary authorities of other states with all the earnestness of which we are capable.

THE ACTUAL CAUTERY FOR ROARING

(Continued from page 116)

mal is placed in stocks or a single stall, and the head gently raised and extended by means of a rope attached to the nose-band of a dental halter.

The laryngotomy is done under cocaine anesthesia using to anesthetize the field 15 minims of 10 per cent solution.

Care should be taken not to incise or mutilate the laryngeal cartilages, the incision being drawn forward from the cricoid cartilage through the medium line of the circo thynoidean ligament to the pomum adami. With the laryngotomy wound held open with retractors a cautery, the tip of which is smooth and of about the size and shape of a peach seed with edges rounded and heated to a cherry-red hue, is thrust into the ventricle, moved about so as to come in contact with all parts of the ventricle wall and then withdrawn. The length of exposure should not exceed two seconds. Both ventricles may be cauterized if deemed advisable. The cautery should be provided with a suitable handle about twelve inches long, with two inches next to cautery tip slightly curved to accommodate itself to the direction of thrust, which is upward through the laryngeal opening and slightly backward into the depth of the ventricle; all parts of the cautery should be cooled except the tip. Digital or other exploration of the cavity after cauterization should be avoided as it carries infection into a sterile field.

Pictorial Review of Noted Veterinarians

By WINTHROP WORTHINGTON

The American Veterinary Practitioner

IN this issue we present sketches of three prominent general practitioners: one of whom has, for many years, been well known in Lawrence, Massachusetts; another in Nashville, Tennessee; still another in Denison, Iowa. Here are represented the East, South and Central West. The accounts of the careers of these men are sure to be an encouragement to practitioners everywhere. The independence of private practice and the freedom it permits men are forcibly illustrated in these men and there are reasons for their strength.

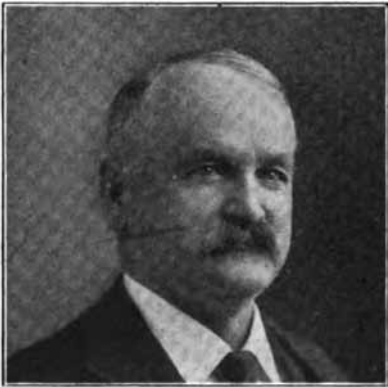
Success in general practice requires more backbone; more resourcefulness; more self-dependence on one's wits than the official veterinarian has to muster, whose money comes from state or government funds. He leans on the state; the state props him up. But the practitioner must "rustle" for a living or else he becomes a failure. More manhood; more moral force; more determination succeed is necessary in practicee than a to veterinary official need possess. My admiration inclines more towards the practitioner than towards the soft, comfortable-living, pampered, veterinary servant of the state.

Hail to thee! O, hardy practitioner.
Down the dusty road; through the mid-
night storm; in the teeth of the frigid

wind, thou goest, wherever sickness calls thee. No weather is too cold; nor too warm; but thou darest it. No place too far; no road too rough; but you must answer the call. The little bag which you carry with you to help you in your handiwork is your servant and not your master. Your masterliness is in your brain. Medicines may be lost, forgotten or scanty. Instruments may be few, unprepared, or wrong for the purpose; but on your resourcefulness you must rely to carry you through any difficulty and bring the creature relief. Manifold must be your adaptabilities to species, and ages, and sizes, and dispositions of animals. At times you must have the proverbial patience of Job with which to possess your soul. At times you must have the muscular grip and firmness of a Hercules. It is all one to you, O valient servant of the public in private life. Keeping clean your conscience by good work and keeping your reputation cleaner is most of your reward. The growing reputation of the veterinary profession as a whole in its records for good and satisfactory work is largely your record; not the official veterinarians', as some fondly suppose. His reward is that he glitters before the public. Yours that you have done it conscientious, noiseless service.

J. F. WINCHESTER, B. SC., D. V. S.

Winchester is one of the finest names in the south of England and Doctor Winchester is worthy of the name. Next to the sees of Canterbury, York and London, the bishopric of Winchester is most coveted by British Churchmen and that see is usually filled by direct appointment of the Crown of one of the preachers of the Chapel Royal. Winchester is a town traceable back to Roman days when the conquerors set up a permanent fortified camp there. He who has any knowledge



of patronymics can see that the man who has the surname, Winchester, no doubt is of good stock. At any rate we are proud of our good Dr. J. F. Winchester, an excellent practitioner and one of the strong men in the profession of our country.

Something like thirty years ago he anticipated a common opinion today in the profession, that a high school course, a complete agricultural college course and a veterinary course constitutes together a fine training for high grade professional service. Dr. Winchester was born in Lynn, Mass., August 5, 1855. When he was ten years old his parents moved to Peabody and it was there that young Winchester received his preliminary education. In course of time he graduated from the high school. He next went to Massachusetts Agricultural College, Am-

herst, Mass., (where Dr. R. P. Lyman later graduated), and he stayed in Amherst until he had received the degree, B. Sc., in 1875. Afterwards he did post-graduate work at the college in chemistry and veterinary science. This was followed by attendance at The American Veterinary College, New York, where he received the degree D. V. S. in 1878. Such a personal, intellectual training surely would be beyond criticism in the profession today, which is always sitting coldly calculating veterinary educational idealism.

In 1878 Dr. Winchester went to Lawrence, Mass., a great, thriving manufacturing town, to practice his profession, and for twenty-eight years, with little interruption, he has served his patrons faithfully in general practice. There are, of course, thousands of practitioners who seldom turn aside, even for an hour, from the routine of strictly private work. On the other hand there are those who, because perhaps of some happy combination of traits, unusually good training and experience, are ever and anon called to do many pieces of work which are undertaken for the locality as a whole, for the state, or for their old college. Doctor Winchester is one of the latter. For four years he was a member of the Massachusetts Cattle Commission. For a considerable time he was inspector of animals for the town of Lawrence. During the three years immediately following his graduation in veterinary medicine he lectured at the Massachusetts Agricultural College and later lectured at the New Hampshire State College at Durham. He has been sought for in difficult situations or when Massachusetts, in the matter of animal plagues, was in a tight place. Doctor Winchester is the author of a number of brochures on subjects pertaining to the profession. To him is due much of the credit for what has been done in Massachusetts to control the spread of bovine tuberculosis. As long ago as No-

ember, 1886, he fought to have tuberculosis in the public schedules placed in the class where it belonged, with the infectious diseases.

A leader in Massachusetts veterinary work, Doctor Winchester was, for two years in succession, president of the Massachusetts Veterinary Medical Association. Seldom missing an A. V. M. A. meeting; loyal to the organization for many years, he was made its president

in 1901 and presided at the Minneapolis meeting in 1902.

Our American veterinary periodical literature contains here and there contributions in the way of case reports which reveal Winchester the wakeful practitioner. He is a man of virile qualities. A thick-set, stout man; grey; with a face which shows pluck and inflexibility—a well-known figure at A. V. M. A. conventions.

HARRY CHASE SIMPSON, D. V. S.

In the Missouri Valley, and especially in the state of Iowa, Dr. Hal Simpson (the name by which he is known to everyone), stands high as a practitioner, as a leader in veterinary organizations, as a good program maker, a secretary who gathered into the Missouri Valley Veterinary Association probably hundreds of members, as a president of the same organization who is an improvement over himself in his earlier secretaryship. Dr. Simpson has the instincts of a successful practitioner well brought out. He is a magnetic, forceful, captivating leader of men whom they naturally choose, as did the clans their chieftains, to stand before them and direct the crowd. He has had some thrilling experiences as a veterinarian; has travelled to diverse parts of the globe, and finally settling in Iowa, has proven the value of these enriching experiences.

Doctor Simpson was born January 8, 1874. He had three years high school training and then two years in Sweet Springs Academy, Mo. In 1899 he graduated at the Kansas City Veterinary College.

The records show that Dr. Simpson has claimed residence in Denison, Iowa, since graduation, and the facts are that most of the time of the last sixteen years he actually has been in general practice in that town. But he has been adventurous. Like the trolls he wanted to look on the pastures on the other end

of the bridge; desired to get veterinary experience by seeing how things were done on the other side of the world.



In the Boer war Simpson undertook the task of giving veterinary attendance to a shipload of mules enroute from New Orleans to Cape Town and East London, Africa. The story he wrote of the trip for *Wallaces' Farmer*, March 29, 1901, tells of his soul-stirring, terrible experience. The ship, the Cunard Liner *Carinthia*, carrying about 1,450 mules, water and forage and a good body of officers and crew, got out into the Gulf and came, in the night time, 150 feet from the shore of Hayti at Point Gravois, when she struck on the rocks. The night was frightfully dark; tropical rains were falling and the breakers could not be heard. In the morning the whole situation was real-

(Continued on page 167)

George Ransom White, D. V. S., M. D.

It is a pleasant thing to speak of cheery, sunny-hearted Dr. George R. White, a man who takes life felicitously and seems not to have an atom of the maudlin in his nature. The warmth of the Southland is in his laughter and the infatuation of his personality made him for nine successive years treasurer of the A. V. M. A. He should be able to go further than that in the organization.

Doctor White is a native Tennessean, having been born in Winchester, Franklin County, August 7, 1874. He was



reared on a stock farm near Chapel Hill, Marshall County, where he acquired that love for animals which has always been a remarkable trait of the man. His preparatory education was obtained in Winchester Normal College. His veterinary training was received in Columbian University (Veterinary Department), Washington, D. C., and he also graduated with the degree Doctor of Medicine at the University of Nashville.

No veterinarian is better known in Tennessee than George R. White. His work for his city, his county, and his state have all made him duly honored. He wrote the ordinance which gave the city of Nashville an excellent system of meat inspection and for five years he served as city veterinarian with fidelity and distinction. He wrote the revision of the law regulating the practice of

veterinary medicine and surgery and he could do this because he had served for five years as president of the State Board of Veterinary Examiners. He has enjoyed the distinction of being well-received by both the medical and veterinary professions; for he holds membership in The American Medical Association; Tennessee State Medical Association; the Nashville Academy of Medicine and the local county medical association. He has served as president of the Tennessee Veterinary Medical Association. A short time ago he finished a term of four years as State Veterinarian.

Doctor White's two books, "The Restraint of Domestic Animals," and "Animal Castration," are known to nearly everyone. The work on restraint is the one good book we have on the subject and it has been adopted by very many veterinary colleges as a guide to the subject. His books and his general reputation have made Doctor White sought for by a number of veterinary institutions as demonstrator and he has visited these veterinary colleges to explain the principles he knows so well.

But, the reader may ask, how has Doctor White made his living; to what form of veterinary work has he given most attention? White for eighteen years has been a practitioner, fifteen years of this time in Nashville. Branching out further, within a year the "White Serum Company" has been formed in Nashville with Doctor White as president and veterinary director. During White's regime as state veterinarian the state serum laboratory was established and he became familiar with the technic of serum manufacture and he has worked with the federal authorities in county demonstration experiments for the eradication of hog cholera.

Any man who has ever seen this ruddy-faced young man, White, this "Tennessee cracker," as Doctor Rutherford

(Continued on page 136)

Department of Surgery

By L. A. MERILLAT, Chicago,
Professor of Surgery in the McKillip Veterinary College,

Fibrous Obstruction of the Teat Duct

THE phrase "stricture of the teat" is usually applied to this condition. It is too well known to require an introduction. Practitioners detest it and writers either ignore it or else pronounce it incurable after enumerating various very ineffectual plans of attack.

Here is a benign, local, accessible condition that seem to baffle us so completely as to threaten our surgical enterprises with ridicule.

Steffin whose latest book is given as the last word in cattle therapy pronounces all stricture of the teat as unfavorable except congenital atresia of the teat orifice and acquired stricture conveniently located near the extremity of the teat. All others are refractory and should not be meddled with except at the owner's risk.

The fact that an animal so affected, no matter how valuable, is forever doomed as a sound milker seems to be an exceedingly good reason why veterinarians engaged in practice among dairies should work out some definite procedure that will bring this annoying condition into the group of curable diseases.

Several times the writer has attempted to excite some general discussion of stricture of the teat in meetings of veterinary associations. At every time the attempt failed to bring out any particular interest. The disease was

simply passed off as a nasty one that could not very well be handled with any degree of satisfaction. The means employed almost universally were slitting operations with various instruments passed into the teat duct. Some have even advised a cautery, but no veterinarian to my knowledge has ever claimed even a fair degree of success with any of these operations.

The only experienced veterinarian known to me who referred to this condition as a simple matter is Dr. A. M. Wray, formerly of Richmond, Illinois, and now of Denver, Colorado. From the wealth of information he accumulated after thirty years of successful practice amongst dairy animals he announced without equivocation that stricture of the teat is amenable to simple ablation of the growth through an invading incision made directly over it. The only ones he feared were those located high up in the galactorforous sinus and especially when these are complicated with fibrous bands stretching across the sinus.

He claimed that the secret of success was surgical cleanliness and the open wound that was left to cicatrize without sutures. Suturing of the wound he found dangerous on account of the certainty of serious complications from infection from within. On the contrary, if the wound was not in-

fectured from handling and the milk was allowed to flow out unobstructed normal cicatrization followed. He advised careful milking or cathetrization and wiping of the wound daily with tincture of iodine as the aftercare.

Coming from a reliable source—a modest man of exceptionally wide experience—these reports have always impressed me as especially significant, but as no corroborating evidence had ever come to my notice and as veterinarians assembled in meetings seemed to doubt the wisdom of the procedure no other effort was ever made to give the method further publicity. Recently, however, three cases thus treated have come under my personal observation and the good results leave me no other course than that of recommending the method as worthy of an extended trial.

Case No. 1. A heavy milking grade shorthorn was found to be difficult to milk at one of the hind teats and the veterinarian called in attendance found a small nodule located three-quarters of an inch from the teat orifice. Without interfering in any way with the condition he called me to operate in the manner I had suggested to him on several occasions. The cow was alone in a small pasture when we arrived. She was cast and tied with ropes, the udder washed with mercuric chlorid solution and then painted with tincture of iodine. The teat being long we found it possible to manage the blood by applying a tape Eschmark. A four percent solution of cocain hydrochlorid was injected subcutaneously at the proposed point of incision. The teat was grasped with the left hand and pressed to tense the skin. With one deliberate stroke of a sharp scalpel an invading incision was made right into the duct. The knife passed right through the nodule, cutting it in two unequal parts. By stretching the wound open with the thumb and finger of the left hand the bisected nodule turned upward into

plain view. It was a whitish wartlike affair that was rooted firmly into the mucous membrane. With the Mayo scissors the two portions were snipped off without difficulty. As there was some bleeding after removing the tourniquet we replaced it with instructions to remove it in two hours. The wound was dusted with iodoform and left open. Each day the veterinarian in charge dressed the wound himself with tincture of iodine and dustings of iodoform, and at the same time cathetrized the milk. There was a leakage of milk for ten days but the wound behaved without serious reaction and after two weeks normal milking was resumed. I saw the cow three months later and as the veterinarian was not present I had difficulty in finding the previously affected teat.

Case No. 2 and case No. 3. As these cases were similar ones a single description will answer for both. Both were grade Holsteins and both were affected with a nodule the size of a small hazel nut right at the very base of the teat. Milking was impossible except with a catheter which had been passed frequently during the preceding days. There was some local inflammation from these cathetrizations and some swelling of the quarter indicating mastitis. The cows were tied with ropes in the recumbent position, cocain injected subcutaneously and an incision one and a quarter inches long made into the duct and sinus. In both cases the nodule was again bisected into two unequal parts. Blood was baled with cotton sponges and each half of the nodule was grasped with a forcep and drawn outward as it was snipped level with the scissors. Two small vessels in the subcutem were picked up and twisted but no other attempt was made to arrest the bleeding which was somewhat annoying but not harmful. The same after care was recommended but in these cases it was intrusted to the owner.

The local reaction owing to the pre-existing inflammation caused by the teat syphon and the mastitis was greater in these cases than in number one, and besides the after care was less intelligently carried out, but in spite of these facts a perfect recovery followed both of these operations.

Extravagant claims should not, of course, be made from this small experience but when these three cases are coupled with the reports of Dr. ray our optimism increases.

Hard Milkers

Wray also transformed a "hard" milker into an "easy" milker by simply rimming out the orifice with a very fine bistoury. The teat is cocained, the bistoury passed into the orifice a quarter of an inch or more and then a thin slice of skin and mucous membrane is rimmed out of the meatus. If too much is removed the teat may leak for a short time, but even this sequel is transient.

ROUTINE TECHNIC OF A FIELD POST MORTEM*

The general plan is applicable to all domestic quadrupeds. Only the technic of evisceration will require a slight variation in the different species.

I

OBSERVE THE GENERAL APPEARANCE OF THE CARCASS

The abdomen, nasal issues, anal issues, enlargements, growths, tumors, wounds, abrasions, contusions, melanoses, exostoses, anchyloses, bulged maxillaries, blindness, age, skin lesions, condition of flesh and visible mucous membranes.

II

POSITION

Roll the carcass to the right side—that is, the left side up. This position exposes all of the intestines and stomach and facilitates their exenteration. It also exposes the pericardium and heart.

*Presented and demonstrated at the clinic of the meeting of the Illinois Veterinary Medical Association, Chicago, Dec. 4, 1915.

III

INCISION WHEN THE HIDE MUST BE PRESERVED

Transversely across the nose to the median line, then back along the median line to the anus. Skin the upper half of the body, including the fore leg as far as the carpus, and the hind leg to the hock. Let the skin drop to the ground.

Search for the *prescapular lymph nodes* which lie under the mastoido-humeralis at the level of the anterior superficial pectoral. The *superficial inguinal lymph nodes* which lie just in front of the external abdominal ring may also be examined at this time.

IV

FORE LEG

Lift the fore leg by the foot and cut off the pectoral muscles close to the upper (external) surface of the sternum from the cariniform cartilage backward. Cut up along the ribs under the latissimus dorsi as the leg is being lifted and then hinge it over the withers by severing the insertion of the serratus thoracis. Examine the inverted leg for the *cubital lymph node* which lies on the distal end of the humerus just above the condyle, and the *axillary lymph nodes* at the insertion of the latissimus dorsi.

V

HIND LEG

First find the *precrural lymph nodes* which lie at the very anterior border of the tensor fascia latae midway between the stifle and the external angle of the ileum, and cut through the tensor fascia latae and backwards through the internal femoral muscles close to the pelvis, disarticulate the coxo-femoral articulation and turn the leg over the rump. The *deep inguinal lymph nodes* will now be found on the inverted leg between the sartorius and the pectineus, and the *popliteal nodes* between the heads of the gastrocnemius.

VI

INCISION OF THE ABDOMEN

Make an incision through the abdominal wall, guarding the knife with the

fingers to prevent cutting the viscera, from the xiphoid cartilage along the linea alba to the pubis and then upward and forward along Poupart's ligament to the transverse processes of the lumbar vertebrae. Turn the flap over the ribs and observe the *peritoneum*, the *position of the intestines*, the *pathological conditions* they exhibit. Do not disturb them by handling, but examine the *colic lymph nodes* that are distributed in large number along the whole lesser curvature. Examine for *peritoneal fluid*.

VII

DORSAL MUSCLES

THE RIBS

Cut transversely across the *gluteus maximus* and *longitissimus dorsi* just in front of the anterior border of the ileum, then along the superior spinous processes of the lumbar and dorsal vertebrae as far forward as the first rib. Separate them from the surface of the ribs and turn them forward over the neck.

VIII

Saw off all the ribs, except the first along the bodies of the vertebrae, using care not to lacerate the organs. Then saw off all the costal cartilages from the sternum except the first. This leaves the first intercostal muscle to serve as a hinge for the flap, which is now turned over the neck by cutting the diaphragm close to the ribs from the lumbar vertebrae to the xiphoid cartilage.

IX

THE PERICARDIUM, PLEURA AND PLEURAL CAVITY

Incise the pericardium vertically, lift the apex of the heart and examine the sac for *lesions* and *pericardial fluid*. Place the heart back into the sac, and then lift up the lungs gently to inspect for *fluid in the pleural cavity*. Let the lung drop back in place.

X

EVISCERATION

If the bowels are bloated, puncture them here and there with a canula to evacuate the gases. Tear away the omen-

tum with the fingers. Ligate the floating colon at the rectum at two points six inches apart after squeezing out the contents between the ligatures. Cut off between the ligatures and then cut the lesser mesentery along the bowel as far forward as the large colon, pulling the bowel out as the mesentery is cut from it. Ligate at the large colon in two places as above described and set it aside for examination.

Now arrange the ileum and jujuneum in their proper relations on the great mesentery. Ligate the jujuneum at the recto-duodenum ligament and cut it loose from the mesentery, drawing it out as fast as it is thus loosened; continue this back over the ileum to the ileo-cecal valve and ligate again. Set these intestines aside for examination. Notice the *mesenteric lymph nodes*, which in ruminants are studded along the mesentery near the bowels and in solipeds are located near the aorta.

Remove the spleen by cutting the gastro-splenic ligament and the spleno-renal ligament. Notice the numerous *splenic lymph nodes* along the hilum.

Lift the stomach and observe the condition of the hepatic duct and the duodenum at its entrance.

Remove the left kidney after hinging it downward to examine the *renal lymph nodes* which are located above near the aorta. Remove the left adrenal.

Draw the duodenum forward under the colon and lay it forward over the lung to prevent mutilation while removing the large bowels.

To remove the large bowels, separate them from the pancreas by blunt dissection. Carefully cut or tear away all attachments except the blood vessels. Examine the vessels for *aneurism* and then ligate the vessels to avoid the outpouring of blood from the veins. Cut off below the ligature and draw the bowels out of the cavity. Note the condition of the cecum and *cecal lymph nodes*. Set these aside, handling them carefully to prevent rupture. If it is desired to invade the

interior, draw them away so as not to mess up the surroundings.

Remove the right kidney and adrenal and observe the *renal lymph nodes* of that side. Section the two kidneys.

Pull the esophagus through the diaphragm about six inches and ligate. Tear loose its attachments; sever the bile duct and remove for examination. Note the *gastric lymph nodes* located along the gastric branch of the celiac-axis.

Leave the liver for the time being and exenterate the thorax.

XI

EXENTERATION OF THE THORAX

Cut through the posterior mediastinum from behind, forward along the aorta, through the arch of the aorta, forward through the anterior mediastinum to the first rib, down and across the trachea and other structures entering the thorax, drawing the apical lobe of the right lung backward to prevent injuring it, then back through the pericardial attachment to the diaphragm. Tear or cut off the vessels and nerves passing through the diaphragm and then lift out the lung and heart by grasping them at the pulmonary vessels. Set aside for examination, noting *lesions* and the *mediastinal lymph nodes* located between the lungs along the esophagus and trachea. Open the heart and examine its chambers for *abnormalities* and *blood clots*. Notice the myocardium, the endocardium, the valves, the orifices and vessels. Note the resiliency of the lungs and palpate them for hard places, tubercles, emphysema, etc.

XII

THE LIVER

Remove the liver and diaphragm together, severing the latter along the ribs. Examine the *hepatic lymph nodes* and section the liver for *pathological conditions that may not appear on the surface*.

XIII

THE UTERUS, OVARIES, BLADDER AND RECTUM

Sever the broad ligaments and ovarian vessels and then cut a circle around the

cervix into the vagina and remove them together. Incise to explore the interior.

Cut the bladder loose from the ureters and push it out through the vulva; then dissect the urethra from the surrounding connective tissue.

Cut through the posterior wall of the peritoneal cavity into the pelvic cavity, break down the perirectal connective tissue, invaginate the rectum through the anus and release it by a circular incision around the anus.

XIV

THE HEAD

Saw off the ramus of the inferior maxillary below the tempero-maxillary articulation and just behind the body anteriorly. Press upon it to assure that it is sawed through at both places. Cut through the muscles and buccal mucous membrane of the floor of the mouth, keeping close to the bone; then deflect under the pterygoid internus through the fauces. Sever the pterygoid internus and stylo-maxillaris at their origins. Remove the plate. Notice the *submaxillary lymph nodes*, the submaxillary and sublingual salivary glands, the parotid, the guttural pouch of the opposite side, the larynx, the *retropharyngeal lymph nodes* and the esophageal infundibulum. Dissect off the parotid and hinge upward. Examine the thyroid glands and the superior *cervical lymph node*.

XV

BLOOD VESSELS

Incise all the exposed blood vessels of the carcass longitudinally and then flush out the abdominal and thoracic cavities of all liquids.

To examine the nasal fossae and the sinuses, carefully remove the nasal bones and the palatine process of the superior maxillary.

To examine the brain, the head should be severed from the body laid on the ground. The brain can be exposed with three blows of a heavy cleaver. One on each side, across the zygoma, with the sharp end, and a heavy blow on the crest of the occiput with the dull end. It re-

quires practice to do this well. The inexperienced, by taking more time, can expose it by carefully sawing and elevating.

The spinal cord is exposed by chopping through the bodies of the vertebrae with the cleaver.

XVI

Specimens intended for laboratory examinations taken during the examination are placed into clean vessels and dispatched as soon as possible to their destinations.

The carcass is now restored to a satisfactory condition for transportation by replacing the organs, turning the legs back to their normal positions and then suturing the skin and abdominal wall along the belly. The thorax can be held in place with a rope or wire. It is better, however, to dispose of the visceral organs separately, as they might trail out where the suturing is not well done.

REMARKS ON DR. DEVINE'S PAPER

(Continued from page 115)

Peters: I was interested in one remark in the doctor's paper relative to the value or the importance of feeding a balanced ration to pure bred animals or to animals in general, and as the doctor remarked, it is absolutely necessary to do so to pregnant animals. Some time ago I wrote a paper on the value of mineral matter to live stock in general, and I just want to draw your attention to this fact, that pregnant animals, especially sows, lose all the way from 25 per cent to 40 per cent of the phosphate of lime in the body during gestation. Now we naturally suppose that the minerals in the food are sufficient to supply this want, but we only suppose that. From actual practice in feeding animals on a large scale, we are confronted continually with the deficiency of this mineral in the food product, and there is no animal that is so susceptible to the lack of mineral matter as the hog.

If hogs are not fed large quantities, or sufficient quantities, of mineral matter, there are certain discrepancies that are known to the laity and to a great number of the practitioners as rheumatism, weak back, kidney worms and the like. These are usually due to a lack of phosphate of lime and can be corrected and avoided if the animals are fed a sufficient quantity of mineral matter, not only spasmodically, that is, once semi-annually, but continually. I think that weak kidneys and weak backs can be avoided if sufficient mineral matter is supplied in the food.

GEORGE RANSOM WHITE

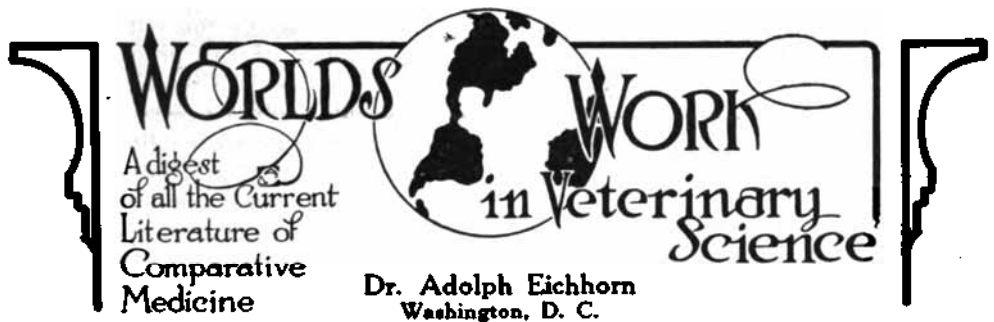
(Continued from page 130)

once called him, knows he likes him. How popular he is is seen in that for nine years it was no use putting up anybody against White for treasurer of the A. V. M. A. No other man has ever held an elective office for so long in that body as White. This was not because he played politics; it was because everybody liked White and could think of nobody else to take his place. Chat with White; laugh with White, and he has you spell-bound. There is a lot of the southern sun in his nature and a lot of zest for his calling in evidence about him.

THREE CORRECTIONS

In the article on Dr. Dalrymple in our January number the following corrections should be made:

1. Page 38, paragraph 2. For "county of Wigton" read county of Wigtown.
2. Same page and paragraph as above. For "Firth of Forth" read Firth of Clyde.
3. Page 38, top of second column. The statement: "He made such a mark in the city affairs that he was given a seat in the council" is in error. Dr. Dalrymple was on the Veterinary Inspection Staff of the Irish Privy Council in Dublin.



Study of the Ophthalmic Tuberculin Test for the Diagnosis of Tuberculosis in Cattle

(Prof. Dr. Arvid M. Bergman, Stockholm.)

Ztschr. f. Infektionskrankheiten, Vol. 17, pp. 37-67, 1915.)

In a large number of tests on 107 cattle of which 87 were tuberculous, Bergman found the ophthalmic reaction to be entirely trustworthy. Blank tests were made with 40 per cent glycerin solution and with concentrated glycerin bouillon. These did not cause pus secretion when dropped into the eyes of unaffected cattle. Repeatedly dropping of the tuberculin into the same eye did not interfere with the test, provided the eyes were observed at frequent intervals. The results of the eye tests were controlled clinically and by postmortem examination. Out of 87 tuberculous cattle, 70 reacted positively, 11 doubtfully, and 6 negatively, to the eye test. Out of 20 healthy animals only one reacted positively. On repeating the tests on the same eyes, entirely correct results were obtained, the 87 tuberculous cattle reacting positively and none of the 20 healthy ones.

Annual Report on the Prevalence of Animal Diseases in the German Empire for 1913

Besides containing numerous tables of statistics, etc., several interesting cases of

human infections and deaths from animal diseases are described.

ANTHRAX. A total of 129 cases of anthrax in man occurred, 10 of which resulted fatally. The following cases are of interest: A woman worker became infected from some Chinese horse hair which had passed through a steam sterilizer but on account of the tightness of some of the hair bundles, sterilization was not complete. The final outcome of this case was not stated. In one case, recovered, anthrax serum and salvarsan were injected. Most of the infections were possible because of skin abrasions, cuts, etc.

In East Havelland a cow was found to be affected with anthrax on postmortem examination. All present were warned of the danger and disinfected their clothes, hands, etc., except one assistant who stated that he did not take part in the postmortem examination, but was only an onlooker. Shortly after however, a pustule developed on his face, and in spite of all warning, he did not apply to a hospital for treatment until eight days subsequent to the slaughter of the animal. He died of anthrax the next day.

GLANDERS. A man who assisted a veterinarian in January in an autopsy on a horse dead from glanders, became infected and died from the disease in December. This is the only case of death from glanders mentioned in the report.

FOOT-AND-MOUTH DISEASE. Prophylactic inoculation against this disease, using Loeffler's serum, was generally attended with good results, although there were some cases in which cattle developed the disease after being so treated. Several cases in man are mentioned, none of which were severe.

SWINE ERYSIPELAS. Several cases of persons infected while making postmortem examinations, etc., occurred, all of which recovered. A serum treatment was given.

BOVINE TUBERCULOSIS. Two veterinarians were infected while making postmortem examinations, both through skin abrasions on the hand. One developed skin tuberculosis (*lupus verrucosus*) which was successfully treated by local excisions. The final result in the second case was not ascertained.

The Value of Abderhalden's Reaction.

Dr. F. Rehbock (Halle, Germany), investigating the results of Abderhalden's dialyzing method, as to the early detection of pregnancy, found that positive reactions were obtained from 10 to 20 days after fertilization. Horses, cows and goats were used in his experiments.

Conephrin for Local Anesthesia.

(Allatorvosi Lapok, 1915.)

The Thilo Mfg. Co. has prepared an anesthetic for local use, called "Conephrin." Its combination is:

Cocainum hydrochloricum.....0.75 Gm.
Paranephrinum, Merck.....0.004 Gm.
Natrium chloratum (sodium chloride)
.....0.9
Thymoltraces
Aqua destillata Q. S.....100.00

Conephrin is said to be very useful in veterinary practice, especially for dogs.

Good Wound Dressing.

(Allatorvosi Lapok, 1915.)

Chrysospates recommends the use of 2.5 per cent iodoform in liquid paraffin for the dressing of wounds. He claims that this dressing is not only antiseptic, but aids regeneration of the tissues. At

the same time vaseline should be applied to the edges of the wounds.

Treating Wounds with Animal Charcoal

(Allatorvosi Lapok, 1915.)

The wound should be first washed and cleaned, using hydrogen peroxide. Its surface is then covered with fine powdered animal charcoal, applied with a duster. After covering the wound well a dry bandage is applied. If necessary the bandage should be changed daily, the scab removed by the use of hydrogen peroxide, and a fresh dressing of the charcoal given. Deep wounds may be treated with a paste made of powdered charcoal. According to Knaffl, severe and neglected wounds will rapidly yield to this form of treatment.

Stable Morphin Solution

(Allatorvosi Lapok, 1915.)

The Swedish military pharmacies prepare a stable morphin solution, according to the following official formula:

Morphini hydrochlorici.....3.0
Aquae destillatae.....100.0
Thymoli0.03

To prevent the loss of hair, due to various diseases, the following remedy will prove very useful:

Spiritus vini (alcohol 95%).....80.0
Spiritus camphorati.....5.0
Spiritus sacchari.....5.0
Tinct. cantharides.....5.0
Glycerini5.0
Pilocarpini hydrochlorici.....0.20
Olei santali gtts.....V
M. Sig. Rub in daily.

Bierling's Method of Treating Hemoglobinemia (Azoturia) In Horses

(Deutsche Tier. Woch. 1915.)

Bierling at first draws 4 to 5 liters of blood from the affected horses. Then subcutaneous injections of .08 gms. of arecolinum hydrobromicum (hydrobromid) are given. The hind quarters are well rubbed with spirits of camphor and the animal covered in order to keep it warm. Easily digestible or liquid food is given. In serious cases sodium sali-

cylate (100 gms. in 2 days), sodium bicarbonate (300 gms.), also (30 gms.) may be given internally, and caffeine sodium salicylate (5 gms. to 15 cc water), morphin hydrochlorate (.5 gms. to 15 cc of water), pilocarpin hydrochlorate (0.4 gms. to 100 cc of water) administered subcutaneously. It must be considered however that none of the above mentioned drugs has any specific action.

Bierling never fails to bleed the animals in the early stage of the disease.

Alcohol for the Treatment of Purpura Hemorrhagica of Horses
(Allatorvosi Lapok, 1915.)

Speiser administers 250 grams of alcohol daily, in three-fourths liters of water divided in two portions, to affected horses. The dose, however, may be increased up to one liter, according to the size of the animal.

Method Employed in the Prussian Army During the War to Prevent The Spread of Glanders
(Berl. Tier. Woch. 1915.)

The veterinary staff of the Prussian army distributed a circular, giving in non-technical language, an elaborate description of glanders, describing the nasal and skin forms, symptoms, their recognition, course of the disease, how to observe the animals, and calling the attention of the private to report at once any animals manifesting suspicious symptoms. The publication describes thoroughly the dangers arising from glanders infected animals, and points out to the soldiers, that not only horses, but mules, asses, and even men are capable of contracting the disease. They are therefore urged to assist in every way possible to prevent the spread of the disease. The men are warned of the danger in horses sneezing in their face, and are cautioned not to come in contact with nasal secretions, and not to touch the face, especially the eyes, nose and mouth, after handling horses, until their hands have been thoroughly cleansed and disinfected. Every soldier is required to examine his horse daily. A detailed descrip-

tion is given of the glanders organism, the use of disinfecting agents, and sanitation. Permitting captive Russian horses to mingle with the Prussian animals is strongly prohibited, as all the Russian horses must undergo a thorough examination, many of them having been found afflicted with glanders. The use of common drinking pails, fodder cribs, and bedding is also regulated.

The Diagnostic Value of A Blood Examination in Glanders

(Dr. A. Marcis, Budapest; Wien. Th. M., No. 7, '15.)

The author examined the blood of 993 horses, of which he autopsied 151. 12 specimens of blood were from animals showing an elevated temperature. He concludes, that while the agglutination fecton, the complement-fixation can be used from the 7th day subsequent to infection advantageously. As an antigen test is positive on the 5th day after inhe uses a bacterial emulsion of *B. mallei*. The antiformin-bacilli extract of Altmann and Schulz, as well as a 5% mallein solution prepared by the Veterinary Medical Institute in Budapest also proved satisfactory as antigens. Animals suffering from a disease other than glanders give negative reactions. Of the complement-fixation, agglutination and precipitation reactions, he prefers the fixation test, stating however, that they may all be used advantageously. He personally prefers the use of all three tests. The subcutaneous mallein test cannot be applied to animals with fever; this condition however would not interfere with the complement-fixation test. A test must be distinctly positive to be considered as such, incomplete fixation is considered as suspicious only and the test must be repeated. The amount of serum used in his test is 0.1 or 0.2 cc. In cases of incomplete fixation and positive agglutination and precipitation reactions, the animal is considered glandered. The subcutaneous mallein test appeared to be of less value than the complement-fixation as out of 25 autopsied cases of

glanders, 18 gave a negative mallein reaction, while in the blood test 20 reacted positively, one suspicious, and four negative.

Vaccination Against Foot-and-Mouth Disease with Loeffler's Serum

(J. Matschke; Wien. Th. M., No. 6, '15.)

The original is a report of the Department of Agriculture in Germany, as to the results obtained with Loeffler's serum in the vaccination against foot-and-mouth disease. The vaccination was tried on 245 animals in 53 yards of 12 commonwealths (villages) located in different regions in Prussia. Controls were left in 32 yards (254 animals). The cattle were injected subcutaneously on the side of the neck at intervals of from 10 to 14 days, 200, 60, 30, and 20 cc. of serum being administered. In 31 yards controls came down in considerable numbers (30), while among the vaccinated animals only one developed symptoms, and this in a yard where three of the control animals were diseased. The vaccinated animal did not show symptoms until 25 days after vaccination. The author concludes as follows: Prophylactic vaccination with Loeffler's serum in foot-and-mouth disease may be used advantageously in preventing an outbreak or spread of the disease. The protective immunity is not lasting. The value of the immunity does not depend on the virulency of the infecting material. The vaccination has no ill effect on the animals treated. The cost of the serum (32 M—\$8.00 for large animals and 16 M—\$4.00 for smaller animals) is, however, a very serious check in using the serum.

The Action of Rabies Virus on Cold-Blooded Animals

(M. Phisalix, Ref. Ztblt f. Phys. No. 1, '15.)

The question as to whether cold-blooded animals are really immune to rabies virus is still unsettled. The author had no success in his infecting experiments with amphibia and reptiles. Keeping the animals warm at a temperature of 35° C.

had no influence on the experiments. At first salamanders and vipers seemed to be exceptions. They came down after being inoculated with the specific brain emulsion, showing symptoms of paralysis. However, death proved to be due to another cause, as emulsions prepared from the brain of healthy animals brought out the same results. We deal here with the poisonous action of nerve substance.

Factors controlling fertility in animals. JOHN HAMMOND, M. A., of School of Agriculture, Cambridge University. *Jour. Agri. Sci. Vol. 6, Part 3, p. 276.*

—After a consideration of the ways in which the fertility of domestic animals is controlled some of the factors which limit it have been investigated. Various circumstances control the number of ova shed at each heat period. Data are presented which show that the low fertility of young as compared with adult sows is due to the fact that not so many ova are shed at each period.

Counts have been made of the number of corpora lutea present in the ovaries and number of fetuses present in the uteri of pregnant rabbits and pigs. The results show that many more ova are shed at the heat period than young are produced at birth. Some ova possibly may be lost but many after fertilization atrophy at some period of their development and undergo absorption in utero.

While the occurrence of atrophic fetuses only causes reduced fertility in animals which have many young at birth yet their occurrence in animals producing only one young would give rise to sterility so that the problem of the cause of the atrophy becomes an important one.

Investigation points to the conclusion that the atrophy is not bacterial in origin since frequently healthy and atrophic fetuses lie side by side in the uterus. Moreover no bacteria could be found either in the fetus or fetal membranes.

Therapeutic Digest

By MART R. STEFFEN, Brillion, Wisc.

Here are some interesting items copied from the Medical Council.

The new United States Pharmacopeia will discard the term cubic centimeter (cc), using the word "Mil," which is a contraction of milliliter, the thousandth part of a liter.

Under "The status of alkaloidal therapy" we read the following:

"To the physician who is prejudiced against the well-grounded advocacy of alkaloids we wish to urge the study of authoritative literature upon pharmacology and therapeutics; and to the physician who is obsessed with the idea that alkaloids have practically the sole place in the therapy of botanic drug medication we would urge a short course in the wards of any good hospital. To both of these men we wish to say that they need to make a fresh start and become balanced." Veterinarians can put this in their pipe and smoke it, too.

Animal charcoal nine parts and iodine one part by weight, when mixed intimately together, enter into a peculiar physical combination. Finely powdered, this mixture is recommended by Lemaire as a surgical dressing. It is non-irritating, since the iodine is very gradually liberated, and the carbon has valuable absorptive powers.

In a recent number of the *New York Medical Journal* we note an article on treatment of "chauffeur's knee," sup-

posed to be caused by shifting or throwing in and releasing the pedals on motor cars.

It is interesting to note how many former horsemen and trotting-horse devotees are now motor speed fiends. In the cities this is more noticeable, but even in the small towns it is nothing uncommon to see a former "horse-jockey" developed into a motor enthusiast.

In the issue dated December 1st, *Kimball's Dairy Farmer*, a farm paper claiming 170,000 subscribers, prints two of the most narrow-minded articles on the subject of the handling of the last outbreak of foot and mouth disease that have yet appeared in print. One article is by M. D. Munn, president of the American Jersey Cattle Club; the other by Tom Middleton "of Kentucky." Both articles, and especially the latter, are a conglomeration of "smart-alecky" talk, such as farmers like to hear on these subjects. Among other things, the Bureau of Animal Industry is labeled as being the greatest obstacle to the successful pursuit of the breeding of pure-blooded cattle. Veterinarians by the wholesale come in for condemnation. In this connection it is interesting to note that this very farm paper is one of the few who yet carry the advertisements of veterinary correspondence schools.

The *New York Medical Journal* takes the following from the *Medical Record*, by Herman N. Biggs: "Septic sore

throat frequently occurs in epidemics, and is caused usually by streptococci, which can be traced to infected cows on dairy farms. The symptoms are uniform and characteristic, with a rapid onset often with a chill, and a sudden rise in temperature to 103 or 105 degrees Fahrenheit. Headache is severe and general muscular pain is present. The throat may show only general redness, like scarlet fever throat; later, however, small patches of membrane may appear on the tonsils, and in many cases the exudate resembles diphtheria. The cervical lymph glands are almost always much swollen. The first period of the disease lasts for four or five days, resulting in rapid recovery in mild cases and marked by secondary complications in severe cases. Common complications are peritonsillar abscess and suppuration of the cervical glands * * * The only means of prevention lies in universal pasteurization of milk used for drinking purposes.

The same issue of the same journal contains the following, copied from the *Journal of Biological Chemistry*: Effect of Pituitary Substance on the egg production of the domestic fowl, by Clark. The author reports some results obtained by the use of pituitary gland substance removed from growing mammals. In the first experiment thirty-five hens were used, while in the second 645 were fed forty-five grams daily. It was found that by the fourth day after the first dose the egg production, which had been decreasing, increased in the first series from sixteen a day to thirty-two; in the second series the increase was from 248 to 339. Another feature was the increase in hatchability. Out of 100 eggs collected before dosing only seventy-one hatched, after the dosing ninety-six. The increase in laying was also preceded and accompanied by an increase in appetite.

McCallum and Davis, in the same journal, explain that the loss of the

nutritive efficiency of heated milk is due to changes which occur in the casein, destroying its biologic value as a complete protein.

According to the report of the Commissioner of Internal Revenue there were over 5,000 violations of the Harrison Narcotic Act in four months. Among this number 257 physicians, 40 dentists and 6 veterinary surgeons were included. Convictions in 106 cases resulted mostly in the imposition of money fines; in some cases both fine and imprisonment. The sentence of imprisonment varied from a short jail sentence to 3 years in the federal penitentiary.

Every practicing veterinarian should obtain a copy of a bulletin published by the Bureau of Animal Industry under date of December 27, 1915, on Anthrax Vaccine and Serum. The author is Dr. Adolph Eichhorn, and those veterinarians who are under the impression that the labors of the Bureau stop at meat and livestock inspection will change their minds when they have carefully read this bulletin. It will give every one of them an insight into the thorough and painstaking manner with which the Bureau conducts experiments which ultimately accrue to the benefit of the practitioner. Several reports are also given in this bulletin of grave cases of anthrax which were treated successfully with Bureau anthrax serum. This bulletin would also make good reading for that flock of agricultural paper writers who, by their lop-sided campaign of articles against the Bureau methods, made the recent foot and mouth disease eradication extremely difficult. But then—on second thought—the matter in this bulletin would no doubt be too deep for their shallow cerebral convolutions.

Do not ask when to stop my JOURNAL. I will tell you when to stop it; stop it when I'm dead. It is worth more to me than anything I can get for the money.

Illinois.

DR. STEWART.

Note: Any Vet is a dead one who doesn't take it.

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

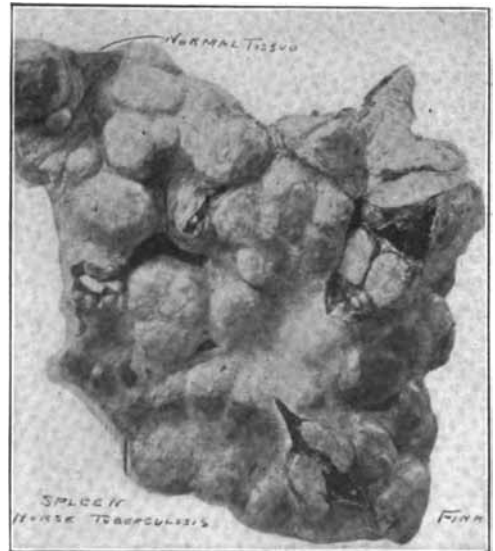
Tuberculosis in a Horse

BY DR. J. WILLIAM FINK, Newburgh, N. Y.

ABOUT a year ago, a very aged horse came to my observation for treatment, with history that the animal had not been doing well and seemed to be running down, as the owner described it. After carefully examining the patient, I was unable to arrive at any definite conclusion or find any evidence of clinical disturbance other than what may have been mistaken for pulmonary emphysema or heaves; temperature 106° F. I advised the owner to relieve the horse of any hard work for a while and feed him good and allow him the freedom of the paddock.

Four months later, I had occasion to visit the owner's farm to see a cow, and while there, examined the horse at the owner's request, as he thought the animal appeared to be just about the same in spite of the better care and feeding he was receiving. At this time, the horse had a temperature 101 and when moved about, would emit a slight cough, not unlike "heavy" cough, though not characteristic, nor was the respiration characteristic of emphysema. Careful inquiry into the history on first examination precluded any suspicion of glanders, but on second examination, I decided to give the animal the mallein test. This gave a negative result.

The owner's demand that I prescribe tonics or medicine for the horse, was always met with the same reply, that I did not know just what was indicated as I



hadn't decided what the trouble was. On several occasions within the next six months, I would meet the owner on the road, and he would tell me he was trying a new brand of tonic or stock food, until one morning he advised me the horse was found dead in the stable.

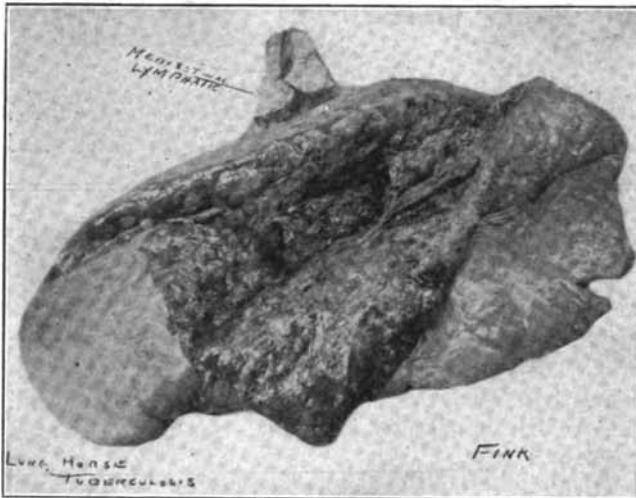
The post mortem examination revealed

lesions so similar to bovine tuberculosis that I removed sections for histological and bacterial examination to verify the diagnosis. The lungs were considerably enlarged, there being masses of tumor-like formations the size of walnuts throughout both lungs, each tumor being surrounded by complete or incomplete

never been tuberculin tested, the attendants and owner as well, showed physical evidence of tuberculosis.

This is the second case of tuberculosis in a horse I have observed, although I was unable to verify the first diagnosis on account of the condition of the organs when post mortem examination was held.

The patient was a very old saddle pony that the owner described as having "coughed himself to death." When the autopsy was held, two days after death, the lungs seemed to be one complete mass of tumors in various stages of caseo-calcareous degeneration and the bronchial and mediastinal glands considerably enlarged. The history of the pony was the same as that of the other horse; he had been raised by the owner, became unfit for use the last



fibrous connective tissue capsules—the centers of many calcareous and a few caseo-purulent. The mediastinal and peribronchial lymph glands were enormously enlarged and quite hardened by fibrous tumor formations with small caseous and calcareous centers. The functional tissue of the spleen was almost completely obliterated by the presence of tumors varying in size from that of a walnut to a lemon. Many were calcareous, a few caseous, and all surrounded by thickened fibrous connective tissue walls, almost tendinous. The liver contained only two lesions of a similar character, of about the same consistency, close together and on the under side. The lesions throughout resembled somewhat the tumors described as lymphadenomata, although varied in size from that of a nut to an orange in a few instances.

It might be interesting to note that this animal had always been stabled where the stalls opened into the cow barn and pastured with cattle that had

two years, and coughed more and more until he finally died.

CASE FOR DIAGNOSIS.

Nov. 19th. Case. Sorrel pony, weight about 950 pounds, age 10 years and in good condition.

Called about noon. Found she had not eaten her last evening meal—stood droopy, looked sleepy, but was having quite a hard chill, shook all over. Temperature 102°; gave aconitine every thirty minutes and blanket-ed her warm.

At 5:30 p. m.—Standing quiet and respiration about normal, temperature 104. I gave 30 grains acetanilid in capsule—light stimulants followed during the night.

At 9 a. m., 20th.—Apparently better, temperature 101—pony was led two blocks for me to see. She was given small doses of strychnine three hours apart. She looked bright but neither ate nor drank.



JUNIOR FOOT-BALL TEAM GRAND RAPIDS VETERINARY COLLEGE

Reading left to right:

Top row—R. H. Ward, Q. B. Van Sant, Mgr.; Watson, Coach; F. B. Fried; L. E. Schwalm.

Middle row—R. E. Jenne, L. T. Murty, C. Liebenstein, L. G. Schott, L. T. Jandernoa.

Bottom row—G. Gruenewald, L. H. Marcus, Capt.; R. G. Klug.

The Junior foot-ball team of the Grand Rapids Veterinary College went through the season of inter-class games without a defeat and as a grand climax defeated the strong Y. M. C. A. team of Grand Rapids on Thanksgiving, the score being 20—0.

The All-Star team of the college would like to book games for the season of 1916. Address Mr. T. Jandernoa, care Veterinary College, Grand Rapids, Mich.

At 9 a. m., 21st.—Was called in a hurry. I thought the people were more excited than anything else and was busy at the time, but a little later they called me again to have a consultation with Dr. J. O. Young. On meeting at the case we found something very wrong had taken place in this case. I explained to Dr. Young as best I could the condition in the past three days. We found at this time a temperature of 103. Respiration fast and labored. Heart beat was something extraordinary; it actually shook the entire animal; the head was carried

very low, she was restless and uneasy, turning around in the stall very often; would place her nose in the water often but not try to swallow any. Nothing definite was decided on. Atropin was given hypodermically. At 5:30 p. m. condition was about the same. Very uneasy, heart beating harder (if that was possible); moved around with a very unsteady gait, real staggery, apparently had lost control of the hind quarters. Atropin was followed, and our prognosis was she would be gone in the morning.

8 a. m., 23rd.—To my surprise she

was standing very quiet, looking sleepy, eyes slightly swollen and some jaundice color in them. Drank about a pail and a half of water during the night and on walking up to her, would lay back her ears and look real cross.

Temperature 100; medicine was changed to half grain doses of strychnin and 5 grain doses capsicum. Mare was purging some but not bad. All conditions apparently were improving except that of purging. We both at this time thought she had a good chance to recover and gave them some encouragement on the case. At 5 p. m. we again called and found the temperature 100, respiration nearly normal, pulse weak and fast, eyes swollen and the light hurt them and they were kept closed, standing quiet, more steady in her walking, neither ate nor drank anything at this time.

Prognosis—Not so well and very unfavorable. She acted tired and gave one that impression of not caring for anything which in the horse (in my opinion at least) means they have given up and will not fight any further. About 11:30 p. m. a telephone call stated she had laid down but had got up into one corner so that she was not comfortable, and wanted me to call and see her. My guess was that it was all over and told them they could pull her around as well as I and that I really did not think that any one could help them any further. Reported dead at 12:30.

Post mortem findings: After lying from 12:30 a. m. to 9 a. m. No bloating of the carcass.

On taking off the skin we noted a very peculiar condition of the body surface. A very yellow appearance, not so much as in Texas fever but very yellow, showing we had quite an absorption of bile. The body surface was studded with hemorrhagic spots about one-eighth of an inch across. It resembled very much the condition of the skin of hogs with hog cholera. On opening the body we noticed the red

appearance of the mesentery. It was of a dark black color and when cut into, black blood flowed from the cut. The intestines were not inflamed nor even red. The mucous membranes were not even colored, the liver was very dark and would tear as if it were partially decomposed. The gall ducts were empty and could find no obstruction which might lead to the cause of the jaundice condition.

Will some one who has had a similar condition tell me what I had?

How would you account for the friable condition of the liver?

The absorption of bile?

The whole of the mesentery filled with that clotted blood?

Practically a normal respiration? And most of all a normal temperature 100° F. up until at least six hours before death?

Did I have an occluded portal vein?
Kansas. D. O. K.

ADRENALIN IN PARTURIENT PARESIS

Having read Dr. J. L. Tyler's (whom I have the pleasure of knowing) article on "Relapsing Milk Fever," it reminds me of a case similar in many ways described to me by Dr. Hamilton, the well known Victoria, B. C., veterinarian. His case was equally stubborn until he used a hypodermic injection of adrenalin, which, he said, acted beautifully. He said he read of its use in such cases in one of the London veterinary journals. I am sorry to say, I do not remember the dosage.

Personally, I have only once had an obstinate case. This responded to a second "air treatment" together with a hypodermic injection of strychnin, which I always give, as I also do the after treatment of salts. In antepartum paralysis, I always get results with either strychnin hypodermically or with nuxvomica powders, without air treatment.

Once, in a case of impaction, after giving a cow small doses of nuxvomica for several days, I gave one-fourth grain

strychnin hypodermically and got most alarming symptoms, which, however, passed off after an hour or so. The cow had been under treatment for a week, having received medicine after the third day she was sick, the treatment consisting of epsom salts, ginger, nux vomica, enemas, etc. She had small passages about once a day, urinating fairly freely, but would neither eat nor drink of her own accord, although otherwise appearing bright. She died the seventh day. Unfortunately I had no chance to hold an autopsy, which might have cleared things up.

I also remember reading in one of the London journals of the use of adrenalin in milk fever some years ago—I think—without any other treatment.

G. R. BOWYER.

Tamarinds, Jamaica, B. W. I.

OPERATE EARLY ON CONTRACTED TENDONS

Believing that the average veterinary practitioner is more interested in surgery than in other lines of practice, due possibly to the fact that the results are more positive, will give my *modus operandi* and some of the results of operations for volar flexion. In my practice I have come in contact with a great many cases of this, both chronic and acute, in all ages of animals, and have noticed that a great many practitioners have a disinclination to operate, but instead resort to liniments and blistering, or firing, which generally aggravates the condition.

In acute cases rest and cold, tight bandages are indicated. In chronic cases, if there is the least mobility of the fetlock joint, operate by all means.

First clip the affected leg and cleanse well. Paint the field of operation with tincture of iodine. Then pass the stomach tube and administer from $1\frac{1}{2}$ to $2\frac{1}{2}$ ounces of chloral hydrate, according to the animal's weight, in solution, as an anesthetic. This works well, and I have never had any bad effects. The foot should be leveled to the best of one's

ability. In a chronic case, with extreme flexion, this sometimes requires considerable effort. As the anesthetic begins to take effect, put on the casting harness and cast with the leg to be operated on underneath. It should also be left free from the hobbles. Secure this leg so it will be extended somewhat forward. The incision is made about midway between the fetlock and knee on the side of the leg, so as to miss the metacarpal artery and veins. Make this incision only large enough to allow the insertion of a small probe bistoury. Do not make the incision in the groove of the leg, but on the perforans tendon. Insert the probe with considerable pressure, so as to keep it tight to the perforans tendon, until you can feel it pressing the skin on the opposite side of the leg. Then turn the cutting edge against the tendon. At this stage have an assistant draw the foot tight with a rope around the pastern and under the foot, putting his foot on the animal's knee and pushing backward. This tightens the tendons and facilitates the cutting. You can hear the tendons parting, and there will be a gap between the two ends of the two tendons of from one to two inches. There is practically no hemorrhage. Now release your animal and cover the wound with absorbent cotton saturated with $1/500$ bichloride of mercury solution, and give the animal time to recover from the anesthetic. When he arises put a small piece of the saturated cotton over the incision and bandage the leg tightly from the foot to the knee. The wound generally heals by first intention; rebandage in five or six days, and keep tightly bandaged until entirely well. I use no braces or supports. Keep animal loose in box stall or small yard. In three weeks the adhesions are quite strong, and by two months he is ready for light work.

Following are some cases on which I have operated: Shire stallion, owned by Warrington Bros. Extreme volar flexion of three years' standing. Was hurt hauling gravel from canyon. Was put

to work 2½ months after the operation at heavy hauling with no bad results.

Eighteen-month-old filly, owned by H. Musser. Extreme volar flexion started to develop at about six weeks of age. Now, as a three-year-old, it is almost impossible to tell by appearance or action which leg was operated on.

Mule, had been owned by Utah Construction Co. Extreme volar flexion in hind leg, of several years' standing. The hoof had grown out like a cow's horn. I removed twelve inches of this horny growth. Had to use a block and tackle wire stretcher to break down adhesions. This mule is now a clipper to go and has worked hard for nearly three years since the operation with no return of the trouble.

I have treated many similar cases.

H. R. ERSKINE,

Non-Graduate Veterinarian.

Twin Falls, Ida.

THE COUNTY AGENT

Several times in the past year veterinarians, through the JOURNAL, have expressed a kind of contempt for, and perhaps jealousy of, the county agent's work. Now, this state of affairs should not be, as one can help the other in too many ways. I am writing from the standpoint of one who has had experience in both lines. I am now county agent, but before I took the job I had lots of veterinary work referred to me by the then county agent.

The only real veterinary work a county agent does is in the way of prevention of disease, by advice, sanitation, etc., and he really takes from the practitioner very little actual fees, except, perhaps, in inoculation against hog cholera. A competent and conscientious county agent always advises the calling of a competent veterinarian when he sees one is needed. Even when the county agent is willing to do veterinary work he has not time to do it, as his many other duties take all of his time.

The best way in my opinion is for the two to get together and work for the

betterment of the agricultural interests and the veterinarian's business will surely profit.

LAWRENCE S. WOLFE.

Orangeburg, S. C.

COW WITH PROLAPSE OF THE RECTUM

On December 25th I was called to treat a cow having a complete prolapse of the rectum. The history the owner gave was that she had had the same thing when she was a yearling. She is now nearly three years old. On December 22d he noticed the condition, but thought that she would recover if the mass was returned.

When I saw her she had expelled a mass about the size of a man's head. It had been bruised and cut until I thought the only cure would be an amputation, and as Dr. Merillat says "recoveries are rare," I decided to return it and try to keep it in. The patient was straining very forcibly.

I gave a dose of chloral, washed the mass, returned and held it with a beer bottle until I inserted a tobacco-pouch suture; removed the bottle and tied the suture in a double bow knot. With the exception of a dose of magnesium sulphate and enemas at five-hour intervals this is all the treatment the cow received.

On December 26th the sutures were loosened and she got a small dose of epsom salts again and an enema. She was not treated again and made a very nice recovery.

C. E. FULLER, M. D. C.

Beach, N. D.

A NEW TREATMENT FOR FOLLICULAR MANGE

In the study of skin diseases of the human being one may naturally become interested in those of the lower animals, and, thanks to the kindness of friends among the veterinary surgeons, I have had the opportunity of studying a good many of the skin eruptions of the dog. Among them I imagine that few are so troublesome and refractory to treatment

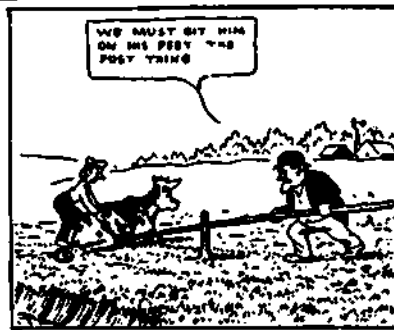
OLD DOC VETTER



HE COLLAPSED
LIKE THIS. AN
'EYER BIT HIM UP

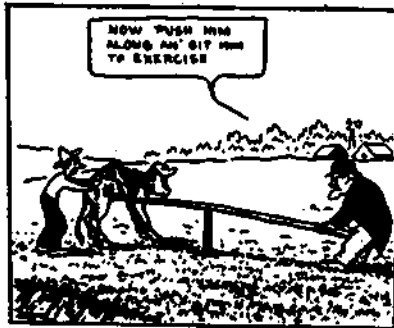
CALPANTIL
PARALYSIS IS
WHAT GETS HIM

1



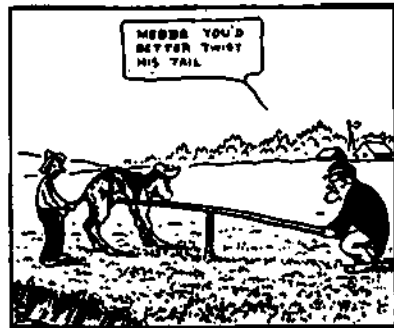
WE MUST BIT HIM
ON HIS FEET THE
POST TRING

2



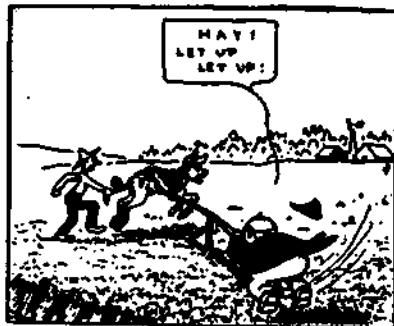
NOW PUSH HIM
ALONG AN' BIT HIM
TO EXERCISE

3



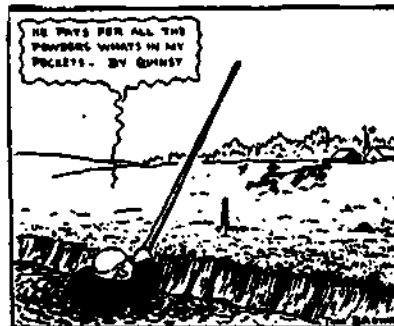
MEDDER YOU'D
BETTER TRIST
HIS TAIL

4



HAY!
LET UP
LET UP!

5



HE PAYS FOR ALL THE
POWDER WHATS IN MY
POCKET - BY QUINCY

6

Courtesy of *The Country Gentleman*

as that known as follicular mange. In this note it is not my intention to claim that I have discovered a cure for this dreaded disease, but merely to give my experience of a form of treatment which I believe has not been used before and appeared to cause a complete cure in a short time. A greater experience than is likely to fall to my lot will be necessary to decide whether the treatment outlined

below is really valuable, or whether it was a mere coincidence that the dog recovered completely from a virulent attack of the disorder during its use. I am therefore offering this note for publication in the hope that those who have opportunity may test the treatment impartially and determine its value.

Should it prove efficacious in all or a large number of cases it would be a great

boon, because it is cheap, easy to apply, absolutely free from risk of poisoning the animal, and quite cleanly, so that it may be applied in the case of the ordinary house dog without causing any damage to the furniture of the house.

Case Notes.

The dog was a male Bedlington terrier, of rather good breeding, born on September 19, 1911.

In April, 1913 (when he was aged 1 year 7 months), he had a mild attack of distemper and the mange began insidiously shortly afterwards. The disease increased and he was treated, but got steadily worse and was finally condemned as incurable. On December 1, 1913, I saw him, and found him in the following condition. His general health seemed fairly good. His coat was lost over the entire surface of the head, body and limbs, with the exception of scanty, almost colorless hairs scattered over him generally. This loss of the coat was so marked that I did not remember what color he had been, though I had seen the dog a few times before his illness. The skin was harsh, wrinkled and aged-looking, and was everywhere beset with minute follicular papules and pustules, and small pus and blood scabs, where he had scratched off the tops. Itching was very generalized, but apparently not very severe, nothing at all comparable to that of most of the animal parasite diseases.

As he had been given up as hopeless by the veterinary surgeon and the owner was a friend of mine, I offered to have a try, on the understanding that if any of my essays caused the sudden death of the animal there would be no ill-feeling.

My first trial was with a 10 per cent. liniment of eucalyptus oil and thymol in olive oil. I chose these remedies as they are very fatal to all animal parasites and, being volatile, I thought it might be possible to get them absorbed by the skin. The treatment was, of course, very messy and very odorous.

With this he was dressed from December 1, 1913, to the end of February, 1914. No effect was observable on his general health and his skin did not improve.

After discussing the point as to whether we should have him destroyed or not, we thought it worth while to have one more try. I might mention that for some time before I saw him he had been treated with sulphur and balsam of Peru ointment without avail.

My second, and apparently successful, treatment was the daily scrubbing of the dog, first with a 5 per cent solution of hyposulphite of soda, and, after this had been well soaked into him, secondly, a 3 per cent solution of glacial acetic acid. The prescription is not a new one, and has been used for various mold diseases in the human being, but some years ago I found it efficacious in diseases of the scalp in human beings. Both solutions are watery, and are not painful, toxic or dirty. When the two mix on the skin there are produced nascent sulphur, some of which is colloidal, sulphurous acid, and, of course, sodium acetate.

This treatment was carried out daily for five months, during which time his coat slowly grew; it was then diminished to three times a week, and finally to twice a week. In the middle of September, 1914, it was given up, the dog having been apparently well for some time. For the last four months he has had no treatment and, though carefully watched, has shown not the slightest evidence of the disease.

I have warned his mistress that it may relapse and he is still watched, but beyond the ordinary toilet nothing is done.

I am inclined to think that he is cured because his skin looks so completely healthy, and has done so without treatment for over four months. I am also rather confident that it was the second treatment which was responsible for the recovery, because the strong parasiticide treatment tried before did not in the least modify the disease, and he began

almost at once to improve, slowly but steadily, after the application of the two lotions. However, as I have said, only greater experience can determine the efficacy, and I therefore beg my veterinary colleagues to try it and publish their results, favorable or unfavorable.—ARTHUR WHITFIELD, M. D., in the *Veterinary News*.

“COLLECTIONS FOR THE VETERINARIAN”

The worth of a veterinary practice is not so much in the annual amount of business booked as it is in the actual amount of cash collected. If you show five thousand dollars as the year's business and collect only 70 per cent, then you have only a thirty-five hundred dollar practice. Fifteen hundred dollars have been donated to “charity.” Thirty per cent of the actual business done has to go as collection loss. Suggest to any merchant the feasibility of doing business on a 30 per cent loss basis and he will laugh at the idea. Yet many veterinarians are working on exactly that percentage.

Collections Win Business

The man who keeps his account square with a certain store feels a great degree of satisfaction in dealing with that store—he is a privileged customer, always welcome. If he lags, there is an almost irresistible temptation to cross over to the competitor's store. So it is as much a matter of keeping the customer's conscience clear, as of getting the money, that prompts a merchant to collect closely.

Does the man who owes you an old account tell of your heroic work in saving his prime herd? Not he! He it is who knocks the hardest. He it is who, in need, calls your competitor and pays cash, if your competitor is wise, leaving you to wonder over a lost bill and a lost patron.

Make him pay—then he'll respect you, and remember you.

It must always be remembered that

the practice of veterinary medicine is a business, success in which is subject to certain definite laws which are applicable to every business. The veterinary colleges should devote a part of their curriculum to the “business” of being a veterinarian. When they do there will be fewer who, after a few years of watching accounts payable and receivable pile up to overwhelming proportions, decide that the money and time spent in securing their diplomas was wasted.

Collection Principles

The rules which make for success in the handling of collections are:

- 1st. Extend credit to the worthy only.
- 2nd. Have a definite understanding as to terms.
- 3rd. Maintain a sharp, regular, and persistent follow-up on all accounts.

Weeding Out the Undesirables

A certain amount of “charity” work is unavoidable. But to donate your services to one who can pay but simply doesn't want to is an injustice to yourself, your fraternity, and to the “patron” himself. For this sort of credit just one rule should apply—“cash on delivery.”

It is not always easy to separate the worthy from the unworthy, especially if one is a newcomer to the neighborhood, but it is not difficult to make certain. The local bank will cheerfully act as your credit information bureau and the merchants will gladly tell you their experience with their customers, especially those that do not pay. In nearly all towns of any size the business men have an association which acts as a clearing house for credit information collecting bills, etc. Veterinarians should be active members of such organizations wherever they exist and should avail themselves of their service.

It would seem that it would be worth while for the local veterinary societies to co-operate in the same way. If loyally administered, a department for the exchange of credit information

among the veterinarians would be of great benefit to every member. Each member would be bound to furnish the names of delinquents to the secretary, who would keep these names on file, together with records of the good payers, and supply this information upon request to the members. The society might go even further by adding a collection department, having a very strong argument in the threatened loss of credit standing among all the veterinarians in the country.

It is a mistake to continue to grant credit to the man who already owes a bill of long standing, or beyond his means of early payment. Too often this is done in the belief that if his credit be cut off he will take offense and not pay any. Never, never, exhibit the slightest fear that any account will not be paid. Such a man is in no position to resent the suggestion that "it will be easier for him that he does not increase the amount of his indebtedness, but make all dealings cash until he is in better position to pay up."

Avoid risky credits. Don't take unnecessary chances. If you cannot secure this kind of patronage on a cash basis it is better not to have it at all rather than to lose it later along with your bill for service. A strict policy in this respect will save you many disappointments, many friends, and much money.

Doing Business on Business Principles

Have a definite business policy. Make your terms specific as to date of payment and then enforce them. Print your business rules on your cards, and on your statements. Make your clients realize their obligation to you—that the extension of credit is an accommodation which carries with it a moral bond which must not be overlooked.

All bills should be due when service is rendered. Right then is the time to arrange for settlement. If cash is not convenient have a definite understanding right then and there. Get the habit of carrying note forms with you. The suggestion that the note will save the mutual

annoyance of opening an account will pave the way. These notes can always be discounted at the bank, thus saving yourself much collection bother, besides making the client more careful of his obligation because of his desire to stand well with the bank.

One enterprising practitioner has had the following printed on his statements:

"My bills cannot carry the same term as those of ordinary mercantile houses. My instruments, drugs, and knowledge of veterinary medicine were purchased for cash. My services therefore are on a cash basis and my charges are made expecting prompt settlements."

Another says:

"Accounts are due when services are rendered. Prompt payment is desired on business principles."

Somewhere—very prominently—on your statements, should appear your terms of doing business. *Slow collections, in many instances, are directly responsible to ignorance of the terms.* Prevention of any doubt in this respect is worth multitudes of "duns."

A. D. BRUSH.

Chicago, Ill.

TETANUS PATIENT RECEIVES 30,000 UNITS OF ANTITOXIN

I was called, December 7th, to see a horse which had a well-advanced case of tetanus. Head was distended, tail slightly raised, hind legs apart, flanks drawn in, eyes well covered by membrane nictitans, and sensitive to the slightest noise. The horse was worth about \$150, but considering that he was a young horse, the owner decided that he would try and save the animal by using the serum treatment. As the jaws were not entirely locked, I gave him a dose of aloin, two drams, and strychnine, one-half gram.

On Dec. 8th I gave 3,000 units of anti-tetanic serum, on the 9th I gave 3,000 units in the morning and 3,000 in the afternoon; Dec. 10th, 3,000; Dec. 11th, 3,000; Dec. 12th, 3,000; Dec. 14th,

3,000; Dec. 15th, 3,000; Dec. 17th, 3,000; Dec. 19th, 3,000.

The horse made improvement from the beginning of the treatment. There was no other medical interference attempted except the free use of purgatives and diuretics. Also the horse had an exceptional good appetite from the beginning.

The owner, of course, was very much pleased at the recovery of the horse, as he had given him up as a dead one.

L. B. G.

Missouri.

RECOVERY IN LOCK-JAW CASE

Oct. 25th-28th. Bay horse found lame in one hind foot. So lame he did not want to go. So I was called to see the horse. Found an eight-penny nail in the cleft of the frog, pulled out with my fingers. Some pus came with it. Opened the wound and injected carbolic acid straight. A wet clay pack was placed on the foot. I tried to have the horse sent over to the hospital. The company could not afford the expense, and, anyway, said they had a man that was very good to their horse, and he would look after him. We differed as to this man taking good care of horses when he had one lame for 3 days with a nail in the foot and not know about it, but sent out on a wagon for work. (But the driver got the horse.)

Nov. 9th. The same company called me up, wanting to know if I would be at the office for awhile. They had a horse that was badly stove up and wanted to know what I would recommend. To my surprise it was the same horse that had the nail removed. The attendant informed me that this old dinky, sore-footed horse had gone bad, and for the last two days was so lazy you could not beat him out of a walk, and anyway he believed he got foundered, for he had seen several foundered horses that walked just about as stiff as he did. This being a hired man, I made very little comment, but called

the manager by phone and told him we had a case of tetanus instead of a stove-up condition. He called at the hospital in person. I explained as best I could the conditions, treatment and prognosis. These people being well able to go to the expense of giving anti-tetanic serum, I recommended giving it a trial. The manager thought the expense would be more than the value of the animal, so we decided that this case would get no serum. I was to keep this horse for a short time, and if he did not get along he would decide what next to do. So this is the treatment outlined. Placed into a box stall—very little bedding—a box was nailed alongside the wall, so that it was an easy matter for him to get to, and he was given grain in this. His jaws were at this time, Nov. 9th, so closed that he could eat no hay, but did manage to get away with about two gallons of ground feed. He drank water pretty well.

Nov. 10th he ate grain. 11th day, grain. But the 12th day of November to the 24th day he could neither eat grain or hay. On Nov. 16th he was placed in slings. He was very nervous and unsteady, and I felt sure at this time if he went down it was all over. So the slings. We did this as quietly as it was possible to do, and every part was fastened and secured. On tightening up the blocks he took a spasm and before we could tighten them up he was stiff on the stall floor. With enough help he was pulled to a height that would let him have footing (providing he ever was going to try for such). We secured the rope and let him hang. Standing in good safe distance looking him over (and censuring myself for not doing this sooner) I surely thought this was his last time. For 20 minutes he hung limp in the slings breathing as though each breath was near the last one. When, to everybody's surprise, he braced his legs and finally stood up. He stood this way until the 19th, when he got very restless and made a number of hard surges and then would stiffen

out. I surely thought this was the last night for him. The 20th he was easier and drank a pail of water fairly easy. From this time on he was fairly quiet, unless some noise would startle him. On Nov. 24th he again got so that during the 24 hours he ate one-half gallon of ground feed. The 25th-26th-27th he managed to gain in his eating. On the 28th he could eat a very little alfalfa hay by taking a few stems at a time. The 29th he ate grain and hay both for the first time since Nov. 9th. From this on he relaxed each day, so that it was quite noticeable, and made a nice recovery.

Medicinal Treatment

Four pounds of magnesia sulphate was given in the drinking water.

This case is remarkable in a good many different ways:

First. The animal ordinarily is high strung and nervous.

Second. The jaws were practically closed from Nov. 9th to Nov. 24th.

Third. Was not placed in slings till Nov. 16th, or not until I thought he could stand no longer, which nearly proved correct.

Fourth. His diet was what water he managed to suck up himself. None was pumped into him, owing to his nervous disposition.

D. O. KNISELY.

Topeka, Kan.

PROFESSIONAL JOURNALS

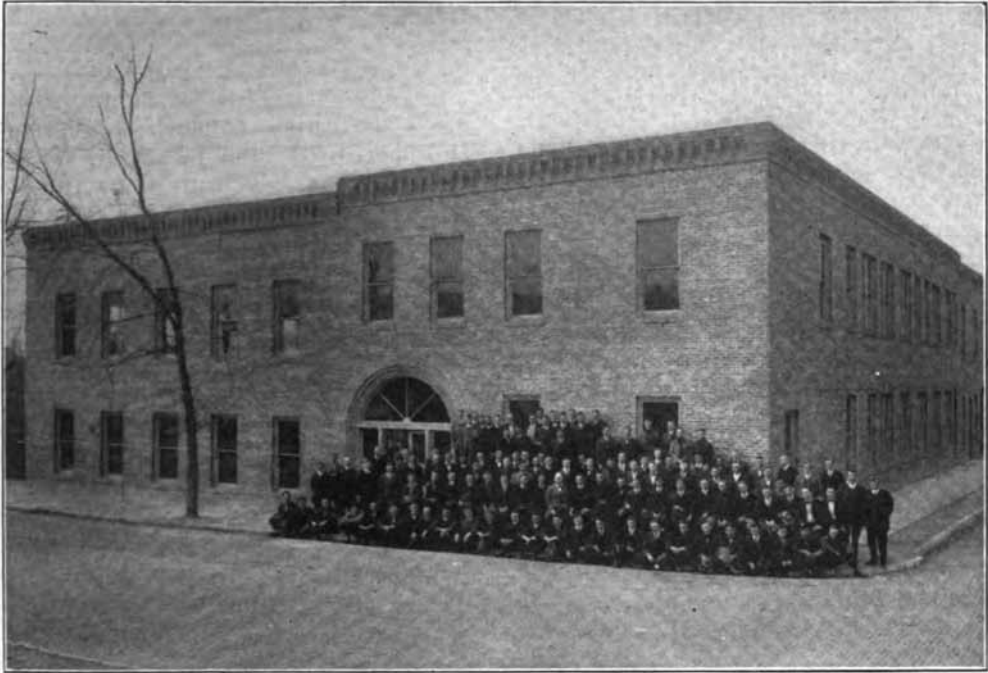
One of the chief functions of a professional journal is the discussion of professional problems. By publishing such discussion, either in the form of articles, clinical records, or reports of meetings, the journal assists professional progress at the time, and provides material for the historians of the future. It is doubtful whether any veterinary journal can discharge this function quite adequately even now, and it is certain that for most of our history it was discharged very inadequately indeed.

One example of old times must suffice. *The Veterinarian* was founded

when bleeding was in full vogue, and was one of the commonest procedures in every-day veterinary practice. For nearly fifty years such opposition as *The Veterinarian* encountered was slight and short-lived; and practically it may be called our only professional journal throughout that period. We all know the complete revolution in the profession's ideas regarding bleeding that took place during that time, and the considerable change in every-day practice that resulted.

That revolution was certainly not effected without much careful thought and private discussion by practitioners. But if we search the old *Veterinarian* for published discussion or comparison of notes upon the merits and demerits of bleeding, we find astonishingly little. It cannot quite be said that we find nothing; but there is nothing at all comparable with the importance of the subject. In other words, the practitioners settled the question of bleeding amongst themselves, practically without help from their journal.

Matters have certainly improved since then. Two of the greatest veterinary revolutions of the last twenty-five years have been the popularization of general anæsthesia and the introduction of the udder treatment for milk fever. Both were accompanied by abundant discussion in the professional press; and that marks improvement. But both might well have been further discussed at the time; and many other professional problems remain little discussed today—and that shows the need for yet more improvement. Every practitioner could name many questions concerning which he requires information, and would be glad to read more than he can find in the journals. It is a pity that so few attempt to use the journals for a comparison of notes—as all are free to do—and that so many continue to keep their experience and thoughts to themselves, as did the old subscribers to *The Veterinarian*.—Editorial in *The Veterinary Record*.



Students of the St. Joseph Veterinary College in Front of Their New College Building.

TRACHEA PACKED FULL OF STRAW

I was called to see a cow that was supposed to be choked. She had been in this condition for four days. When I saw her, I gave her a thorough examination but couldn't find where the trouble was. She could swallow good but still she couldn't get her breath.

After she died, I made a post mortem examination and found a piece of sorghum doubled across her windpipe but giving her a chance for breath, this causing her windpipe to stay open to some extent, and as she had been eating straw, it had been sucked into the windpipe until it was almost completely filled for about twenty inches.

She seemed to be very easy a couple of minutes before she died. She was standing up, when she made a lunge and stood on her head and died instantly.

This being a new thing to me, I merely mention it thinking it may be of some benefit to others. S. WAGLEY, V. S.
Anson, Texas.

A CORNEAL TUMOR IN A FOX TERRIER

On November 1st a fox terrier bitch was brought to my hospital, the owner requesting that a growth be removed from the left eye, and in case this operation was thought successful, that she also be spayed. I examined the eye carefully and found the growth quite different from the usual eye tumor encountered in dogs (particularly in the bull terrier) in that it was securely fastened to the cornea, another small one being attached to the outer corner of the conjunctival sac.

On November 2nd the animal was anesthetized and placed on the operating table, belly down. The tumor was removed, it being necessary to remove considerable of the corneal coats as well as a large portion of conjunctival sac. As a precaution against return, a silver nitrate pencil was employed followed with irrigations of normal salt solution.

As an after treatment, a boracic acid wash followed by thorough drying and

the application of iodoform in its pure state, was employed. The results were excellent, and the wound healed rapidly leaving only small scars.

Spaying was performed while under the same anesthetic.

CLYDE T. LITTON, D. V. M.

Gardena, Cal.

TUBERCULOSIS (?) IN A HORSE

On Oct. 10th a horse was brought to me to see, suffering from a nasty discharge from both nostrils. I was then informed that ever since he had had a bad attack of pneumonia, 18 months previously, he had been suffering from a nasal discharge which sometimes got better and then got worse again. His temperature was 102. The horse looked very weak and thin, and was very distressed and done up, so he was destroyed.

As it was a rest day I was able to make a post-mortem examination. The right lung had hardly any normal lung tissue remaining in it. A small portion was in a state of white hepatitis from recent pneumonia, and there were numerous gangrenous centres varying in size from a pea to a walnut with calcareous and caseous matter in their walls. The larger ones were of a greenish-black color. The left lung contained three large (Brazil nut) irregular abscesses containing pus and also one very large (tennis ball) cavity with calcareous deposits and fibrous tissue in its walls. (A medical officer who was with me informed me that it was typical of a chronic case of tuberculosis in the human subject.) The bronchial and mediastinal glands were also enlarged, one showing signs of caseation. The abdominal organs showed no naked eye appearance of disease. What makes the case so interesting to me is that the horse never missed a day's work since he came out here on Aug. 16.

In my opinion this horse was suffering from tuberculosis of long standing with recent pneumonia caused by septic

infection. I should be very grateful if readers of your paper who have proved cases, by microscopic and other methods, to have been tuberculosis would give me their views of this case. GRAHAM REES-MOGG in *The Veterinary Record*.

A CASE OF EPIZOOTIC LYMPHANGITIS IN MAN

Symptoms and Treatment

By Dr. D. B. Leininger, San Francisco, California, Veterinarian, U. S. Army.

While stationed at Camp Stotsenburg, P. I., with the Eighth U. S. Cavalry, in 1913 and 1914, I had the opportunity to observe and treat about ten cases of epizootic lymphangitis in horses and mules, property of the United States Government.

I will not attempt to describe the lesions in the above subjects, excepting to state that they were characteristic as described by Pallin, and by Huttyra and Marek, Vol. I, in their works on the above disease; and that all but two mules made apparently a complete recovery—these two mules were finally destroyed as incurable, their cases having become chronic after six or seven months' treatment.

I have various lines of treatment, and apparently obtained the best results by extirpation of the involved tissues, cauterizing with phenol, and controlling with alcohol for the external treatment, and by the administration of mercury and potassium iodid internally. However, the success in dealing with this disease lies in an early diagnosis and treatment. I will now describe the disease as it appeared in my own case, and for which this article is intended.

About April, 1914, I became affected with a simple rhinitis, which started with a swelling and congestion of the membrane confined mostly to the left side, dryness, followed by increased mucopurulent secretions, moderate pain, and impaired respiration, snoring while asleep, becoming more aggravated as the disease progressed; the left nostril was

constantly occluded from the swelling and accumulation of mucous, and the right would also be completely closed when the symptoms became aggravated. I was often compelled to breathe through the mouth alone for periods of five to ten days.

Treatment: Local treatment, which was given me at the post hospital, consisted of spraying and swabbing the affected parts with Dobell's solution; alboline; tincture of iodine; and argyrol in various strengths; all of which gave temporary relief for a few minutes to half an hour. This line of treatment was continued daily until July, 1914, with additional internal treatment of potassium iodid and elixir of I. Q. S., and Fowler's solution; all were given a fair trial at different stages during the above period.

No appreciable results were noticed, and about this time (July, 1914), ulcers developed in the left nostril on the septum and middle and lower turbinates, also in wall of pharynx; these received local applications of nitrate of silver and improved, the ulcer of the throat disappeared entirely in about one week. The Wasserman test was applied, with results, negative. I was in fair condition; appetite somewhat impaired, with no indigestion, except from the potassium iodid treatment. About October, 1914, an ulcer appeared upon the left lip, just at the junction of lip with left nostril, which did not yield to local treatment, progressing rapidly and was decidedly characteristic of the ulcers in epizootic lymphangitis in the horse. It began as a nodule which was very small at first, developing into a pustule in about two weeks, and was about the size of a pea when it began to soften and break down, showing punctured out edges which became later inverted and having an indurated base with well-defined edges; five days later a second smaller ulcer of similar character appeared to the left of the first and nearer the margin of the upper lip.

There was no glandular enlargement or involvement of the lymphatics as is common with glanders; the ulcers gave off a muco-purulent sanious discharge, with a distinctly disagreeable odor.

Up to the time five different doctors in the Army had treated my case, but had not arrived at a definite diagnosis, as it seemed rather unusual and peculiar in its course and development, and I made application to be ordered to the Department Hospital, U. S. Army, Manila, P. I., for further observation and treatment. I was ordered to proceed there, and was admitted for treatment Nov. 7, 1914. In addition to the above described ulcers, there were now two ulcers in the left nostril—one on the left inferior turbinate at its anterior tip, and a smaller one on the left side of the septum, located far back. These ulcers on the mucous membrane all showed exuberant granulations, bright red in color, inverted edges and with a discharge of thick, creamy, whitish colored pus. The tests for glanders were made by microscope and guinea pig inoculation and were found negative; tubercular lymphangitis was also ruled out by microscopical examination. Wasserman test was again applied—results negative. I then suggested an examination be made for epizootic lymphangitis, microscopically, which was done, and revealed the typical cryptococcus *Farcimosus Rivolta* (*Sacharomyces Farcimosus, Tokishige*) being identical to that in Plate No. 11, as shown by Pallin in his work on the above disease, thereby proving a positive diagnosis of epizootic lymphangitis. The sacchomyces can easily be seen without staining by using a 500 magnification which reveals its size, shape and highly refractile outline.

Treatment: The ulcers were treated locally with concentrated solutions of silver nitrate; internally, I received three doses of salvarsan (606), each treatment consisting of .6 of a gram dissolved in 150 c. c. aqua. dist., injected into a

branch of the radial vein, location, inner side of the elbow, on the following dates: Nov. 15th, 22d and 29th, respectively.

There was a noted improvement on November 16th, one day after receiving the first treatment, with a rapid disappearance of all lesions, and continued improvement with each succeeding treatment. I was returned to duty on Dec. 1, 1914. It has been more than a year since, and as there has been no returning symptoms, I feel that the cure is a permanent one, and might be of use to some fellow-veterinarian under similar conditions.

WINTER CALK WOUNDS

In the last ten years I have had a large practice among horses working in the lumber woods, and the most annoying thing I am called to treat is the puncture wound made by the heavy long calk of the logging horse.

For the benefit of the southern practitioner and those not accustomed to the lumber woods, let me say the calks used for climbing slipper mountain roads are about one and one-quarter inches long and drawn out sharp so that when the horse makes a misstep and drives this calk into the coronet the resulting wound is one of the worst.

More or less hair and small pieces of horn are driven down back of the hoof and remain there until removed.

The veterinarian is usually called after the horse commences to get sore—and found standing on three legs—which may be a few hours or several days; then the murder is out and the teamster owns up to the boss he has a lame horse—guesses he must have a spavin or a strain.

Now what would seem a simple wound may develop into the most annoying and dangerous calamities that comes to the logging horse.

My method is to cut away a portion of the hoof straight in to the bottom of the puncture, which usually proves to be filled with hair and small particles of horn; (when I say usually I mean nine-

ty-five times in one hundred) then remove all foreign substance with dressing-forceps, sponge, and try with probe for a farther crack or fissure in hoof, which may need more drainage, and which must be accomplished.

I have found it to be much better to start cutting through from the lowest point first, where the hoof is thick, than to commence at the coronet where calk first goes in, and cut down in the last process. By the latter method, you will hurt him all the time, making a painful operation of it, while cutting through in and up, the work is nearly done before the horse knows it; then a small touch of phenol helps to lessen pain.

If the entire hoof can be poulticed for twenty-four hours before operating, it is much easier for patient and operator.

After this I find that bichlorid works wonders, 1-7000, using cotton enough to take three-quarters of a pint of the solution; then apply with strip of dry cotton outside, and loose bandage.

If the work has been done well, the chances are the horse will be standing square the day following.

The ordinary farrier's knife is of little use in this case. Haussman & Dunn's, Set Fig. 1148, in their catalog, is nicely adapted to this work, especially the short half and full curve; also blunt-pointed scissors are indispensable when the inner hoof is reached, as a broken piece can be turned out and clipped off and with less pain than digging with knife or curette.

When returning the horse to work, touching up with a little iodized collodion twice or thrice daily helps to prevent infection.

I know many good veterinarians who turn over to the blacksmith all the calk wounds they can to be mutilated by him, and the last trouble will be worse than the first.

One day last winter I was called to treat eight cases of neglected calks in one barn; death reached there before me and one valuable horse lay down and died from a simple calk; another one, after a consultation, was shot; the others made

a good recovery after a lot of hard work and patient handling, poulticing, soaking and curetting.

There were two cases of quittor in the bunch, so the reader can imagine the expense to the lumber company for this neglect, and the untold suffering to the horses before they were operated on.

As the Good Book says, "despise not the day of small things;" when that day includes a puncture of the coronet with a sharp calk, for if you do, you will regret it.

A man with large lumber interests told me one day, when I was operating on one of his horses, that it cost him five thousand dollars in horses to learn to have calk wounds properly treated. He also said the majority of veterinarians he had employed did not take pains with calk wounds.

Hence I have the courage to write of a simple operation the technique of which is nothing more than a little common sense.

E. H. SCOTT.

Johnson, Vt.

THE "NEWS SERVICE" REPUDIATED

EDITOR, AMERICAN JOURNAL OF VETERINARY MEDICINE:

I was surprised at finding in the new year's issue of the AMERICAN JOURNAL OF VETERINARY MEDICINE an editorial with the heading "*Missouri to be Afflicted With Quacks with University Backing.*" This editorial it appears was inspired by a news item which someone clipped from one of our local papers, and sent to you. I wish to assure you and the readers of the JOURNAL that no such calamity as you predict is to befall Missouri, notwithstanding the fears that have been aroused by an *uncensored* news item which bore the ear marks of official sanction and promulgation, but which, in fact, did not have the endorsement of anyone connected with the Agricultural College.

No one deploras the erroneous impressions given out by the news item mentioned more than I do nor more than the

Superintendent of the Short Courses, nor more than the Dean of the College of Agriculture; and if the matter had come to our attention it would have been properly "blue penciled." But each of us has a large burden of duties, and we cannot inspect all the news items and write-ups that are put out by the University news service, concerning the work of the Agricultural College. This news service is probably on the whole as accurate as the news service of any other University and as a rule every reasonable effort is made to prevent erroneous statements and impressions from going to print. It is the practice of the director of the news service to submit important articles concerning the work of any department to the head of that department. But the simple matter of giving publicity to an announcement of Short Courses was evidently not considered of sufficient importance to be referred to the Superintendent of Short Courses. At any rate he has no recollection of having seen and approved the "write-up" mentioned before it was published, although the "style" employed gives the impression that the offending article has official approval. In the news service department new men are occasionally given assignments; for we have here a school of journalism and the students of that department must have practice. The write up of the Veterinary work for the Short Course, I have been informed, was "assigned" to an assistant in the news service department, who did not investigate sufficiently and develop all the facts, and let his imagination have too much play, even as the Editor of the JOURNAL himself did when he wrote his editorial, and drew the erroneous inference "that Dr. Conaway, head of the Veterinary Department of the University, is responsible for this; or at least that he could have prevented such folly on the part of the school with which he is connected—and that he has chosen such a course in a spirit of spitefulness because of the rough handling he has himself received at the hands of the Veterinary profession of Missouri." The Edi-

tor of the JOURNAL is fully as far from the facts in his inferences and imputations as was the young journalist whose brilliant pen transformed a Short Course student into a "fair horse doctor."

But I will not dwell on the frailties of editors and news gatherers; for I am conscious of having so many frailties of my own that I can afford to be lenient in criticism. But it is pertinent to say that before your editorial was printed, a few reportorial mistakes, such as mentioned above, resulted in establishing a stricter censorship of the news matter that is being sent out from the news service department of the University to be established and we thus hope to avoid misleading the unwary, and offending the sensitive.

The University of Missouri is not attempting the impossible feat of making "fair horse doctors" out of Short Course Agricultural students. Although the Short Course instruction in Agriculture in the University of Missouri is of sufficiently high grade to have attracted graduates of institutions like Harvard and Cornell. The quality of the instruction is good and we have no apologies to make for it. The quantity in these Short Courses is designedly small to meet a real need. But meager as it may be, as to quantity, it is worth while, and these courses have come to stay.

The purpose of the instruction which is given to these agricultural students is not to fit them to compete with Veterinary practitioners. And I am confident that no competent veterinarian in Missouri has the least fear of having his income reduced by the "competition" of these Short Course agricultural students. My experience of a good many years is that the instruction given to these students increases their respect for the properly qualified veterinarian, and leads them to seek his services when the need for professional aid arises.

The aim of this instruction is to teach the students how to do in a better and more sanitary way the simple things of Veterinary Science which farmers have

been accustomed to doing, and which they will continue to regard as too simple to require professional aid—such things as the Veterinary Practice Act of most states now recognizes as permissible for the farmer to do. These students have an opportunity to see a few of the more difficult major operations. But it is not probable that these opportunities will lead them to attempt such operations themselves. On the contrary they thus learn their own limitations and the value of the services of the skillful graduate veterinarian. There is no greater probability that they will attempt these major operations after seeing them done at the Agricultural College than after seeing the local veterinarian do the same operation at a neighbor's farm. In fact the instruction they receive at the Agricultural College, and their association, for a time, with the three graduate veterinarians connected with the College, I am constrained to believe, increases their respect for the veterinary profession and makes them better patrons of the properly qualified practitioner, and not dangerous "quack competitors."

While the main purpose of this instruction to the Short Course agricultural students is to teach them how to prevent disease, as much as possible, it also fits them to be more efficient nurses of sick animals; and accordingly more serviceable helpers to the professional veterinarian whose advice they seek. And the good results that come from the co-operation of the veterinarian with these Short Course students will enhance the reputation of the competent veterinarian who serves them. The instruction that I and my colleagues give to these students at the Agricultural College instead of being a menace to the live stock industry and the veterinary profession will result in benefit to both.

If by any mischance the uncensored news matter has misled any student to register in the Short Course in Agriculture, with the mistaken idea that this is a short cut to Veterinary practice, he will certainly not go away with such a notion.

It has been my practice every year at the opening of these courses to explain very fully to these students the purpose of the instruction and that it is not meant to make veterinarians out of them, not to supplant the veterinarian, but rather to make them helpful allies.

I think I should be permitted to add a word of a more personal nature, in reply to the personal imputations contained in the editorial. That is, assuming that Dr. Campbell, who has known me for several years, is responsible for the editorial, just as he assumed that I was responsible for the news matter referred to, I must express my regret that he could entertain the thought that I could be so unworthy as to use my official position and instructional work to "get even" with anybody on account of real or fancied personal injuries. I never have done such a thing and never shall, no matter how roughly any clique of misguided veterinarians may have handled me in the past or may handle me in the future. Moreover, I hold no grudge against the "Veterinary profession of Missouri" for the rough handling alluded to; namely, expulsion from the Missouri State Veterinarians' Association. It was not the Veterinary profession of this State that was guilty of that injustice, the guilt rests on a small group of veterinarians—54 out of the 300 or more practitioners in the State—a group which I am confident was misled by misrepresentations and prejudice, and dominated by a combination of mercenary interests. It was not the "professional spirit" that dominated the meeting; but petty veterinary politics and the spirit of veterinary commercialism—a spirit antagonistic to the official work I am trying to do. A spirit which has been rebuked in stinging editorials by the Editor of the JOURNAL himself. I shall not cease to do everything I can in an honorable way to eradicate from the profession that unprofessional spirit. And it is to be regretted that so much of that unworthy spirit is now centered in and dominates the Missouri State Veterinary Association, which should be a guardian body of

high ethical and professional ideals. But perhaps when hog cholera is eradicated the reformation of the Association may come from the inside. I shall labor as best I can from the outside for a much earlier reformation of the Association—and "spitefulness" shall have no place in my program.

In the matter of editorial censure of members of the profession and of public institutions with which they may be connected, I believe if I had been Editor of the JOURNAL and Dr. Campbell had been at the head of the Veterinary Department of the University, and some one had sent me the same clipping that he received, I would probably have written the same editorial nearly word for word. But still having considerable confidence in him, in spite of the backbiting of the enemies he had made on account of his holding so firmly to his own views of public duty, I would have sent him the editorial I had written, including a copy of the clipping on which it was based, and would have expressed my regrets at the attitude he had assumed toward the profession, if the offending statements in the clipping really represented his attitude, and I would have expressed the hope that he was in no way responsible. And I feel sure that he would have replied in a kindly and convincing way that would have caused me to tear that editorial into small bits so that not a sentence would mar the pages of the good JOURNAL that goes far and wide to the veterinarians of the country; nor be the means of arousing prejudice against an innocent fellow member of the profession, and the educational institution he is striving to serve in a way that best promotes the highest good to the live stock industry, and its servants, the veterinarians.

J. W. CONNAWAY.

Columbia, Mo.

[Every effort is made to verify or disprove the accuracy of newspaper reports where their importance warrants it, but it is news to me that the authoritativeness of official publications of universities should be questioned—Editor.]

A USEFUL "BLACK OIL"

In December issue of AMERICAN JOURNAL OF VETERINARY MEDICINE in Dr. Peterson's budget, the doctor inquires for the ingredients of a black oil used by farmers and stockmen in different parts of this country. As I have in my possession the formula, I enclose it. I have found it is of value where exuberant granulation springs up and also to keep flies from infesting wounds.

BLACK OIL.

Creolin (Pearson)	3I
Ol. Terebinthinal	
Ol. Olivae aa.	3VI
Ac. Sulphuricum	3II

Mix the creolin terebinthinae and oleum olivae in an earthen jar, then add the acid slowly and stir; let stand in the open vessel for 10 hours.

Sig. Apply to wounds twice each day with brush or clean feather. While using do not wash the wound with water. The sediment of this mixture can be used as a strong counter irritant over curbs, splints or spavin with good results, but as it is quite severe it should be handled with great care. This black oil is not a proprietary preparation.

L. M. WALKER, D. V. S.

Decatur, Nebraska.

CANINE DISTEMPER — ETIOLOGY AND VACCINATION

The following is a summarized abstract of a short report upon the above subject which H Carré, Chief of the Service of Research upon Infectious Diseases at the Alfort School, presented at the International Veterinary Congress last year.

The author commences by pointing out that the etiology of distemper is still very obscure. Only one point is incontestable, viz., the extremely contagious nature of the affection. This etiological obscurity depends upon many causes, among them being the difficulties of research and the contradictory results that are current, the absence of truly pathognomic symptoms and the resultant impossibility of clinical

differentiation of the affections which may attack young dogs, the lack of information regarding the exact parts which pertain, in the symptoms and the lesions, to the virus proper of the disease and to the microbes of secondary infections, the great diversity of accidents which may appear, in very variable order, in the course of the disease, the diverse receptivity of different breeds of dogs, and the multiplicity of microbes encountered in the lesions.

The author notes the fact that Lignières, whose conclusions he quotes verbatim, has now admitted that the true specific agent of the disease appears to be the filterable virus demonstrated by Carré in 1905. Lignières has thus given up the claim of specificity for the *Pasteurella canis*, though he holds that various microbes, the *Pasteurella canis* among them, are capable, apart from the filterable virus, of producing an affection clinically similar to distemper.

Lignières, Carré, and Eugène all agree that the filterable virus is an established fact and beyond all dispute; but it is nevertheless true that precise information is still required concerning the part played by it in the causation of the various lesions observed during the course of distemper.

The author dwells at some length upon the well-known work of Ferry, who, in his judgment, has by no means established the specific nature of his *Bacillus broncho-septicus*. Various reasons, such as the harmlessness of cultures when injected subcutaneously, warrant grave doubt being cast upon this organism as being the cause of a disease which is exceedingly contagious. Carré adds that, in seven young dogs manifestly affected with distemper, he failed to find the *B. broncho-septicus*. At present, he regards this organism as a simple agent of secondary infection, and not at all as the specific germ of distemper.

In criticizing the further work of Ferry, Carré points out that that author and Kregenow (a German worker who

agrees with Ferry in discrediting the view that distemper is caused by a filterable virus), express surprise at the diagnostic importance which he seems to attach to the cutaneous pustules. But Carré is not alone in attaching importance to these pustules; all French veterinarians, for a long time past, have relied greatly upon them in diagnosis. The double fact that the German and American workers have failed to demonstrate the filterable virus and have not encountered pustules suggests to Carré doubt as to whether he and they have really been studying the same disease.

Finally, Carré deals briefly with the question of vaccination. He has himself been working for some time upon this subject, but is not yet prepared to publish his results. Meanwhile, he merely intimates that he has obtained results which "deserve to be known."

The report concludes with some strong criticisms of the method of vaccinating with cultures of *B. broncho-septicus*, which does not appear to rest upon a very firm basis, and of the value of which Carré is evidently skeptical.—*The Veterinary Record*.

THE SECOND PAN-AMERICAN SCIENTIFIC CONGRESS

Twenty-one American republics were represented at the second Pan-American Scientific Congress held in Washington, D. C., December 27, 1915, to January 8, 1916. Altogether more than 1,000 delegates and a large number of diplomats were present. In addition, the congress was attended by many interested spectators throughout the session.

The veterinary profession in North America was represented by two committees—the A. V. M. A. committee, consisting of Drs. N. S. Mayo, N. R. Ward and John R. Mohler, and the committee of the United States Live Stock Association, consisting of Drs. A. Eichhorn and S. H. Gilliland.

All of the veterinary delegates took an active part in the scientific and social proceedings.

The congress specially recommended the establishment of an intellectual Pan-American union to unite the associations in the various countries of a technical, legal, medical and veterinary character, and declared such an organization would lay broad, deep and true foundations of intellectual Pan-Americanism.

The following resolutions of particular importance to veterinarians were adopted by the congress, which recognized the need of uniform livestock sanitary regulations and believed that the time was propitious for the promulgation of principles which may be readily applied to all the Americas:

The following general principles are recommended for consideration and adoption by all American countries:

I. Each country should maintain a well-organized and competent livestock sanitary service, comprising executive officers, field inspectors and a laboratory force.

II. Each country should enforce the livestock sanitary laws and regulations, with the view of preventing the exportation, importation and spread within the country of any infectious, contagious or communicable disease, by means of animals, animal products, ships, cars, forage, etc.

III. Each country should maintain a thorough livestock sanitary survey to determine what communicable diseases of animals are present, and the localities where they exist. This information should be furnished regularly to each of the other countries at stated periods as a routine feature.

IV. Each country should refrain from exporting animals, animal products, for age and similar materials, which are capable of conveying infectious, contagious or communicable animal diseases to the receiving country.

V. Each country should enforce measures to prohibit the importation of animals, animal products, forage and other materials which may convey disease, from countries where dangerous communicable diseases such as rinder-

pest, foot and mouth disease and contagious pleuro-pneumonia exist, and which have no competent livestock sanitary service. Animals, animal products, forage and similar materials from countries maintaining a competent livestock sanitary service may be admitted under proper restrictions, regulations and inspection, imposed by the importing country.

VI. Each country, through its livestock sanitary service, should endeavor to control, and if possible eradicate, the communicable diseases existing there. There should be an exchange of information as to the methods followed which have proved most successful in combating animal diseases.

VII. Members of the livestock sanitary service of each of the American countries should meet at regular intervals to consult and inform each other regarding the measures taken for furthering Pan-American co-operation in protecting the livestock industry of the American countries.

Among the papers presented in Section III of especial interest to the veterinary profession were the following:

American International Convention of Sanitary Police, by Dr. Jose Leon Suarez, Chief, Bureau of Animal Industry, Argentina; The Pan-American topic, "Is it possible to make uniform regulations among the different American countries for the prevention of the introduction and propagation of diseases of animals?—The prevention and extirpation of animal diseases," which was discussed in separate papers presented by Dr. Julio Besnard, Chief of the National Veterinary Service in Chile; Dr. Rafael Munoz Jimenez of Uruguay; Dr. Francisco Etchegoyen of Cuba, and Dr. A. D. Melvin of Washington, D. C. The effect of parasites on the animal industry, by B. H. Ransom, Washington, D. C.; The prevention and eradication of destructive animal diseases and the effect upon agriculture and the meat supply, by A. R. Ward, Washington, D. C.; The function of live stock in agriculture, by George

M. Rommel, Washington, D. C.; The role of the dairy industry in a system of national agricultural development, by B. H. Rawl, Washington, D. C.; The horse in rural industry and recreation, by Carl W. Gay, Philadelphia, Pennsylvania; How an animal grows, by H. J. Waters, Manhattan, Kansas, and The swine industry; its importance in agricultural development, by D. C. King, Chicago, Illinois.

The program of Section VIII on Public Health and Medical Science, was likewise of interest to our profession, especially the following papers; Problems of Insect-Borne Diseases in Pan America, by Juan Guiteras of Cuba; Present Views in Respect to Modes and Periods of Infection in Tuberculosis, by M. P. Ravel, Columbia, Missouri; The Etiology and Prevention of Beri Beri, by E. V. Vedder, Washington, D. C.; A Safe and Sane Milk Supply, by John Weinzirl, Seattle, Washington; A Symposium on Cancer Research, with 15 papers by different authors, attacking the problem from different angles; A Symposium on Life Histories of Protozoa, with 11 papers covering amoebae, intestinal flagellates, cultivation of the parasite of rabies, trypanosomes of Venezuela, animal parasites of Paraguay, etc.; The Relation of Modes of Infection to the Control of Bacterial Diseases in Pan America, by M. J. Rosenau, Boston, Massachusetts.

BRITISH COLUMBIA VETERINARIANS HOLD PUBLIC MEETING

The following is a report of the first public meeting held by the British Columbia Veterinary Association on Dec. 10, 1915, on matters relating to the public health, which was well attended by the local health officers, other medical men and the general public.

The first speaker was Dr. S. Ransom, Dominion Veterinary Inspector, who explained the origin and work of the Health of Animals Branch as relating to the control and the prevention of the introduction of Contagious Diseases into

Canada, and how some had been practically eradicated, particularly those that are transmissible to man, and that Foot and Mouth Disease had been kept out of Canada.

Dr. Bruce, Chief Meat Inspector for B. C., explained the methods of meat inspection and the dangers of disease commonly found in meat to human beings, and illustrated this by lantern slides made from photos taken by Dr. Jervis, assistant meat inspector, of specimens met with at the abattoir in Vancouver, B. C. He pointed out that the law at present only requires plants doing an export business to be inspected and advocated civic abattoirs, and compulsory

meat inspection in them, such as are found in Glasgow and Edinburgh.

Dr. S. Hadwen, Dominion Pathologist, spoke on parasitic diseases and parasites and explained their life circle, particularly those dangerous to human beings and illustrated these by lantern slides, showing the parasite in the different stages of its life.

Many questions were asked by the audience and a vote of thanks was passed to the B. C. Veterinary Association.

Another similar meeting is to be held in February.

KENNETH CHESTER,
White Rock, B. C. Sec.-Treas.

Memories of Old Doc Stone

By His Assistant

STILL BREAKIN' IN

Lately I been readin' in the JOURNAL how some fellers is recommendin' bleedin' again. They tries to make out like it was somethin' pretty new, or at least, like they had just discovered that there was really some good in bleedin'.

Sure, there is lots of good in bleedin'! The trouble with this bleedin' business was that everybody, farmers, blacksmiths, jockeys and everybody else, would bleed horses for everything, from colic to heaves. The vets themselves was nearly as bad, although they probably done the job lots of times merely because the people asked for it done. Anyhow, that is the way bleedin' died out. And you got to travel many days now to find a modern vet what can do a nice job of bleedin' with the fleam. Fact is, there ain't one vet in fifty nowadays what even owns such a thing as a fleam.

When old Doc Stone was practicin' this bleedin' stunt was flourishin' yet, and old Doc fixed up many a bad case

of many diseases by bleedin'. Take, for instance, a case of staggers. Up to date I have found no more prompt and satisfactory treatment for it than bleedin' with the old fleam Doc Stone gave me and showed me how to use. Then there is laminitis; if you know when and how to bleed you can make it a simple case nine times in ten. Bleedin' come easy for me; old Doc said I had just the correct sense of weight in landin' the blow with the stick. He said there was only a few fellers what could tap the fleam just right with the stick, and it seems like he takes pride in me bein' so handy. And while, maybe, I don't use the old fleam so free as Doc Stone done I never yet has to feel sorry for learnin' how to handle it in them days.

That's where the fellers today makes a mistake. I mean, in droppin' bleedin' entirely from the catalogue of treatment. Instead of just goin' easy on it they shuts down on it altogether! It reminds me of the story my grandmother used to tell me about a lad

whose brothers and father and uncles and cousins was all sailors, and every darn one of 'em died on the water. An old woman was warnin' the lad, sayin' to him that if all her folks had died on the water that way she would never go on board a boat. Well, says my lad, seein' as all your folks died on land I can't see how you're takin' your own advice. Just so with bleedin'; it's O. K. in the right place and at the right time.

One of the hardest things for me to learn when I was breakin' in under old Doc was wakin' up when the 'phone rang at night time. Lordy, how hard it used to be for me to get awake! After I was up and puttin' the satchels in the buggy for Doc I was all right; and the funny part was that I really had a likin' for night calls. But gettin' awake was a regular tough job for me.

Somehow I never really gets over that; it's hard work for me even nowadays, and it makes me sore at myself sometimes because when I answers the 'phone, then I talks pretty cranky. Of course, nowadays a night call ain't hardly a night call anymore; a feller goes flyin' along in his car with bright head-lights to light up the road a couple blocks ahead and in 'most no time a feller is there and back again.

When I was with old Doc we had a horse called "Spot" what we used for night-horse. "Spot" gets called by that name for bein' spotted; Doc tells me he is part Arabian.

About nine out of ten night calls in them days Doc gets from the big contract stables, and old "Spot" pretty near knows where you goin' after you gets him headed right.

One night when Doc and me is drivin' to one of the brewery barns, old "Spot" gets scared at a locomotive puffin' under the viaduct and spills us out. He leaves Doc and me settin' on the ground and goes flyin' towards the brewery barn, about six blocks off.

Doc says we might just as well walk to the brewery because "Spot" is sure to be there waitin' for us. And sure enough, when we gets there, we sees him standin' in front of the yard gate waitin' for the watchman to let him in. Nobody had noticed him yet, it bein' after midnight and nobody on deck but the watchman, so Doc and me gets into the buggy and pulls the signal wire for the watchman to open the gate; and in we drives just like nothin' was wrong.

Doc, he makes me promise never to squeal and until now when I'm writin' this nobody ever got wise how Doc and me has to walk them six blocks that night.

Seems to me all of us was more than half sleepin' when this comes off; Doc and me, and old "Spot", too. Seems this way to me, because old "Spot" was never scared of no trains, and old Doc was too good a driver when he was awake to let old "Spot" get away from him; and I was too good at sittin' tight, when I was awake, to let a little old side-jump from old "Spot" spill me out. Can't be no different; all of us three must a been sleepin' when that there locomotive give that there puff.

After I had been with Old Doc for about seven months I was gettin' to be real handy at a lot of things and he used to let me do a lot of the work when there was nobody around who might object to it.

Old Doc was a prince that way, and he used to give me every chance to learn things first hand. For instance, when he gets done cuttin' out a shoe-boil or a shoulder tumor he always lets me do sewin' up. Or when he gets a case of lameness he lets me look it over first and then he shows me where I am wrong. And so on, all through the business.

All these things helps to make me more useful to Doc too, and pretty soon he gives me a raise.

ILLINOIS EXAMINATION FOR ASSISTANT STATE VETERINARIAN

The Civil Service Commission of Illinois will hold an examination during the month of February for the position of Assistant State Veterinarian. All veterinarians in the state who are graduates of recognized veterinary colleges will be eligible to appear for this examination. Those contemplating taking the examination should forward their applications at once to the Civil Service Commission, Springfield, Illinois. Application blanks may be obtained from the State Board of Live Stock Commissioners or from the office of the Civil Service Commission.

O. E. DYSON,
State Veterinarian.

HARRY CHASE SIMPSON

(Continued from page 129)

ized. The second officer jumped overboard and, battered and wounded, got to shore. He saw the British consul. The owners were cabled and the Hamburg-American Liner Valencia was chartered to try and pull the Carinthia off the rocks. This could not be done so a war vessel from Jamaica was sent for the purpose. Such movement of the Carinthia as was made only stove a big hole in her bottom. Finally a gang of Jamaica negroes was sent to take the mules off the ship. She was tilting on her side at an angle of 55 degrees. The mules had to be hauled up and slid down or pushed into the water. A good many of them swam off around the Valencia and the war vessel and were drowned. Many were gotten to land and care was taken of them for the time in the island of Hayti. The story closes with the taking up of the mules from Hayti by the British steamer Montezuma, to which they were carried on lighters, the vessel standing out about two miles from the dangerous coast. In the end Doctor Simpson got to South Africa safely with about 850 mules. The detailed account

of this adventure, written in the *New Orleans Times-Democrat* of August 27, 1900, reads like a chapter from one of W. Clark Russell's sea novels.

In *Wallaces' Farmer* of October 11, 1901, appears an article by Doctor Simpson describing a trip he took to the Philippine Islands with horses and mules for the American Government while he was, for a year, a veterinarian of the Quartermaster Corps of the United States Army. It is a companion article to the one we have summarized, and it has plenty of nautical and oriental color.

After Doctor Simpson's adventures came to an end he settled down in Denison, Iowa, to stay, and he has kept well to his row as a practitioner. Still he has been a strong association man. He was secretary of the Iowa Veterinary Association for nine years; five years secretary of the Missouri Valley Veterinary Association; resident secretary of the A. V. M. A. for Iowa for a number of years. Now he is president of the Missouri Valley Veterinary Association. He has been a city official for four years. Since 1899 he has been Assistant State Veterinarian of Iowa. It must not be forgotten also that he is Assistant Chief Veterinarian of Iowa State Live Stock Insurance Company.

This Denison practitioner is a man who has lived life to the full. He is a staunch friend of the United States army veterinarian, whom he understands from his own experience in the army service. We understand that he is a member of the Legislative Committee of the American Veterinary Medical Association. If so, we may suggest that he is able to wield a good deal of influence for good in that line for the establishment of a United States Army Veterinary Corps.

THE NEWSPAPERS SAY THAT—

Wm. A. Reno, 50 years old, who claims to be a veterinarian, and Roy Shelton, 28 years old, a horse trader, were arrested at St. Louis, Mo., January 4th, charged with attempting to pass a counterfeit half dollar on a blind newsvender.

A company was organized in January among the farmers of Sunfield, Mich., and vicinity, to be known as the Eaton and Ionia Horse Breeders' Association, and they have purchased a \$2,200 registered Percheron stallion.

Three sets of twin calves have recently been born on farms near Grayslake, Ill. All of the calves lived.

S. C. Lindsey, a cattle breeder near Carthage, Mo., is the owner of a Holstein calf that weighed 120 pounds at birth, December 1st. On January 1st, when the calf was 30 days old, it tipped the scales at 210 pounds.

Dr. C. Rasmussen of Wyanet, Ill., tried to run over an Overland auto with his Ford car on January 4th. All parties concerned escaped without injury.

An itemized statement prepared by Dr. O. E. Dyson, state veterinarian, shows that Illinois became liable for a total of \$278,635.79 for animals slaughtered in the second outbreak of foot-and-mouth disease. This is one-half of the value of the animals as appraised by the state's agents. The statement shows that 6,200 cattle, 11,295 sheep, 30 goats and a deer were killed up to November 24th.

The Kentucky Veterinary Medical Association in their meeting at Louisville, Dec. 21st, drafted a bill to be submitted to the General Assembly for the regulation of the practice of veterinary medicine. It will not affect veterinarians now engaged in practice in the state, but provides that new practitioners coming into the state must be graduates of recognized institutions and must pass a strict examination by the state board.

Dr. C. A. Collins of Grand Ridge, Ill., and Miss Anna Sauer of Chicago, were married at West Chicago, November 11th.

Fifty-one out of a herd of 94 Holstein cattle near St. Jacob, Ill., reacted to the tuberculin test recently, thirty-eight being killed and thirteen quarantined.

Zeke, an English bulldog belonging to Mrs. Grace Lancaster, Indianapolis, Ind., was buried in a satin-lined, walnut casket with his name on a plate on the lid, December 20th. Drs. W. O. Wyant and E. E. Long, who had attended the dog during his life, were present at the funeral.

State Veterinarian J. I. Gibson of Des Moines, and his assistants, Dr. S. H. Edwards of Iowa City, Dr. Spencer of Clinton,

Dr. Griffith of Cedar Rapids and Dr. T. W. Chandler of Davenport, Iowa, were in the latter city December 15th, investigating the alleged outbreak of glanders among the horses belonging to a local contractor.

Dr. J. T. Shannon of Lexington was called before the Kentucky State Livestock Sanitary Board, December 20th, to answer charges against him of having exacted an unreasonable inspection fee. He had charged \$72 for examining thirty-six horses. He was requested not to make a greater charge in the future than \$5 for each carload of livestock, \$2 for a single horse, mule or cow and \$1 for sheep or hogs.

AN IMPROVED MOUTH SPECULUM

Haussmann & Dunn Co. of Chicago have placed on the market a safety mouth speculum, which has many points in its favor. The mechanism is such that the ratchet bars drop in place by their own weight and are retained in place by an improved safety locking device. This locking device is an entirely new feature and is indispensable, for it prevents the accidental closing of the instrument under any pressure. Besides this improvement, the instrument is heavier and stronger than the original pattern of the bilateral speculums, affording more operating space, and the parts being heavier, the device is practically unbreakable.

The Dunn's Safety Mouth Speculum which I recently purchased has given entire satisfaction in every particular. I am well pleased with it and recommend it to all veterinary surgeons.

DR. M. C. McLAIN.

Dr. H. W. Jakeman has moved from New Westminster, B. C., to Reno, Nevada, where he is engaged in laboratory diagnosis at the University of Nevada. The rabies situation in that State has furnished considerable additional material requiring his attention.

I have read over the books of the VETERINARY MEDICINE SERIES and think that they are fine. Every subject is short and right to the point, which makes it very interesting to read. I have practically the full set now and think they are worth a great deal more than I paid for them.

Willistad, N. D.

A McNIVEN.

I am enclosing check for the JOURNAL for 1916. It is well worth the price. Very few veterinarians can afford to miss the many good things it contains during the year.

Garnett, Kans.

J. M. LITTLE.

No doctor will ever regret investing \$1.50

for "Special Cattle Therapy"—a host of information in a small space.

Grand Blanc, Mich. T. FARMER.

RARE DISEASE! NO CHRISTENING AS YET!

On Monday I visited Clarno in search of sick hogs. They were reported to be dying of cholera, but it proved to be some other disease. I have not been able to name the disease, but think it is caused by lack of feed.

ORREN BEATY,
County Agent.

Wheeler County, Oregon.

Dr. L. B. Wood, formerly of Carlinville, has moved his office to Edwardsville, Ill.

George A. H. Scott, secretary of the Illinois Humane Society, reported an outbreak of spinal meningitis among Chicago horses during the holidays. He stated the cause was lack of proper exercise and overfeeding and predicted that 75 per cent of the stricken horses would not recover. Veterinarians call the ailment azoturia.

The annual meeting of the Illmo Veterinary Association was held at Belleville, Ill., December 17th. The following officers were elected: President, Dr. C. F. Ratz of Red Bud, Ill.; first vice-president, Dr. Henry Piatt of St. Louis; second vice-president, Dr. W. F. Hoehner of Belleville; secretary, Dr. L. F. McKinley of Freeburg; treasurer, Dr. Robert Buchmann of Marissa. The blue cross was adopted as the emblem of the association.

In testimony given before U. S. Senator Kenyon of Iowa in a hearing at Chicago, December 29th, it was learned that the loss to Henry County, Illinois, farmers from foot-and-mouth disease was \$93,000.

The New York board of health has an-

nounced that the sale of horse meat for food will be permitted. The health commissioners said that while they did not exactly recommend it, no harm can be seen in its use.

The entire herd of seventeen milk cows at the county home, Vinton, Iowa, was condemned by Deputy State Veterinarian Dr. E. A. Buxton, during the latter part of December. Every one of the cows showed a reaction to the tuberculin test.

Dr. H. O. Weilepp of Brighton, Ill., had his leg broken when his auto skidded and turned over, December 21st.

Forty head of hogs and twenty-six head of cattle infected with tuberculosis were condemned by State Veterinarian Anderson at Milford, Nebraska, and shipped to the South Omaha market, December 22nd.

The Illinois Livestock Breeders' Association held a three-day session at Springfield, Ill., January 17th, 18th and 19th. Dr. J. A. Kiernan of the U. S. Department of Agriculture told of the control of foot-and-mouth disease and Dr. O. E. Dyson spoke on the eradication of the disease in Illinois. Dr. A. T. Peters of Peoria discussed "Abortion and Sterility of Brood Mares."

An agreement has been reached between officials of the states of Ohio and West Virginia providing that all cattle passing between those states must pass a tuberculin test.

James Dorsey, the wealthy cattle dealer of Kane County, Ill., accused of using the mails to sell tubercular cattle and indicted September 30th, has had his case deferred until February 8th.

The Union Stock Yards of Chicago finished half a century of business, January 1st,

ANIMALS SLAUGHTERED UNDER FEDERAL MEAT INSPECTION, OCTOBER, 1915.

City.	Cattle.	Calves.	Sheep.	Goats.	Swine.
Chicago	209,079	22,744	317,063	9,405	433,129
Fort Worth.....	19,915	8,233	7,798	1,720	55,593
Kansas City.....	102,904	11,276	92,257	2,600	166,173
National Stock Yards.....	63,073	6,967	19,175	5,303	90,943
Sioux City.....	18,937	1,021	27,605	50	40,025
South Omaha.....	69,203	2,395	174,773	484	57,166
South St. Joseph.....	23,869	2,508	28,010	1,540	85,588
All other establishments.....	229,169	92,927	449,331	2,108	1,565,214
Total, October, 1915.....	736,149	148,061	1,116,002	23,210	2,493,831
October, 1914.....	743,686	135,009	1,330,530	33,312	2,681,851
January-October, 1915.....	5,770,465	1,651,817	10,038,659	111,418	29,200,616
January-October, 1914.....	5,416,368	1,470,472	11,950,417	133,622	25,214,113

having been opened fifty years ago on that date.

Farmers in Jay, Mercer and Darke counties, Indiana, have had a number of sudden deaths among their stock recently and claim there is a man traveling through the community poisoning stock.

Hemorrhagic Septicemia Specimens Desired

The Pathological Division at Washington is desirous of obtaining for comparative study a number of specimens of tissues from animals affected with hemorrhagic septicemia. To collect affected glands and also sections of heart, kidney, and spleen from animals suspected of being affected with hemorrhagic septicemia, and to pack them in powdered borax and ship them to the Chief of the Bureau of Animal Industry, Pathological Division, Department of Agriculture, Washington, D. C.

Dr. L. A. Maze, who has been at Chelsea, Mich., during the past four years, has accepted a position with Parke, Davis & Co. as assistant veterinarian at their biological farm, Rochester, Mich. He began his new duties January 15th.

The Mississippi Valley Veterinary Medical Association met at Galesburg, Ill., January 7th. A good crowd was in attendance, and a very good meeting was held. The following officers were elected: Dr. W. J. Morgan, Seaton, Ill., president; Dr. M. C. Eckley, Galesburg, Ill., vice-president; Dr. W. Lester Hollister, Avon, Ill., secretary-treasurer. The following resolutions were adopted:

Whereas, death has removed from our midst a member of this association, Dr. John A. Dilley, Burgess, Ill.

Be it resolved, that the veterinary profession has suffered a loss and that the Mississippi Valley Veterinary Medical Association is deprived of one of its valued members; that we as members deplore his loss and extend our sympathy to his wife and family, also that a copy of these resolutions be spread upon the minutes of the association.

G. C. ECKLEY,
W. F. BROWNLEE,
W. E. MILLER,

Committee.

The next meeting will be held in Galesburg, July 7th. This association is growing and extends a hearty invitation to fellow veterinarians to attend the July meeting.

W. LESTER, HOLLISTER,
Secretary.

Adding the K. O. Punch

Inoculating your clients' hogs with NELSON SERUM puts in the punch that brings home the bacon, whether your client be of the six cylinder species or the buck board, twine, mended harness or lame horse kind.

That is one of the many reasons you should buy our serum.

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NELSON SERUM COMPANY

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Wimsett's Anti-Fis-Tract Tablets are a scientific, simple and inexpensive treatment for **Fistula of the Withers, Poll-Evil, Shoe Boil, Quittor, Deep Humeral Abscess, Actinomycosis of the lower jaw and parotid region** and all such tracts or abscesses containing a thickened wall or **Pyogenic Membrane**.

Hundreds of Veterinarians in all parts of the United States and Canada are using them with great satisfaction to themselves. Why continue in the old-fashioned way of irrigating with antiseptics as that will not destroy the **Pyogenic Membrane** which must be removed before a cure can be effected. If you are a doubting Thomas, try it out, and if you are not satisfied I am the loser, as your money will be refunded.

Price, \$1.00 per Dozen.

Wimsett's Anti-Excessive Granulation Paste (put up in collapsible tubes) is a very effective as well as a convenient treatment for the removal of **Cancerous Warts, Summer Sores, (Jack Sores) Excessive granulations following wire cuts (commonly called Proud Flesh)** and all such conditions you may meet in everyday practice. Satisfaction guaranteed or your money refunded. One tube contains sufficient amount for the cure of several cases.

These Specialties are sold to Veterinarians exclusively.

Price, \$1.00 per tube.

Dear Doctor:—

I find I am out of your **Anti-Fis-Tract Tablets** and have a bad fistula on hand, so kindly send me a dozen at once; also a tube of **Anti-Excessive Granulation Paste**. Enclosed find check for same. I have used your **Anti-Fis-Tract Tablets** before with excellent results and hope to have the same with these, so kindly send them at once.

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The Louisville (Kentucky) *Post* of January 3rd contained extensive write-ups of some of the veterinarians of that city, including Drs. Edw. M. Lang, C. A. Miller and E. Caldemeier. The photographs displayed in this connection show the doctors to be above the average in good looks, and the account of their facilities for taking care of practice indicates that they are admirably equipped in that respect; but the reporter was not satisfied with this. He had to break forth into song with the following disastrous results:

He is an expert, if you please,
Knocks out the Foot-and-Mouth Disease,
He gives old Pink Eye cards and spades,
And on the Glanders makes bold raids;
He makes all maladies go hang,
This splendid expert, Dr. Lang.

It is doubtful if this atrocity has ever been equalled, except by the same inspired scribe, who further incriminated himself with the following in regard to the other two doctors:

When veterinarians get the call
And all their rivals wear the willow,
Who has a horse upon them all?
Why Doctors Caldemeier and Miller.

Is it not about time to organize the Society for the Prevention of Cruelty to Poetry?

FEBRUARY AND EARLY MARCH VETERINARY MEETINGS

Connecticut Veterinary Medical Association, Hartford, Conn., Feb. 1st.

Missouri Valley Veterinary Association, Kansas City, Mo., Feb. 1, 2, 3.

Idaho Association of Veterinary Graduates, Blackfoot, Idaho, Feb. 3; 4.

Utah Veterinary Medical Association, Logan, Utah, Feb. 5.

Michigan State Veterinary Medical Association, Lansing, Mich., Feb. 8, 9.

Ohio Valley Veterinary Association, Terre Haute, Ind., Feb. 8, 9.

Northwestern Ohio Veterinary Medical Association, Toledo, Ohio, Feb. 16.

Alabama Veterinary Medical Association, Auburn, Ala., Feb. 18, 19.

Pennsylvania State Veterinary Medical Association, Pittsburgh, Pa., Feb. 22, 23.

California State Veterinary Medical Association, San Francisco, Cal., March 8th.

Texas Veterinary Medical Association,

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Little short of

a Specific in contagious abortions and foetal discharges. The ideal antiseptic and healing agent for obstetrical and surgical work. Mild, yet effective. A splendid deodorizer. For internal and external use. A Thymol-Terpene Compound but not a coal tar preparation.

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An aromatic, non-toxic, excellent substitute for Iodoform. Accelerates granulation and healing process.

Their Therapeutic Actions

in producing highly gratifying results, speak louder than any words.

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A New and Successful Vaccine

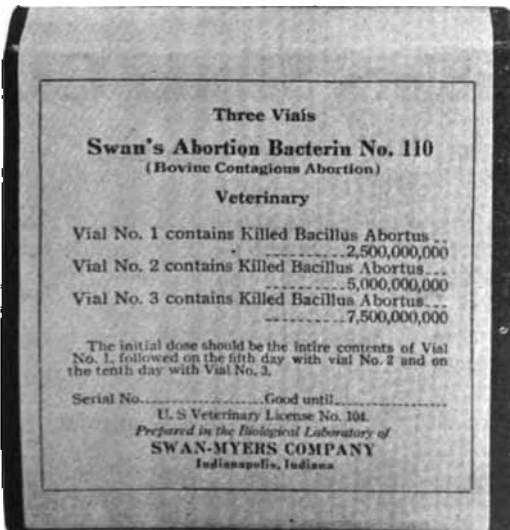
Purpose—To Immunize Against Contagious Abortion

Modern Veterinary Science has found that vaccination is the most satisfactory treatment of this condition.

When the infection appears in a herd, each animal should receive at least three injections—each as early as possible.

Special Note—Tear out this page and paste it in the back of your ledger or day book. Then when you are badly in need of this vaccine you will know just where to get it.

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ASSOCIATION MEETINGS

The information given below is up-to-date and has been furnished by the secretaries of the various associations listed. Secretaries are requested to supply us data regarding their associations after each meeting; otherwise, the association will necessarily be dropped from the list. We ask secretaries to kindly co-operate with us in keeping before the members of their associations the date and place of the next meeting.

Name of Association	Date of Meeting	Place of Meeting	Secretary
Alabama Vet. Med. Assn.	Feb. 18, 19	Auburn, Ala.	C. A. Cary, Auburn, Ala.
Alumni Assn., Col. of Vet. Med., O. S. U.	Jan. 12, 1918.	Columbus, O.	W. R. Hobbs, O. S. U., Columbus, O.
Alumni Assn., N. Y. State Vet. College	June 10, 1918.	New York	P. K. Nichols, Fort Richmond, N. Y.
Alumni Assn., U. S. Col. Vet. Surg.	April 18, 1918.	Washington, D. C.	Chas. M. Mansfield, 1244 Newton St., Washington, D. C.
American Vet. Med. Assn.	Aug. 29, 25.	Detroit, Mich.	C. M. Haring, Berkeley, Cal.
Arkansas Vet. Med. Assn.	January, 1918.	Little Rock.	R. M. Gow, Little Rock.
B. A. I. Vet. Assn. of So. Omaha.	3rd Monday of month.	So. Omaha, Neb.	J. W. Giffes, c/o B. A. I., So. Omaha
California State Vet. Med. Assn.	2nd Wed. in Mch., June, Sept., Dec.	San Francisco, Cal.	C. L. Roadhouse, Univ. of Cal., Berkeley.
Central Canada Vet. Assn.	Jan. 19.	Ottawa, Ont.	H. D. Sparks, 448 Wellington St., Ottawa.
Central N. Y. Vet. Med. Assn.	Last week in June and Nov.	Syracuse, N. Y.	E. H. Yunker, 2344 N. 15th, Philadelphia.
Chicago Vet. Society	2nd Tues. of month.	Chicago, Ill.	W. B. Switzer, Oswego, N. Y.
Colorado Vet. Med. Assn.	January 18.	Denver, Colo.	Glenn Brown, 2206 Lowell Ave., Chicago.
Connecticut Vet. Med. Assn.	1st Tues. in Feb.	Hartford, Conn.	J. E. Newson, Ft. Collins, Colo.
Genesee Valley Vet. Med. Assn.	January 27.	Rochester, N. Y.	A. T. Gilrard, Waterbury, Conn.
Georgia State Vet. Assn.	Aug. 23, 24, 1918.	Savannah, Ga.	O. B. Webber, 154 Andrews, Rochester.
Hudson Co. Vet. Practitioners' Club.	Monthly	Jersey City, N. J.	Peter F. Bahnon, Capitol Bldg., Atlanta.
Idaho Assn. of Vet. Graduates	February 2, 4.	Blackfoot, Idaho.	B. D. Blair, 728 Montgomery St., Jersey City, N. J.
Illinois State Vet. Med. Assn.	July 19, 1918.	Peoria, Ill.	J. R. Fuller, Watase, Idaho.
Iowa Vet. Med. Assn.	Dec. 17.	Belleville, Ill.	L. A. Martlett, 1827 Wabash Ave., Chicago.
Madison Vet. Med. Assn.	Jan. 17, 18 and 19, 1918.	Indianapolis, Ind.	L. R. McKinley, Freeport, Ill.
Maine Vet. Med. Assn.	Jan. 5-6, 1918.	Ames and Des Moines.	A. F. Nelson, Indianapolis, Ind.
Kansas Vet. Med. Assn.	Jan. 5-6, 1918.	Kansas City, Kan.	H. B. Truman, Rockwell City, Ia.
Kentucky Vet. Med. Assn.	2nd Tuesday of month.	Lexington, Ky.	J. H. Burt, Manhattan, Kan.
Keystone Vet. Med. Assn.	3rd Wed. of month.	Philadelphia.	Robt. Graham, Lexington, Ky.
Los Angeles Vet. Med. Assn.	April 12, 1918.	Los Angeles.	T. B. Davis, 387 E. Grand, Philadelphia.
Maine Vet. Med. Assn.	Not decided.	Belfast, Me.	J. A. Dell, 18th & Pacific, Los Angeles.
Manitoba Vet. Assn.	4th Wed. each month.	Winnipeg, Man.	M. E. Mackoela, Augusta, Ma.
Massachusetts Vet. Assn.	1st Tues. & Wed. after 1st Mon. in February.	Worcester in Sept.; Boston rest of year.	W. Hilton, 275 James St., Winnipeg.
Michigan State Vet. Med. Assn.	Jan. 10, 11, 1917.	Lansing, Mich.	E. A. Cahill, Boston, Mass.
Minnesota State V. M. Assn.	2nd Tues. & Wed. Jan.	St. Paul.	W. Austin Ewalt, Mt. Clemens, Mich.
Mississippi State Vet. Med. Assn.	July 7, 1918.	Clarksdale, Miss.	G. Ed. Leach, Winona, Minn.
Mississippi Valley Vet. Med. Assn.	Feb. 1, 2, 3.	Galesburg, Ill.	E. S. Norton, Greenville, Miss.
Missouri Vet. Med. Assn.	Last week in July.	Kansas City, Mo.	W. Lester Hollister, Avon, Ill.
Montana Vet. Med. Assn.	Jan. 28, 29.	Bozeman.	R. F. Bourne, 1536 E. 18th, Kansas City.
Nat'l Assn. B. A. I. Employees	2nd Mon. in Aug., 1918.	New York City.	C. D. Polak, 1326 E. 15th St., Kansas City
Nebraska Vet. Med. Assn.	Aug. 2, 3, 4.	Lincoln, Neb.	A. D. Knowles, 302 S. 4th St., West Missoula, Mont.
New York State Vet. Med. Society		Ithaca, N. Y.	S. J. Walker, 165 N. W. Ave., Milwaukee.
			S. W. Alford, Lincoln, Neb.
			C. P. Fitch, Ithaca, N. Y.

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Full directions for use with all shipments. Information upon request.

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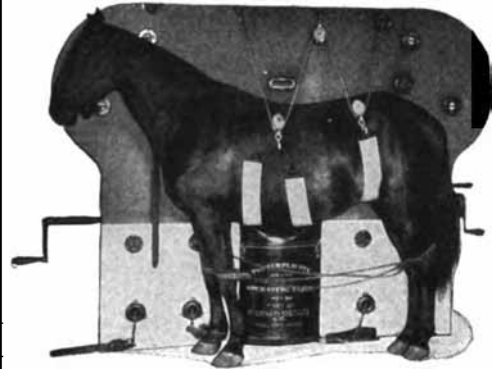
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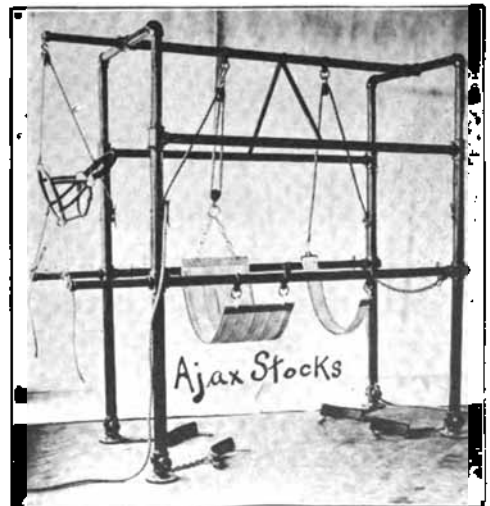
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Name of Association	Date of Meeting	Place of Meeting	Secretary
North Carolina Vet. Med. Assn.	June, 1916	Wrightsville Beach, N. C.	J. P. Spoon, Burlington, N. C.
North Dakota Vet. Assn.	3 days, last week July	Fargo, N. D.	W. J. Mulrooney, Bavana, N. D.
Northwestern Ohio Vet. Med. Assn.	Feb. 18	Reading, O.	Paul E. Wood, Ottawa, Ohio
Ohio State Vet. Med. Assn.	Jan. 13, 14, 1916	O. S. U. Columbus, O.	F. A. Lambert, care O. S. U., Columbus
Ohio Valley Vet. Med. Assn.	Feb. 8, 9	Terre Haute, Ind.	G. J. Bohren, Evansville, Ind.
Oklahoma Graduate Vet. Med. Assn.	Jan. 18, 19	Oklahoma City	S. H. Güller, Norman, Okla.
Oklahoma Vet. Med. Assn.	Usually in January	Oklahoma City	B. T. Stumpp, Corvallis, Ore.
Oregon Vet. Med. Society	June, 1916	Probably Corvallis, Ore.	E. H. Yunker, 2344 N. 15th, Philadelphia
Pennsylvania State Vet. Med. Assn.	March 7, 8, 1916	Pittsburgh, Pa.	S. W. Allen, Watertown, S. D.
Schuykill Valley Vet. Med. Assn.	Dec. 15, 1915	Reading, Pa.	C. B. Fottler, Reading, Pa.
South Dakota Vet. Med. Assn.	January 15, 19, 1916	Sioux Falls	J. A. Doll, 16th & Pacific, Los Angeles
Southern Aux. Cal. State Vet. Med. Assn.	3rd Wed. Dec.	Los Angeles	J. H. McMahon, Columbia, Tenn.
Tenn. Vet. Med. Assn.	Nov. 17, 18, 1915	Chattanooga, Tenn.	Allen A. Foster, Marshall, Tex.
Texas Vet. Med. Assn.	March, 1916	Not decided	C. C. Palmer, St. Paul, Minn.
Twin City Vet. Med. Society	Once a month	St. Paul	J. J. Ferguson, U. S. Yards, Chicago
U. S. Live Stock Sanitary Assn.	Dec. 1, 2, 1915	Chicago	E. P. Coburn, Brighton City, Utah
Utah Vet. Med. Assn.	Feb. 5	Logan, Utah	R. O. Chesnar, Hanley, Seark.
Veterinary Assn. of Saskatchewan	March, 1916	Regina, Sask.	S. L. Lobelin, New Brunswick, N. J.
Vet. Med. Assn. of New Jersey	2nd Thurn. in Jan.	Trenton, N. J.	E. S. MacKellar, 251 W. 11th St., N. Y.
Vet. Med. Assn. of N. Y. City	1st Wed. ea. mo. except July, Aug., Sept.	New York City	C. W. Rippon, 2115 14th St., N. W., Washington, D. C.
Vet. Med. Assn. of Geo. Washington Univ.	1st Sat. each month	Washington, D. C.	Claude Holden
Vet. Med. Society Wash. State College	1st and 2nd Tues. ea. mo.	Pullman, Wash.	W. G. Christian, Blacksburg, Va.
Virginia State Vet. Med. Assn.	Jan. 19, 1916	Richmond, Va.	Carl Conder, Edlingham, Wash.
Westington Vet. Med. Assn.	June, 1916	Seattle, Wash.	F. P. Febr, 94 Prospect Ave., Buffalo
Western N. Y. Vet. Med. Assn.	2nd week December	Buffalo, N. Y.	W. A. Wolcott, Madison, Wis.
Wisconsin Vet. Med. Assn.	January 18, 19, 20, 1916	Madison, Wis.	E. S. Bauslicher, 325 Newberry, York, Pa.
York Co. Vet. Med. Society	1st Tues. after 1st. Mon. of each month	York, Pa.	

Six cows died near Buckingham, Iowa, early in January, from what the local veterinarian pronounced to be auto-intoxication due to the feeding of soft corn.

A resolution to investigate the feasibility of using horse flesh for human food was adopted by the Illinois state board of agriculture, January 11th. If the results are favorable, the board will probably recommend a law allowing its sale in the state.

Dr. D. A. Illingsworth has changed his location from Bennington, Vt., to Brooklyn, N. Y., where he will be employed as veterinarian by the Knickerbocker Ice Co., having 1,200 horses to look after. This leaves a vacancy for a veterinarian at Bennington, and Dr. Illingsworth states he is willing to introduce a good man to his former clients. Any one who is interested should address the doctor in care of the Knickerbocker Ice Co., Bond and 4th streets, Brooklyn, N. Y.

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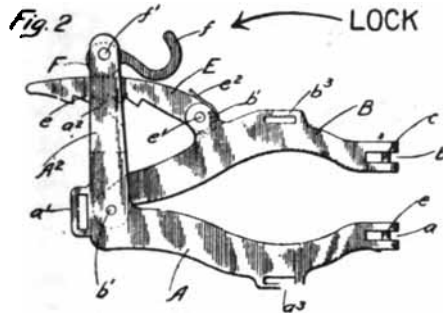
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Price with Cupped Plates, only.....\$10.00
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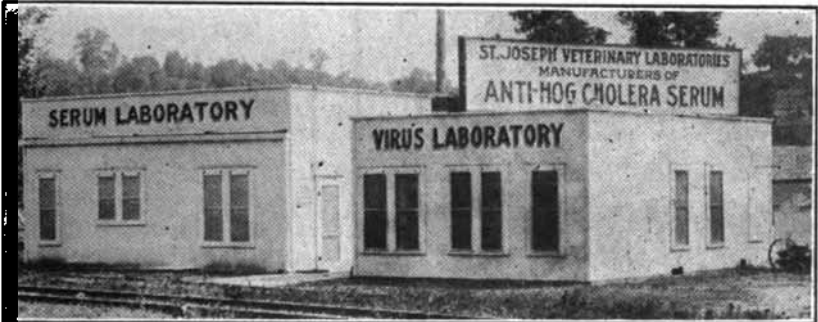
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Write us for pictorial trip through our plant and other literature and our special price to veterinarians. A man on duty all night. Only six blocks from depot, express offices. Automobile service. Telephone, wire or write us your order and let us demonstrate our excellent service to any part of the country, and number you among our many satisfied customers, several of whom have volunteered the report that they have not yet lost any hogs with our serum.

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Single and Double Treatment

is without comparison as a reliable preventive of Anthrax (Charbon).

The **DOUBLE** vaccine, introduced by us into America in 1895 and successfully used by veterinarians on over 75,000,000 animals, is still used wherever possible as the best known preventive of this disease.

The **SINGLE** vaccine is rapidly winning in popularity with those having large herds and where double vaccination is a burden. The single Anthrax Vaccine has been used in all parts of the world on over 25,000,000 head, with the best of satisfaction.

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makes it possible to immediately immunize animals preparatory to using the vaccine, thus saving a large number of animals that would otherwise die before the vaccine alone could take effect.

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NOW FOR THE GREAT VETERINARY COLLEGE

The time has come when the general standard of the veterinary profession in this country must be marked up. The experiences of the last 14 months have brought home as never before the fact that there is a woeful dearth of trained, educated men available for coping with animal plagues. We have learned our lesson, and, as usual in such cases, at staggering cost.

The Gazette renews at this time the appeal of the stock breeding interests of the United States for the establishment at the Chicago Union Stock Yards of an institution, under University of Illinois supervision, which shall rise to the full stature of all that a twentieth century veterinary college and experiment station ought to be. Such a project was unfolded to the vision of an expectant industry several years ago, only to be abandoned through the failure of the University of Illinois, and the sponsors of the movement at the yards, to get together on matters that might, it seems to us, have been adjusted at that time; but they were not. Had the shadow of foot-and-mouth thrown its frowning front over the situation while those negotiations were pending, it is likely that ways and means of financing, equipping and properly directing such a seat of research and learning would have been devised. But the stars were not then read aright, and later came the deluge. Not that the establishment of the institution would have necessarily preserved us from this foreign invasion, but its faculty and laboratories properly utilized would have had a value beyond price in our hour of trouble.

Will They Rise to the Occasion?

We therefore appeal at this time to the public spirit of the Union Stock Yard & Transit Co. and to the great packers to renew their proposal to finance this great institution. The land is available, plans for building were carefully worked out when the matter was up before, and these we assume have been preserved. The reasons why this matter should now be taken up and pushed to a conclusion are many and obvious; so apparent, in fact, that it would be quite a waste of space to undertake to set them forth. No such place for clinical work and scientific experimentation exists elsewhere in the world. Nothing short of the best of everything in the way of equipment, and the best trained men of Europe and America should be employed. Nothing short of that could of course satisfy the great packing companies, in case they get behind this splendid educational proposal. They demand the highest grade of efficiency in their own great organizations, and if they join in this, as *The Gazette* thinks they ought, that in itself would be equivalent to a guarantee that nothing will

ANNOUNCEMENT EXTRAORDINARY

After extended experiments in Europe, Prof. LeClainche, chief of the Sanitary Bureau of the French Department of Agriculture, and Prof. Vallee, Director of the Veterinary School at Alfort, France, have perfected the first improvement made in more than a decade in the prevention of blackleg.

These recognized veterinary authorities have devised an absolutely reliable and positively attenuated

Liquid Blackleg Vaccine

that is ready to inject as sent out by us. This will revolutionize blackleg vaccination, and places it on an ethical basis that should appeal to the veterinary profession. In their experiments, Profs. LeClainche and Vallee have vaccinated 3,500,000 cattle with complete success.

**By means of PROFS. LECLAINCHE
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which we also have the pleasure of supplying, all outbreaks of Blackleg may be controlled immediately and many animals saved.

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ERS TESTED SINCE
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**Wichita & Oklahoma
Serum Company**

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Branch Office:

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be left undone to make such a college the best of its kind in the world, and a source of inestimable benefit to the farmers and stockmen of North America.

What is the answer?—Editorial from the *Breeder's Gazette*, Chicago.

Four persons were bitten by a rabid dog at Columbus, Ind., on December 13th.

It is reported that coyotes afflicted with rabies have become a grave source of danger to dogs and children in Idaho.

Dr. J. J. Waters, of Kearney, Nem., was hit by a Ford car operated by a reckless driver, December 13th, and had his shoulder, arm and several fingers broken.

BLACK OIL LINIMENT

- Oil. Lini.....3iv
- Oil. Terebinthinae.....3iv
- Ac. Sulphuric.....3i

Mix Terebinthinae and oleum lini thoroughly then add the sulphuric acid slowly.
L. N. P.

A "Softener" for Hoofs

- Castor oil
- Barbadoes tar
- Venice turpentine aa.....3iv

- Yellow wax.....3ii
- Rosen3ii
- Mutton tallow (fried) lb.....3ii

Mix and apply three times a week.

A Useful Counterirritant

Here is my prescription for Save the Horse: it may not be the same as the widely advertised proprietary but I see no difference.

- Oil of spike.....3iss
- Oil of wormwood.....3ii
- Menthol3i
- Sulphuric ether.....3ii
- Wood alcohol qs.....3viii

Sig. apply 3 days, skip 3 days and repeat.

WM. A. THOMPSON, V. S., B. V. Sc.
Rushville, N. Y.

NINETEENTH ANNUAL MEETING OF THE NEBRASKA STATE VETERINARY MEDICAL ASSOCIATION.

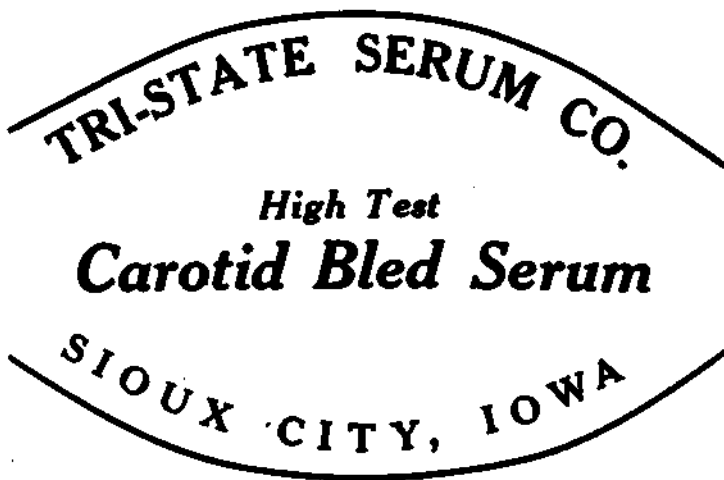
The meeting was called to order at 11:00 a. m., Dec. 7th, 1915, by Pres. McGinnis, and welcomed to Lincoln in a fitting address by Mr. Whitten, secretary of Lincoln Commercial Club.

In response Dr. Jensen assured secretary Whitten that we were always glad to come to Lincoln and appreciated very much the courtesies of the Lincoln Commercial Club. He also recalled old familiar faces and

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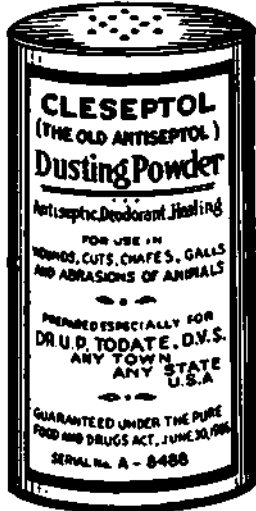


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President

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Always dry and ready for use.

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Per half gross, Doctor's label..... 8.75
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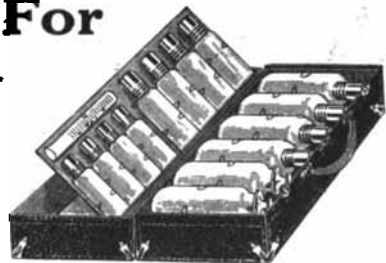
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CONTAINS:

8 oz. Bottles for liquids; 8 oz. Salt Mouth Bottles.
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SIZE: 5 1-2x7 3-4x15 3-4 in.

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"The Western House for the Western Veterinarian"
OMAHA, NEBRASKA

scenes and gave a good illustration of what Veterinary Science had done in combating contagious diseases, especially Black Leg, at the time he was in practice at Weeping Water, and hoped that we would receive the needed appropriation at our next legislature to carry out this work and make it still more effective.

Roll call was responded to by members.

Minutes of 1914 meeting, also the special meeting held September 8, 1915, were read by secretary Norden and approved. He suggested that the proceedings of the meetings be printed, but no action was taken.

Moved and seconded to adjourn. Carried.

At two'clock the meeting was called to order by president McGinnis and in his annual address expressed the appreciation of the Association to the different committees, especially the committees on entertainment and local arrangements. He enumerated things that we had accomplished in the past year in the way of new legislation, calling attention to the new practice law and stallion inspection law.

He congratulated the State Veterinarian and Sanitary Board for their successful attempt in keeping Nebraska free from foot-and-mouth-disease when at times it looked like an impossibility. He also expressed the

appreciation of the Association to the Sanitary Board and State Veterinary Department for having eradicated Dourine in the north-western part of the state and the quarantine lifted.

President McGinnis then called upon Dr. R. C. Moore for a few remarks and extended the best wishes of the Association to him. Dr. Moore said he was glad to be with us at this time and that he could be with us regularly in the future, which everyone was glad to hear.

Dr. Alford gave the report of the Committee on Biologics, which brought out considerable discussion by Drs. Newman, Nichols, Hoylman, Boyd, Moore, Jensen, Cady and Sneed. He insisted on the Committee continuing its work and following some definite plan in order to find out what the products were actually doing in practice.

A few applicants for membership were reported favorably by the executive committee and the rules suspended and the secretary instructed to cast the vote of the entire association to elect them to membership.

In the absence of Dr. Brown, Dr. Collins was chosen to read his report of committee on therapeutics, which was entitled "Relation of Veterinarian to the Druggist."

He objected strongly to druggists prescrib-

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Night Phone (Res.), Home South 2310

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ST. PAUL, U. S. A.

ing for all ailments of domestic animals from his shelves, of proprietaries instead of taking equally as much interest in the veterinarian's as the doctor's drug business.

Dr. Hoylman discussed this paper giving by way of illustration some personal experiences with unscrupulous druggists, citing an incident where one emperic in his neighborhood started into the veterinary business on his (Dr. Hoylman's) prescriptions given him by the druggist.

Dr. Hall's report of the committee on diseases was an interesting one and led to a heated discussion by Drs. Anderson, Juckniess, Odell, Sneed, Schafer, Nichols, Vinnedge and Jensen. Dr. Anderson related his experience with what might be ictero-hematuria at Central City.

A discussion was also brought out in regard to what was diagnosed as infectious pneumonia and hemorrhagic septicemia appearing in different parts of the state.

Dr. Morris being absent there was no report on the committee on surgery. Dr. Moore was called on and he said he might mention the use of the cautery in removing the mucosa from the ventricle in the operation for laryngeal hemiplegia, which was being practiced by some. Dr. Schafer thought that a good idea and also mentioned that in administer-

ing the mallein test some were injecting the ophthalmic mallein into the conjunctive of the lower lid.

The round table on general practice conducted by Dr. Jensen was full of "pep" and attention and, although it being the first attempt at such, no doubt it will retain a permanent place on the program.

A resolution was adopted extending sympathies of the Association to Manager Johnson of the Lindell Hotel and Dr. G. R. Young, of Omaha, who were quite seriously ill and the Committee was instructed to purchase flowers and deliver to both parties.

Moved and seconded to adjourn. Carried.

The entire association enjoyed dinner together at 6:30 o'clock and appreciated the music furnished by the university quartet. At 8:00 o'clock everybody was entertained at a theatre party.

The association was called to order by president McGinnis at 10:00 o'clock Wednesday, Dec. 8, and listened to the report of the prosecuting committee by Dr. Norden, who in a brief way told of the prosecutions and convictions and how the funds were expended. The question then arose as to whether this committee would be continued and how it would get its funds to operate, which brought out a lengthy discus-

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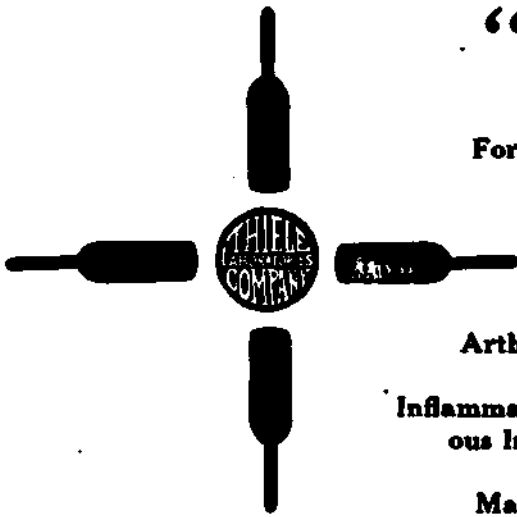
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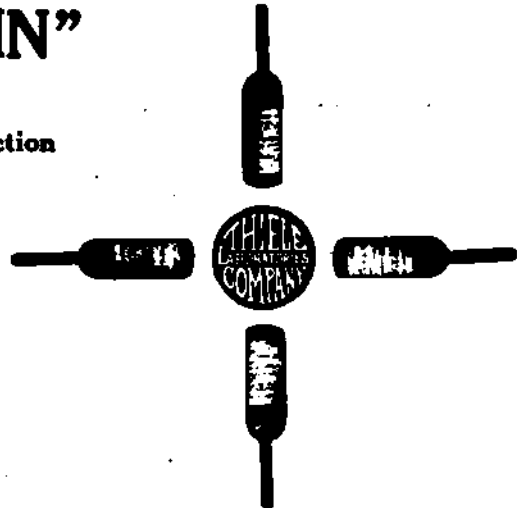
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sion by Drs. Cady, Juckniess, Newman, Hoylman, Schafer, Young, McGinnis, McEachran, Hall and Bordner and was finally decided that the committee would have more work to do now than before the new law was passed, have a better basis to work on, that it remain as a committee of the association and was instructed to ask for what ever donation it thought necessary to defray expenses incurred.

The executive committee reported some more applicants eligible to membership and it was moved and seconded and carried that the association concur in the report of the committee and that the rules be suspended and the secretary be instructed to cast the entire vote of the association and elect them to membership. The applicants admitted to membership at the 1915 meeting were E. J. Neugebauer, J. Ward Jackson, Claude C. Stryson, J. T. Brown, J. P. Dillon, C. S. Westrick, Franklin Allen, J. J. Waters, F. S. Falk, J. E. Salsbery, L. J. Smith, Floyd Ferrin, O. F. Rickart, M. S. Lentner, D. C. West.

The applications of Drs. C. M. Day, G. R. Miller, E. L. Lull and G. R. Lemley were recommended to be held over for one year for further investigation.

Dr. Wild, State Bacteriologist, read a paper on "The Importance of a Closer Relationship Between Boards of Health and the Veterinarians and the Necessity of a State Vet-

erinary Pathologist." He laid stress on the good fellowship which should exist between and in the Departments in order to accomplish the good results desired. He told of how he was overrun with work and was without help and that the State Veterinary Department had been required to send 2654 Dourine and 224 glanders specimens to Washington, with much loss of time. He insisted that the association take some actions on the matter and try to solve the problem at the next legislature.

Dr. Anderson lead the discussion on Dr. Wild's paper.

A rising vote of thanks was tendered Dr. Wild.

REPORT OF RESOLUTION COMMITTEE

No. 1. Be it resolved that we the Nebraska Veterinary Medical Association extend a vote of thanks to the Lincoln Commercial Club for the courteous treatment while in the City.

No. 2. Be it resolved that we the Nebraska Veterinary Medical Association extend a vote of thanks to the manager of the Hotel Lindell, Mr. Johnson, for the courteous treatment and favors shown while in session.

No. 3. Recognizing the urgent necessity of a State Veterinary Bacteriologist, be it resolved that we the Nebraska Veterinary Medical Association recommend that the Board

Abscesses

Inflamed Glands

Periostitis

Bog Spavin

Capped Knee

Infected Wounds

Harness Galls

Bruises



Burns

Distemper

Pneumonia

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We are going to give you an opportunity to get some of these articles at our expense. OF COURSE WE DO THIS ONLY FOR ADVERTISING PURPOSES; WE MAKE NO MONEY ON THESE BARGAIN OFFERS; WE ARE SURE THAT YOU WILL BE PLEASED WITH THEM and we expect to MAKE OUR PROFIT on your future purchases. Until further notice we will ship prepaid for Cash With Order, to any Qualified Veterinarian in the United States or Canada:

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1 Steffens Prescription Book.....	1.00	
1 Automatic Dilator	1.50	

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1 Steffens Prescription Book.....	\$1.00	} \$1.25
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1 Pkg. Azolysin	\$2.50	} \$2.75
1 Steffens Prescription Book.....	1.00	

Or

2 Automatic Dilators	\$3.00	\$1.00
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Or

1 Pkg. Azolysin	\$2.50	} \$5.00
1 Pkg. Acaralysin (for Mange)	1.50	
1 Pkg. Opalysin (for Corneal Opacities).....	1.50	
1 Pkg. Osteolysin (for Spavin).....	.75	
1 Automatic Dilator	1.50	
1 Steffens Prescription Book.....	1.00	

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of Regents of the University of Nebraska employ one.

The Association stood adjourned and a photograph was taken on the south side of the Lindell Hotel. From there we went to the Lincoln Commercial Club and enjoyed their courtesies, consisting of a well arranged and timely luncheon.

At 1:30 o'clock practically every veterinarian left for the State Farm where Prof. Kennedy gave a very interesting talk on the draft horse, his future, type, etc., stating that January 1, 1913, found this country with more horses than they ever had and that as the land owner's holdings became smaller he would have to use the horse, as the "machine horse" was practical only on large farms. He also stated that 75 per cent of the farm profits came from live stock and their products. After he had illustrated the desirable points of a draft horse, using the State Farm stallion as a model, he turned it into a judging contest, using four two year old stallions kindly furnished by Woods Brothers, which proved very instructive.

Prof. Frandsen of the Dairy Department of the University of Nebraska then furnished us the closing part of the program by taking up the dairy questions, using five different breeds to illustrate the points he wished to bring out. He showed the future necessity of

the dairy cow in intensive farming and the veterinary future in that respect; also where and how the different breeds could be used to the best advantage, taking into consideration the quantity and quality of milk desired and the feed to be consumed. He rehearsed the desirable and undesirable points of the different breeds from a judging standpoint, and in all, brought out many features that had grown rusty to many of us.

The meeting was adjourned and all present sampled the lactone furnished by the Dairy Department before going home.

Lincoln, Nebraska. S. W. ALFORD,
Secretary.

SAYS ANTI-CRUELTY MAN WAS CRUEL TO HIS WIFE

Cruelty was the ground on which Mrs. Helen Tomlinson was granted a divorce Nov. 30th from Dr. Roland G. Tomlinson, veterinarian of the Anti-Cruelty Society of Chicago. Her husband's store of kindness was all employed in his work, Mrs. Tomlinson told the judge, and he frequently whacked her and choked her.—*Chicago Herald.*

Dr. C. H. Potter, a veterinarian of Ellendale, N. D., was killed December 1st, when his auto upset. The doctor lost control of the machine while driving at high speed.

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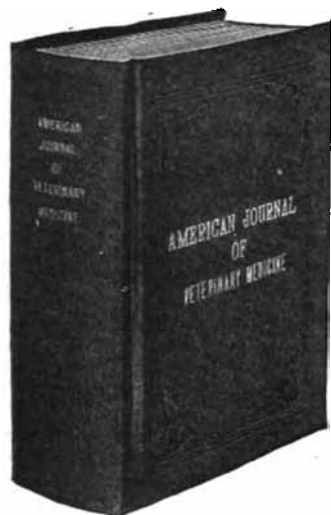
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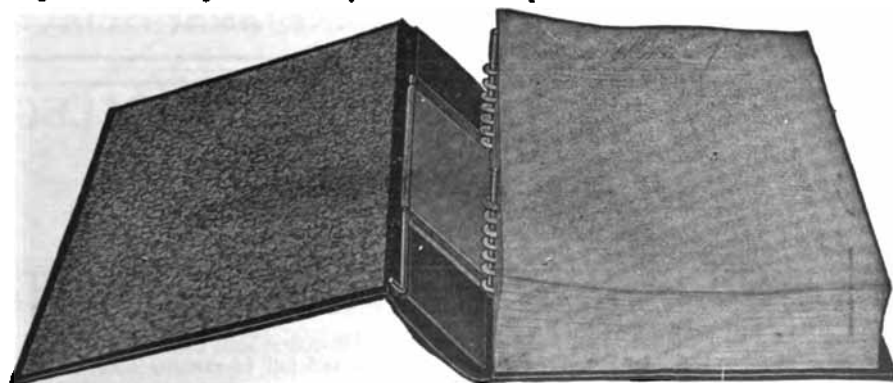
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Jarrell has lived in Fort Worth and Dallas and has been a veterinarian in active practice in Texas for ten years. He is president of the state board of veterinary examiners, and is president of the Southwestern School for Veterinarians at Dallas.

He served as state veterinarian for six months during Tom Campbell's administration as governor. He is a graduate of the Chicago Veterinary College.

Courts in Minnesota, Montana, Tennessee and Pennsylvania have held that a person other than a producer, a broker, a manufacturer, a jobber, a druggist, a physician, a dentist, or a veterinarian, may have narcotics in his possession without violating the Harrison law while a court in the State of Washington has ruled to the contrary. The United States Supreme Court will be called upon to decide this point in the near future.

The Southwest Jersey Cattle Breeders' Association met at Kansas City, December 11th, among the numbers on the program being an address by State Veterinarian D. F. Luckey.



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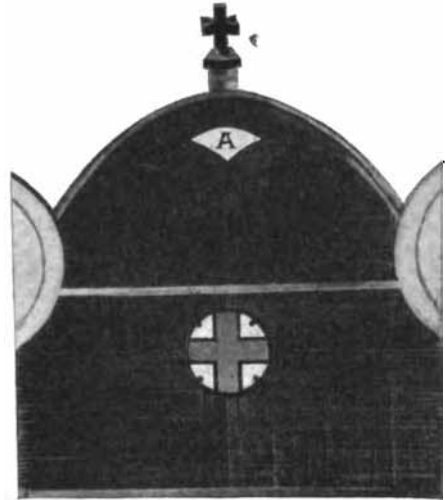
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D. S. White, Dean, Ohio State Univ.
H. C. Simpson, Pres. Mo. Valley V. M. A.
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Dr. A. L. Abell moved from Shelbyville to Hannibal, Mo., recently.

The McLean County Pure Bred Percheron Association will hold its first meeting at Bloomington, Il., on January 21st.

The trustees of German Township, Ohio, have adopted a resolution requiring the destruction of dogs running at large unless the animals are muzzled.

Dr. C. R. Wildes, of Wichita, Kansas, was sentenced to the penitentiary on December 7th for robbing a bank at Chautauqua, Kansas. With two companions, the doctor drove up to the bank in an automobile on November 10th, covered the cashier with revolvers and escaped with \$800. Wildes fled to California, where he was arrested. He had a veterinary hospital at Wichita, where he sold liquor and dispensed narcotics contrary to law.

At a recent session the Alabama legislature passed a law by which persons who have been bitten by rabid dogs or have lost animals by rabies since September 15th may recover two times the amount of their actual damages and two times the cost of Pasteur treatment from the owner of the rabid dogs if they can prove the owner knew his dogs had hydrophobia or had been exposed to the disease.

"Wound Treatment" received some time ago. I have not only read it but have studied it and compared it with Frick, Lister and others, also with my method. I consider it worthy of a place in any veterinarian's book case, also in his "gray matter." Even if it does not suggest anything new to him, it is worth the price and time he consumes in studying and comparing it to know that others are not more advanced than himself. Get it by all means.

Circleville, Kans.

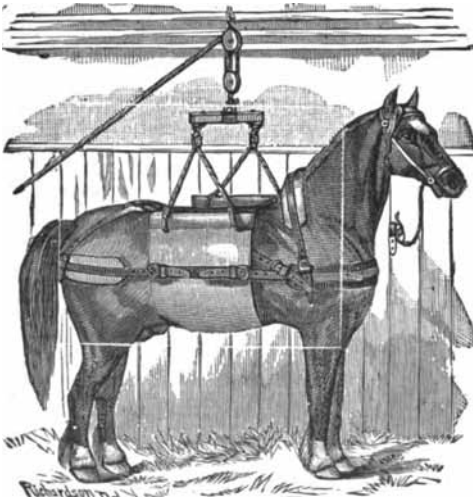
C. S. BAXTER, D. V. S.

I received the set of nine volumes of the Veterinary Medicine Series and have looked through them, but have read "Wound Treatment" and think it a wonder. The same applies to the rest so far as I have had the opportunity to examine them.

Morgan, Minn. S. H. BURGESS, D.V.M.

That the majority of veterinary practitioners are prone to "beat back" to careless quackery in surgery is to be deplored. "Wound Treatment" will help the line-up in the fight for better things, and its brevity and simplicity commend it to the "old timer" as the next best thing to an exchange of personal experience.

L. FREDENBURG, V. S.

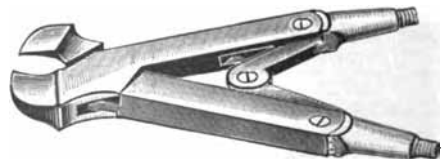


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Greater Accuracy in Clinical Diagnoses

By R. R. DYKSTRA, Manhattan, Kansas.

IT seems to the writer that with our increase in the knowledge of diseases of domesticated animals and their corresponding division in groups, the members of which resemble each other very closely from a clinical standpoint, that their successful diagnosis has become increasingly difficult. In view of the fact that leaders in veterinary thought and investigation have deemed it wise to make such a minute division, which undoubtedly is of the greatest value, it is incumbent upon the veterinary practitioner to apply this knowledge as accurately and in as practical a manner as circumstances and surroundings will permit. In part one of this paper I wish to review some of the conditions that may be diagnosed more accurately, in part two I shall discuss the remedy.

PART ONE

Subdivision 1. Many times animals suffer from some form of pain located in the abdominal cavity. To the uninitiated these are grouped under the single heading "colic" and if the practitioner is not on his guard he will, in the course of time, commit the same error. In this connection it is well to bear in mind that colic refers to some form of abdominal pain, and before intelligent, rational treatment can be instituted it is essential that the exact nature of the malady be determined by a careful physical examination.

"Colicky symptoms" in horses are observed in the following conditions: Acute and chronic peritonitis, acute and chronic gastric dilation, gastritis, gastric ulcer, partial stenosis of the pylorus, gastric parasites, enteritis, intestinal bloat, intestinal impaction and intestinal obstruction due to other causes, thrombosis of the mesenteric arteries, volvulus, in-

vagination, intestinal parasites, numerous diseases of the liver and bile ducts, of the sexual organs, urinary organs, and such conditions as azoturia, spasm of the esophagus, sometimes during pleuritis and in some infectious and contagious diseases.

While I have not named nearly all the conditions in which "colic" may be a symptom the foregoing are sufficient to indicate the importance of differentiating them.

In our diagnosis we depend largely upon a careful physical examination, in which a rectal exploration conducted along rational lines is considered absolutely essential, and in addition we have found the following points of the greatest assistance:

(a) Icteric discoloration of the visible mucosae points to involvement of the duodenum, or bile secreting organs.

(b) Intense, continuous pain is noticed especially in all forms of gastric and intestinal bloat, and thrombosis of the mesenteric arteries.

(c) Primary elevation of temperature is observed in colicky conditions, gastritis, enteritis, etc., due to inflammation, though a later rise in temperature does not have the same significance, it being due to toxemia or secondary inflammation.

(d) Retching, belching, and a sour smell with the expired air may be observed in gastric ailments.

(e) If the pulse is normal or close to normal in the early stages of the affection we may exclude inflammations and infectious disorders.

(f) Marked abdominal enlargement is rarely observed in any of these conditions except bloating of the large intestine.

(g) Complete constipation as an early symptom, and absence of peristalsis,

points to impaction or intestinal paralysis.

(h) Unnatural positions of the animal have so far been of little value to us in diagnosing colicky conditions.

Subdivision II. Ailments affecting horses and cattle that have recently been shipped by rail or that have passed through public stockyards are many times diagnosed simply as "shipping fever." We consider such a diagnosis entirely inadequate; the term itself expresses little and does not indicate the nature of the malady. The writer does not wish to create the impression that he has personally observed all the various diseases that may be included under the heading of "shipping fever," but he has personally observed cases of so-called shipping fever in cattle that should have been diagnosed as one of the following:

- (a) Contagious conjunctivitis
- (b) Pectoral form of hemorrhagic septicemia
- (c) Malignant catarrhal fever
- (d) Ordinary catarrhal pneumonia, affecting many animals in the same herd.

In horses our experience with so-called "shipping fever" has been less extensive, but in those cases where we were called upon to make a diagnosis it has invariably pointed to one of the following:

- (a) Equine influenza in one of its various forms
- (b) Enzootic acute bronchial catarrh
- (c) Ordinary catarrhal pneumonia affecting many animals in the same herd.

It is probable that other diseases have been observed in animals following passage through public stockyards or following a journey by rail, but sufficient evidence has been introduced to indicate that the term "shipping fever" as a "blanket diagnosis" is not warranted by the conscientious diagnostician.

Subdivision III. Another term used with equal abandon in diagnosing diseases of farm animals is "blind staggers." This term is not a correct one for a graduate veterinarian to use in diagnosis. It must be remembered that blindness and

staggering, or inco-ordination of movement, occur as simultaneous symptoms in a multitude of diseases; some of the more common are vertigo due to cerebral congestion and cerebral anemia; overloading of the stomach, meningitis, cerebritis, forage poisoning, etc. The writer contends that the only time that the veterinarian is justified in using the term "blind staggers" is when he is naming a disease in which blindness and staggering are symptoms for a layman who is not familiar with technical terms, but he should avoid it in his own private vocabulary, for strictly personal use, because its continuous use does not lead to accuracy in clinical diagnosis.

Subdivision IV. We have been called upon a few times to inspect animals reported to have glanders, and sometimes the previous diagnosis was correct, but we have also observed patients suspected of being glanderous to be affected with ulcerative lymphangitis, mycotic lymphangitis, malignant hyphomycosis, and actinomycosis of the nasal and facial region. In these cases the correctness of the diagnosis was established by the mallein test and microscopical examination.

Subdivision V. Some few months ago our attention was called to a reputed case of "swamp fever." Not being very familiar with this condition from personal observation, and being anxious to extend our knowledge by examination of the patient we induced the owner to place the animal under our care. Clinically the patient had all the aspects of "swamp fever." The inoculation of 30 cc. of its blood into a healthy animal, however, proved negative and we were compelled to make a diagnosis of sclerostomiasis, which was afterwards confirmed by an autopsy.

Numerous other conditions could be cited to indicate the dangers of a hasty diagnosis.

PART TWO

The remedy may be readily outlined without going into detail, under the following headings:

(a) The closest possible application to the perusal of veterinary publications, especially veterinary journals.

(b) Careful study of and familiarity with the differential diagnosis of diseases.

(c) A regular and carefully outlined method of conducting a physical examination of all patients, in all cases, so that it may become second nature to the diagnostician. This examination is to be applied frequently to healthy animals as well, because unfamiliarity with the normal renders it impossible to correctly diagnose the abnormal.

(d) The more frequent use of diagnostic inoculation such as the tuberculin

and mallein test, and blood inoculations, are recommended to confirm or assist in making a diagnosis.

(e) Microscopic and bacteriologic examinations in all cases of doubt.

(f) Frequent performance of autopsies.

In conclusion it may be stated that it is not the intention of the writer to act as critic regarding the accuracy of veterinary diagnoses, knowing the handicaps imposed upon the general practitioner of veterinary medicine and surgery, but rather to stimulate a closer application to new and established veterinary literature, resulting ultimately in "greater accuracy in clinical diagnosis."

Remarks on the Diseases of Foxes

By I. E. CROKEN, V. S., Port Elgin, N. B.

I AM a reader of your valuable journal, and have often looked for some discussion of the diseases of domesticated foxes and their treatment. I live in Prince Edward Island, which has become famous for its pre-eminence in the fox industry. Fox farming is carried on on a very large scale here. All kinds of foxes are bred, and raised in captivity with marvelous success. The black and silver black fox stand in the fore front. This class of foxes are very valuable for the magnificent fur they produce; the most beautiful and most valuable fur in the world. A single skin has brought the princely sum of \$2,800!

The Prince Edward Island black and silver black foxes stand in a class by themselves, being bred up to the high standard at which we find them at the present time by years of careful and select breeding, so that there now exists a pure bred Prince Edward Island black and silver black fox, always producing offsprings true to type.

Foxes like other animals are subject to many different diseases. Being closely

related to the dog the diseases of foxes can be treated similarly with success.

Foxes are not so easily handled as dogs; they have not been bred long enough in captivity to make them tame, but as the years go by the fox will become more tame, and no doubt, sometime will be just as easily handled as the dog. At the present there are many of these animals that do not object to being handled. However, the handling of a fox and administering medicine to it is often quite difficult. Not because it cannot be done, but because of the bad effect on the animal. Catching him and giving him medicine excites him, and very often aggravates the trouble, so that it is necessary to use a great deal of strategy in administering medicine to foxes. One thing I have noticed always; when a fox becomes ill he is tamer and more easily handled than when well and it is a sign of convalescence when he gets snappy, and harder to handle.

During the last three years I have treated many foxes suffering from disease, and have had fairly good success.

I have carried out many experiments of great value to me on a cheap grade of foxes. I have administered most of the drugs that are used in dog practice to foxes; and have observed that a fox will stand about the same dose of medicine that a dog the same weight will stand.

I have used the extract of pituritin in cases where the female fox was unable to deliver her young. In my hands it has proved very valuable in bring on labor pains, and helped in expelling the cubs from the uterus.

I have experienced more trouble with intestinal parasites in foxes than from any other ailment. Round worms are quite prevalent, there has also been considerable trouble from tape worms. This trouble can be treated quite successfully.

The greatest danger is from the time the cubs are born until they are about four weeks olds. Up to that age it is not very safe to handle the pups, because the mother fox may become excited and carry out the cubs and bury them in the ground; instinct being to hide them. The result often is disastrous. During this period—the first four weeks after birth—many foxes die from worms.

When the cubs reach the age of four weeks most fox ranchers administer a vermicide. Many different vermicides are used. The vermicide I have used for the last two years is Dr. Cecil French's Vermicide Capsules especially prepared for foxes. They can be given to very young foxes with perfect safety, and always remove the worms in a short time. To prevent the fox cubs becoming infested with worms shortly after birth, the adult foxes should be treated for worms the fall and winter before the young foxes are born. A vermicide should be administered at least three or four times, about one week between each treatment, and all feces cleaned up and burned. The breeding den and house also the pens should be gone over with some strong disinfectant solution that will destroy the eggs of the parasites.

The most effective method is to use a gasoline blow torch and go over the interior of the den, house, and the ground enclosed in the breeding pens. This will to a great measure prevent the young foxes becoming infested with worms immediately after birth. This treatment must be done thoroughly, strict attention to every detail, otherwise it will not be successful.

After foxes reach the age of six months they are pretty healthy and but seldom sick. The greatest mortality among foxes is from the time the cubs are born until they reach the age of six months. They have to be fed very carefully and watched very closely. Indigestion is the principle trouble. I use about the same treatment for indigestion in a fox as is generally used in treating indigestion in dogs, such as purgatives, stimulants, rectal injections, emetics, etc., according to the condition presented.

One peculiar thing I have noticed about foxes, they will show very few symptoms. I have very seldom seen foxes showing symptoms of pain. The most one will notice, is the fox will lose its appetite, remain in his house, or when he does come out will appear dull.

They will take fits in about the same manner as a dog, due in most cases to intestinal parasites, and indigestion.

Rickets is a disease which foxes suffer from quite frequently due largely to inbreeding I think. Lack of proper food, such as food not containing a proper amount of earthy salts, is also as in the dog a cause. I have treated many cases of rickets in young cubs. Last year I treated nearly two hundred fox cubs that were affected by rickets; many recovered without any visible deformity. Many recovered with crooked legs and enlarged joints. Very few cases proved fatal.

The treatment I use is syrup calcii et sodi hypophos (Parke, Davis & Co.) given twice a day in feed; vary the dose according to the age of the animal;

it is better to dilute it with water, the dose can be measured more accurately.

This is the formula I use:

Syrup calcii et sodi hypophosphitum
(Parke, Davis & Co.) ℥ II.

Aqua ℥ VI.

To very young cubs give one drachm twice a day in the food; increase the dose as the cub grows older. The cubs should also be dieted. Oatmeal porridge well boiled should be given three or four times a week; if given carefully and not too much at a time it can be given once a day. Other food, such as meat, bread, biscuits and milk should also be given.

Foxes very often get injured by fighting and by crawling up the wire fence enclosing the pen, falling down and breaking their legs, or lacerating them. They respond very well to treatment when the wounds are treated with proper antiseptics. I use Chinosol altogether; it is nonpoisonous, and is a good antiseptic. In fractures, when the fracture is not a compound one I reduce the fracture and use stiff cardboard and adhesive plaster to hold it in place; pouring on compound tincture benzoin on the outer

surface of the adhesive plaster when it is applied and every few days afterwards, to prevent the fox from pulling it off with his teeth. When the fracture is a compound one I always amputate the limb, using bone forceps to sever the bone. This operation can be done safely without an anesthetic, but it can be done much better by using an anesthetic. I use H. M. C. dog size. Give a few tablets hypodermically, wait for one hour and then complete the anesthetic with chloroform. I have used this method on many foxes without any fatal results.

I might here state that the fox does not stand ether very well. Nor is it safe to use chloroform alone. The bad results I have noted is severe irritation of the respiratory passages and sudden collapse. No doubt as time goes on and foxes become more domesticated chloroform and ether will have the same effect on them as on other animals.

There are many other interesting things that come up in fox practice, but I do not wish to trespass upon the space in your valuable journal.

English Transport Duty

In the Service of His Majesty, the King.

By F. C. HERNDON, D. V. S., Rocky Mount, N. C.

IN February I received an appointment as veterinarian in charge of H. M. Transport "Leysian" bound for Liverpool, with a cargo of horses.

The "Leysian" is a splendidly built ship (captured from the Germans) and the ship's officers said a good sea boat. Captain John H. Kay was her commander and I don't believe a better seaman or finer gentleman ever lived.

Each of the seven hundred and seventy-seven horses had a separate stall that was built so that the rocking of the ship could not throw him off his feet but it also necessitated his standing up dur-

ing the entire voyage. All horses' heads faced the alleyways of the ship, therefore it was impossible to take any temperatures and on account of the narrowness of the stalls impossible to examine the lungs unless many horses were moved to allow the sick one to have a double stall, and inasmuch as they had just come in from Kansas City and with little rest had been put aboard, it was a hard matter at first to decide which were the sickest.

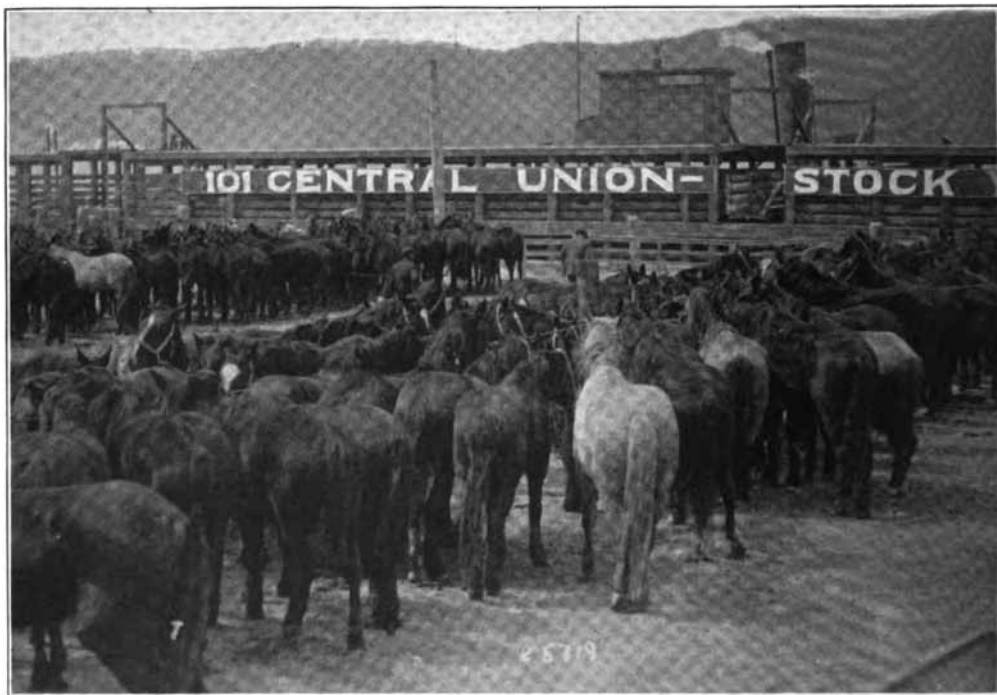
We encountered a gale the third day out and as the ship began to roll and pitch horses as well as men became sea-

sick, both receiving the same treatment, epsom salts, which soon straightened them out.

Contagious pneumonia with gangrene of the lungs was the most dreaded disease and when I found a case, following instructions, I immediately shot the animal and had it thrown overboard, and then of course thoroughly disinfected the stall, breastboard, etc. Strangles was a very troublesome disease as it spread so rapidly and kept me busy

nied, and we had to wire a British warship and threaten them with summary punishment before they would obey.

When we entered the war zone the niggers refused to go below but insisted on sleeping in the life boats in the drizzling rain. One dark night when we were about two hundred miles off the coast of Ireland we saw in the distance two small lights which we soon discovered were searchlights. We were running without any lights except the navi-



At the Loading Dock.

opening and washing out abscesses. Influenza, too, could have been kept down had the British Remount Veterinarian allowed me to use bacterins, but he had orders not to allow any to go on the ship as his superior officers claimed that they were very dangerous aside from being utterly worthless. I met veterinarians in England, however, who were as great believers in them as I am.

When I ordered my feeders, who were of every nationality under the sun, and most of them representing the lowest of that nationality, to muck out and thoroughly disinfect the ship before entering a British port, they promptly muti-

gation lights, but they saw us and although we were running under full steam they began to overhaul us as though we were tied. All hands were on deck and when the men saw that they were gaining, black and white began praying, and several six-footers started crying. According to our chief engineer, all of the men had been praying for days with the exception of a Cockney who had been regarding them with disgust, but when he saw the cruisers were going to catch us he fell down on his knees and said, "God, save me. I'm not like the rest of these bleeding bunch of buggers asking you for something all the

time. Go' bli' me (God blind me) if this aint the first time that I ever asked you for anything." The cruiser caught us but luckily for us turned out to be a French and British cruiser.

Later we received a wireless to make Queenstown, Ireland, on account of submarines between us and Liverpool, and so I was able to see the second prettiest harbor in the world. The skipper took me on shore with him and I immediately hired an Irish jaunting cart and rode for five hours over County Cork. Wanted to go to Tipperary as that is the next county but as I didn't know when orders would be given to sail of course couldn't do it. Two little spiderlike destroyers went out followed by a ship carrying Canadian soldiers which our ship was supposed to follow to Liverpool.

When we docked at Liverpool the next day soldiers came on board and unloaded the horses. The commanding veterinary officer had the men put hay down the chute which was then sprinkled with disinfectant for the horses to walk over. His idea was I suppose that walking over disinfected hay would prevent the horses from carrying and spreading contagious disease. Of course it was simply a waste of good hay and disinfectant to say nothing of time, but

it was their party, so I said nothing.

After discharging the horses I went to London, where after being twenty days on the water, with the exception of the two days spent in Queenstown, I proceeded to enjoy life to the utmost for ten days.

More gales were encountered on the return voyage but after twenty-two days landed at New Orleans. I went from there back to Newport News and worked in the British Remount Station for eleven days when I was ordered to take the "Anglo-Columbian" and made an uneventful fourteen-day trip to Avonmouth, up the Bristol Channel. I again went to London, stayed ten days, and sailed from Liverpool on the Cunard liner "Orduna" and landed safely at New York.

All of the British officers at Newport News, New Orleans, and all I met in England were the most courteous gentlemen one could meet. All the British veterinarians I met seemed to desire to make my stay more enjoyable, and by timely advice, my work easier for me.

The horses when landed in England are taken to the Remount Stations where they are trained and then sent to the front where their average life is just a little over ten days.

Medical Treatment of Hog Cholera*

By D. D. LeFEVRE, D. V. M.

THE question of hog cholera is getting to be one of considerable importance to veterinarians of this state, and our government has of recent years spent vast sums of money experimenting along lines of producing biological products for the control of the disease, and various individuals have devoted considerable time studying the modes of transmission, but I believe that very little has been done on the question of studying

medicinal agents for curing hogs sick with cholera.

The serum and vaccine treatments have proved to be of vast aid in protecting well hogs, and therefore controlling the spread of the disease. But, what are we going to do with the hogs sick with cholera?

Some three or four years ago I read a paper on hog cholera before the Genesee Valley Veterinary Society, and at that time gave my somewhat unpleasant experiences in trying to cure with serum, hogs sick and infected with

*Read before the Annual Meeting of the New York State Veterinary Medical Association, Ithaca, August 5, 1915.

cholera, and also bring to the notice of the profession the urgent need of an agent that would cure hogs sick with cholera as well as protect the well ones from cholera.

As a rule, we veterinarians are called only when a bunch of hogs, and generally a small bunch, of say, from eight to fifteen hogs, owned by some farmer, are quite badly affected. Usually from one to three have died; a few more are very sick, and the rest badly infected, or more likely in the early stages of the disease, although a few of them may not show physical signs of the disease.

We are told, and I have found it is so, that in such cases very little benefit can be derived from the serum, and it is very humiliating to us, who are almost expected to cure *rigor mortis*, to say that we cannot do anything. Are we to tell the farmer that there is no hope, that we can do nothing to alleviate his misfortune?

This society is largely composed of men engaged in practice. They are men who long ago learned all the distinctive symptoms and principal pathological lesions of hog cholera, and it is useless for me to spend time describing, or for you to spend time listening to remarks from me, relating to any phase of the disease other than that of its treatment. In regards to its treatment, I believe that every man here has an earnest desire to procure some more efficient means of treatment than that now in general use.

I am not, today, going to give you any new treatment for cholera, but rather to bring to your notice a treatment that has, for the last few years, been used with some success by a few veterinarians, namely, the *sulphocarbolate treatment*, somewhat modified.

The amount of dosage and the method of administration of a medicine may often times greatly vary the results obtained in treatment of any disease. Therefore, I wish to call your attention particularly to the amount of dosage and mode of administration, as given in

this paper. I have experimented considerably with smaller doses and rougher methods of administration to my regret, before arriving at the present gentle method of administration and apparently large dose, although I believe the dose is yet too small for the best results.

In August of last year, I was called to see some sick hogs owned by John Martin. He said that during the last few days he had lost three hogs. There were two hogs at the time dead in the orchard, one having just died; the other died the day before. There were ten more sick, some very sick, hardly able to walk. You could push them over anywhere. Several others were still able to come to the trough and eat a little. Some showed a cough when caused to exert themselves. One or two were slightly lame.

I autopsied both of the dead ones and found the button shaped ulcers around and near the ilio-cecal valve of both hogs and some in other parts of the intestine of one hog, also characteristic petechia of the kidney was found in both.

I diagnosed the trouble as cholera and began administering the following: Zinc sulphocarbolate, four ounces; sodium sulphocarbolate, four ounces; warm rain water, sufficient quantity to make a quart. This gives you a saturated, or very nearly a saturated solution, and it seems necessary to have the water warm to take up all of the salt, but after it is once taken up, at our ordinary summer temperature, it seems to be held in suspension, but if the weather is freezing cold some of it will be precipitated and the dose therefore should be increased. Of this prescription, each 100 pound weight of the sickest hogs received one-half ounce every four hours, only until they improved enough to come to the trough and eat with those not so sick.

Those not so sick received per 100 pound weight of hogs, one-half ounce or more of the medicine in liquid food three times a day.

At any time any hog became too sick to go to the trough and eat he was immediately given the dose orally, every

four hours, and as soon as the sickest ones became well enough to go to the trough and eat freely, the oral dose was discontinued.

In addition to this there was another prescription used: Aloin, one ounce, water enough to make a pint mixture, and give one-half ounce daily to any hog whose bowels do not move freely. I believe that it is quite important to keep the bowels moving freely. It was usually noticed that marked improvement followed the use of the physic on those which at times became constipated.

The manner of administering the medicine is very simple and takes but an instant; I am strongly opposed to catching and causing sick hogs to struggle and fight. A hog that is sick enough with cholera to need dosing orally is by far, too sick a hog enjoy or derive any benefit from a wrestling match, and it is altogether unnecessary.

So, first of all, confine the very sick hogs in a rather small enclosure for convenience in administering the medicine. These sickest hogs you will find have usually lost all, or nearly all, of their spirit of fight or fear of man and are quite docile. They are too sick to care much about the presence of a man, and if confined in a small enclosure move around but little and lie down a great deal, and are slow to arise when *gently* disturbed. Draw the dose of medicine into a heavy two-ounce metal syringe with a stout nozzle; approach the hog which is lying down, from in front; gently poke the hog under the lower jaw with the syringe and he will arise on the front feet first, the same as a horse does, and usually remain sitting in that position for a few minutes unless disturbed further. This position gives you the desired elevation of head. Immediately gently press the syringe against the back corner of the lips, the hog will then open his mouth and at that instant the syringe is entered and the medicine squirted well back into the mouth.

By using a little skill the medicine can readily be given in this manner without

wasting but very little of it. Repeat every four hours. In this case I told the owner to give a double dose the last thing at night and the first thing in the morning.

In this bunch of hogs three died before treatment was begun and only one afterwards, and that one was very sick to start with.

I have treated several other bunches of hogs that were sick with cholera with about the same results.

Knowing that some of the gentlemen here may possibly question the correctness of the diagnosis, I might mention those on the Edgett-Burnham farm; at the time these hogs had cholera there was also a lot of steers being kept on the farm. The steers had been supposedly exposed to foot and mouth disease, which existed on an adjoining farm. Therefore it was necessary for state and federal inspectors to visit the steers frequently, and while there inspecting steers, Dr. Smith, of Interlaken; state inspectors, Hunt, of Syracuse, and Dr. William Clark, of Seneca Falls, and also Dr. W. C. Wooton, a federal inspector, and myself, witnessed an autopsy of one of these hogs and all agreed that it was cholera beyond doubt. Also Dr. J. G. Claris, of Buffalo, saw these hogs and pronounced their disease cholera. Button shaped ulcers and petechia of the kidney were found in the subject autopsied.

In treating these hogs an error was made in preparing the medicine and for nearly a week the hogs received only 50 per cent strength of the dose recommended in this paper. During that time four of the hogs died, but as soon as the error was discovered and corrected by placing them on the dose as here recommended the most of them began to improve, and after about four days no more deaths occurred and improvement was gradual until ultimate recovery.

The advantage of this treatment is its high efficiency; its cheapness and simplicity.

Another point not brought out in the early part of the paper is that the ap-

parently well hogs being left right in the infected quarters and receiving a mild dose of the medicine, three times a day in their feed, failed to develop physical signs of the disease at any later period.

To me it can only be explained by supposing that they must have contracted the disease, but owing to the action of the medicine they received in their feed, they developed only a mild attack which was enough to render immunity.

Regarding the toxicity of the *sulphocarbolates*, I would say that I have never recognized any toxic effects and do not know the maximum dose that may be given.

I find the literature of the subject very meagre.

In the United States Dispensatory I find that sodium sulphocarbolate is made by mixing equal parts pure phenol and

strong sulphuric acid together and heating, and that zinc sulphocarbolate is made in the same manner except that when heating the mixture of phenol and sulphuric acid, zinc oxide is added.

The Dispensatory further says that the idea of combining the two probably was that the medicinal properties of the two might be united but that it was more probable that both agents had become inert.

The sulphocarbolates have, of recent years, been used quite extensively by the medical profession in treating typhoid fever and in diarrhea. The dose used by them is from five to ten grains of the combination every four hours, for an ordinary-sized man, say 200 pounds, the dose recommended in this paper for hogs is about twenty times greater, or stands in relation as 200 doses to ten.

Comment.—The importance of hygienic measures in the hog cholera control work must not be minimized; further, it is probable that a suitable intestinal antiseptic constitutes an important hygienic measure in the treatment of subacute attacks of hog cholera, but the

veterinarian who does not include the use of anti-hog cholera serum in his hog cholera control work, whether it be in the prevention or treatment of the disease, in the long run will fail oftener than he succeeds.—EDITOR.

Modern sociologic and commercial conditions have very materially changed the relationship of the milk industry to public health. Formerly the milk was delivered to the customer within a few hours at the most after milking; the cows were generally within easy inspection by the customer, and an infected pail of milk could endanger few persons. Now the milk for our large cities must be transported from large areas, often outside of the state in which it is consumed. The customer does not even know, as a rule, from what state his supply comes. A pail of milk which is infected at the milking may infect several carloads at a bottling plant, and the time between milking and delivery is such that there may be a great multiplication of a few bacteria. A strict supervision of the industry is therefore an ur-

gent governmental responsibility.—Hemenway, "Essentials of Veterinary Law."

An error in judgment of a man skilled in a particular calling is not malpractice, unless it is a gross error. But error in judgment in a science, of a man unskilled in that science is malpractice.—Hemenway, "Essentials of Veterinary Law."

The science of medicine has made tremendous advances within the past few years. New and powerful aids for combating disease have been furnished in the various sera, antitoxins and bacterins. But with these new remedial agents come new responsibilities. The man who uses them recklessly or carelessly is an enemy to the interests which he serves, and to the profession to which he claims to belong.—Hemenway, "Essentials of Veterinary Law."

The Value of Laboratory Diagnosis to the Veterinarian*

By RALPH B. STEWART, Class 1916, St. Joseph Veterinary College.

THE successful and scientific practice of medicine depends to a large extent upon diagnosis. We cannot expect to get much satisfaction from treatment of a pathological condition if we are unable to properly diagnose that condition. To this end, use should be made, as far as possible, of all the various methods that science has developed to accurately determine the condition with which we are confronted.

A single method of diagnosis is often misleading; clinical symptoms should be when practical combined with laboratory tests; and we then have the advantage of basing our conclusions on the summed-up evidence of both. Laboratory diagnosis is robbed of much of its value if we have no clinical symptoms, or if no history is available. True, with all these advantages, the laboratory diagnostician cannot always positively determine the nature of the trouble with which he is dealing. This is especially true when a negative reaction is obtained.

The complex chemical changes that are constantly taking place both in the normal and pathological body, idiosyncrasies, and the many other factors that must be considered, have kept and probably always will keep the science of medicine with its many branches from becoming an exact science such as mathematics. Many phenomena are to be explained only by a hypothesis. There are, however, many comparatively simple and absolutely reliable laboratory tests that should be resorted to more frequently by our practicing physicians and veterinarians, and it is these tests that I wish to bring to the attention of the reader.

*Read before the St. Joseph Veterinary Association, November 11, 1915.

While a student in the St. Joseph Veterinary College, the writer had the pleasure of spending the vacation period both between his freshman and junior and junior and senior years in the laboratory of Dr. E. A. Logan, bacteriologist for the Board of Health of St. Joseph. Besides the city work, specimens are received from the practicing physicians and veterinarians of St. Joseph and surrounding territory and from the hospitals of the city. The cases that follow are some that have come under the personal observation of the writer, and while not unusual, they seem to especially show the value of laboratory diagnosis in the practice of medicine. It is the purpose of this paper to consider the laboratory from the standpoint of the veterinarian, but it will not be amiss to mention some work done in connection with the M. D.

Students of evolution have established a close relationship between man and the lower animals; likewise, many infectious diseases are found to be transmissible from one to the other. In the control and eradication of such diseases, the doctor of human medicine and the veterinarian must co-operate, or the work of both is likely to be in vain. These facts are bringing the two professions nearer together each year. The mistakes and successes of one are often the mistakes and successes of the other. Hence, the following cases in human medicine are of interest here.

No. 1. A young woman was being treated for rheumatic gonitis. Treatment extended over quite a length of time, and numerous anti-rheumatics were administered without results, the case finally falling into the hands of the city physician. Aspirating the joint, a smear

was made of the contents and gonococci found to be the invading organism. An autogenous baceterin was prepared and the patient made a speedy recovery.

No. 2. A child developed a very sore throat which continued to grow worse under the treatment of local antiseptics. On account of the absence of a rise of temperature, the attending physician excluded diphtheria from his diagnosis, thinking he was dealing only with an aggravated case of septic pharyngitis. Intubation became necessary, and a swab from the throat was brought to the laboratory for examination. A smear made direct from the swab showed numberless diphtheria bacilli. However, too much time had been wasted, and although heroic doses of antitoxin were injected intravenously, the child succumbed to the attack. A culture from the throat of the physician also proved positive, but yielded in its incipiency to treatment. The absence of a rise of temperature in the case of the child was explained by the apparent lack of resistance.

No. 3. A veterinarian was called to see a mule which showed clinical symptoms of glanders and died before a second call could be made. Specimens were sent to the laboratory, and the bacillus of glanders was identified without the necessity of culture. In the meantime, the ophthalmic test was given the remaining animals with the rather unusual result of no reactors. The veterinarian might have concluded that he was not dealing with glanders, but the laboratory report caused a thorough disinfection of the premises and no further trouble was experienced. It could not be determined where the mule contracted the disease, but by some strange coincidence, he had been isolated a very short time before the first symptoms were noticed, and being a very acute attack, the infection was eradicated before being carried to the other animals.

No. 4. A cat was presented for treatment at a veterinary hospital and soon after became so violent that de-

struction was necessary. Rabies was suspected, and as the animal had bitten a member of the family, the head was brought to the laboratory for examination. Smears from the hippocampus major showed numerous negri bodies. The bitten one was given the Pasteur treatment, the cats and dogs on the premises placed under close observation, and no further trouble developed.

Numerous other interesting cases might be cited such as the diagnosis of tuberculosis; milk, urine, and water analysis; blood counts; examination of blood smears; agglutination and complement fixation tests, etc. Many practitioners make use of the microscope in prognosis, noting the different phases of the opsonic index.

New discoveries are constantly being made carrying laboratory diagnosis into new fields. The Abderhalden test for pregnancy, while not yet reliable enough to gain recognition, will doubtless soon be brought to a point where it can be depended upon, and this will prove especially beneficial to the veterinarian, as early diagnosis of pregnancy is often valuable knowledge to the livestock owner.

There will always be various laboratory tests that require too much technic and equipment for the practicing veterinarian, but he will be able to make much use of the more common tests if he will equip himself with a small laboratory. Let him start with a good microscope, some platinum loops, a box of glass slides, an alcohol burner, and a modest line of stains, adding to this as time and practice justifies. The microscope seems to have reached a point of perfection beyond which it cannot go on account of the physical law of refraction, and the purchaser of a modern scope needs have no fear that it will be ruled out-of-date within a few years, and with good care it should last a lifetime.

Let us suppose that a veterinarian invests one hundred and fifty dollars in laboratory equipment. As he becomes acquainted with the medical doctors of

his community, he will probably find that eighty per cent of them are without a microscope, even of the most obsolete type. Learning that he has a modern instrument, and we take for granted that it is kept in a neat, up-to-date and inviting office, the physician often brings specimens for examination. As the acquaintance grows, he is doubtless surprised to learn that here is a veterinarian who possesses a scientific knowledge of medicine and can discuss mutually with him many points of interest to each. Together they may conduct some interesting research work. What is the result? As the physician goes about his practice, he does not hesitate to recommend this veterinarian to his clientage as a man who understands his profession.

Again, as the clients visit the office and time is at hand, they may be given probably their first actual view of "germs." Many specific organisms may be shown, and if near a breeding stable, a hanging drop of spermatozoa may be demonstrated; in any case, we are assured of an interested and appreciative student. Very few of the laity realize the value of asepsis, and as they carry home with them a picture of the millions of pathogenic organisms that can be

placed upon the point of a platinum loop, they will always show much more respect for the veterinarian who carries out for them an operation, using the most aseptic methods available in veterinary practice. For these men, the day will have passed when they allow an empiric to open his jack-knife and without further ado proceed to castrate a valuable colt.

In the opinion of the writer, there are two main reasons why the veterinary profession has not yet reached its justifiable place of recognition. First; veterinarians as well as any other professional men, sometimes become careless in regard to ethics, and in this way bring criticism upon the profession. Second: the average person judges the veterinarian without investigation, simply placing him in the class of the much heralded "horse-doctor." Let the man who comes from our modern veterinary schools follow the professional ethics he is taught; let the people become acquainted with the work he is doing today; and the profession will be given the recognition it deserves. The equipment and use of a modest laboratory will do much toward this end, not only proving a good investment from this point of view, but also very instructive and interesting.

It sometimes happens in accident cases that an animal is so seriously injured as to be worthless. Bystanders urge that it be put out of its misery, and the veterinarian is called upon to render this service. In case the owner is present and gives his consent there is no question of the legal right; but where the owner is absent a veterinarian so acting does it *at his own risk*. The common law of humanity might justify putting the animal out of its misery; but if it be later shown in trial of the case that the killing was unnecessary, the veterinarian might be held for the destruction of the animal.—Hemenway, "Essentials of Veterinary Law."

An operation is not finished until the patient has recovered from its performance, so that no further results may occur. Even when an operation has been skillfully and scientifically performed, there is still abundant opportunity for infection to occur until after the wound has healed; and when infection does occur it may be exceedingly difficult to determine whether the infection is the result of a lack of care in the operation itself, or in the after care of the animal. In either case the operator may be held liable. It follows, therefore, that after an operation the surgeon should be watchful for the slightest evidence of unfavorable results.—Hemenway, "Essentials of Veterinary Law."

Immunity

By D. HENRY WYATT, Santa Paula, Cal.

IMMUNITY is that power of resistance possessed in some degree by every individual. It is due to a combination of *protective material substances* that are very nearly alike in all individuals with one exception, namely: that peculiar type known as *natural immunity*. It has never been satisfactorily explained. Natural immunity was about as well understood centuries ago as it is today, for then, it was demonstrated in a clinical way with the same nicety as it is today; for then as now, it was a daily observance to see one species exempt from a disease of which another species often was a victim.

Someone has said that there is something lacking in the tissues of the natural immune animal, but we do not know. For example, cattle are naturally immune to glanders, yet while this is true, the serum of the cow has no bactericidal effect on the bacillus mallei; thus immunity does not always imply a bactericidal serum. Toxins may also be demonstrated in like manner, for natural immunity to toxins is not in all cases anti-toxic. While the medical world appreciates this *natural immunity*, it is not concerned at present in trying to solve this problem the which might be worth while, and might lead to the solution of some of the problems the answers to which are being so earnestly sought. In immunity, as in everything else, the personal equation is the important factor; this being a fact we must conclude that the nearer normal the individual, the less susceptible to disease; this would lead us to believe and rightly so, that an absolutely normal animal would be immune to all diseases; but as perfection has never been achieved it leaves the scientific world to grapple with this question which in its different phases has

more to offer to the investigator than any other branch of medicine.

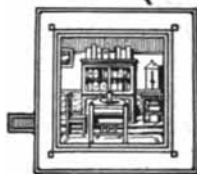
Immunity is no longer a *theory*; it is a *science*; and although not perfectly understood we have by far a better knowledge of the actions of the protective material substances in the blood sera than of the physiological actions of any of the drugs.

In reality there are only two kinds of immunity: first, *natural*, which we have already discussed; second, *acquired*, often spoken of as *medical*. It is only during the last few years that this science has made such wonderful strides and has now reached the stage of so great practicability, and this advancement is due to the partial solution of the problem of *acquired immunity*. Before going very far along the line of acquired immunity, we find that when some animals recover from a specific infectious disease that they never contract the same disease again; therefore, they have acquired an immunity, and this kind of immunity is known as *naturally acquired immunity*. Natural acquired immunity is a very different thing from natural immunity, the latter being an inborn characteristic peculiar to that of species; while naturally acquired immunity is something gained during the life of the animal, be it congenital or after birth.

There are two *artificial* ways of acquiring immunity: first, by introducing specific foreign proteid substances (antigens), into a susceptible animal, thereby causing a reaction of its tissues to the extent of producing protective substances (immune bodies). This is known as actively acquired immunity. Second, by introducing the produced material substances (immune bodies), taken from the actively acquired immune animal, in-

(Continued on page 242)

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Boost the Membership of the A. V. M. A.

PRESIDENT ARCHIBALD and Secretary Haring of the American Veterinary Medical Association have just commenced a campaign for new members, which deserves the widest publicity that can be given it and the active support of every loyal member of the association. The plan is worthy of its energetic source, and but for a few handicaps not under their control would be prolific in applications for membership beyond anything that has been accomplished in the A. V. M. A. heretofore.

Briefly the plan contemplates a co-operation with the faculties of the various veterinary colleges to obtain the application from as nearly as possible 100% of the men graduating this year. In a number of schools, arrangements have been made to finance these applications, that is, to loan the necessary initiation fee and the first year's dues to such members of the graduating class as do not feel that they can afford this expense at this time. As an additional inducement to join the A. V. M. A., members of the senior class will be placed on the mailing list of the *Journal of the American Veterinary Medical Association* as soon as their applications for membership are filed, and further back numbers of the *Journal* to October, 1916, will be sup-

plied them. This means of obtaining applications through offering "something for nothing" is not as laudable as the general plan, and moreover there is a strong probability that it is not lawful to so dispose of copies of a publication admitted to second class mailing privileges. Furthermore, among publishers, such a method of soliciting subscriptions is not considered ethical or fair to competing publications. It was probably adopted without very much consideration by those responsible for it.

Further, this plan for obtaining new members of the A. V. M. A. contemplates the appointment of some alumnus of each of the veterinary schools to solicit applications from the other alumni. Unfortunately it is planned to turn applications so obtained over to resident secretaries in the states from which they come, to be turned in to the association by them. It is not likely that they will obtain many "alumni secretaries" who will get up very much enthusiasm over an arrangement by which they are expected to do all the work and the resident secretaries to get all the credit.

Speaking of resident secretaries, it was a surprise to see the energetic administration now in control of A. V. M. A. affairs adopt this time-worn, outgrown

and never (except in isolated cases) successful expedient for obtaining members. At least some of the recent secretaries of the A. V. M. A., and as far as the writer knows, all of them, have been opposed to the resident secretary plan. Barring a few conspicuous exceptions, the resident secretaries as a whole have never accomplished anything like the results that should have come from the expenditure of the money which they have cost. The expense for resident secretaries as shown in the treasurer's report of last year was approximately \$350.00. Think of the letters direct from the president of the association or from the secretary to prospective applicants that this would have paid for, or the number of state veterinary meetings which the secretary could have attended with expenses no greater than this amount, with results in new applications in either case, we believe, far in excess of the number that was actually persuaded to apply for membership through the efforts of the resident secretaries. The resident secretary is looked upon by the prospective applicant merely as a subordinate official or representative of the association, and what applicant would not rather be solicited by the secretary in chief or the president of the association? It was only with men of very strong local influence entirely aside from their positions as resident secretaries that this plan was successful.

Mention was made in the preceding of the handicaps under which President Archibald and Secretary Haring are laboring in their efforts to obtain a larger number of applications for membership in the A. V. M. A. than ever before have been acted upon at any one meeting. Perhaps it were well to mention them. Heretofore, the report of the meeting has been sold to those not members of the association at a cost equal to the annual dues, so that it cost a man who wanted the report, which was conceded by all to be worth more than what was charged for it, no more to be a member of the association and get his report free

than it did to stay outside of the association and buy the report. But now, such of the report as is published is available to any one in the *Journal of the A. V. M. A.* for \$3.00, whereas the annual dues of the association are \$5.00.

In the nature of things, but few members of the association can attend any one meeting. The association will solicit the applications of prospective members this year who may never attend one of its meetings. Most of them will probably not attend more than once in ten years. Under our archaic plan of organization, the man who cannot attend the annual meetings has no sort of voice in the proceedings of the association, regardless of how regularly he may pay his dues or how strongly he may boost for the association.

At present the plan is to tax the man who cannot attend the meetings \$2.00 a year for his professional spirit. If he stays out of the association and does not attend the meeting, he can get all its published reports and its official journal for \$3.00. If he joins the association and cannot attend the meetings, he gets the same thing and pays \$5.00 for it and at the same time has no voice in the proceedings.

It may be argued that as a member of the association he has a right to present his views on any matters concerning it through the official journal, but have you noticed any one doing this? When the executive committee, improvised from those in attendance at the Oakland meeting, recommended that the discussion of any plan for reorganization of the association be postponed without consideration for the third year, they urged most of all that this be done because an official journal was being established, and it would give an opportunity for a very free discussion of the plan of reorganization, give time for moulding the opinions of the membership and preparing it for action at the next meeting; but has any one seen any discussion of the plan of reorganization or any other policy of the association in the official journal? Only

six issues can appear between now and the next meeting. Should the discussion be taken up immediately, two months must elapse before it can be considered and replies thereto published, and then the meeting it almost upon us.

A considerable number of state legislatures are now in session or have been in session during the past winter. Not a few of them have had veterinary practice laws up for consideration. Have you seen any discussion of these in the official journal of the veterinary profession of this country or any encouragement held out to or aid supplied those struggling for better recognition of the profession in any of the various states?

Congress is in session at this time, and the army veterinary bill is not yet enacted. Has it received one-half the publicity that it got before the association had an official organ. Is the membership of the association and the profession as a whole being aroused to the support of its committee on legislation? This must not be construed as a criticism of Dr. Fish, who has done surprisingly well with the *Journal*, surprising even to those of us who know how well he ordinarily does things; but it is merely an evidence of how often plans, and particularly hastily considered plans, "gang aft agley."

We believe some plan for obtaining new members will have to be evolved that offers the prospective applicant more than the opportunity for paying \$5.00 for what others get for \$3.00 before it can be really successful with those so situated as to be unable to attend meetings of the association regularly, and that of course, includes more than 75% of the membership and of prospective members as well.

The matter of equalizing the cost of staying inside and outside of the association can be accomplished in any one of three ways.

First; the dues of the association might be reduced. This would constitute a distinct backward step. There are many great problems before the veterinary profession of the country that cannot be worked out as they should be,

without funds. Nothing else has hampered accomplishments of the association so much heretofore as the lack of funds.

Second; The price of the official publication can be raised until the subscription price to outsiders would be the same as the annual dues of members. This is the plan that has been adopted by the American Medical Association, the American Chemical Association and various other national organizations.

The third method would consist in changing the plan of organization somewhat as has previously been recommended by the committee on reorganization, so that the man so unfortunate as to be unable to attend meetings of the association (and keep in mind that includes and always will include a majority of the membership) can yet have a voice in its policy and in this way be made to feel that he is accomplishing something by belonging to the A. V. M. A.

VETERINARIANS AND "PREPAREDNESS"

Among the news items in this issue it is mentioned that Dr. W. P. Hill, veterinarian with the Sixth Artillery at Camp Douglas, Arizona, has been sent to the scene of war operations in France as an official observer of the War Department. This information is particularly gratifying in that it shows in a measure the attitude of the War Department toward veterinary service in the United States Army. It is an indication that should the United States again be engaged in war, the Department does not want the veterinary fiasco of the Spanish-American war repeated, and it presages good for the army veterinary bill now before Congress.

Now comes the pleasing news that the reports which have been published of the excellent work of the military veterinarians on the western battle front in Europe have induced a friend of the University of Pennsylvania to donate a fund to be used to send a veterinarian to England and France to make observations in the hope that information will be obtained which will be of service in this country.

The veterinary corp of the English Army has been specially efficient in caring for horses wounded in battle or exhausted by hardships and it is believed that much can be learned from the experiences of the members of this corps which will be of value to veterinarians and others. Dr. C. J. Marshall, Professor of Veterinary Medicine in the Veterinary School, has been selected for this important mission and it is expected that he will sail from New York on the steamer Rotterdam on March 7th. He will go first to England where he will study the organization of the veterinary corps of the English Army and the methods in operation in the concentration camps to prepare the horses for service and to protect them from infectious diseases. From England he will go to France where he hopes to have an opportunity to observe the methods of treating wounded and exhausted horses at the front and in the base hospitals. He will also study the measures taken to prevent the introduction of infectious disease and observe the methods used in caring for the horses in the military camps and remount stations.

The selection of Dr. C. J. Marshall for this important work is particularly fortunate. Dr. Marshall has had a large experience as state veterinarian of Pennsylvania in veterinary administrative work and has shown a rare ability for executive work of this kind.

No speaker at the recent meeting of the Missouri Valley Veterinary Association elicited more interest than Dr. R. Vans Agnew of Ft. Leavenworth when he explained to the veterinarians assembled there that a plan is on foot to obtain the registration of all veterinarians in the country willing to serve in the army in case of war.

Dr. Agnew stated that army experts estimate that the United States would require an army of two million men as soon as it could possibly be raised if it should become involved in war with any major power and that for such an army seven thousand veterinarians would be immedi-

ately required. It is the plan, of course, to build this organization of seven thousand veterinarians around the present organization comprising forty-four veterinarians in the army and a few others in the quartermaster service.

He explained that it was the desire not only to obtain the names and addresses of veterinarians willing to serve in the army in case of war for listing with the Secretary of War, but that those listing their names should also indicate the branch of the service in which they would prefer to serve, such as service at remount stations, inspection of horses purchased for army use, service in base hospitals and in field hospitals and with cavalry and artillery regiments at the front, service at the convalescent farms, etc. The pay with the perquisites amounts to about \$2,500 a year.

For information, those interested in this matter should address Dr. R. Vans Agnew, Ft. Leavenworth, Kans.

D. ARTHUR HUGHES

Veterinarians the country over will be shocked to learn of the death of Dr. D. Arthur Hughes at his home in Chicago,



D. Arthur Hughes, Ph. D., M. Litt., D. V. M.

February 14th. Dr. Hughes had served long in the government service, first in the Bureau of Animal Industry, where he was promoted to the position of inspector in charge at East St. Louis, Illinois, which position he resigned to accept an appointment in the quartermaster corps, U. S. Army, in which posi-

tion he has been stationed continuously in Chicago except for about a year, which he spent in Galveston at the time of the first mobilization of American troops there during the Huerta revolution.

However, it was as a brilliant writer that Dr. Hughes was best known. His contributions to the veterinary press, always scholarly, have been voluminous for more than a dozen years. Many of these have appeared under pen names assumed because of the relation of the discussions to the work in which Dr. Hughes was engaged. His many articles on army veterinary legislation appearing in *VETERINARY MEDICINE* and in the late *American Veterinary Review* under the name of Garrison Steele, have more than any other influence moulded the opinions of the veterinary profession as a whole on army legislation and aligned the profession solidly behind the legislative committee of the A. V. M. A. and others favoring the Army Veterinary Bill now before Congress.

One of the leading veterinary weeklies of Germany has within a few weeks devoted several pages to the discussion of one of Dr. Hughes' recent articles on army veterinary legislation (the article discussing the British army veterinary corps and contrasting it with the veterinary service of the United States Army, Published in our February, 1915, issue).

"Lymphatic Glands in Meat Producing Animals" by Dr. Hughes was reviewed at length in our January issue, and a companion work "Application of the Anatomy of Food Producing Animals in Meat Inspection" was in preparation at the time of his death.

Dr. Hughes was born at Liverpool, England, in 1870, and came to this country at the age of fourteen. He graduated first at Albion, Michigan, where he received a bachelor's degree, later obtaining the degrees of M. Litt. and Ph. D. at Cornell University and the degree of D. V. M. from the New

York State Veterinary College at Ithaca. His death, which occurred after only a few days' illness, resulted from pneumonia following an attack of influenza. He leaves a widow and four children, the oldest of whom is eight years of age.

BOOK REVIEWS.

American Illustrated Medical Dictionary (Dorland). A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology and kindred branches, with new and elaborate tables. Eighth revised edition. Edited by W. A. Newman Dorland.

Perhaps in no other science are new words added to the vocabulary so rapidly as in medicine, particularly in the realms of bacteriology and pathology, or is the aid of a dictionary so necessary in reading its literature. A dictionary must, of course, first of all be authoritative, and it must be comprehensive; but almost as important is the necessity for its being up to date. With the changing terminology such as we have in medicine, this can be accomplished only by frequent revisions, and it is to these frequent revisions by which the publisher keeps it thoroughly up to date that Dorland's Illustrated Medical Dictionary owes its popularity among veterinarians. The present volume is the eighth revised edition and amply sustains the high reputation of preceding editions and will prove, as they have proved, the standard in this field.

Large octavo of 1,135 pages, with 331 illustrations, 119 in colors; containing over 1,500 more terms than the previous edition. Flexible leather, \$4.50 net; thumb index, \$5.00 net. W. B. Saunders Co., Philadelphia and London.

Text-Book on the Pathogenic Bacteria and Protozoa, eighth edition, revised, for students of medicine and physicians, by Joseph McFarland, M. D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia.

While this work is intended primarily for students and practitioners of human medicine, the science of bacteriology and protozoology is, of course, much broader and, therefore, the major portion of the discussion in this work is as applicable to students of veterinary medicine as those for whom it was written. The chapter on bovine tuberculosis will be read with particular interest by veterinarians.

Octavo of 807 pages with 323 illustrations, a number of them in colors. Cloth, \$4.00 net. W. B. Saunders Co., Philadelphia and London.

Essentials of Veterinary Law, by Henry Bixby Hemenway, A. M., M. D., Fellow, American Academy of Medicine; Fellow, American Medical Association; Member, American Public Health Association; Member, American Association of Railway Surgeons; Member, American Statistical Association; etc., etc., Author "Legal Principles of Public Health Administration."

This volume constitutes No. 10 of the "Veterinary Medicine Series," and we have no hesitancy in saying that in quality it is fully up to the best of the other numbers of the series, and in practical usefulness to veterinarians both students and practitioners, it stands first. So good a judge of matters veterinary as Dr. L. A. Merrillat of Chicago unhesitatingly said, after the examination of advance sheets of the work, that none more important to veterinarians had ever been published; that it was a work that unquestionably should be in the hands of every veterinarian and particularly of every veterinary practitioner.

The subject matter naturally divides itself into four parts, as follows:

PART I, Legal Principles. In this are discussed the general principles of government organization, police power, due process and nuisances.

PART II, Pertaining to Veterinary Practice. In this special chapters are given over to the discussion of the regulation of the practice of veterinary medicine, liabilities and compensation.

PART III, Pertaining to Governmental Control. This deals in the main with official veterinary work. In this section chapters are devoted to governmental services, governmental inspection and executive organization.

PART IV, Pertaining to Animals Generally. This section is probably as much adapted to livestock owners as it is to veterinarians. It contains chapters dealing with ownership of animals and bailment.

Altogether more than 700 cases are cited with accurate references as to where they may be found. Throughout the work, much attention is given to the business side of veterinary practice.

An appendix gives a system for collecting that has been used with great success by a considerable number of firms, large and small, and by a large number of professional men. This system for collecting overdue accounts was evolved by a lawyer with a very large experience in matters of this kind and has been sold to hundreds of firms and professional men for fees ranging from \$10.00 to \$50.00. There is no question but any veterinarian by using it would in a short time with but very little inconvenience to himself collect many times, perhaps even a hundred times, the cost of the book from his overdue accounts.

The style of the book is similar to that of the other numbers of the Veterinary Medicine Series. It is handsomely printed on a high grade quality of paper and splendidly bound in fine silk cloth. It contains 340 pages. Price \$3.00 prepaid. American Journal of Veterinary Medicine, Evanston, Ill.

When an animal is taken to a veterinary hospital for treatment the management of the institution will be held responsible for all that transpires there, where injury results either from negligence, carelessness, or malpractice.—Hemenway, "Essentials of Veterinary Law."

Department of Surgery

By L. A. MERILLAT, Chicago,
Professor of Surgery in the McKillip Veterinary College.

Pitfalls

NO. 13. *Phlebitis of the Jugular.* Inflammations of the jugular vein and its insidious, encroaching complications is less known to the modern veterinarian than it was to those who practiced when phlebotomy was an every-day operation. That was before the days of asepsis, when almost all surgical wounds were inoculated with infected instruments. The veterinarians of the ante-Listerian era, and many after that time who ignored the laws of asepsis, were well acquainted with this fell disease. Venesection was a routine procedure for many afflictions in those days, and the reckless invasion of the jugular with the unclean fleams through the uncleaned skin followed by closure of the incision with a pin and tail hairs was fraught with danger. On the fourth day following the operation the environs of the wound were found painful and slightly swollen along the jugular groove. Day after day the swelling advanced in both directions, but particularly upward and finally fluctuating abscesses inviting the lance developed here and there along the course of the swelling. When evacuated a copious bleeding often followed the discharge of pus and because the vein was choked up with inflammatory products below the seat of lancing the hemorrhage was usually very difficult to control. The trend of the process was always decidedly toward the periphery,

abscess after abscess would form, first along the jugular groove, then along the parotid region and finally within the cranial cavity. This final involvement was fatal, the patient dying from abscess located in the venous sinuses of the brain. Besides this chronic course phlebitis of the jugular occasionally killed the patient during the acute stage of the inflammation from acute septicemia and in rare cases from malignant edema and tetanus.

Today phlebitis of the jugular interests particularly those veterinarians who have a penchant for intravenous medication and of course those who still occasionally bleed for therapeutic purposes. And furthermore it is always worth a thought during the treatment of accidental wounds of the jugular and its larger radicals around the throat. Abscess of the venous sinuses of the brain has occurred in our practice following the lancing of retropharyngeal abscesses and in one case recently it followed a punctured wound located just above the larynx. In both of the cases a large vein was accidentally opened and the purulent products which entered the perforation produced a succession of abscesses which finally reached the brain, and the patients succumbed from "blind staggers." Still another case which ended fatally—the inspiration for this pitfall—was caused from an injection

of tallianine into the jugular in the middle cervical region. Whether the syringe or the medicant was the carrier of the infection is not known, but four days after the treatment the neck was swollen and the patient was very sick. The indisposition was at first attributed to the influenza for which the drug was given but as the local phenomenon became more threatening and finally the center of the swelling burst and discharged a large amount of sanguinous pus followed by copious bleeding that required packing to control, it was at once seen that the local and not the systemic disease must be reckoned with. It was at this stage I had the privilege to examine the patient, and to announce the serious character of the trouble. By doing an aseptic ligation of the jugular at the level of the first ring of the trachea we hoped to arrest the progress of the disease there, but in spite of this radical step it pursued its relentless course unchecked and ended in the brain as so many of these cases do.

Invasion of the jugular with the hypodermic syringe is therefore not an entirely innocent operation, nor can the reckless use of the fleams be countenanced today, because there is occasionally a sequel that makes up in seriousness what it may lack in frequency.

The prevention must be sought in the cleanliness of the syringe, the fleams, the skin and also in the product injected.

Aseptic ligation is only effectual as a check for the advancing process when it is done very early. In the advanced case it is better to leave the vein work out its own salvation other than that of lancing ripe abscesses and draining them by irrigations or with gauze wicks.

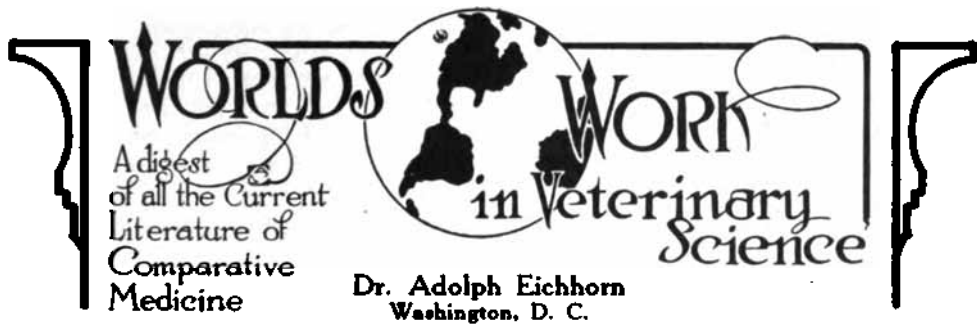
No. 14. *Alveolar Carcinoma.* The veterinarian must always be on the lookout for cancers in the mouths of horses. Patients affected with offensive emanations from the mouth and nose are often found to be affected with this disease. On examination of the mouth one, two or three superior molars are found black and loose and a granulating growth is

seen extending along their buccal surface. At first only one molar may be affected and one might at this early stage carelessly diagnose the trouble as simple alveolar periostitis. After extracting the affected molar the cancerous process advances more rapidly and soon another one must be removed; later a third one is found loose and is extracted. The alveolar cavities are now filled up with cauliflower granulations that bleed copiously when the patient wounds them in eating; the nose of the affected side discharges a bloody, stinking pus, and the skull below the eye bulges outward. Sooner or later the skull softens, the skin dissolves and the eyeball is attacked and the patient now presents the nasty picture that only cancer can produce.

The practitioner who does not diagnose these cases in a very early stage and extracts the teeth without having suspected the seriousness of the ailment drops into an ugly pitfall. According to the owner's conviction, the disease dates back to the first extraction and the veterinarian, not having recognized the nature of the disorder, while, of course, blameless, has no good defense to offer. The only defense he can make is that the horse had cancer before the extraction, but he did not know it—an ugly confession. The moral is to look out for alveolar carcinoma when deliberating over ailments of the teeth and nose, especially of old horses.

No. 15. *Sanguinous sacs and ventral herniae.* Recent traumatism of the abdomen must always be very cautiously judged. What may at first seem to be only a superficial contusion with an accumulation of serosity or blood, might after the masking swelling has disappear the character of the ailment pathognomonic symptom of hernia (the orifice or reducibility of the contents) may be obscured by swelling during the first ten days, and even later when ventral hernia is complicated with a serous or bloody collection it may be difficult

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The Influence of Turpentine on the Stomachs of Ruminants

Eugen Rau (Inaugural Dissertation, Diessen)

A single administration of turpentine in doses of 5 to 15 gms. for cattle and 1 to 5 gms. for sheep and goats, induces in all ruminants an increase of peristalsis, both in frequency and intensity. Up to a certain point this increase corresponds with the size of the dose of turpentine. The action of single doses is manifested within an hour and continues in a cow from four to six hours, and in sheep and goats from three to five hours. In doses of 25 gms. and more for cattle, and 10 gms. for sheep and goats, a paralytic action of the motoric activity of the rumen, which may be of shorter or longer duration, results; this is pronounced in sheep and goats.

It is advisable to establish a dose of 5 gms. three times daily for cattle and 1 to 2 gms. daily for sheep and goats. In such doses a disagreeable effect upon the intestines and kidneys, and also the unfitness of the milk need not be feared.

Septic Pleuro-Pneumonia of Calves

Prof. D. Schlegel (Munch. Tier. Woch., 1915)

In 1914 calf pneumonia occurred in an enzootic form in various districts in Baden. It was established that the milk from affected herds of a township was

delivered to creameries, and the skim milk containing the infectious agent was returned to many of the producers, which of course disseminated the infection.

The calves manifested the characteristic symptoms of pneumonia, which usually lasted for several weeks. Autopsy revealed a chronic catarrhal pneumonia with a pronounced affection of the bronchi in the anterior and small lobes of the lungs and also in the lower part of the diaphragmatic lobe. The hepatized parenchyma frequently exposed lentil-sized yellowish pus foci. The pleura was opaque and thickened.

The microscopical examination of the bronchial secretion, and also smears from the lungs, revealed the presence of *Bac. vitulisepticus*, a secondary invader, *Bac. streptococcus pyogenes*, and *Bac. coli*.

The Treatment of Wounds

Tierarztl. Centralbl. (September, 1915)

The Academy of Sciences of Paris awarded the triennial Lecomte prize of 50,000 francs to Sir Almroth Wright, England's war bacteriologist, for his new method of treatment of wounds. Wright's treatment increases the flow of the bactericidal lymph from the wound. He disregards the use of antiseptics, since they tend to close the wounds and cause the retention of the lymph. Wright recommends, after the cleaning and opening of

the wound, applying a fluid which stimulates the flow of the lymph. For this purpose a five per cent salt solution, to which a small quantity of sodium citrate has been added, is the most suitable. He also experimented with the production of an anti-infection serum which also gave very good results. Should this prove effective it is intended to vaccinate the soldiers before they proceed to the front, in order to avoid an infection of the wounds which they might receive.

Observations of Azoturia of Horses

Bierling (Munch. tierarzt. Woch., 1915, H. 15)

The author treated in the last eight years 71 cases of azoturia in horses. Out of the 71 horses 22 were in good condition, 41 in average condition, and eight in poor condition. The age of the animals varied between six months and 18 years; he concludes his observations with the following:

1. The muscular degeneration occurring in azoturia may affect not only the muscles of the croup, but also the anconae of the anterior extremities and the muscles of the head, especially those of mastication.

2. The degeneration of the muscles of mastication sets in with a marked, sometimes severe swelling. Eating is thereby rendered difficult and often impossible.

3. Sex, age, and nutritive condition have little influence on the disease.

4. With regard to the influence of the season of the year, out of the 71 cases 36 occurred in winter, 15 in the spring, nine in the summer, and 11 in the fall.

5. The disease usually lasted several days.

6. Of the 71 affections, 46 terminated fatally, and 25 recovered. At the same time it should be noted that (a) cases of azoturia in which the animal could not be raised from the ground terminated fatally without exception; (b) in cases

in which the masticatory muscles showed a swelling the animals went down on the following day and died one day later; (c) inflammation of the masticatory muscles with swelling of the croup terminated fatally in from six to seven days; (d) swelling of the masticatory muscles without the elimination of hemoglobin resulted in recovery; paralysis of the hind quarters resulted only in two cases in which death followed in seven days; (e) cases (without the swelling of the masticatory muscles) which could be kept on their feet resulted in recovery in most instances. In these cases the health was regained without medicinal treatment. (Mild cases of short duration.)

7. The treatment consisted in bleeding (5 liters), rubbing of the croup with camphorated spirits, subcutaneous injection of arecalin hydrobromid 0.08 gm., and covering the entire body with warm blankets. Easily digested gruels should be given.

In severe cases the administration of sodium salicylate (100 grms. in two days); bicarbonate of soda (300 grms. per day); also aloes (30 grms. in pill form, caffen. natr. salicyl. 5 to 15 grms.); morphin hydrochlorid (.5 to 15 grms.); pilocarpin (.4 to 10 grms.).

The author failed to observe a specific action from any of the above remedies but he considers them as very beneficial at the onset of the disease.

Valuable Aid From Dogs in the War (Tierärzth. Rundschau., October, 1915)

More than 600 dogs are now being employed for searching for wounded soldiers on the battle grounds. The number, however, is not by any means sufficient so that in different parts of Germany, especially on the race tracks, an attendant may be constantly seen training such dogs. Any possible doubt as to the value of the dogs for such service must now be disregarded, judging from the numerous reports of the successful services of the very brave leaders and

their dogs in the theater of war. These reports also contain many letters from wounded soldiers who consider that their lives have been saved by these faithful dogs. The early finding of the wounded is essential, especially in the cold season, since the prolonged exposure of the wounded soldiers has a great influence on their recovery.

Potassium Permanganate as a Hair Dye for Gray Horses in the Present War

(Ztschrift f. Vknde-1915)

Captain Thieme and Colonel Huttner, members of the German military expedition in Turkey, experimenting with potassium permanganate, concluded that a one per cent aqueous solution was suitable for the purpose of dying the light colored hair of war horses. They dissolved 10 grms. of potassium permanganate in one liter of water, and painted the horse, taking care that the hair and skin should be well covered by the solution. In this procedure the head and other sensitive parts were rubbed with linen cloth or sponge, while a brush was used in applying the dye to other parts of the body. The color of the horses was at first violet and later changed to a brownish-green, due to the reduction of the permanganate into mangan superoxid. The reduction is caused by the perspiration of the animal. In order to hasten the process the authors found it advisable to expose the animal to direct sunlight. The dye is inexpensive, harmless, and the color thus produced is lasting.

The Horses in the World War

(Allatorvosi Lapok, 1915)

There were many who considered the horse of comparative little value in the recent war, as the numerous technical devices seemed to decrease the usefulness of the horse. Very soon, however,

it was found that this supposition could not be confirmed. Reuter, a district veterinarian, and later Prof. Eberlein of the Veterinary High School of Berlin, reported on the value of the horse in the war. Eberlein, in an article published in the *Monatshefte für praktische Tierheilkunde*, described the conditions under which the horses of the VIII-th reserve army were kept. From the 18th of August to the end of September, these animals were at no time quartered in stables, and while on many days they were compelled to march from 60 to 70 kilometers (from 38 to 45 miles) there were very few losses from exhaustion. The horses Eberlein had under observation were common heavy type working horses which were employed formerly in manufacturing establishments and trucking business. According to Zembsch (Ztsch. f. Vkn.) the east Prussian horse especially proved capable of withstanding these hardships, covering distances from 60 to 100 kilometers (38 to 60 miles) a day under very unfavorable conditions. The best service was obtained from horses of the age from eight to fifteen years, while the younger animals were not as serviceable. The Austrian horse proved to be of great quality, and the recently acquired Ruthenian horse was practically inexhaustible.

Of course, all necessary sanitary measures are being carried out to insure the minimum loss of horses from disease. Hospitals have been established, and the animals which are of no further use on the battlefield for various reasons, but which may be useful in other ways are returned for farm and other work. A sufficient number of veterinarians and horse shoers are being maintained on the battle line, and in many instances the animals are given immediate attention. The following incident demonstrates the importance of having for service good and able horses: The Russians surrounded an army corps so thoroughly that it appeared nearly impossible to break through the ring. The officer in charge of the artillery through the use of

all of his available horses succeeded in placing the entire equipment of artillery at an advantageous point on a height from which he shelled the enemy in the most violent way, causing serious damage and effecting a safe retreat for the troops.

The tuberculin reaction in the pig.
LINDNER. *Berlin. Tierärztl. Wchnschr.*, Vol. 31, No. 14, pp. 162, 163.—The body temperature of healthy runner pigs two to three weeks old is very irregular. Generally speaking, it is said to vary between 39 and 40° C. but it is at times 40.1°. From the fourth month on the temperature gets more regular and it may be between 38.7 and 39.5°. It never goes over 40° at this time. Healthy pigs reacted to an injection of 0.1 and 0.3 cc. of old tuberculin (in 10 cc. of physiological salt solution). In 9 out of 48 animals the rise in temperature was more than 1°. The temperature in no case went over 41°. Sixteen four to six months old animals were given .02 to 0.5 mg. of the bovine tubercle bacillus culture. After the elapse of 4 to 8 weeks the animals received either 0.15 cc. of human tuberculin or 0.3 cc. of bovine tuberculin. The animals showed a rising temperature of 1.4°. The increased temperature limit vacillated between 40.6 and 42°, consequently, a temperature which goes over 41°, that is, a temperature of 1° over that which was observed the night previous, is to be regarded as evidence of tuberculosis in two to four months old pigs. In older animals, a temperature over 40.5° is considered positive. The intracutaneous test was tried on 20 tubercular and 37 non-tubercular animals. These were given 0.2 to 0.4 cc. of tuberculin in salt solution. The animals received on the opposite flank 0.2 to 0.4 cc. of glycerol in salt solution. The reaction was positive with 15 out of 20 tubercular animals, and in 1 of 37 healthy pigs. The epicutaneous test was positive with 10 tubercular pigs. The ophthalmic test was negative in 16 tubercular pigs.

PITFALLS IN SURGERY

(Continued from page 214)

to arrive at a safe decision as to the exact nature of the injury. To hastily lance such sacs is a dangerous practice, because such a large cavity, with an external opening, cannot easily be prevented from becoming infected, and if a hernia exists peritonitis will certainly follow. Some years ago the writer found an assistant working over an abdominal contusion he had been treating for several days. Believing it to be a sanguinous sac, he had lanced it and evacuated a quart or more of serum and had dislodged a few large blood clots with the finger. While preparing a wadding for the orifice a mysterious looking string of tissue began to protrude. Examined, it was found to be blood-soaked omentum. The pitfall is not difficult to avoid if the diagnosis of all abdominal bruises is withheld for a week or two.

No. 16. *Colic from strangulated hernia.* Colic in stallions or even in geldings is sometimes caused from inconspicuous oscheoceles, and the veterinarian who treats such a case hour after hour unconscious of the real cause of the trouble always exposes himself to criticism for not having discovered the condition before remedial measures were useless. It is mighty good practice to examine the inguinal region in all stubborn colics and in all colics of stallions, and when there is any evidence of hernia the suspicion should be promptly confirmed or excluded by a rectal exploration. No matter what course of treatment is decided upon after an early diagnosis of hernia is made, the practitioner's reputation will not suffer if the patient dies.

Consultation over stallions dying from strangulated hernia are very common events, and in every case the announcement that it is now too late to operate successfully always reflects seriously upon the practitioner who failed to recognize the character of the ailment earlier.

Therapeutic Digest

By MART R. STEFFEN, Milwaukee, Wisconsin

Symposium on Drugs.

THE editor of the *Medical Review of Reviews* went to the trouble of getting the data from hundreds of the most prominent medical men in the country on their viewpoint of the most valuable or important medicinal agents. Among the replies 107 were from teachers or instructors of medical schools. Here is the summary of the ballot:

Opium	102
Mercury (calomel, ung. hydrarg.)....	94
Cinchona (quinine)	85
Digitalis	70
Iodin (iodides)	35
Ether	28
Arsenic (salvarsan, atoxyl).....	28
Salicylates (salicylic acid, aspirin)..	21
Iron	16
Nux Vomica (strychnin).....	10
Diphtheria antitoxin	8
Castor oil	8
Magnesium sulphate	4
Ipecac (emetin)	3
Belladonna (atropin)	2
Sodium bicarbonate	2
Chloroform	2
Cocain	2
Cascara sagrada	2

There was one vote each for alcohol, camphor, strophanthus, nitroglycerin, caffeine, smallpox vaccine, potassium bromide, phenacetin, acetanilid, aconite, formaldehyd and bismuth.

When we get no results, or poor results, from a given drug or other therapeutic agent the fault lies with us in 99 cases out of 100. Either we have selected the wrong agent for the case, or we have made the wrong diagnosis; or, if neither of these, we are wrong in the dosage for the drug in the particular case. The drugs which give us such regularly good results are usually the ones we understand the best, and usually in conditions with which we are very familiar from a clinical standpoint.

In the *Medical Council*, Dr. Wooden, of Rochester, speaking of the Therapeutics of *Passiflora incarnata* says that "it seems that the inexpensive, easily standardized preparations of *Passiflora incarnata* warrant more attention on the part of the medical profession.

Veterinarians can also heed this. I can recommend this drug, after more than ten years of experience with it, most highly in veterinary practice. I have pointed out a number of indications for it in previous writings.

In the same paper Dr. Gallant, of New York, says that a mixture of balsam peru one part and castor oil sixteen, called Van Arsdale's mixture, when applied to raw surfaces acts as a moist sponge, absorbing all secretion, cleans and dries the surface, freeing it from moisture and pus, thereby minimizing the formation of excessive

granulations and, if the dressing be not changed oftener than every third day, healing will result in one-third the time required under so-called stimulating dressings.

For alopecia an Indian practitioner recommends equal parts of glacial acetic acid and chloroform, to be applied with a small, soft brush once a day.

Investigators have recently made use of the x-ray for the purpose of observing the effects of morphin upon stomachal and intestinal peristalsis. Their results may be summed up in a general way as follows:

1. Decreased motility of the small intestines always follows.
2. Practically no effect is seen in the large intestines.
3. The results are the same in this respect whether the morphin be given orally or subcutaneously.
4. While the effect on the stomach is usually so little as to be insignificant, pyloric spasm nearly always occurs.

From these observations we must conclude that morphine is certainly not indicated in acute indigestion of horses, because the pyloric spasm and accompanying decrease of peristalsis in the small bowels would only tend to make the existing attack all the more grave. I desire to bring out this point because I have listened to arguments frequently in which some practitioners contended that morphin would be helpful in acute indigestion because it would have a tendency to relax the pyloric valve and thus aid in the expulsion of gas from the stomach into the intestine.

The findings of the investigators cited above must settle this question forever, because it is not only the theory of a few eminent men; these investigators saw these results in living subjects, by the use of the rays.

The Present Status of the Pasteurization of Milk

This is the title of Bulletin No. 342 contributed by the Dairy Division of the Bureau of Animal Industry under date of January eighth. The author of this bulletin is S. Henry Ayers, Bacteriologist of the Division, and it contains much of interest to veterinarians.

The author states quite positively that "from a bacteriological standpoint, pasteurization at 145 degrees F. for 30 minutes gives assurance, so far as we know, of a complete destruction of disease producing bacteria, and at the same time leaves in the pasteurized milk the maximum percentage of the bacteria that cause the milk to sour (lactic-acid bacteria) and only a small percentage of those that cause it to rot (peptonizers). When higher temperatures are used, while the total number of all kinds of bacteria is reduced, the percentage of lactic-acid bacteria becomes less and less and the peptonizing group increases until at 180° F., or above, when the lactic-acid bacteria are practically destroyed and the most of the bacteria left belong to the peptonizing group.

A table is also given of the proportion of milk supply being pasteurized in the following cities:

Boston, Mass.	80 per cent
Chicago, Ill.	80 per cent
Detroit, Mich.	57 per cent
New York, N. Y.	88 per cent
Philadelphia, Pa.	85 per cent
Pittsburgh, Pa.	95 per cent
St. Louis, Mo.	70 per cent

The *Medical Council* says—"WILL YOU kindly bear in mind that *YOU* may have just as valuable clinical points to record as has any physician contributing to these pages?"

This can also be applied to veterinarians. Considering the fact that there are really only two veterinary publications in the United States they

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Queries and Answers

The editor will reply to queries appearing here, as he is able and as opportunity permits, but he does not want, nor cannot undertake to monopolize this portion of the department. Any reader who can furnish further and better information in reply to any query is urgently requested to do so. Where the treatments advised in these replies is adopted it is hoped that those employing them will report their results whether good or bad. In all cases give the number of the query when writing anything concerning it.

REPLY TO QUERY NO. 211—I should like to add my method of killing horses to the various methods given in answer to Query No. 211. When I have a horse to kill, I take an ordinary scalpel, place a small cork over the point of the blade to prevent cutting myself as I introduce my arm into the rectum. I locate the posterior aorta and slip the cork from the point of the blade with a finger, then make a slit two or three inches in length, and the horse dies of internal hemorrhage in from two to three minutes, absolutely without pain. I have used this method for twenty years.

O. C. BRADLEY, D. V. S.

Wadestown, W. Va.

REPLY TO QUERY NO. 211—On seeing the question asked as to how much strychnin will kill a horse, I should like to give my experience on this subject. It has fallen to my lot to be called to kill horses on Broadway and the adjacent avenues of New York City; and to suit the taste of the humane old ladies of this city, one has to make a good job. Besides the ladies, the spectators by the hundred that surround you have to be satisfied. I have given this satisfaction by giving one ounce of fluid extract of nux vomica injected into the jugular vein. I have found that the all important point is to use a big syringe and a big needle so as to inject it quickly. By so doing, it goes into the heart in bulk more or less. I have found that nux vomica kills a horse quicker than strychnin. For this I cannot account. If it is well injected, it

will drop a horse where he stands and is followed by no unpleasant scene. I would also add here, and this is important—give your overcoat to *no one* but a policeman to hold for you.

T. B. DOLL, V. S. B. V. Sc.

The Plains, Va.

REPLY TO QUERY NO. 211—Being somewhat interested in the discussion of different methods of killing a horse in the January issue, I thought I would contribute a few lines. I will say in the beginning—no strychnin for me. One trial was quite enough. A well-to-do merchant had a choice horse violently stricken with azoturia. After a few days he decided to have him put out of his misery. His request was an opiate to produce unwaking sleep. It so happened that I didn't have sufficient chloroform on hand to do the job. My next choice was strychnin. Now Prof. Baker says that ten grains constitute a fatal dose. But I went him three better and administered thirteen grains. I want to say I never passed a more miserable thirty minutes watching a horse expire. I felt very lucky that the owner had bid us good night and left before the dose was given. The way that horse suffered was a sight to behold. Spasms began within five minutes, growing more severe until death. When the owner saw the evidence of the struggle, he called me to account for using drugs I didn't know the action of. I didn't say much as I was disgusted myself, although I didn't have to use an axe like Dr. Jensen.

Another man had a road horse that was kicked, causing a bad fracture of the leg. He requested me to chloroform her. After administering enough to kill any horse, I still found she was in fine shape to operate on. I saw she was returning to this world and asked the man to bring his gun, when I soon dispatched her. Although this horse was down and securely tied, when she began to feel the effects of the chloroform, she struggled violently, so we all well know they must suffer.

Now I am fully convinced that the best, quickest and most humane way to kill a horse is to shoot him. Take a twelve-gauge shotgun. Now, don't think me crazy when I advise a shotgun instead of a rifle. You get more concussion, and that is what we want. Load with anywhere from No. 1 to No. 5 shot and smokeless powder. Stand anywhere from three to six feet in front. Shoot directly into the brain, and the horse will never know what strikes him. I recently dispatched one for a city man who had an old driving horse that he wished to be put away in a humane manner. One well directed shot, and she died without a struggle.

What puts a veterinary in a more humiliating position than to be like Dr. Jensen states? The doctor is called to do the death act. Why? Because he is supposed to know how to produce death in the quickest and most humane manner. He carefully mixes up the potion, administers it quickly and retires to a warm room, awaiting results, hoping from the bottom of his heart that it will be a quiet struggle of quick termination. Some fifteen minutes later, to his great chagrin, he hears these words from the boss: "Say, Doc, old John is still living; think he can stand several such doses, and by the way he is struggling, he sure is suffering great." Feeling like a whipped cur, the doctor returns to the death chamber, quickly administers a double dose this time, thinking he will do him for sure. After some twenty or thirty minutes of increased

struggling, the boss meanwhile pacing the floor emitting groans of sympathy for the old horse, you get so disgusted that you could chop a horse into mince-meat. In order to end the scene, you grab an axe, bury it in the horse's brain, and the job is done. What could be more humiliating? After causing the horse to suffer some forty or fifty minutes, you have dispatched him in no more scientific manner than any old farmer or woodsman might have done. The only recourse the doctor has is to condemn the medicine and the man who made it, telling the client that if it had been of the proper strength it would have done a good quick job.

One thing is sure—if you use a good gun and shoot in the brain, the horse will die and that very quickly, too. No waiting or horrible struggling. There is occasionally one who objects to the use of a gun; but by reasoning and telling him the suffering drugs cause, he will consent, and after once having it done with a gun, will never submit to any other method for killing his animals. Such is my experience, and I am quite sure if others will practice this method, they will be of the same opinion.

Pennsylvania.

E. W. W.

Query No. 213.—What would be the treatment for quittor, the coronary band being extended possibly four inches and the swelling extended from the coronet to the knee, of two months' standing?

REPLY BY DR. MERILLAT: A quittor in such an active state of inflammation as to cause swelling as far as the knee is in no state for any kind of radical surgery. The patient should be given diligent antiseptic fomentations until the process recedes back to the foot. The brief query, by reading between the lines, indicates that the patient is affected with a suppurative process that has invaded the synovials or else has been kept acute by harmful injections. In either case the patient should be given plenty of foot baths, the foot should be shaped up by paring and the tracts should be injected daily with a two percent solution

of potassium permanganate. When there is no more acute lameness and the inflammation is securely chronic, there are several plans of effectual treatment. One is Bayer's radical operation; another is curetting the tracts from above to "fish out" the sloughed cartilage; another is the injection or insertion of caustics; and still another is the writer's plan of direct invasion of the lateral cartilage area by a vertical incision through the coronary band after removing the hoof beneath the affected zone.

If the querist is not prepared to do any of the more radical operations I would advise that he resort to the following plan. Irrigate the tracts with a one percent solution of formalin for fifteen minutes, carefully assuring himself that the solution has been delivered to the very depths of the sinus. Then inject a mixture consisting of mercuric chlorid, one dram, hydrochloric acid, one dram, and alcohol one ounce. This caustic liquid should be driven in with sufficient force to deliver it to the bottom. No after care is required except that of keeping the foot clean.

If on the other hand the querist prefers to operate I would recommend the last procedure mentioned above. Pare the foot thin, that is, shave it up well and rid it of all loose horn. Give the patient a preparatory antiseptic foot bath; then cast, cocain the plantars, and tourniquet the metacarpus just above the fetlock or the forearm just above the knee. Remove a crescent-shaped zone of wall beneath the coronet. Make a vertical incision from the bottom of the tract upward through the coronet to and even beyond the orifice above. Grasp each end of the coronet with a tumor forcep and gap the wound as far as possible. With the curette scrape off carefully the loose granulation tissue from the diseased cartilage it shelters. Lift up and carefully excise the greenish, fringed parts of the cartilage with the curette and scrape off all that is denuded externally down to the internal perichondrium. Suture the coronet and skin and

apply a wick of sterile gauze through the opening below. Smother up the whole wound with an antiseptic powder and bandage. Dress every day by renewing the gauze wick and applying plenty of powder.

Query No. 214. Stallion, weight 2200 lbs., five years old, has been shown every year up to the time he was four years old. The horse has a horny growth projecting out from coronet hoof, which is very rough but not like laminitis. When this horn is removed, it recurs in a short time. What is the diagnosis and treatment?

REPLY BY DR. MERILLAT: In the treatment of a growth of hoof projecting from the coronet of a horse's foot the practitioner has the choice of two plans. One is to keep the horn trimmed down level by repeated rasping or snipping and the other is to remove the genetic structure from which it is growing. The latter is a permanent cure; only a flat horny scar will remain. The stallion should be well secured for such an operation because it is painful and the foot is difficult to control well enough to do effectual work while the patient is standing. Such a patient really should be secured on the operating table and a liberal amount of sterile 2 per cent solution of cocain injected subcutaneously at frequent intervals, tracing a half circle around the base of the growth. Then after shaving the hair and disinfecting the field, the horn is pulled in an upward direction with a tumor forcep as the underlying skin and coronet is dissected out, right down to the subcutaneous aroelar tissue. This leaves a deep wound whose other dimensions will of course correspond to the size of the horn's base. The walls of the cavity may be cauterized with the actual cautery to arrest the bleeding, but no cauterization must be done on the floor of the cavity because the slough might expose the underlying tendon or ligament. The wound should be dressed with iodoform until it is level and then dried up with an astringent lotion. Where cauterization is not prac-

ticed, the cavity is wadded with a sterile gauze and wrapped tight with a bandage for twenty-four hours and then treated with iodoform as above.

QUERY No. 215. Will some JOURNAL contributor kindly describe Hartwig's operation for torsion of the uterus in cows?

ANSWER: Dr. L. A. Merrillat in his admirable article entitled "The Surgical Treatment of Colics"* makes the following statements: "Hartwig has performed some operations for torsion of the uterus in cows with splendid success, by making an abdominal section in the right flank large enough to admit both arms. In this I see the secret of success in handling the twisted colon, for with both hands the organ can be lifted without danger of tearing its walls."

The following is taken from "A Text Book of Veterinary Obstetrics" by Geo. Fleming, pp. 311-313, published in 1877:

Abdominal Taxis.—The idea of opening the abdomen and thrusting the hands and arms into its cavity, in order to search for the twisted uterus, then to untwist it directly by turning it on its axis in a contrary direction to the torsion, in order to deliver the animal by the natural passages, is at first sight an eminently rational and practical procedure, and one which, occurring independently to several minds, has been resorted to by a number of veterinary obstetrists. But, however simple and feasible it may appear, yet it is very far from being an easy or always successful method, and this for several reasons. Among these may be cited the great weight of the gravid uterus—from 112 to 180 pounds—its immense size, its convex, smooth, and slippery surface; the limited space there is in the abdominal cavity for manipulation; and the obstacles the other viscera offer to version manœuvres.

"Nothing," says Mazure, after repeatedly trying this method, "appears more simple to the mind than to seize with the hand one of the sides of the uterus, and to swing it round, and especially as it is restoring the organ to its natural position. Yet no one whom I know is competent to perform this simple movement."

"My confrere and I tried to swing round the uterus," writes Gosselin, "but it was in vain; all our efforts could not even cause it to change its place."

Bouley attempted this method in 1853, but did not succeed. After failing in other manœuvres to effect the detorsion of the uterus, in despair he made a large incision in the right flank, in order to try if he could not, by direct taxis on the organ itself, restore it to its ordinary condition. But he was disappointed: for the uterus, enormously distended, so completely filled the abdominal cavity that the hand could scarcely be introduced between it and the walls of the abdomen; while the surface of the uterus was so smooth that the operator's fingers could not cling to it.

Notwithstanding, this operation—which, from having been performed in the region of the flank, has received the designation of "laparotomy"—has been practiced with variable success in Germany by Fausel (1849), Epple (1852), Kohler (1853), Diccas (1867), Lechleuthner (1868), Obich (1869), Heichlinger (1869), etc.; in France by Darreau, Garreau, and others; in Italy by Santoni and Rocco; and in Denmark by Stockfleth.

We have said that the success attending laparotomy has been variable. This is exemplified in Obick's experience (*Wochenschrift für Thierheilkunde*, 1869). This veterinarian had three cases of uterine torsion, in which he resorted to this operation to replace the organ. Two of the cases were attended with complete success; but in the third the uterus was of such an extraordinary size and weight, that he failed to restore it to its natural position. He proposed in future to facilitate the operation by using a looped cord with which to raise the organ.

Heichlinger operated successfully on a cow in the same manner, but the animal afterwards perished through gangrene of the uterus.


It must be admitted that the operation has not been performed sufficiently often, and then sometimes in very unfavorable circumstances, to enable us to draw any satisfactory conclusions as to its value. Darreau, who has been fortunate in some of his attempts, writes: "Direct taxis by an opening made in the flank has had some advantages; I have even thought for a moment after my first success that it would be the only means I should resort to for the future. But, unfortunately, new cases upset my predictions, and compelled me to seek for more efficacious means." And Fausel admits that the considerable weight of the uterus may sometimes prove an insurmountable obstacle.

It is worthy of note that the idea of resorting to laparotomy occurred to an excellent veterinary practitioner in Scotland, perhaps long before it did to Fausel, though for lack of opportunity it was not carried into effect. Mr. Cartwright, of Whitechurch, writing, in

(Continued on page 246)

*"Colics and Their Treatment" published by the AMERICAN JOURNAL OF VETERINARY MEDICINE.

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary Medicine



It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

The Treatment of Tetanus With Tetanus Antitoxin

By H. BERGH, D. V. S., Suisun, Cal.

ON a number of occasions when in attendance on various veterinary meetings as well as in numbers of personal conversations with other practitioners, it has been my experience to hear reports of little or no results from the use of tetanus antitoxin in the treatment of tetanus in horses. My own experience has been so different from the usual reports of such treatment and I have so much faith in proper sized doses of tetanus antitoxin that I want to present this little report in defense of tetanus antitoxin in treatment.

The first thing I want to say is that if we expect results from the use of tetanus antitoxin in treatment we must expect to give it in sufficient dosage. It is not uncommon to hear some practitioner say that he gave the antitoxin in a dose of 500 or 1,500 units and got no beneficial results, which is exactly what one would expect who understands the necessities in connection with this treatment of tetanus. In some sections of the country where this disease is more prevalent and apparently more virulent it is quite possible that even large doses of the antitoxin will

not be of a great deal of service. About this I cannot say because I have had no extended experience in different localities. I do want to make it plain, though, that if you want to get results from tetanus antitoxin, you must give a sufficient amount. As a preventive measure I have absolute confidence in the antitoxin and believe that 1,500 units should be administered whenever one has cause to suspect infection. If we could always do this the disease could be almost entirely prevented, but unfortunately this cannot be done since very often we do not see the cases until the symptoms have developed.

The factor of expense in the treatment of animals with a sufficient quantity of the antitoxin to be effective in the majority of cases is a thing which is of prime importance and this cost should be explained to the owner of the animal at the start to see if he is prepared to spend the amount of money which may be required to give the animal enough antitoxin to cure the disease if a cure is possible. My experience has been that we should not become discouraged if the patient does not show an

immediate response, because I have found that in some of my cases treatment was kept up for as high as six or eight days before good results were apparent.

I naturally do not depend entirely upon the antitoxin since I believe in doing everything possible to aid the animal in its resistance. When it is possible to find the seat of infection, I use strong disinfectants as well as in many cases cauterization and the removal of tissue, if advisable. Idiopathic cases I treat the same as others. Of course, I use drugs when indicated, but these are used either subcutaneously, intravenously, or intratracheally, never orally. I find also that much better results are obtained when animals are confined in a dark box stall away from noise and excitement. I fill the ears of the animal with cotton and use every other method possible to prevent the spasms. I inject the serum subcutaneously into the neck, first clipping the hair and further disinfecting the skin. I presume intravenous injections will act more rapidly than subcutaneous ones and in some cases injection into the vein should be employed. My usual dosage is 9,000 units daily, divided into three doses of 3,000 units each. I give this quantity when necessary for four days, then decrease to half this amount, giving 1,500 units three times a day.

I have been practicing in this place for the past six years and have had 17 cases. Of these, 12 have made good recoveries treated with the antitoxin as above described. One case died after receiving 15,000 units. Another died after receiving 24,000 units. Three cases received no serum and all three of these died.

I give herewith brief case histories:

No. 1., Oct. 9, 1909—I was called to see a horse which was lame, due to a recent nailprick. Upon my arrival I found a case of tetanus, and so informed the superintendent, who told me to do the best I could and not hesitate about the expense.

I began with 3,000 units in the morning, gave the same dose at noon and the same in the evening; this I kept up for four days. The nail hole was curetted thoroughly and the following dressing was applied: Carbolic acid, glycerin and distilled water, then iodoform gauze, pack and bandage. This I dressed daily. After using the 9,000 units of serum per day for four days, I cut it down to 4,500 units per day for a like period, and then gave 1,500 units twice daily for four days and lastly 500 units twice daily for a couple of days. This mare, weighing about 1,800 lbs., made a complete recovery and was ready to work within one month. Gave altogether about 70,000 units of tetanus antitoxin.

No. 2., Oct. 10, 1909—Three-year-old male colt, weight about 900 lbs. When I arrived I saw the colt in the field and was told he had been down about 30 hours. I tried to help him up, but he was as stiff as a board. The horse died that evening, without having received any antitoxin. This case was idiopathic tetanus.

No. 3, May 7, 1910—An old driving horse, snagged between the fifth and sixth rib by a fruit tree limb. This horse had been suffering several days from tetanus, according to the history. I advised the owner that the animal was too far gone for treatment and as she was only valued at about \$40.00, none was given. She died that evening at 6 o'clock.

No. 4, July 12, 1910—A four-year-old, heavy, draft horse weighing about 1,500 lbs. This horse was in the last stages of tetanus and no antitoxin was used. He died a couple of hours later. Had been down two days. Infection probably occurred through an open collar bruise.

No. 5, Nov. 14, 1910—A horse was brought to me that the owner said could not eat. I at once diagnosed the case as tetanus. We brought the horse into a box stall, with plenty of bedding. Arecolin hydrobromid, 1 gr., strychnin sulphate, ½ gr., and atropin, ½ gr., was

at once administered. Trismus was present so I had not much faith in the case, although the owner wanted me to do all I could for him. I gave the animal the same doses of antitoxin as in Case No. 1, with arecolin and strychnin twice daily for three days. Trismus gradually disappeared, the horse began to eat and drink and was sent home after making perfect recovery. This was an idiopathic case. Gave altogether 60,000 units of antitoxin.

No. 6, Jan. 11, 1912—A two-year-old colt contracted tetanus from nail in the foot 10 days previous. Forty-five thousand units of antitoxin were used and the colt made a good recovery.

No. 7, May 9, 1912—I was called to Joyce Island to fix a grey stallion's teeth (as the superintendent expressed it) and when I got there, told them to back the stallion out from his stall, noticing his stiff gait as well as the membrana nictitans and other symptoms. I diagnosed tetanus. They told me that the animal had picked up a nail in the foot about three weeks previously. We had to cast the horse to curette his foot and dress it. The stallion made a perfect recovery. Gave 60,000 units of antitoxin.

No. 8, Aug. 13, 1912—Called to place where they had lost two horses, one and two months previously. They told me over the 'phone that they knew they had some infectious disease among their horses, but did not know what it could be. Upon my arrival I found a grey horse, eight years old, weighing about 1,200 lbs., suffering from tetanus. I questioned them regarding the other two horses that had died and discovered that the first horse had a collar bruise on its shoulder, but they did not think anything of it. The second horse had later on been using the first horse's harness and contracted a bruise about the same place. This horse also died, having shown the same symptoms as the first one. The horse was examined and I found a bruise about the same place on the shoulder, as had the other two

horses that were dead. I asked to see the harness and then found that the collar was slightly torn and a nasty scab surrounded the tear. My diagnosis in all three cases was probable tetanus. These three horses had been using the same harness. Of course, the collar was burned in my presence and the other collars were scraped and washed in disinfectants. I treated the animal and, to the owner's surprise, he made a perfect recovery. Will add that sometimes preventive measures against tetanus are of great importance, as I found out in this particular case. If I had let the tetanus bacilli remain in the old harness, perhaps he would have lost every horse on his ranch. The wound, of course, was treated and the amount of antitoxin was 55,000 units.

No. 9, Jan. 28, 1913—Was called to see a 1,100-lb. horse on pasture. The owner told me he had lockjaw. After seeing the horse, I advised the owner to get a truck and they brought him to his barn. The third day, in the morning, they rang me up and told me I had better come out and kill him because he was down. I went to see him and found that the floor was very slippery. We put in some gravel and straw, got my slings and raised him up, let him hang in my slings four days, after which they were removed, as the horse was doing fine. Made perfect recovery. Gave 51,000 units of antitoxin.

No. 10, July 29, 1913—Owner came to my office, telling me about a fine mule that was not working the way he ought to the last three days; said he had not worked him the last day. I asked him for the symptoms and history. Diagnosed the case as probable tetanus and told him we had better go out at once, which we did and found what I suspected—a well developed case of tetanus. I gave 61,000 units of antitoxin. The mule made perfect recovery.

No. 11, Aug. 8, 1913—Was called to see a yearling colt. Found the colt affected with tetanus and his foot in a frightful condition. The foot was at-

tended to and kept the leg in a strong solution of disinfectant for several days. The antitoxin was used, 40,000 units in all. The colt made a speedy and perfect recovery.

No. 12, June 22, 1914—Owner asked me if I could do anything for a horse with lockjaw. I told him I thought so. Said the horse had been affected for 10 days. I found the horse on pasture in rather bad shape, although he could walk fairly well. I told them that there was a chance of saving him. They did not believe it and decided that if I would take the horse away from the ranch I could have him for nothing. I had the animal brought to my hospital and treated him. After giving 55,000 units of antitoxin the animal, a five-year-old horse weighing about 1,250 lbs., made perfect recovery.

No. 13, March 9, 1915—Found 1,500-lb. horse suffering from tetanus. I had him brought to my hospital, examined his feet and found pus in left front foot, caused from a nailprick. I cut out the nail hole, dressed it daily in same manner as in Case No. 1 and gave 60,000 units of antitoxin. He made a perfect recovery. The owner of this horse is the same that owned Case No. 5 that I have described.

No. 14, July 26, 1915—Mule with tetanus. I treated the case, which made perfect recovery after 60,000 units antitoxin had been given. This was an idiopathic case.

No. 15, Oct. 25, 1915—At 1:30 a. m. I was called to see a three-year-old colt, weighing about 1,200 lbs. The owner told me on the 'phone that the colt was suffering from colic, as it was down. Upon my arrival I found a case of tetanus and, as the owner had been away for a number of days and had not known about the condition of the colt and could not obtain correct history from the attendant, I was undecided what to do. The poor animal had dug himself deeply into the ground in the corral. I told the owner that I was almost sure I had a hopeless case to deal

with and I advised him what the cost of the serum would be, but if the animal should die, he would die within a day or two. He was very fond of the colt and wanted to try the antitoxin. I told him about what success I had with tetanus and I would not lose my reputation by treating this case and I did not want the antitoxin to be knocked if the animal died. I gave 15,000 units and he died. This colt got infected through a bruise of the head.

No. 16, Nov. 25, 1915—Was called to see a large three-year-old horse colt, weighing about 1,400 lbs., suffering from tetanus. I treated the case with success. He made perfect recovery after 70,000 units of antitoxin had been given. The peculiarity about this case was that on the fifth day the owner rang me up and told me the animal was breathing very heavy and rapid, and was practically unable to stand on his feet. I went out and found the animal was foundered. I told the owner not to worry. Here is a case where leukocytic extract (Archibald) was used and six cc. of same was given intratracheally once daily, until 42 cc. had been given. This is the first of my cases of tetanus where laminitis was also present.

No. 17, Jan. 17, 1916—A case of tetanus was brought to me. I advised them the same as everybody else about the price, my success in those cases, etc. The case was brought to my hospital. A deep wound was found, caused from collar gall. I burned same out thoroughly with a red hot iron, then injected a strong solution of disinfectant. The third evening the animal did not look quite as well as she should. The next morning I saw her early. She was the same as the night before. I watched her off and on the whole forenoon; she grew worse and I brought her out to the corral, where she fell and I then had her shot. I gave her 24,000 units of antitoxin.

DOG CASE, Jan. 12, 1916—A dog was brought to me with tetanus caused from a foxtail which had entered between the

toes. The only thing I did to him was to operate on the foot; disinfected and dressed it twice. Stimulants were given hypodermically but with no results. The third day I destroyed the dog and just prior to the injection of hydrocyanic acid into the heart, I took a picture of him, which will accompany the story. Notice the tail, the gluteal muscles and the legs. The eyes were almost covered by the membrana nictitans.

In conclusion I would say that in spite of all of the reports of unsatisfactory results from the use of this serum, I have the greatest of confidence in it and with very good reason, I believe, when the results I have obtained are considered. All of the antitoxin used was that made by The Cutter Laboratory at Berkeley, Cal., and upon inquiry I find that it is the usual practice to place a liberal excess of units in each package at the time it is put up to take care of any loss of potency during its market life and, as I obtain the serum in small lots so that it may be as fresh as possible, the actual unitage given in each case is well in excess of the unitage indicated upon the label on the package, which unitage I have given in this report. I always keep 9,000 units on hand in my office.

I believe a great many that have reported very poor results will save a good many of their cases if they will use as much of the antitoxin, or even more of it, than I have here suggested.

TREATMENT OF PROLAPSE OF THE RECTUM WITHOUT SURGICAL INTERFERENCE

The theory of this treatment is based on the fact that the anus has a powerful muscular contraction, sufficient to shut off the blood supply of the protruding rectum and causing it to slough, but leaving adhesions holding the rectum in normal position with the anus.

Case No. 1. I was called one hundred miles to see a fine cow and found a rectal prolapse of eighteen inches; parts badly

inflamed. The animal was taken off feed, the parts cleansed thoroughly and the tail tied up to prevent irritation. Lukewarm enemas were given to loosen the passages, and in a few days the prolapsed part sloughed, leaving the healthy rectum adhered to the anus. From appearances, one could not tell that anything had been wrong.

Case No. 2. Matured horse belonging to Mr. Jalide. Prolapse of about twelve inches, greatly inflamed. The animal was taken off feed, and cannabis indica given to lessen straining. The parts were cleansed, tail tied up, and enemas given two or three times daily. In a short time the parts sloughed, leaving the rectum healed solidly to the anus.

Case No. 3. Yearling colt belonging to Mr. Jarman. Prolapse as big as two fists. Same treatment as others and perfect recovery.

Case No. 4. Two-year-old belonging to Mr. Bills. Same treatment and perfect recovery.

Case No. 5. A sow belonging to Mr. Hall. Taken off feed and left alone. Entire recovery.

Citing these cases, will say that so far I have never had anything but success from this treatment.

H. R. ERSKINE,
Non-Graduate Veterinarian.
Twin Falls, Idaho.

AN OFFICIAL EMBLEM FOR THE A. V. M. A.

At the last meeting of the A. V. M. A. the President was directed to appoint a committee to collect data and information concerning a national veterinary emblem and make recommendations for the adoption of an emblem by the A. V. M. A. at the next meeting.

The committee appointed desire to obtain all the data and information possible on this subject and ask that all members of the A. V. M. A. and veterinarians interested in this subject to forward to the office of the chairman all information available concern-

ing veterinary emblems used in this and foreign countries, as well as any original ideas concerning a desirable emblem to be adopted by the national association.

It is the desire of this committee to obtain as complete information as possible concerning all veterinary emblems now in use as well as to enable every veterinarian in America who so desires, to submit designs for the consideration of the A. V. M. A. Please forward all information and suggestions to the chairman of the committee on emblem, Otis A. Longley, box 963, Fresno, California. Matter for publication may be sent direct to Dr. D. M. Campbell, Evanston, Ill., who is also a member of the Committee on Emblem.

OTIS A. LONGLEY.

Fresno, Calif.

OPERATION FOR IMPERFORATE ANUS IN A CALF

A very interesting case came to my attention some time ago when called in to operate on a calf which had been born the day before. I found that the calf had an imperforate anus, and after operating, discovered that the rectum extended only a little way through the pelvic cavity and then looped on itself and extended forwards. I learned this last on post mortem examination. The calf had three tails and two scrotal sacks, each of which contained two testicles. It died while undergoing the operation.

F. C. HERNDON.

Rocky Mount, N. C.

EVERSION OF THE UTERUS IN THE SOW

On April 2, 1915, a farmer called me to his farm by 'phone, saying that he had a sow that had "cast her weathers." On arriving at the place, I found the sow with inversion of the uterus. I told the farmer that I had never met a case like this in the sow but that I had seen it in other animals. I advised removing the womb with an emasculator, which was done. She made a complete recovery,

was fattened and sold in about four months. I have seen several cases like this but always the sow was dead. This being the first case I ever treated and my being successful, I thought it might be of interest to other practitioners.

W. S. WALLACE.

Phoenix, N. Y.

RELATIONSHIP OF VENEREAL DISEASES OF ANIMALS

I wish to express my approval of the opinions of Drs. Williams and Giltner, held in regard to the relationship existing between abortions (premature births, still births and birth of weaklings), retained after-births (and all that goes with them), and sterilities.

I am wondering also if we will not find sometime that there is a further relation of these troubles to the exceedingly large number of cases of granular venereal disease, to certain forms of mammitis and to certain forms of calf scours.

It is possible, that some of us try to swing the pendulum too far in the direction opposite to that held in the past; yet without doubt or fear of successful contradiction, one may say that few veterinarians appreciate the significance of these relations. Many perplexing problems can be very satisfactorily explained upon this basis. Like many other diseases, it has been very improperly named and gives us very little of its scope and meaning in its name.

Most of us used to think that we had almost as many causes for abortions as we had abortions occurring. This certainly cannot be true, although it is possible to have other causes than specific infections, yet by far most of them undoubtedly do result from infection. This is to my mind satisfactorily proved by the failure of other agents to produce their effects in the majority of cases under like conditions and especially the failure to get results from our specific abortifacients.

For several years, twelve or thirteen we have had under observation a dairy herd of approximately fifty head, in

which some years various antiseptics, so-called specifics for this trouble, have been rigidly employed. Other years, no attempts have been made to cut the trouble short, with practically the same results in all cases. We, therefore, cannot see how this trouble is to be controlled by the measures which have heretofore been so largely recommended.

Many of the similar conditions as found in cattle also exist in other classes of animals, particularly the deleterious effects upon the offspring, metritis and sterilities of the females—few sterilities occur in entire males. Many of these troubles can be most satisfactorily explained upon the ground of infection. The proof is all but positive that each class of animal has its own specific venereal disease or diseases. Like human venereal diseases (so named) there are possibilities of other modes of infection than through the means of sexual intercourse.

G. A. ROBERTS, B. S., D. V. S.
West Raleigh, N. C.

EIGHTH ANNUAL VETERINARY CONFERENCE

Ithaca, N. Y., Jan. 11-12, 1916

The eighth annual conference of veterinarians was held at the New York State Veterinary College at Ithaca, N. Y., on Jan. 11-12, 1916. The conference was opened by Dean Moore on January 11th at 9 A. M. He spoke of the evolution of veterinary knowledge, laying particular stress upon the advancement in knowledge of hog cholera and its control, giving as his opinion that the power of complete control is already within our grasp.

Following Dr. Moore, Dr. Williams presented a paper on "Lead Poisoning in Cattle." The speaker stated that this ailment is far more general than is usually diagnosed. He recited the symptoms attending the obscure death of several of the college experimental herd, where careful post mortem examination revealed nothing definite; finally the peculiar articular character

of the ailment directed his attention toward the possibility of lead poisoning. Further observation on other herds leads him to believe that any painted utensil, wall, piece of board, etc., that may be entirely unsuspected is often the cause of lead poisoning and should be guarded against. This paper was interesting and was discussed by Drs. Mayo and DeVine.

"The Hookworm in Dogs" was the subject of Dr. Muldoon's paper. The fact that this disease has apparently been carried to colder sections than heretofore, it behoves those who have canine practices to familiarize themselves with the symptoms of this disease. Dr. Muldoon's paper covered the important phases of this disease as far as present knowledge would warrant. The paper was discussed by Drs. Mayo, Reichel and Nichols.

The next paper was one by Dr. Udall, the caption being "Diagnosis of Swamp Fever."

According to the author, the disease is manifest both in acute and chronic form, and that there is much danger of confusing acute swamp fever with other diseases, particularly influenza. The disease is known to exist in St. Lawrence County, N. Y., and probably does exist in other sections of the state.

He recited the various symptoms and pointed out as the most constant symptom the icteritic condition of the mucous membranes. The accompanying fever may be intermittent or remittent. Appetite irregular and difficulty in swallowing. Dilation of the anus is quite constant; may be a slight nasal discharge streaked with blood. Summed up, we have the symptoms of an acute septicemic disease. Blood seems thin and serous in character and lighter in color; does not clot readily.

Chronic form—Symptoms very indefinite. Positive diagnosis can only be made by transmission of the infection to another equine by blood inoculation.

Van Ness in his report states that the urine is virulent. Dr. Udall has not

been able to transmit the disease in this way.

Japanese authorities claim that the disease is transmitted by the horse fly; others deny this.

Dr. Fitch discussed this paper, having done some research work in cooperation with Dr. Udall. He stated that swamp fever was a misnomer, as is also pernicious anemia, having no similarity with those diseases in man. Perhaps infectious anemia is the best name. He suggested that the practicing veterinarian make a blood examination where the disease is suspected, and exhibited a simple apparatus for determining the hemoglobin fairly accurately. He pointed out that while the normal horse was 85 to 100 per cent in this disease, it may go as low as 15 per cent; he also stated that the red blood corpuscles are seriously affected as to number being reduced in some cases as low as one million against six to eight million of normal blood.

The number of leukocytes usually not appreciably affected and the lymphocytes apt to be increased.

In conclusion the author stated that this information, with the history and symptoms are the only aid we have in making a diagnosis other than animal inoculation.

Dr. Mayo stated that some report good results in treating this disease with sodium cacodylate.

The next subject was an interesting discourse by Dr. John Adams on "Necrosis of the Lateral Cartilage."

Dr. Adams deviated from his subject at first in order to give some data to those interested in the operation for the relief of roaring. He stated his records showed the result of some 350 cases operated on, that there was a complete recovery in about 70 per cent of horses carrying a high percentage of thoroughbred blood. About 20 per cent improved sufficiently to do work without distress and about 10 per cent showed no improvement, some being worse than before they were operated upon. His records further showed that the operation is

not so successful in coarse bred animals. That the number of complete cures averaged about 50 per cent—25 per cent were helped to usefulness and the balance being either worse or not improved. Fatalities are rare when proper attention is given to the preparation of the animal and to watching to avoid suffocation after the operation. Dr. Adams believes it always safer to use a tube, placing it in immediately after the operation and leaving it in for from four to six days and nights and then out during the day time and in during the night for a few days longer. He does not advocate the double operation where only one side is affected. He also cuts the cricoid cartilage believing it gives better drainage, and lays particular stress upon the necessity of always avoiding injuring the arytenoid cartilage in stripping the ventricles.

Proceeding to the subject of quittor he reviewed the structure of the field of operation and the cause of necrosis, pointing out that the season influences the cause; that the most common cause in summer is injury to the sole and wall, whereas in winter, skin injuries and subsequent infections are usually the cause.

As is characteristic of the speaker his talk was thoroughly practical and comprehensive. He brought out many of the little practical details such as the uncertainty of caustics, and the danger of applying them to the anterior border of the cartilage owing to its close proximity to the pedal joint. He believes that the removal of a necrosed cartilage is the proper method of treatment, but has long since abandoned the Byer operation, and described in detail a method that he prefers as he has found it simpler and more satisfactory.

He pleaded for complete anesthesia in all these cases and reviewed the danger and difficulty in applying it, and how to overcome them either in a well equipped hospital or in the open field in a rural district.

Following Dr. Adams, Dr. Eichhorn opened the symposium on "The Therapeutic Value of Biological Products."

He read a splendid paper and touched on the many sides involved in this important subject, pointing out the necessity of some knowledge of the phenomena of immunity in order to intelligently apply these products. He reviewed their increased usefulness in application during the past few years. He explained how passive immunity can be produced by injecting into the body the products (serum containing antibodies) of an actively immune, even in some cases this product acting as a curative agent.

He similarly dealt with the subject of vaccines and bacterins, defining them and their usefulness also enumerating the different uses which these biologic products may be put to, classifying them as prophylactic, curative, diagnostic and virus bacterins.

He emphasized the necessity of careful technic of administration and the importance of the proper destruction of containers that have held a virus.

He spoke particularly of the present apparent success of the serum for white scours in calves. A very serious malady the control of which is of great importance to our livestock industry.

He further touched on the use of biologies as diagnostic agents and their great value to the veterinary profession in detecting occult cases.

Dr. Eichhorn was followed by Dr. Mayo who in a most capable and interesting way introduced the producers side; comparing the uncertain action of medicinal agents with the more certain action of biological preparations; speaking of the later as natural agents and admitting that we are only on the threshold, but predicting a marvellous outcome. Pointing out that even with our meagre knowledge we are sometimes getting results from these products without really knowing why. For instance the control of hog cholera with serum. He admonished all to look into the proper application of these biological products and not to jump at conclusions or use them so miscellaneously as to bring disappointment to the user and discredit wrongfully to the product.

We take the privilege here to endorse this very good advice, agreeing with Dr. Mayo that the proper knowledge of the method of preparation, nature and use of these products and the proper selection of cases is the only method whereby their application can be made of greatest benefit to animals and mankind.

Drs. King of Detroit and Reichel of Philadelphia further discussed the subject as producers' representatives and these two very able men reviewed the great precautions necessary to produce these products with standardized safety and merit and left no doubt in the minds of the listeners that a properly trained veterinarian holds an important post with these reliable commercial houses whose equipment, both in apparatus and scientific workers are second in no way to either state or governmental laboratories.

We congratulate such firms on having men as able as Dr. Reichel and Dr. King and we likewise congratulate such men for the things they are not only doing for their employers but for our profession, in raising and maintaining its standard.

These scientists were followed by practicing veterinarians, Drs. Buchanan, Beebe, Faust, Williams, Udall and DeVine taking part in the discussion.

The meeting then adjourned to meet at 8 p. m. In the absence of President Schurman, Prof. Scheerer welcomed the conference to the campus and spoke of the mutual advantage of a conference of this sort both to the faculty of the college and the practitioner. He extended a broad welcome not only to the Veterinary Department of the University but to the entire University assuring those present that they would receive courteous treatment and be welcome visitors wherever fancy took them.

The address of the evening that captivated all was the one by Dean Cook. The Dean is a man of mature years and large experience. He has driven the family horse, milked the dairy cow and so followed the trail of agriculture through its various ramifications until he finally settled in northern New York

as dean of the Canton Agricultural School.

He is truly an agricultural philosopher, and his incisive humor kept every one of us eager to catch his every word of wisdom. The Dean paid a tribute to the progress of the veterinary profession and ridiculed the superstitions and empiricism of the past.

He depicted in an amusing caustic way what he styled the "patent medicine age" and the necessity of its elimination and agreed with the veterinarian that the dissemination of knowledge among stockmen in the way of prevention of animal diseases is one of the important functions of the profession today. He pleaded for the coöperation of all forces, for the elimination of animal diseases and ever keeping in mind the healthy animal as the goal to seek for; giving it as his judgment that a certificate of health is of more importance than a certificate of registration.

Following Dean Cook Dr. Stone made a few remarks on the new state law requiring annual registration of licensed veterinarians.

This closed the evening's literary programme and we then adjourned to the museum where we were entertained by the student body.

The morning of the 12th, the session was opened by Dr. W. L. Williams, presenting a paper on Infectious Abortion. He discussed the varied opinions as to the habitat of the pathological organism associated with this malady. He stated that 90 per cent of calves raised on un-boiled milk give a blood reaction. He believes that where infection takes place by the alimentary canal that it is due to infection by milk during the milk taking period of the calf rather than by herbage in later life. He also stated that a large percentage of breeding bulls react to the blood test and he believes the bull plays an important part in the dissemination of the disease.

He believes that the elimination of the disease should begin by guarding the calf from infection and while it is prob-

ably safe to leave the calf with the dam (by giving special attention to the udder in the way of antiseptic, cleanliness) during the first week, that after this the calf should be removed and fed upon sterilized milk.

It was further his opinion that isolation of an aborter in a herd, is of no value other than a good sanitary principal to observe.

He considers parturition normal only when you have prompt expulsion of the fetus followed by prompt expulsion of the fetal membrane. The paper was discussed by Drs. Way and DeVine.

Dr. Williams for sometime has been specializing in diseases of animal breeding. He has done considerable original research work on granular venereal disease and abortion, with its relation to sterility, and we predict some valuable information as the outcome of this thorough student's efforts.

Following Dr. Williams, Dr. Frank Miller of New York, addressed the conference taking as his subject "Time is Money."

He spoke of the ever shifting of clientele, pointing out the necessity of lessening this and giving more particular attention to every case and every client, making plain how little things and attention to detail are the important things after all.

Dr. Miller's advice was good, sound and very interesting.

After finishing his remarks he showed some excellent slides pertaining to parasitic diseases of dogs; his remarks were discussed by Drs. Fitch and Adams.

Dr. Milks next presented a paper on "Verminous Bronchitis in Dogs" stating that it was a comparatively rare disease in dogs and that the lesions differed from similar diseases in larger animals. He reviewed the history, symptoms and post mortem findings of several cases coming under his observation; and enumerated the sanitary precautions necessary to prevent the disease, since any known treatment up to the present time is of no avail.

The next paper was a very interesting

one to veterinarians having to do with dairy practice. It was by Dr. Harris Moak, of Brooklyn, a specialist on certified milk production. Its title was "Mastitis." This affection always causes high bacterial count in the milk; it usually affects one quarter, sometimes more and may continue as a subacute condition for years.

Ordinarily this affection can be detected in the milk a few milkings after infection by special straining with a close mesh strainer, the milk from each quarter separately.

He condemned the practice of milking the fore milk on the floor, a thing that is at once objectionable and has long since been condemned by those having a sense of cleanliness.

Dr. Moak believes the infection is largely an external one, and the practice of dipping the teats of all cows *after milking* in a mild solution of such preparations as Pixolo, or Westcole and the disinfecting and rinsing of the hands after milking each cow, has proved to be of great advantage in controlling this and other teat troubles as well.

Following Dr. Moak's paper we adjourned to the clinic rooms where several interesting operations were performed.

In the evening we met at the Clinton House and banqueted with the Society of Comparative Medicine.

There were several post-prandial speeches and great interest centered in anticipation as to what Drs. Adams, Miller and Mayo would say. We were not disappointed in any one of the three gentlemen as they dispensed good advice in a modest but scholarly way, and proved again that the "big man" is quite at home whether attending to professional duties or gracing a social or literary function.

Before adjourning the Society sent to that "grand old man," Dr. Liutard, a cablegram expressing sympathy for the loss of his beloved wife, and loving good cheer for his future.

Goshen, N. Y.

J. F. DeVine.

SOME "ROTTEN" THERAPY

I would like to speak of a case of fistula that I have treated in the last two years; one of them especially has just gone back into harness and was much more protracted than the first one, as I shall presently show. This case was a fourteen-year-old grey mare weighing about 1,400 pounds, owned by a dairy firm and used for hauling feed and excrement to and from the barn. When my attention was called she had two large swellings one on each of the shoulders, with large openings on each side well up on the top, with a good deal of swelling in front of right shoulder, extending some in front of the scapula. On probing that side I found two cavities extending some six or eight inches down on the side of the shoulder; the other side only one about four to six inches deep. The mare was in bad shape, standing with front legs crossed most of the time, poor appetite—almost none. I proceeded to open the fistulas or cavities at their lowest point and thus get complete drainage.

I saved some of the pus; put it in a glass container which would hold four of my dose syringes full of water, added one tablespoonful of this pus, I gave her one syringeful of the mixture every two hours till four doses had been given and had her turned loose on some not very good grass, for it was not to be had at that time of the year, and ordered her fed liberally, if she would eat them, of rolled oats.

After three days I had them gather some more of the pus and repeated the treatment. In five days I again renewed the treatment, and so continued every five days. At about the 25th day the mare was improving and it was with difficulty the pus was procured for me. At the end of the month's treatment the mare was taking on fat very fast and I could procure no more pus, but succeeded in obtaining some of the dried material that had lodged in the hair and had not been cleaned off, and so gave her another treatment as at first.

I had on hand a trial package of polyvalent bacterins given me by my druggist. It contained six ampules and being quite busy and everything going along so nicely with the mare, after showing the owner how to do it and explaining everything as best I could, left a hypodermic syringe and the bacterins with him to be given according to directions on the box; the first dose to be given in seven days. The seventh day he gave four ampules two hours apart, as I had given the diluted pus. The third day afterwards he wanted me to see her and you can imagine how she looked; about as bad as ever, only she was not reduced in flesh and did not stand cross-legged.

After ten days the immense swelling went down and I gave her the remaining ampule and she improved again very fast, but this taught me a lesson. I procured a package of staphylococcus bacterins and have given her four doses and perhaps will not need to give any more. As I said before, the mare is in harness every day and is doing fine. I believe had I had plenty of time I could have recovered this horse entirely with the first treatment, but I do not certainly know, for I have on all of my former cases, after the lesions have ceased discharging, given a few doses of staphylococcus bacterins and thus far have had no failure out of many cases.

Oregon.

D. D. K.

COMMENT: This is truly a case for the facile pen of "The Itinerant Horse Physician"; none other can quite do it justice. He should have known of it to describe along with the old fellow who gave "green chicken guts" for all kinds of colic. And some of them got well, just as the above case did after good drainage was established. Intestines for intestinal ailments and pus for suppurating condition—*similia similibus curantur* with a vengeance. Next some one will give teaspoonful doses of crushed bone for fractures and phonograph records of coughing for tuberculosis.—EDITOR.

LIVE STOCK SANITATION IN ILLINOIS*

By Dr. O. E. Dyson.

I find in the preface to the program of this meeting a platform that practically covers what I had in mind today. I didn't see it until I opened this program a few moments ago, but it fully expresses what I want to express to you this afternoon. There may be quite a number here who have not read it; it reads:

"Now, as never before, we are confronted with conditions which call for the very sanest deliberations of the Association. As a profession and as individuals our work is being scrutinized by the public as it has never been scrutinized before. We are on the rack of public criticism, unjustly we know, but nevertheless on the rack. With this in mind it behooves the whole profession to gather together in a great convention to show that we are a body of resolute men, banded together, not for personal aggrandizement, but for the good we can do for the interests of which we are *ex-officio* custodians."

I don't believe it would be possible to get more into an article on this subject regardless of length than Dr. Merilat has put into this paragraph. I don't believe that more could be said that would apply to the present conditions. I want to give the secretary due credit for that.

I was last evening elected president of the largest live stock sanitary association in the world. I by no means consider my election as a personal compliment or as a personal favor. It is simply a vote of confidence in the veterinary profession at large, and particularly a vote of confidence in the veterinary profession in the state of Illinois. We have certainly during the past year gone through the mill, and we have demonstrated beyond the

*Extemporaneous address at annual meeting of Illinois Veterinary Medical Association, Chicago, December, 1915.

question of a doubt that we can handle the most highly contagious disease known in connection with the live stock interests, and it simply sets an example. We have demonstrated that we can control it.

Now, if we can control foot-and-mouth disease, why can't we go a step farther and control less contagious diseases for the benefit of the live stock interests of the State of Illinois? The success of the live stock producer unquestionably depends upon the veterinary profession if a man is going into a business that is hazardous such as the production of hogs. The breeding of hogs nowadays is a hazardous undertaking. A man starts out this year and doesn't know whether he will have anything for market or not, regardless of the fact that serum plants are being developed over the country like mushrooms. It is up to the veterinary profession to control hog cholera.

I had no hesitancy at our last meeting in stating that, regardless of the cost of eradicating foot-and-mouth disease, I thought that the outbreak would be a blessing in disguise. I had no idea at this time last year what we would be compelled to go through in order to accomplish our purpose; but having succeeded I consider we are now, or at least should be, open for some other engagement.

I am very sorry indeed that our live stock sanitary force does not comprise a larger number of representative men. I think that you have been very, very negligent, had our force been twice the size it is, we would have handled the outbreak much more successfully. I want to give due credit, of course, to the assistance we received from the Bureau of Animal Industry; but I honestly believe that we have a force of veterinarians in the State of Illinois that is sufficient unto itself to handle any kind of an outbreak. I don't care if it is foot-and-mouth disease or what disease. It is simply

a question of getting together. Now the gate has been wide open, and every veterinarian in the State of Illinois, that is every graduate veterinarian, as only those who are graduates are considered eligible, is given an opportunity to take the civil service examination, and any veterinarian who takes an examination and passes that examination would receive an appointment as Assistant State Veterinarian. There is no question but that any man who is entitled to the position of assistant state veterinarian can pass the examination. We could go further if we wished and throw the gate wide open and make appointments, but it would not be possible to do that without throwing the whole works into politics, and if you are going to have a live stock sanitary force, you have to keep it out of politics as it won't mix except at the expense of the live stock producer in the state. That is a thing I hope we shall always be able to avoid.

How many members has the association, Dr. Merrilat?

Dr. Merrilat: Four hundred and thirty-six whose dues are paid up, and perhaps 200 laggards, who according to our by-laws we cannot count.

There is no reason why we should not have four hundred and thirty-six assistant state veterinarians, and if we could get four hundred and thirty-six assistant state veterinarians, instead of the State of Illinois being in the condition it was a few years ago, it would be at the head of the procession. We were tail-enders for a great many years. The live stock breeders were unable to make interstate shipments. We were discriminated against to the detriment of the live stock producer and the detriment of the veterinary profession. There is no question about that. I think we have two states now that still hold out against the certificates of health from the State of Illinois, but since we succeeded in being released from Federal quarantine on

account of the foot-and-mouth disease, I understand they are ready to come across and accept our certificates.

I hope that we may be able to get into a little closer touch with the live stock producer. I think that every county in the state should be represented by a live stock sanitary force, that is, I think there should be co-operation between the veterinarians and the live stock producers of the respective localities. I believe in a county organization that would undertake to organize in each county, so as to bring the veterinarians into closer touch with the live stock producer and secure his confidence—that is the thing we must ultimately depend upon, the confidence of the live stock producer in the veterinarian of his locality.

When we were called upon to fight foot-and-mouth disease, we had no opportunity whatever to perfect our organization, and in fact, although it is hard to say, I know only a comparatively few of our assistant state veterinarians personally. I regret it very much, and I had hoped by this time to have a personal acquaintance with every member of the force, but have been otherwise engaged during the last year, and I hope within the coming year I will have an opportunity to get personally acquainted with the entire force, and I hope it will be doubled or trebled by the end of the year and that we will succeed in our county organization plan, which will ultimately build up the profession and get you into closer touch, not only with the live stock sanitary affairs, but with the live stock producer at large.

In addition I want to say that, during the last outbreak or during our trouble, I have had the unqualified support of the State Board of Live Stock Commissioners in every step that was taken. I also want to give Governor Dunne due credit. Governor Dunne has taken an active per-

sonal interest in the live stock sanitary affairs in this state, and he has supported me in every step. I think you are all aware of the positions I have been in from time to time and that I absolutely had to have support. A support of the profession and the back-state veterinarian doesn't amount to much in this state unless he has the ing of the government. In fact, you can't get very far. That has been the trouble heretofore—the higher officials have never given the state veterinarian any support, and he might as well sit down in his office and draw his breath and his salary and not go looking for trouble, unless he can secure that support. I, however, have certainly been well supported.

I believe we gave the Bureau of Animal Industry credit for the assistance that they have rendered in this outbreak. If I haven't, I want to do so at the present time, and I wish to repeat that I trust that we veterinarians, particularly the members of this association, will take advantage of the opportunity to become members of the live stock sanitary forces in the State of Illinois by qualifying to act as assistant state veterinarians, and assure you that there will be no question raised the moment you are certified as being eligible to the position according to the civil service regulations.

PHLEBOTOMY FOR FORAGE POISONING

Dr. C. E. Lucas, Olney, Ill., reports good results in even bad cases of forage poisoning from jugular phlebotomy. He abstracts six to eight quarts of blood in bad cases and claims to have turned a number of apparently hopeless cases toward recovery with a promptness that would leave little doubt as to the merits of the treatment. The patients although sometimes unmanageable must be controlled by force until the vein can be opened and the desired amount of blood is with-

drawn. The improvement begins in a few hours.

HIGH FINANCE AT BUNCH-GRASS

By E. T. Baker.

"Stung agin'," burst forth old man Skeets, full of indignation. "Ef thar is enny bunko game agoin' aroun', it shore never misses Bunchgrass, Idyho!"

"This was as how it all happened. Sum of us bin lookin' fer a thurrowbred Percheron stallyon, an I was to be gen'ral manager. I never told nobody ceptin' a couple travelin' men, so you see it was kept pretty mum.

"One day, week afore last, a ruther big, ham-faced guy hove into our burg. He registers at th' Grand Central, an' asts Pete to give him th' best room an' bath what is in th' hotel. Peter says 'I aint got no time to give ye a bath, but I'll give ye room 101.' That meant th' fust, fer Pete began countin' from one hunderd, thinkin' it sounded more metro-polican, an' bein' as they are only nine rooms in all.

"Nex mornin' th' guy eats breakfast about half-past nine, usin' a napkin an' hollerin' fer a finger bowl, Pete says, an' then starts rantin' aroun' our thrivin' city, finally endin' up at th' Last Chance Livery an' Feed Stable."

"Mornin'," he says, pleasant like.

"Mornin'," I answers, spectin' he wanted a rig.

"Is you th' boss?" he asts.

"Yes sir," I assents.

"Ah-h, Mister Skeets, I b'leeve," he begins. "Be you enny kin of General Ras Skeets, of Banker Hill, Massychu-sets?"

"I don't know th' ol' gent," says I, "but my grandfather on my wife's side come from th' old Bay State."

"Zasso?" an he smiles all over. "Well! I do declare if you ain't one of th' Bill Skeetses, ain't you?"

"Mebbe, pardner, my old man's name was Bill, when we lived back in Lame Duck, Nebrasky," I says, wonderin'

what in Sam Hill he was tryin' to git at. Then he steps forrud an' shakes my hand.

"Wall, by gum, who'd ever think it! A meetin' a cuzzin way out here in Idyho. Why, man alive, my old dad and yer mother was brother an' sister. My name is Spriggs—J. Quincy Spriggs, of Fargo, North Dakotay.

"Cuzzin Skeets, I want to do you a favor. I got a stallyon, imported Percheron, four-year-old, iron grey, sound as a dollar, gentle as a kitten, an' a prize winner where ever I've showed him. He'd take th' blue at th' International, only I never ain't had no time to show him thar. He's bred in th' purple, as you'll see, when you get your lamps on his pedigree."

He continers:

"Cuzzin Skeets, you know as well as I does they ain't no use windjammin' 'er blowin' about a hoss to you. Men I've met all over th' state tell me Bill Skeets is jest about th best jedge of hoss flesh in th' state of Idyho."

I nodded, modestly of course, but liken' to hear th' truth onct in a while.

Mister Spriggs then says: "Now, Bill, ef you an' I wasn't in the same family, I wouldn't never put you next to this, but I'm offerin' this hoss fer three thousand cash—dirt cheap." Gittin' closer to me he kind o' whispers: "You git a comp'ny to buy 'im, and Ile slip you a share fer five hundred fer yer trouble. See!"

Thet listened pretty easy; me to git up a comp'ny when it was already got, only, of course, he didn't know it.

I says: "Mister Spriggs, Ime yer man. Wished I had more relatives like you an' less of what kind I got."

I hustles roun' and soon landed up five big hoss owners to sign up fer one share of five hundred each, me a headin' th' list. I takes Mister Spriggs aroun' in my rig, tellin' 'em all what a good feller he was.

Mister Spriggs gits the notes all signed up, includin' mine, only, of course, I was to get mine back, nobody else knowin' it.

The papers, showin' his pedigree, Mister Spriggs says, was en root from Cheecago, where the secretary of th' Percheron association lived next door to his father-in-law. He said he would have everything straighted up O. K. afore he left Bunchgrass, payin' Pete a week's bord ahead.

Cordin' to law a deputy state vetinary has to examine every stallion an' give him a license, so I writes over to our nearest one, and he writ back he would be over Thursday next.

Tuesday come an' Mister Spriggs gits a telegram from his brother-in-law at Seattle, sayin' his sister was very low with peristalsis of th' bowels, I guess, an' fer him to come immejitly. Unbeknownst to me, Mister Spriggs cashes the notes, includin' mine, at th' Fust National, fer twenty per cent discount. With tears in his eyes, Peter said, he packed his grip, an' went.

Thursday th' deputy come. Lookin' at th' hoss, he asts:

"Where's yer pedigree?"

"Pedigree!" I echoes, plum clean fer-gittin' all about that. "Oh! That's a comin', but it ain't here yet."

"By th' looks of them hocks it will come by frate, I guess," he says. "I can't give no license to such a thing as that brute!"

"Why?" I enquires.

"See them thurrowpins?" an' he pints out puffs big as a good egg, when you notise 'em. "An' they is a small ring-bone on th' left front foot, besides he looks like he bin nerved too." He asts:

"Where's yer test chart fer im?"

"What test chart?" I blurts out, gittin' all het up.

"Why, cordin' to law, all hosses comin' into this state must be tested fer glanders."

"Oh!" an' a suddint light dawned on my mind, "you mean th' moline test!"

"Yes," he says.

"I—I ain't got it jest now. By gosh I lost it, now I remember," I says. "You go ahead and do it, Doc, an' I'll stand fer th' cost," seein' I was in fer it.

So he does an' it costs me a ten spot. After he had finished his test, awaitin' fer th' pedigree to blow in from Cheecago, up drives a guy what inter-dooed hissself as Sheriff from Fergus county, Montany.

"I air lookin' fer an iron grey hoss," he begins, "an' I heered you'ns had one down here. No harm dun if I take a peep at im!"

"Sure not!" says I, leadin' him in th' barn.

"That's 'im," he says. "He was rustled cross th' mountings last month, an' I guess we'll ship im back, to home sweet home," he says.

I telegraphs Seattle fer Mister Spriggs' brother-in-law, but the cheese of police answers an' says they ain't no such guy in th' dirookery. Then it dawned on my mind quick as wink, Mister Spriggs was no relative of mine at all, an' I was gyped. There I was out of feed; th' price of a molin test, an' a week's hard work. Friday last, the bank notified me my note was due fer payment th' fust of th' month, besides th' other five signers is a goin' to sue me fer helpin' a swindler obtain money under false pretense. Dog-gone these here studhorse deals, anyhow.

E. T. BAKER.

Moscow, Idaho.

STRANGUARY FROM CONCRETIONS IN THE SUB-URETHRAL DIVERTICULUM*

This is a condition which occurs in cows of moderate and old age and may become evident in some cases within a month or two after a difficult parturition. The latter form is probably the result of uterine discharges or debris, such as hair, being forced into the diverticulum during the difficult labor and acting as an excitant to its lining membrane. The resulting catarrhal excretions collect around the debris as a nucleus, forming sometimes in the course of two months, a concrete mass of the size of a hen egg.

In other instances the concretion may

*Reprinted from "Special Cattle Therapy."

be due to the collection and inspissation of catarrhal discharges from no particular cause.

These concretions have the appearance of and are of nearly the consistency of coffee grounds. Here and there in the mass can be seen white flakes which are somewhat firmer than the other portions.

The elaboration and retention of concretions in the suburethral diverticulum produces no objective symptoms until the mass has attained sufficient dimension to interfere with the exit of urine from the urethra. When this stage has been reached the cow does not urinate quite as freely as she should; she requires a little more time than usual to complete the act, and instead of the normal gushing flow it is seen that the urine comes in spurts, an ounce or two at a time. This may go on for several weeks without attracting much attention from the owner, and without increasing in severity to any great extent.

This condition persists for a variable period depending upon the rapidity with which the mass is growing in size, and then it suddenly assumes an alarming character. The veterinarian is called and he finds the case about as follows:

The cow appears in acute pain, constantly getting up and lying down. When up, she paws and kicks at the abdomen. She ignores her feed. So far it looks like a case of colic. It is now noticed that a very thin stream of urine is almost constantly escaping from the vulva. Every few moments the cow assumes the position for micturition but the stream of urine which she succeeds in ejecting is very small. The vulva is agape and appears congested.

As the symptoms now point to a local trouble in the vagina the veterinarian makes an examination here. The hand is passed in, and when it has entered as far as the knuckles the finger tips come in contact with what at first is taken for some sort of a cauliflower growth. It seems to stick straight upwards and backwards and is movable. While the fingers are feeling for anatomical land-

marks a jet of urine shoots up from behind the enlargement and the diagnosis is readily made. If the hand is passed into the vaginal canal somewhat deeper the veterinarian discovers that the bladder is filled to the limit of its capacity.

The treatment consists of mechanical removal of the concretions. Usually it is necessary to begin the removal with a blunt curette. After a good start has been made with the curette the removal can be completed with the finger.

Immediately the mass has been removed the cow urinates normally and begins to eat. All signs of acute pain disappear instantly, although the cow may strain slightly for some time. A few small doses of fluid extract of stramonium suffice to overcome the latter. Stramonium seems to have a selective action on the parts responsible for symptoms referable to vesical irritation.

M. R. STEFFEN.

Milwaukee, Wis.

GENERAL ANESTHESIA FOR THE TREATMENT OF DISTEMPER IN DOGS

In January, 1915, I began a series of intestinal experimental work on dogs that required a number of dogs every week. The first lot of dogs, six in number, were bought at the dog pound, and four of them had distemper. All the dogs were placed in a single isolated stall. No attention was paid to distemper that four of them were suffering from. The dogs were operated on, two a day under general anesthesia. The A. C. E. mixture was used. About fifty dogs were operated upon in all. And all the dogs, I bought after the first lot, I tried to get with distemper—not a hard task—at the city pound.

After the first four dogs that had distemper were operated upon, I noticed a great change in the discharge from the eyes and nostrils, and also in the condition of the bowels. This interested me greatly, and is the reason why I wanted distemper dogs for the experiment thereafter.

The majority of these cases were destroyed after a certain length of time, and nearly all the distemper dogs made a recovery from this disease. Since January 1, 1915, for experimental purposes only, I have anesthetized about one hundred distemper dogs, with gratifying results. I am also at the present time using it in my daily practice, using it along with other treatment for distemper.

I will report a typical case of thirty days ago. Airedale bitch, ten months old, was brought into my hospital, to be spayed. I refused to operate on the grounds that the bitch had distemper; owner was obdurate, and told me to operate, kill or cure. Bitch was placed under general anesthesia (A. C. E.) and every precaution taken. Opened up abdominal cavity and found intestines of a pale starved color, in other words, a congested bowel. Tough, without any fat, and liver colored. The operation was performed and the following day the patient was given some warm milk. Bitch went home in one week. In one month this bitch grew big and strong, gained fifteen pounds in flesh and was completely cured of distemper. This patient had had distemper since she was three months old, and just carried immunity enough to hold the disease in check seven months. I cite this case as one of the many which have come under my observation and which have been cured by this new method of treatment. No case of chorea has developed subsequent to this treatment.

E. E. PATTERSON.

Detroit, Mich.

IMMUNITY

(Continued from page 206)

to a susceptible one, or in other words a mechanical transference of immune bodies from an immune animal into one that is susceptible to an infectious disease: this is *passively acquired immunity*.

Mention has been made of certain

protective material substances; before going farther we will endeavor to prove that such really exist. Metchnikoff, with the aid of Wright and Douglas, discovered that if you mix a known quantity of bacterial suspension with equal quantities of blood sera and an emulsion of healthy leukocytes, and incubate the mixture 15 to 30 minutes, and then make slides and examine under the microscope it will be seen that the leukocytes have engulfed a number of the bacteria, while on the other hand, just incubate the leukocytes and bacterial suspension and examine, and you will find the leukocytes free from any bacteria; thus proving that something material did exist in the blood serum; by many such experiments it has been shown that the nearer normal the individual from which the serum was taken, the more bacteria the leukocytes engulf; this will substantiate a previous statement, to-wit: *the nearer normal the individual, the more free from disease, or in other words, the more perfect the immunity.*

Now the question arises, are all of these material substances (immune bodies), one and the same thing, or do they differ? There are so many different names given them that indeed it is very confusing; for example, immune bodies, anti-bodies, anti-toxins, amboceptors, opsonins, etc. Late authorities are coming to believe that they are all about one and the same thing; and that as they exist in the normal individual they are not specific to any certain disease, but serve to protect the individual against all foreign invading substances. These material substances (referred to hereafter as anti-toxins), are not specific to any single disease, yet by sensitizing. They may become so.

Thus we have discussed all of the different forms of immunity known to science, and while time prevents a more intricate discussion we must not lose sight of the fact that there are many subjects and theories which are closely allied and really form a link in this great chain, the wealth of which means health.



WISCONSIN VETERINARIANS CONVENE

The second annual convention of the Wisconsin Veterinary Medical Association was held at Madison, January 18, 19 and 20. An exceptionally good program was given, among the speakers being Drs. J. V. Lacroix, Kansas City;

Hughes, Chicago; H. P. Hoskins, University of Minnesota; O. H. Eliason, Wisconsin State Veterinarian; A. S. Alexander, Wisconsin University; V. S. Larson, Berlin, Wis.; W. H. Dreher, Oregon, Wis.; R. E. Schuster, Evansville, Wis.; Herbert Lothe, Sharon, Wis. The following officers were elected for

the ensuing year: President, T. J. O'Reilly, Merrill; vice president, Herbert Lothe, Sharon; secretary, W. A. Wolcott, Madison; treasurer, J. T. Roub, Monroe; trustees, R. S. Heer, Platteville, for three years; G. H. Atkinson, Waupaca, for two years; H. E. Horel, Augusta, for one year.

Menomonie was chosen as the place for the semi-annual summer meeting, which will be held some time in July. The annual meeting next January will be held at Madison as usual.

CONNECTICUT VETERINARY MEETING

The annual meeting of the Connecticut Veterinary Medical Association was held at the Hotel Garde, in Hartford, on Tuesday, February 1st.

Eighteen members were present and the following officers were elected: President, Dr. G. E. Corwin, of Canaan; first vice-president, Dr. G. L. Cheney, of New Haven; second vice-president, Dr. F. D. Monell, of Derby; secretary, Dr. A. T. Gilyard, of Waterbury; treasurer, Dr. Thos. Bland, of Waterbury.

Doctors J. S. and E. F. Schofield of Greenwich invited the association to their town for its next summer meeting.

This invitation was accepted with much enthusiasm and several papers were promised. The secretary was instructed to confer with the Schofields regarding the date of the meeting as well as the program. The members present entered into a very interesting and lively discussion of cases; everybody seemed to be willing to talk and the afternoon slipped away very quickly.

Dr. Bland passed around copies of a booklet containing a copy of the veterinary practice laws of Connecticut and a list of the veterinarians licensed to practice in the state. This pamphlet has been compiled for the association by Dr. Bland and copies of it may be had by application to the secretary.

A. T. GILYARD, *Secretary*.
Waterbury, Conn.

THE MICHIGAN VETERINARY MEETING

The 1916 meeting of the Michigan State Veterinary Medical Association was, without exception, the best annual meeting our association has ever held, it being a booster (in a preparatory way) for the 1916 meeting of the A. V. M. A. which will be held in Detroit, and in view of this fact, our association will hold no midsummer meeting.

Every effort is being put forth to make the 1916 A. V. M. A. meeting a record breaker. It is our purpose to make this a practical meeting for the practicing profession.

Officers of the M. S. V. M. A. for 1916.

President, Geo. W. Dunphy, Lansing.

First vice-president, F. M. Blatchford, Brighton.

Second vice-president, A. B. Curtice, Hillsdale.

Third vice-president, J. S. McDaniel, East Lansing.

Secretary-treasurer, W. Austin Ewalt, Mount Clemens.

Board of Directors.

H. M. Gohn, St. Johns, six years. G. D. Gibson, Adrian, five years. J. P. Hutton, East Lansing, four years. H. M. Armour, Chelsea, three years. Judson Black, Richmond, two years. A. McKercher, Lansing, one year.

W. AUSTIN EWALT, *Sec.-Treas.*
Mt. Clemens, Mich.

OKLAHOMA VETERINARIANS MEET

The semi-annual meeting of the Oklahoma Graduate Veterinary Medical Association was held at Oklahoma City, Jan. 18 and 19, 1916. This was a very successful meeting as harmony prevailed. There was a large attendance and some instructive papers and addresses were given; also some interesting discussions upon various subjects were held. Among those giving addresses and papers were the following:

Dr. V. W. Knowles, of the B. A. I., in an instructive address on vaccination

and sanitation in eradication of hog cholera.

Dr. J. G. Eagle gave an address on the serum treatment of hog cholera.

Dr. E. V. Robnett, state veterinarian, presented a paper on hemorrhagic septicemia of cattle.

Dr. D. W. Gerber read a paper on influenza of horses in its various forms.

Dr. C. R. Walters gave a paper on the accuracy of the intradermal tuberculin test.

Dr. C. E. Steele told of experiences on his recent trip to Europe with a ship load of mules for the English government.

Dr. J. E. Nance described in an interesting manner his experiences in the Philippine Islands as a veterinarian in the service of the B. A. I.

Dr. J. S. Grove, inspector in charge of the B. A. I. at Oklahoma City, gave an address on the uplift of the veterinary profession, which was beneficial to all who were present.

Dr. Fred Eagle in an interesting talk discussed the betterment of the profession.

Doctors F. F. Meads, A. O. Hughes, J. M. Vrba, E. M. Prather, J. E. May, W. F. Hall, J. A. Lowell and F. M. Starr took part in the various discussions.

R. C. SMITH, *Secretary*.

Enid, Okla.

THERAPEUTIC DIGEST

(Continued from page 220)

should be filled to the brim with case reports and other matter from the practitioners who read them. No one, no matter how small his field or how ordinary his own clinical experiences may seem to him, should neglect to write up reports for publication on odd cases. In every locality there are some practitioners who are better versed in certain conditions, as a result of much contact with them for some reason or other, than the average practitioner.

It is the duty of these men to let the profession know that they are on earth. AND, no matter what the opinion may be in some circles, *the profession always appreciates these things.*

QUESTIONS AND ANSWERS

(Continued from page 224)

1850, "On Torsion of the Uterus in the Cow" (Veterinarian, vol. xxxiii., p. 248), and its treatment, and proposing to try rolling the animal, adds: "If I did not succeed in this way, I should proceed according to a suggestion given me by Mr. John Steel, of Biggar, Lanarkshire—viz., to make an incision between the ilium and the ribs on the right side, and try to untwist it (the uterus). If I succeeded, I should sew up the wound and allow the labor to take its natural course; but if not, I am not aware that there is any other means but that of performing the Caesarean operation. Mr. Steel, although he has not yet had an opportunity of testing its practicability, deserves the thanks of the profession for such a suggestion, and it is one which I think very likely to succeed. At any rate, if it does not, we can but perform the Caesarean operation."

The dangers attending the operation, even if reposition of the uterus is effected, are as great as its difficulties. Several good authorities have therefore recommended its abandonment, or at least its being adopted only in very exceptional circumstances.

It will be noted that the authorities mentioned were not especially enthusiastic as to the results of the operation, so it certainly should be of considerable interest to the profession to know that this heroic method of procedure has been so modified that it can now be performed with splendid success.

What is the operative technic that will enable the surgeon to overcome the almost insurmountable obstacles mentioned by Fleming and others?

J. P. FOSTER.

CAN DO BETTER WORK FOR HAVING READ IT

I am well pleased with the book, "Swine Diseases," and am better prepared to handle the diseases of swine after reading the book. I

think every practitioner should have a copy.

DR. FRANK McVAIGH.

Kincaid, Kansas.

SIMPLE DIARRHEA IN CALVES*

Diarrhea in a simple or sporadic form occurs in calves during the first few weeks of life. It may appear as early as two or three days after birth; most commonly at the end of the first week or ten days.

The bowel evacuations are performed at short intervals, the feces having a very light yellow color and considerable odor. When the disease has been active for twenty-four or forty-eight hours the calf has a dejected appearance, is listless, and does not move about much. In some cases there are slight colicky pains.

If the disease is not checked the calf rapidly loses strength, lies down almost constantly and dies, having lingered for several days in an exhausted cachectic condition.

The treatment of this condition is followed by prompt and satisfactory results if the case is taken in hand while the patient is yet vigorous. Neglected cases frequently die in spite of the most careful nursing and judicious treatment.

Calves which have just been attacked with diarrhea are given a few large doses of intestinal antiseptics. We have had most excellent results from the triple sulpho-carbolates: zinc, sodium and calcium. Calves up to weeks old we give two thirty-grain tablets at one dose, and repeat the same in about four hours. This is usually all that is required.

When a case has been neglected until the calf has abdominal pains and has become listless and weak, the treatment requires more care. The calf must be provided with warm quarters, and if the abdomen is quite tense and the colicky pains frequently recur, a weak mustard plaster is applied on the belly.

We then order a dose every hour or two of tincture of capsicum ten minims,

triple sulpho-carbolates fifteen grains (5 grs. each of sulpho-carbolates: zinc, sodium and calcium), and compound tincture of gambir half ounce. This is kept up hourly until four or five doses are given, thereafter every two to four hours according to the case. If more stimulation is necessary a small dose of warm brandy may be given now and then.

In *exceptional* cases tincture of opium may be used to advantage but it should not be used if it can be avoided. Frequently, when opium is used in conjunction to check the scours the case is transformed into a stubborn attack of constipation which proves as difficult to relieve as the disease which preceded it. In the treatment which we have outlined are contained no agents to cause the prolonged effect of opiates.

When a troublesome constipation does supervene on a case of diarrhea in calves we recommend large doses of castor oil, with a few doses of cascara sagrada. If the treatment which we have outlined is used the occurrence of constipation as a sequel will be practically unheard of.

Infectious Dysentery of Calves

This form of diarrhea in calves is very prevalent in some localities. It differs from sporadic or simple dysentery to that extent that it is very rapidly fatal. It can probably be best described as a hyperacute diarrhea.

This disease attacks calves very soon after their birth; in some cases it is present at the time of birth. Usually the symptoms set in on the first or second day and the course of the disease is very rapid and the termination fatal in a high percentage of cases.

Infectious dysentery of calves begins as an ordinary diarrhea, developing in the course of a few hours into a very grave condition.

The evacuations are at first normal in color; later they become of a pale-grey, or almost white, shade. The odor is intense, and the evacuations are accompanied by much straining. In spite of the severe tenesmus, the evacuations, which are very thin now, do not spurt

*Reprinted from "Special Cattle Therapy."

outward, but merely run down the buttocks. This region and the tail are soon very filthy and foul-smelling. At the end of from ten to fifteen hours, convulsions, and, finally, decubitus and death, occur.

The treatment of this disease has not been very satisfactory in the past. Most cases terminated in death in spite of prompt remedial measures.

Recently fair results have been reported from serums prepared from horses subjected to the effects of the colon bacillus, and this serum deserves further trial at the hands of practition-

ers. However, for all purposes in general practice, we must yet consider the handling of this disease almost wholly from a prophylactic standpoint. Pregnant cows should not be permitted to give birth in infected stables and all calves born on premises where the disease has been known to occur should at once be submitted for preventive inoculation. For all purposes of prevention the serums now in use appear to be reliable.

We are not acquainted with any form of curative treatment which we can recommend.

Memories of Old Doc Stone

By His Assistant

ONE night when Doc had gone to a lodge meetin' and I was on guard at the hospital a hurry call comes in for Doc to come right down to a barn in the wholesale district. There was a fire in the barn and a bunch of horses gets burned pretty bad.

I 'phones right over to the lodge but they 'phones back Doc left a hour ago. Then I tries his house, but his Mrs. says he ain't there and she don't have any idea where he is if he ain't at the lodge. I figures that Doc has met a couple of good fellers and is enjoyin' his night off somewheres. So I tells the deck-hand to hook up old "Spot" and I starts out.

When I arrives at the place where the call come from there is a mob of "rubber-necks" standin' around and I pretty near gets cold feet. But I braces up and inquires for the barn boss, whom I tells we can't locate old Doc and that I thought I better come down and help what I could.

The feller says as how he was darn sorry old Doc wouldn't stick around when they had a fire, but for me to go ahead and see what I could do. He takes me in and shows me the nags what is burned and I sees right away

that two of 'em is just about chokin'; they was burned around the nose and mouth and their heads looked like a barrel, so big.

Gee whiskers, thinks I; what must I do now? Then I remembers how I seen Doc put a tube in a case of what he calls purpura hemorrhagica one time, and I says to myself why won't that work here; I figured it out that they just *couldn't* breathe because their noses was all swelled shut.

I hadn't never put no trachea tube in but it looks to me like a easy job the time I seen Doc do it; so I tells the barn boss we got to put a tube in them two horses right away. And I talks right snappy about it, too, just like puttin' in trachea tubes was a everyday job with me. In my insides I was sort of shakey about it though; I was afraid maybe it ain't so easy like it looks anyhow. But, I says to myself, this is got to be did, and pretty quick, too; one of the horses was beginnin' to stagger and make such a loud noise you could hear him breath a block off, pretty near.

So I gts Doc Stone's satchel out of the buggy and tells the boss to lead the horse on the floor so we can dodge

him if he gets to fallin'. When I looks in the grip I finds there is only one trachea tube, although usually Doc carries two along. Afterwards I remembers that one is in a horse's neck at the hospital.

Well, I never forgot how scared I was to make that there cut in that there horse's trachea! Lucky he was so darn near chokin' that he didn't feel me cuttin' him; he didn't fight none, but just kept staggerin' around, mostly backwards.

When the tube is in he is O. K. right away and looks like a brand new horse. The barn boss is pretty much tickled and says, "Now for the other one." Then I has to tell him I brung only one tube. "Holy smoke! kid," says he. "chase right back and get another one." "No," says I, "I got a better scheme. 'I'll 'phone to the deck-hand at the hospital and tell him to take the tube out of that horse there, and send it right down here with a messenger boy." You see, the horse what had the tube in up at the hospital was a roarer what Doc operated on and he didn't really need the tube anyhow.

So I 'phones, and in ten minutes or maybe less we has the other tube, which I also puts in and with a little less shakin' this time.

SIMPLE REMEDIES

In spite of the large number of new drugs introduced, the old and simple remedies are able to hold their own. If an attempt were made to write a book on *Materia Medica* in the present day which should include all the preparations and drugs introduced and tried in veterinary medicine, it would indeed be a mighty tome. On considering the matter one would be excused for inquiring how it is that a market is found for the enormous number of preparations and remedies which are so freely advertised. Probably a solution of the question would be that many practitioners believe the statements put forth by the manufacturers, and prescribe accordingly. It requires a distinctly skeptical mind to

judge accurately as to the therapeutic value of any medicinal agent. A large number of observations are essential and the *vis medicatrix naturae* must be sults obtained. When we come to judge between the value of one drug and another in the treatment of any disease, a similar difficulty presents itself. Unfortunately the tendency is to draw conclusions on evidence derived from a few cases and to overlook the natural powers of recovery.

We learn much from contract practice, as in this the minimum amount of drugs is prescribed and these are usually of a simple nature. The complex medicinal agents are too expensive. Yet how do the results compare with the practice in which expense is no object? So far as we can judge, the recoveries are quite as numerous and as satisfactory.

The difficulty in the diagnosis of many diseases indicate that until we are able to ascertain the real nature of a case, it is wiser and safer to prescribe simple remedies rather than powerful drugs possessing complex actions. Of late years views on therapeutics have been greatly modified and although the orthodox believers in the virtues of drugs still exist, they are becoming fewer in number. Take, for example, the prescribing of drenches for horses. Except in cases of colic, drenches are now seldom employed by practitioners who take the trouble to think and to observe. Formerly cases of influenza and respiratory affections were liberally "drenched" with alcohol and febrifuges, and no one questioned the dangers and inutility of the procedure. It was the recognized routine and custom, and unless carried out practitioners feared that the patient was neglected or did not get a chance for his life. However, some practitioners who had original ideas and were sufficiently bold to put them to the test, relinquished "drenching" and the long array of medicinal agents. Hypodermic medication employed with discretion came into vogue, and subcutaneous injections of normal saline solution took the

place of whiskey and ale as stimulants. To these may be added the good effects of plenty of open air, and the net result is a far greater number of recoveries.

Simplicity in therapeutics is the order of the day, and the "shot-gun" prescription is now abandoned by practitioners who have the will and the capability to observe and to study "cause and effect."

In the treatment of colic, it is now recognized that simple cases tend to recover spontaneously or with the assistance of a diffusible stimulant. In practices where at one time large amounts of opiates were used, the bill for such agents is now reduced to a minimum. The time-honored oil of turpentine forms a cheap and efficient remedy for colic, and it has the advantage that if the case happens to be of a more serious nature than anticipated, the drug does not prove inimical to recovery.

Bicarbonate of soda is a cheap and simple agent which often proves useful in doubtful cases, and in others, if it fails to achieve good results, it, at any rate, does no harm. Calomel is another drug which, if used with discretion, has its uses, and although condemned for a time owing to its indiscriminate employment by our ancestors, its value is

In cattle practice, the homely "common salt" is largely employed and its value when given in the form of electuary in many gastric affections is amply demonstrated. In the treatment of "Red Water," common salt, if given sufficiently early, proves of marked value although we are not aware how it combats the attacks of *Piroplasma*.

Examples might easily be multiplied which would tend to show how largely a practice might be conducted with a few simple, cheap agents, in conjunction with pure air and attention to dietetics. Similar remarks apply to surgical therapeutics. Given good drainage of wounds, a healthy patient, clean again becoming recognized.

Given a strong patient and healthful surroundings, and a dresser who recog-

nizes the necessity for surgical cleanliness, it matters little what form of antiseptic we employ. Under opposite conditions, the most potent germicides will fail to achieve good results.

Without assuming the role of the prophet, one may anticipate that in the future simplicity in treatment will supersede many of the present methods. The treatment of "milk fever" in cows is an example. Could anything be simpler? No drugs, just the simple inflation of the udder with air. Yet so wedded are some practitioners to drugs, that they must needs employ the hypodermic injection of atropin or adrenalin as an adjunct to air, and try to persuade us that better results are obtained. Of course the treatment is too simple for display, hence the desire for complexity. Some go further and cry out for a solution of the problem of how the air acts, and desire to ascertain the pathology of the disease. We hardly think their curiosity is likely to be satisfied, and we are quite positive that no cheaper or more effective therapeutic agent than air will be discovered.—*The Veterinary News*.

A "GOV'TMENT VETERINARY."

By Carl E. Freeman, D. V. S.

Once a young man went to school, to be a "Horse Physician," his folks all said he was a fool, to want such a position. "What's a 'veterinary' for anyhow, but just to make us laugh, when he's pryin' round a cow, tryin' to help her have a calf? Why don't you be a carpenter?" they said, "Or a soldier brave and bold, then you'll be sure to have a bed, in the winter when it's cold."

But this young man went on to school, to a well known veterinary college; they made him study—it is their rule, so he acquired a bit of knowledge. It took him three full years at least, besides a lot of "change," to learn what to give a lousy beast, with "belly-ache" and mange! He learned the names of bones and things, blood-vessels, nerves and all, and found out what would happen when he gave an "aloetic" ball.

Then he took the gov'tment "exam," and passed it fair and square (?), and went to work for Uncle Sam, "Pudding Guts" and Hunting—Hair!!! And now he has circles 'round his eyes, and is cranky and contrary, but his folks all say: "He's aw-full wise,—he's a 'Gov'tment Veterinary'."

IF YOU WANT TO RISE

If you want to rise in the world you must raise something else. If you want to rise in business raise the business you are in. Don't imagine that when you have given your life to the lifting up of a business, the house will try to keep you down. A house cannot rise and keep down the man who raised it, any more than a man can rise out of the water and keep down the life-preserver that raised him.

No man can do a dollar's worth of work for a dollar. When you are working for nothing but a dollar your work will not pan

just a bit of printed matter to encourage his men, to spur their ambition, to incite them to higher endeavor. Men need something more than money. They need an encouraging word. They need antidotes for the blues. They need stout backbone bracers. They need a friendly handshake—a handshake with a grip in it that helps a man get a new grip on himself.—*The Young Man in Business.*

A disease believed to be rousp was reported to be prevalent among the poultry in Cass, Atlantic and Carroll counties, Nebraska, during January.



"My Poor Master." This Remarkable Photograph "From the Front," Was Received by Dr. A. Eichhorn from Hungary.

out at more than fifty cents. To do a dollar's worth of work you must work for a dollar and something more. You must work for the love of the business, or for the love of something—for something more than the dollar. A mere hireling never does more than fifty cents' worth of work for a dollar, because he has nothing to work for but the dollar. He may meet the requirements as to quantity, but never as to quality. So long as a man thinks of himself as a hireling he will never hitch his wagon to anything but a pay envelope.

A large employer said the other day that he never distributes his pay envelopes without putting in them an inspirational leaflet—

After looking over "Animal Castration," by Lacroix, I am well pleased with it and think it fills the wants of the busy practitioner very nicely.

Brookings, S. D.

B. H. SAYRE.

I received a copy of "Wound Treatment" by Merillat, Hoare, et al., some time ago. I have perused it carefully and find it is up to date on the treatment of wounds, that is, it is practicable and deals with the subject at issue in a very masterly way, and it should be very commendable to the profession.

King City, Cal. D. J. D. ARNELL, V. S.

MINNESOTA LIVE STOCK HEALTH

Minnesota was one of the pioneer western states to establish a Live Stock Sanitary Board, and, we believe it can truthfully be stated, no state in the country has established a higher standard of efficiency for this work in disease control. For this reason, the twelfth annual report of the board is of especial interest.

In the period beginning August 1, 1914, and ending July 31, 1915, there were tested for tuberculosis in Minnesota 51,866 head of cattle with 1,495 reactions or 2.84 per cent. The pure-bred herds of the state are practically clean, less than one per cent showing reactions during the year. This is a remarkable record which we believe no other state can equal. It is especially gratifying as compared to the rotten conditions in some other states where buyers can purchase only at the greatest risk of getting reactors.

In glanders control among horses, this disease has almost disappeared. In 1905, 606 horses were killed on account of glanders. The number of cases has declined steadily year by year to 38 in 1914-15.

In hog cholera control the Minnesota Live Stock Sanitary Board has co-operated with state and federal authorities to the point where losses have been greatly reduced this year as compared with former years. The

board has taken a very advanced step in limiting the use of virus only to their employees and in infected territory. This is a mooted question but thus far the argument seems to be in favor of the Minnesota plan of using the quarantine regulations, coupled with the single treatment and thorough disinfection, to combat the disease.

The most noteworthy achievement of the Minnesota Live Stock Sanitary Board was the effectual stamping out of foot-and-mouth disease brought into the state by infected serum. This piece of work alone more than repays the state for the entire cost of the Sanitary Board since its inauguration twelve years ago. An even greater compensation will come in the future when Minnesota will be recognized as one of the chief supply points for live stock of unquestioned health as well as quality.—*The Farmer*, St. Paul, Minn.

Cattle in the vicinity of Cadillac, Mich., during December, suffered from a malady thought to have been caused by eating sand which had gotten into the silage.

A short course for graduates in veterinary medicine was held at the North Carolina College of Agriculture, Raleigh, N. C., January 10th to 14th.

Wimsetts Anti-Fis-Tract

Anti-Fis-Tract is a scientific and inexpensive treatment for Fistula of the Withers, Poll-Evil, Shoe Boil, Quittor, Deep Humeral Abscesses, Actinomycosis of the Parotid Region in cattle, and all such tracts or abscesses containing a Pyogenic Membrane.

Having been on the market two years and passed the experimental stage it is worth the consideration of any Veterinarian that wants quicker results and less labor than with the old time methods.

Your money refunded if you are not satisfied.

Put up in tablet form, price, \$1.00 per dozen.

I. G. Wimsett, D. V. M.
1108 Main St.

Winfield, Kansas

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100 Private Bath	2.50	4.00 Up
100 Private Bath	\$3.00 to 5.00	4.50 Up

Total 600 Outside Rooms
ALL ABSOLUTELY QUIET

Two Floors—Agents' New Unique Cafes and Cabaret Excellent
Sample Rooms

I find Lacroix's "Animal Castration" all right and up to date. I feel that I could recommend it to any veterinarian.

Aplington, Ia. THOS. P. WAUDBY, V. S.

Cows are now wearing spectacles on the steppes of Russia to prevent snow blindness. It is said that a kind-hearted man noticed the dazzling effect of snow upon the cows' eyes and was led to devise smoked glasses for their benefit. This opens up a field for the veterinary optician.

Dr. Chester G. Starr of Purdue University conducted a series of hog production meetings in Allen county, Indiana, during November.

Dr. Geick of Table Rock, Neb., had his arm broken when he was kicked into a ditch by his auto, November 19th. He was trying to crank the machine.

A veterinarian at Covington, Ind., extracted part of a toy cannon weighing nearly half a pound from the shoulder of a dray horse on January 3rd. It had been imbedded in the animal's shoulder since the Fourth of July, when some boys had fired the cannon, which exploded and hit the horse.

I have had the best of results following some of the treatments outlined in "Wound Treatment." I consider it a very practical piece of work. The discussion of nail injuries of the foot alone will more than pay for all the information the little book contains.

Norwich, Conn. F. D. COLES, D. V. S.

A class for local dairymen was started at the Kansas City Polytechnic Institute, January 11th. Lectures on animal husbandry and feeding will be given.

The Eastern Iowa Veterinary Association met at Davenport, Ia., December 16th. Sixty-five members were in attendance.

Please find enclosed \$2.00 for renewal of my subscription. I cannot do without the JOURNAL; no veterinarian alive to his business would do without it.

L. T. ELLIOT, V. S.

Pathlow, Sask., Canada.

I am well pleased with the subject matter of the books of the Veterinary Medicine Series and consider them very essential to the practitioner as dealing with subjects that were sadly neglected in the college curriculum during my school course.

West Point, Miss.

O. L. BENEY.

F. P. BROWN

E. E. HUFFT, D. V. S.

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We hyper our immunes with six c. c. of virus per pound which is one c. c. more than is required by the Government.

Our virus is all made from our own inoculations on susceptible pigs.

We bleed only arterial blood, thereby getting a serum with a lesser amount of impotent red blood corpuscles.

We have never put on a serum test in which 15 c. c. of serum failed to protect against 2 c. c. of virus. Our grade on serum tests for 1914 was 100 per cent.

Our price is 1¼ cts. per c. c., virus q. s. free. If you are a graduate veterinarian, write, wire or phone your order and it will be promptly filled.

(Syringes in stock.)

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Crawfordsville, Ind., Dr. James McDonald instead of Dr. R. N. Mead.

Austin, Minn., Dr. E. W. Barthold instead of Dr. Joshua Miller.

Sioux Falls, S. Dak., Dr. E. S. Dickey instead of Dr. Chester Miller.

Fort Wayne, Ind., Dr. Joshua Miller instead of Dr. E. W. Barthold.

Duluth, Minn., Dr. Chester Miller for Dr. E. S. Dickey.

I have carefully read Lacroix's "Animal Castration" and consider it a thoroughly practical work, that will increase the knowledge and usefulness of every practitioner and student.

Calumet, Mich. J. M. O'NEIL, D. V. M.

Dr. Charles D. Gruber, a veterinarian of Bernville, Pa., committed suicide by drinking prussic acid on November 15th.

Dr. John Lockwood has been elected honorary president of the Veterinary Medical Association of George Washington University, Washington, D. C., Dr. Chauncey M. Grubb, honorary vice-president, and Dr. John P. Turner, honorary secretary. The active officers for the ensuing year are: Maurice

C. Hall, S. B., A. M., Ph. D., president; Walter C. Pulsifer, vice-president; Charles W. Rippon, secretary; Burnett C. Johnson, treasurer; F. H. Melvin, sergeant-at-arms; Leslie G. Chase, editor; Francis L. Oyster, jester, and Maurice C. Hall, Howard M. Savage, Lester G. Chase and T. B. Fell, members of the board of directors.

New Zealand breeds between 23,000,000 and 24,000,000 sheep, of which about 25 per cent are annually exported.

A farmer at English Lake, Ind., has brought suit against the Indiana Pipe Line Co. for \$25,000, claiming his cattle died from drinking oily water. It is said that nearly 100 head of cattle and horses have died from this cause in Starke county.

Dr. George W. Dunphy, State Veterinarian, reported the death of 20 sheep out of a herd of 300 near Alma, Michigan, January 4th. The animals were afflicted with lung trouble which Dr. Dunphy attributed to the adverse weather conditions of the present season. Specimens of infected material from the dead animals were shipped to the Bureau of Animal Industry at Washington for their diagnosis.

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OUR VACCINES BEST BY TEST

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Bulgar-Lac

ABOUT "THE ITINERANT HORSE PHYSICIAN."

If impossible to continue "The Itinerant Horse Physician" in your journal, by all means publish it in book form. It is great, and I think will do any young man good.

Va.

J. A., D. V. S.

I note in the January issue of the JOURNAL that you would publish "The Itinerant Horse Physician" in book form if enough veterinarians desired it. You may put me down for one, as I am very much interested in the story and would like to have it complete in book form.

Mont.

W. R., V. S.

I received my copy of your valued journal today, and turning as has been my wont to the story of "The Itinerant Horse Physician," was astounded to see that we could not follow his adventures further on account of lack of space in your JOURNAL. That would be to many of us like leaving on a hurry call in the midst of an especially good Sunday dinner. There are many like myself who have spent some time in meat inspection and quarantine work, and to read these experiences brings up our own recollections. I sincerely hope that the story will have enough friends to warrant its publication.

Now a word for the JOURNAL. I have taken it ever since it was a mere pamphlet and have seen it constantly grow and improve until it seems almost indispensable. May it continue to grow and prosper is my most sincere wish.

N. Y.

J. V., D. V. M.

Go ahead and publish the whole story of "The Itinerant Horse Physician."

Ore.

H. N.

I see your note in the last JOURNAL in regard to "The Itinerant Horse Physician." As for my part, I enjoy reading his chapters, as it is a little out of the general line of reading—always something amusing.

Mo.

T. J. L.

I will buy a copy of "The Itinerant Horse Physician."

Texas

J. C. W.

I read with much pleasure "The Itinerant Horse Physician." Publish the book and send me a copy.

It is no doubt useless to say anything in behalf of the JOURNAL, for I think all readers think as I do. It is enjoyed as much as a good meal when a fellow is hungry.

Ga.

H. A., D. V. S.

Adding the K. O. Punch

Inoculating your clients' hogs with NELSON SERUM puts in the punch that brings home the bacon, whether your client be of the six cylinder species or the buck board, twine, mended harness or lame horse kind.

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Eventually, why not now.

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97% of Those Writing Us Urge the Publication of The Itinerant Horse Physician In Book Form

We bow to this overwhelming demand—the book will appear within thirty days, issued in the same attractive style that has proved so popular in the "Veterinary Medicine Series"—convenient size, engaging type, splendid paper and beautiful silk cloth binding—a welcome addition to your library, a source of entertainment on your reading table.

This volume will comprise more than was foretold in our editor's note in the January issue of VETERINARY MEDICINE; it will contain double the material that has been published serially, and it will be splendidly illustrated by a high class artist with drawings decidedly unique in veterinary literature.

The increased size and particularly the large expense incurred for the illustrations, make it necessary to charge more than the tentative price of \$1.00 mentioned in the announcement. The price will be \$1.50, but that every one may have an opportunity to procure a copy at the price originally named, the book will be sent on advance orders (reaching us before April 1st) for one dollar, cash with the order, and your money back without question if you are not satisfied.

Do not overlook the fact that in addition to the entertainment and instruction that the story of "The Itinerant Horse Physician" contains, it also presents:

The most telling brief ever offered against the traveling veterinary faker, qualified or otherwise;

The most vigorous condemnation of unqualified practitioners ever printed;

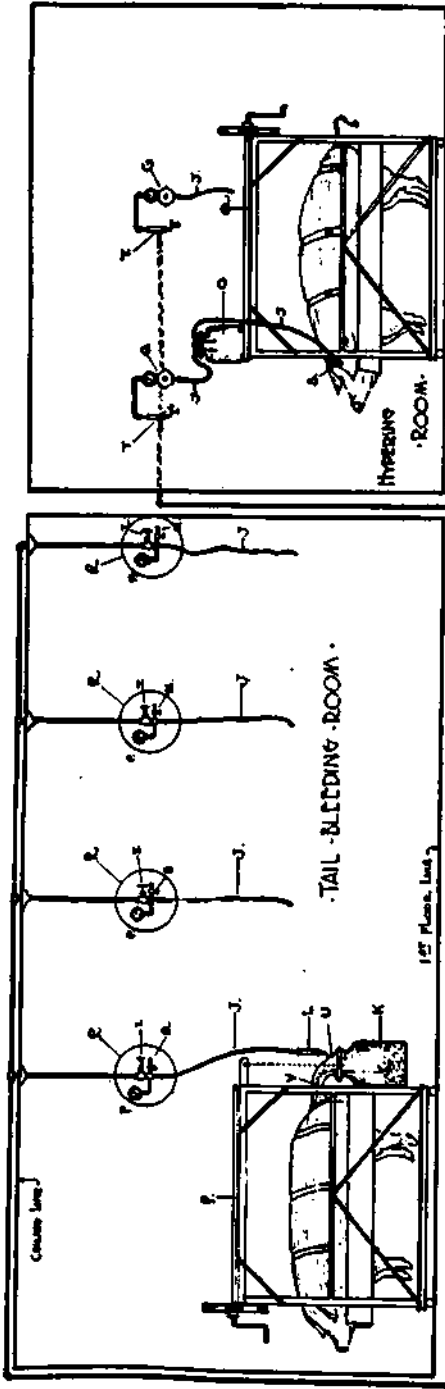
The strongest plea ever made for adequate veterinary practice laws;

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Cloth bound, illustrated, about 180 pages, price \$1.50.

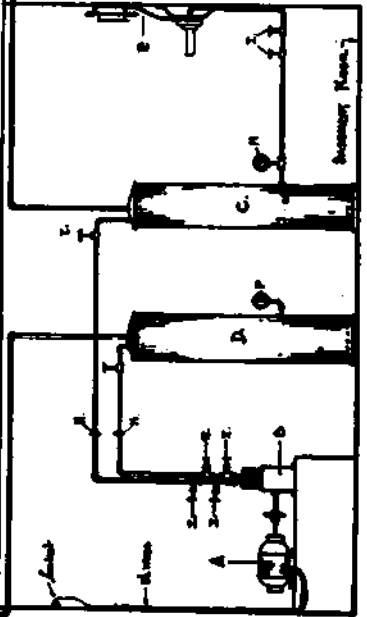
American Journal of Veterinary Medicine Evanston,
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Orders sent us before April 1st, \$1.00. Order today, save one-third of the cost, and at the same time get an early copy and complete the fascinating tale of experiences by Dr. M. R. Steffen, of which you have already read a portion.



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A	Motor
B	Transmission, Pulley and Flywheel
C	Chamber for Vacuum
D	Chamber for Hyperinflation
E	Valve
F	Pressure Gauge
G	Pressure Gauge
H	Valve
I	Valve
J	Valve
K	Valve
L	Valve
M	Valve
N	Valve
O	Valve
P	Valve
Q	Valve
R	Valve
S	Valve
T	Valve
U	Valve
V	Valve
W	Valve
X	Valve
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Economists say we are entering on the greatest epoch of prosperity history has ever known. How can we take advantage of this peerless opportunity? If our competitor is better prepared than we, it's going to have a vital bearing on our business.

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Can you beat it? We will answer for you. Our experience has taught us the answer. You cannot beat it.

This system can be operated very successfully by hand, water, electricity or any kind of engine power. If you have water pressure, we can supply you an outfit as low as \$10.00 and you can convince yourself of the wonderful possibilities of this system before buying one of our large outfits. We can furnish you with outfits ranging in price from \$10.00 to \$300.00. The prices of the larger outfits depend of course on the number of stations, the kind of power, etc., that you would require. The outfit as illustrated on the opposite page sells for \$210.00. This price does not include crates or installation. It consists of four bleeding stations and one hypering station. As you may see, this is our combination outfit which makes it possible to run your hypering and bleeding room at the same time with the same power. With this outfit a hog can be bled at each station in from two to five minutes, consequently greatly reducing the cost of the production of serum.

One man can attend three or four hogs.

Write us today for further particulars. Ask for our catalogue of up-to-the-minute Serum Laboratory Equipment.

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Give us some more of "The Tramp Horse Doctor" when you get a little time and space to spare; but we don't want any charging poor Mexicans \$100.00 a trip to see an old cayuse pony. That is worse than any of the quacks ever did. I know, for I am one of them, and have been for thirty years.

Okla.

E. T., V. S.

In answer to your query regarding "The Itinerant Horse Physician," I will say that, while enjoyable to read, I think it has no place in a first-class veterinary journal, but is more consoling to a young practitioner than "Memories of Old Doc Stone," where the author simply blows about something he has found out by experience and does not give us any chance to learn anything. For my part, leave such stories to the Argosy and such magazines.

Kans.

E. C. B.

You asked in your note relative to continuing the series of "The Itinerant Horse Physician." I for one enjoy reading the articles and I have read every one so far, and would and could stand for more of them, but in book form, I would not give the book shelf room. The JOURNAL is growing better all the time and it has grown to be an absolute necessity

to any practitioner or others of the profession.

Okla.

C. H. J.

As to "The Itinerant Horse Physician," while it may not be strictly "high class" literature, it makes us see all the different angles of the practice of veterinary science. Let's have it in book form.

Mont.

C. T. N.

Noting in your paper of January that you ask for the subscribers' opinions regarding "The Itinerant Horse Physician," as a subscriber and a reader and admirer of numerous articles, and also an admirer of many of the contributors, I am going to take the liberty to express my opinion of the aforesaid articles. To be frank with you, I must say that "The Itinerant Horse Physician" is a disgrace to your valuable paper. I read two of the articles, and to my mind, they seemed like the ravings of a lunatic. Two of the articles were enough for me. If one wants to read silly nonsense, buy a ten-cent joke book; but medical journals should, I think, deal with medical problems and the workings of the profession. If the writer of those articles is a medical writer, then let the shoemaker stick to his last, and let him remember that there was only one Mark Twain and that

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What is a potent anti-hog cholera serum?

Defibrinated blood of hyperimmune hogs, collected under strictly sanitary precautions at a time when the immunity is at its highest point.

When is it produced?

Eighteen days after the immune hogs have been hyperimmunized, at which time they return to their normal condition.

How is it produced?

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Where is it produced?

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When the typewriter arrives deposit with the express agent \$3.80 and take the machine for five days' trial. If you are convinced that it is the best typewriter you ever saw, keep it and send me \$2.50 a month until our bargain price of \$48.80 is paid. If you don't want it, return it to the express agent, receive your \$3.80 and return the machine to me. I will pay the return express charges. This machine is guaranteed just as if you paid \$100.00 for it. It is standard. Over one hundred thousand people own and use these typewriters and think them the best ever manufactured.

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he is dead and gone now, and not try to ape him and made an ignominious failure.

Let us have more from such men as J. L. Tyler, L. A. Merillat, Chas. F. Lynch and such men as those; something is to be learned from their writing, especially by the man who is depending on the practice of veterinary medicine for his living, and also those who are interested in the scientific treatment of disease. I suppose, doctor, you think I am a crank, and when I get this out of my system I will feel better. I do not aim to be a crank but only aim to state what I think are facts as I see them. If I am wrong, then blame me.

Arizona.

H. T. D., D. V. S.

I am in favor of your publishing "The Itinerant Horse Physician."

Pa.

Dr. M. D. R.

I am in favor of the continuance of "The Itinerant Horse Physician."

Tex.

John R.

As far as I am concerned, I shall continue to welcome with delight "The Itinerant Horse Physician" and "Memories of Old Doc. Stone" as printed in the JOURNAL. I should not care for it in book form. I like your journal better every issue. I have lost two old friends

lately, and really feel the loss keenly. I never felt that way before. I refer to *The Horseman* and the *American Veterinary Review*. Both I have taken for over thirty years. I can never get used to the present style of the *Journal of the American Veterinary Medical Association*. "Old things changing fret us." I roved a little myself before I landed here, where I have been for twenty-eight years.

There are so many heavy and pseudo-scientific articles we must read and books galore being produced and we so seldom get anything like "Old Doc. Stone" and "The Itinerant Horse Physician" that the latter are really refreshing. They bring us down on the ground out of the clouds of serums, vaccines, etc.

Ohio.

S. R. H., V. S.

In regard to publishing the story of "The Itinerant Horse Physician," would say, publish it in book form. I think it would be interesting.

Ohio.

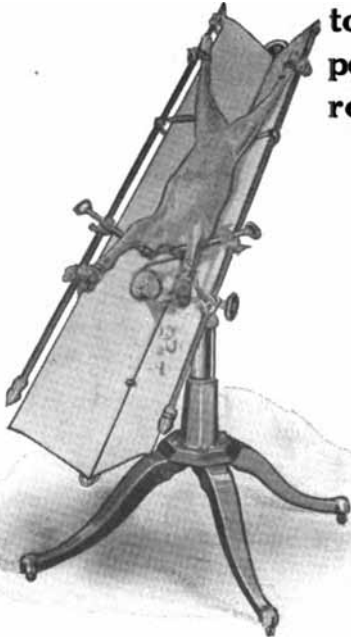
H. N. P.

I have derived much pleasure and good from reading "The Itinerant Horse Physician" and hope you will not discontinue the story. However, if you do discontinue same, print it in book form, and I will buy a copy. The story broadens one and helps to make a better veterinarian of him.

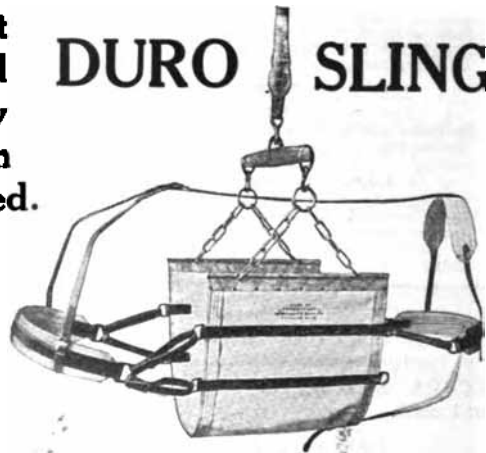
Ia.

W. A. M., D. V. S.

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a Specific in contagious abortions and foetal discharges. The ideal antiseptic and healing agent for obstetrical and surgical work. Mild, yet effective. A splendid deodorizer. For internal and external use. A Thymol-Terpene Compound but not a coal tar preparation.

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An aromatic, non-toxic, excellent substitute for Iodoform. Accelerates granulation and healing process.

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in producing highly gratifying results, speak louder than any words.

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By all means continue with "The Itinerant Horse Physician." I always read that first. It furnishes rest and recreation for the mind.
N. C. T. N. S., D. V. S.

In regard to "The Itinerant Horse Physician," I should be glad to send you \$1.00 or more if it is necessary for it in book form.
Arizona. R. G. S.

I for one think "The Itinerant Horse Physician" would make interesting, light reading, and incidentally, does unearth many of the reprehensible things that the quack and traveling fakir are guilty of. This knowledge would not be a bad thing for a young inexperienced man to know.
N. Y. J. F. D.

The January JOURNAL has just come to hand and I wish to respond to your request for expressions of opinion on "The Itinerant Horse Physician." It has always seemed to me that our profession has had entirely too many "itinerants" advertising it in America and there is no room for an account of their adventures in VETERINARY MEDICINE. The mere fact that this man was graduated from one of our leading veterinary colleges does not give him license to consider himself a professional man regardless of his conduct. I cannot see that his escapades have done anything to elevate our profession.

In conclusion let me say that I am very much in love with your journal and always look forward to its arrival. It would be hard to find a substitute for it.
So. Car. M. G. S., D. V. M.

Yes by all means continue the articles in the JOURNAL by "The Itinerant Horse Physician"; then later incorporate all in book form.
Iowa. Dr. C. S.

By all means publish the story of "The Itinerant Horse Physician."
D. C. C. H. R., D. V. M.

I would favor the publication of "The Itinerant Horse Physician" in book form.
Neb. P. P.

Personally I think "The Itinerant Horse Physician" well worth the while, whether in a medical journal or in book form, excepting when you are crowded for space, it should not take up the space of case reports and matter of greater importance. I should like to obtain the story in book form, and if the JOURNAL decides to publish it, kindly mail one to my address.

Oklahoma. J. C. C., D. V. M.

I should like to see "The Itinerant Horse Physician" in book form and will buy one.
N. D. H. M. E., D. V. M.

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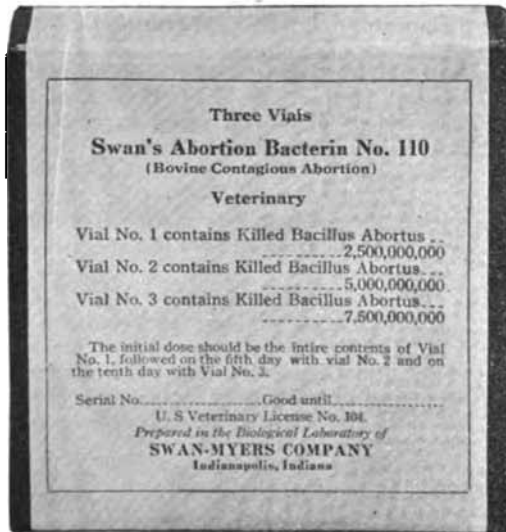
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Modern Veterinary Science has found that vaccination is the most satisfactory treatment of this condition.

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Special Note—Tear out this page and paste it in the back of your ledger or day book. Then when you are badly in need of this vaccine you will know just where to get it.

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A powder containing pyrethrum, tobacco naphthaline, precipitated sulphur and a higher phenol. For the destruction of lice on animals.

IT IS EFFICIENT AND ECONOMICAL

Supplied in Neat Sprinkle-top Cans.

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I should like a copy of "The Itinerant Horse Physician" if you decide to issue it in book form.

J. W. RIDER, M. R. C. V. S.
Montreal, Quebec.

I am very much pleased with the JOURNAL and can't see how I got along without it.

Ind. C. E. H.

I think "Wound Treatment" is the best and most practical work I ever read on the subject.

Gordon, Neb. DR. GRANT GASTON.

I have received "Special Cattle Therapy" and have examined it thoroughly and am well pleased with it.

No. Car. E. L. S.

You are surely giving us a remarkable journal. The veterinary profession should be proud of the JOURNAL, as well as its editor. You are earning a crown for yourself in the other world.

Neb. S. P. O., D. V. S.

The recent advances in drug prices has reminded an old-timer at Fulton, Mo., that just at the close of the Civil war his father traded a horse for ten ounces of quinin, which was then selling at \$10 an ounce.

I should like very much to have "The Itinerant Horse Physician" articles continued. I appreciate them very much. I will take a copy of them at any time you should decide to publish them in book form.

Hanford, Cal. S. E. WATKINS, D. V. S.

Dr. D. C. Houser, who was in practice with his brother, Dr. W. J. Houser, at Carthage, Mo., for several years, has moved to Jasper, Mo., where he will open an office for himself.

I like the JOURNAL very much. It would be poor economy to do without it.

Ontario. D. A.

J. G. Truman, president of Truman's Pioneer Stud Farm, was again elected president of the American Shire Horse Association at its annual meeting in Chicago last December. He has been president of the society for fourteen years.

Dr. Howard H. Day, formerly connected with the United States Bureau of Animal Industry in Kansas City, was transferred to Indianapolis, December 20th. Dr. Day will work as a member of the government force under Dr. O. C. Mayer, who has charge of the cholera serum industry in the Indiana district.

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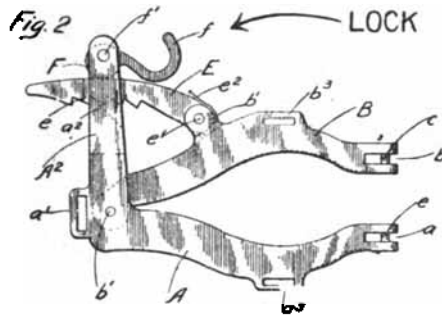
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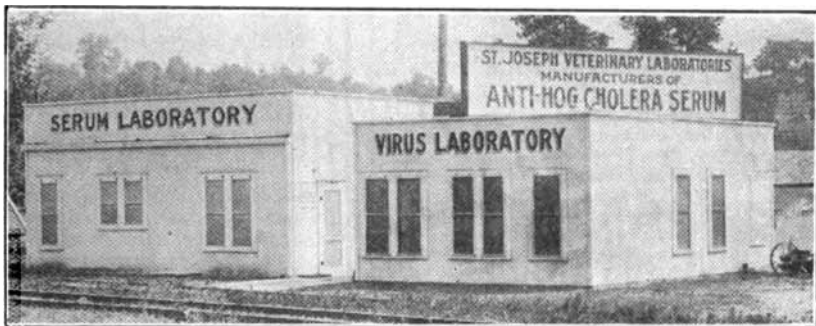
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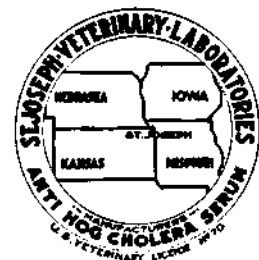
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I have just received my January copy of the **JOURNAL** and will say that its worth to the practicing veterinarian cannot be determined—it is so far reaching—it's a dandy. It is a college review in itself.

Miss.

F. M. B., D. V. M.

Dr. W. P. Hill, army veterinarian with the Sixth Artillery at Camp Douglas, Arizona, has been ordered to France as a government observer of the veterinary work being done in the great war. He promises to give the readers of **VETERINARY MEDICINE** a write-up of his experiences when he has the opportunity.

Dr. J. S. Martin recently moved from Centralia to Monroe City, Mo., where he will conduct his practice.

A Pittsburgh woman had a valuable pet bulldog that developed a toothache. She was unable to get a veterinarian at once, so she called a dentist. The latter, however, refused to pull the dog's tooth, saying it was unethical for him to do veterinary work. Even for an exorbitant fee, he wouldn't consider it.

A farmer near Paris, Ill., lost eight steers valued at \$1,000 on January 1st. They were smothered to death when a stack of straw under which they had taken shelter collapsed.

The embargo against the exportation of cattle from Canada, established when the British government was buying large numbers of horses for military purposes, has been withdrawn. Great Britain has ceased purchasing horses, and they may be taken from Canada to the United States.

I have a copy of "Special Cattle Therapy," also "Colics and Their Treatment" and will state that all the works of the Veterinary Medicine Series are very useful to the busy practicing veterinarian.

N. J.

W. J. R.

The Missouri State Board of Agriculture was reorganized January 4th. Dr. D. F. Luckey of Columbia was elected State Veterinarian and his salary raised from \$2,000 to \$3,000 a year. Under the new law he will hold office for four years.

Quarantine against live stock shipments to Colorado from Illinois and New York were re-established by the state live stock board on December 23rd.

A farmer near Grand Forks, N. D., treated a cow's mouth when his hands were badly chapped and afterwards had to go to the Pasteur institute to take the rabies treatment.

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ASSOCIATION MEETINGS

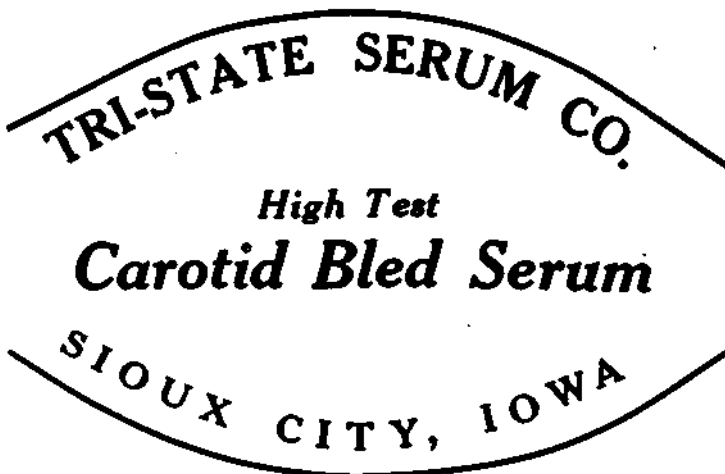
The information given below is up-to-date and has been furnished by the secretaries of the various associations listed. Secretaries are requested to supply us data regarding their associations after each meeting; otherwise, the association will necessarily be dropped from the list. We ask secretaries to kindly co-operate with us in keeping before the members of their associations the date and place of the next meeting.

Name of Association	Date of Meeting	Place of Meeting	Secretary
Alabama Vet. Med. Assn.	Feb. 28, 1916	Auburn, Ala.	C. A. Cary, Auburn, Ala.
Alumni Assn., Col. of Vet. Med., O. S. U.	Jan. 10, 1917	Columbus, O.	W. R. Hobbs, O. S. U., Columbus, O.
Alumni Assn., N. Y. State Vet. College	June 10, 1916	New York	F. E. Nichols, Fort Richmond, N. Y.
Alumni Assn., U. S. Col. Vet. Surg.	April 15, 1916	Washington, D. C.	Chas. M. Mansfield, 1544 Newton St., Washington, D. C.
American Vet. Med. Assn.	Aug. 22, 25	Detroit, Mich.	C. M. Haring, Berkeley, Cal.
Arkansas Vet. Med. Assn.	January, 1916	Little Rock	R. M. Gow, Little Rock
B. A. I. Vet. Assn. of So. Omaha	3rd Monday of month	So. Omaha, Neb.	J. W. Giffes, c/o B. A. I., So. Omaha
California State Vet. Med. Assn.	2nd Wed. in Mch., June, Sept., Dec.	Univ. Farm, Davis, Cal.	Assoc. of Cal. Veterinarians
Central Canada Vet. Assn.	Jan. 19	Ottawa, Ont.	H. D. Sparks, 448 Wellington St., Ottawa
Central N. Y. Vet. Med. Assn.	Last week in June and Nov.	Syracuse, N. Y.	E. H. Yunker, 2544 N. 18th, Philadelphia
Chicago Vet. Society	2nd Tues. of month	Chicago, Ill.	W. B. Switzer, Oswego, N. Y.
Colorado Vet. Med. Assn.	2nd Tues. of month	Ft. Collins, Colo.	Glenn Brown, 3206 Lowell Ave., Chicago
Connecticut Vet. Med. Assn.	Jan. 27	Greenwich, Conn.	I. E. Newcom, Ft. Collins, Colo.
Genesee Valley Vet. Med. Assn.	January 27	Rochester, N. Y.	A. T. Gilyard, Waterbury, Conn.
Georgia State Vet. Assn.	Aug. 23, 24, 1916	Savannah, Ga.	G. B. Webber, 154 Andrews, Rochester
Hudson Co. Vet. Practitioners' Club	Monthly	Jersey City, N. J.	Peter F. Balmsen, Capitol Bldg., Atlanta
Idaho Assn. of Vet. Graduates	February 3, 4	Blackfoot, Idaho	E. D. Blair, 723 Montgomery St., Jersey City, N. J.
Idaho Vet. Med. Assn.	July 28, 27	Pocatello, Idaho	C. V. Williams, Blackfoot, Idaho
Illinois State Vet. Med. Assn.	July 19, 1916	Peoria, Ill.	O. C. Engstrom, Burley, Idaho
Illmo Vet. Med. Assn.	Dec. 17	Bellefonte, Ill.	L. A. Merrill, 1527 Wabash Ave., Chicago
Indiana Vet. Med. Assn.	Jan. 17, 18 and 19, 1916	Indianapolis, Ind.	L. B. McKinley, Freeburg, Ill.
Iowa Vet. Med. Assn.	Jan. 5-6, 1916	Ames and Des Moines	A. F. Nelson, Indianapolis, Ind.
Kansas Vet. Med. Assn.	March	Kansas City, Kan.	H. R. Draman, Rockwell City, Ia.
Kentucky Vet. Med. Assn.	2nd Tuesday of month	Lexington, Ky.	J. H. Burr, Manhattan, Kan.
Keystone Vet. Med. Assn.	3rd Wed. of month	Philadelphia	Robt. Graham, Lexington, Ky.
Los Angeles Vet. Med. Assn.	April 12, 1916	Los Angeles	L. B. Davis, 257 E. Girard, Philadelphia
Maine Vet. Med. Assn.	Feb. 15	Biddeford, Me.	M. A. Dell, 16th & Pacific, Los Angeles
Manitoba Vet. Assn.	Feb. 15	Winnipeg, Man.	W. E. Maddock, Augusta, Me.
Massachusetts Vet. Assn.	4th Wed. each month	Worcester in Sept.; Boston rest of year.	W. Hilton, 275 James St., Winnipeg
Michigan State Vet. Med. Assn.	1st Tues. & Wed. after 1st Mon. in February	Lansing, Mich.	E. A. Cahill, Boston, Mass.
Minnesota State V. M. Assn.	Jan. 10, 11, 1917	St. Paul	W. Austin Ewell, Mt. Clemens, Mich.
Mississippi State Vet. Med. Assn.	2nd Tues. & Wed. Jan.	Clarksdale, Miss.	G. Ed. Leach, Winona, Minn.
Mississippi Valley Vet. Med. Assn.	July 7, 1916	Galesburg, Ill.	E. S. Norton, Greenville, Miss.
Missouri Valley Vet. Assn.	Last week in July	Omaha, Neb.	W. Lester Hollister, Avon, Ill.
Missouri Vet. Med. Assn.	Jan. 28, 29	Neosho, Mo.	R. F. Bourne, 1336 E. 15th, Kansas City
Montana Vet. Med. Assn.	2nd Mon. in Aug., 1916	Bozeman	C. D. Foote, 1336 E. 15th St., Kansas City
Natl. Assn. B. A. I. Employees	1st Tues. & Wed. in Dec.	New York City	A. D. Knowles, 302 E. 4th St., West
Nebraska Vet. Med. Assn.	Aug. 2, 3, 4	Lincoln, Neb.	Minneapolis, Mont.
New York State Vet. Med. Society		Ithaca, N. Y.	S. J. Walker, 135 N. W. Ave., Milwaukee
			S. W. Alford, Lincoln, Neb.
			C. P. Finch, Ithaca, N. Y.

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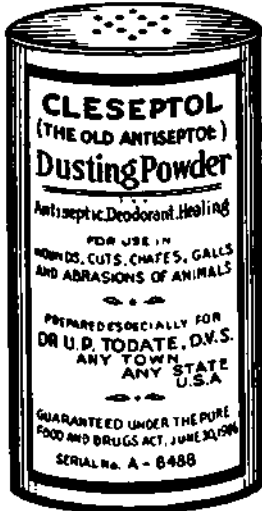
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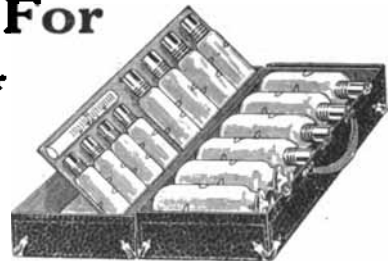
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Name of Association	Date of Meeting	Place of Meeting	Secretary
North Carolina Vet. Med. Assn.	June 28, 29, 1918	Wrightsville Beach, N. C.	J. P. Spoon, Burlington, N. C.
North Dakota Vet. Assn.	3 days, last week July	Fargo, N. D.	W. J. Mulrooney, Bismarck, N. D.
Northeastern Indiana Vet. Assn.	Feb. 15	Toledo, O.	U. S. Richards, Woonsocket, R. I.
Northwestern Ohio Vet. Med. Assn.	Feb. 16	Toledo, O.	Paul E. Wood, Ottawa, Ohio
Ohio State Vet. Med. Assn.	Jan. 11, 12, 1917	O. S. U. Columbus, O.	F. A. Lambert, care O. S. U., Columbus
Ohio Valley Vet. Med. Assn.	Feb. 8, 9	Terre Haute, Ind.	G. J. Behrens, Evansville, Ind.
Oklahoma Graduate Vet. Med. Assn.	July, 1918	Oklahoma City	R. C. Smith, Knid.
Oklahoma Vet. Med. Assn.	March 7, 8	Oklahoma City	S. H. Gillier, Norman, Okla.
Oregon Vet. Med. Society	June, 1918	Probably Corvallis, Ore.	S. T. Summa, Corvallis, Ore.
Pennsylvania State Vet. Med. Assn.	Feb. 22, 23, 1918	Pittsburgh, Pa.	E. E. Tunker, 2344 N. 19th, Philadelphia
Rhode Island Vet. Med. Assn.	2nd Tues. Jan.	Providence, Ind.	C. B. Baumgartner, Arcola, Ind.
Schuykill Valley Vet. Med. Assn.	June 14, 1918	Reading, Pa.	C. R. Pottinger, Reading, Pa.
South Dakota Vet. Med. Assn.	July 11, 1918	Lake Madison	S. W. Allen, Watertown, S. D.
Southern Aux. Cal. State Vet. Med. Assn.	3rd Wed. Dec.	Los Angeles	J. A. Doll, 16th & Pacific, Los Angeles
Tenn. Vet. Med. Assn.	Nov. 17, 18, 1918	Chattanooga, Tenn.	J. H. McMahan, Columbia, Tenn.
Texas Vet. Med. Assn.	March 14, 15, 1918	Not decided	Allen A. Foster, Marshall, Tex.
Twin City Vet. Med. Society	Once a month	St. Paul	C. C. Palmer, St. Paul, Minn.
U. S. Live Stock Sanitary Assn.	Dec. 1, 2, 1918	Chicago	J. J. Ferguson, U. S. Yards, Chicago
Utah Vet. Med. Assn.	Feb. 5	Logan, Utah	E. P. Coburn, Brighton City, Utah
Veterinary Assn. of Saskatchewan	March, 1918	Regina, Sask.	E. G. Cheamar, Hanley, Sask.
Vet. Med. Assn. of New Jersey	2nd Thurs. in Jan.	Trenton, N. J.	E. L. Lobstein, New Brunswick, N. J.
Vet. Med. Assn. of N. Y. City	1st Wed. ea. mo. except July, Aug., Sept.	New York City	R. S. MacKellar, 361 W. 11th St., N. Y. C.
Vet. Med. Assn. of Geo. Washington Univ.	1st Sat. each month	Washington, D. C.	E. W. Bippoon, 3115 14th St., N. W., Washington, D. C.
Vet. Med. Society Wash. State College	1st and 2nd Tues. ea. mo. July 13, 14	Pullman, Wash.	Claude Holden
Virginia State Vet. Med. Assn.	June, 1918	Ocean View, Va.	W. G. Christian, Blacksburg, Va.
Washington Vet. Med. Assn.	June, 1918	Seattle, Wash.	Carl Casler, Bellingham, Wash.
Western N. Y. Vet. Med. Assn.	Last week in June	Buffalo, N. Y.	F. F. Fehr, 86 Prospect Ave., Buffalo
Wisconsin Vet. Med. Assn.	July	Menominee, Wis.	W. A. Wolcott, Madison, Wis.
York Co. Vet. Med. Society	1st Tues. after 1st Mon. of each month	York, Pa.	E. S. Bausticher, 325 Newberry, York, Pa.

NOTICE

The triennial meeting of the Alumni Association of the Ontario Veterinary College will be held in the new College building, 110 University Avenue, Toronto, Monday, April the tenth, 1916.

The meeting will open at two P. M.

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Beaver, Clarence T.	189 University Ave.	191 University Ave., Toronto
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Carlson, Arthur A.	Jordan, Minn.	Milan, Minn.
Chapman, D. D.	Sully, Ia.	Blakesburg, Ia.
Cleveland, W. J.	Rocky Ford, Colo.	Galt, Ia.
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Foster, Thos. N.	319 Coleman St.	212 Coleman St., Belleville, Ont.
Fredette, L. G.	Peace River Crossing.	Hudson's Hope, B. C.
Frost, Geo. P.	4727 Ravenswood Ave.	4527 Ravenswood Ave., Chicago, Ill.
Foster, R. J.	Harlingen, Texas.	9th U. S. Cavalry, Manila, P. I.
Giles, N. B.	Gentry, Mo.	Albany, Mo.
Gleason, M. E.	Sibley, Ill.	Fowlerton, Texas
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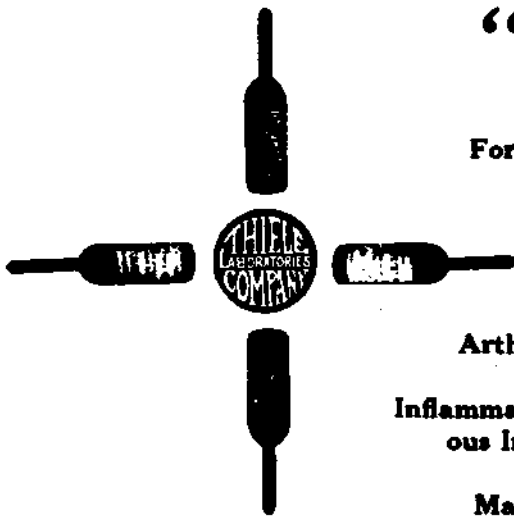
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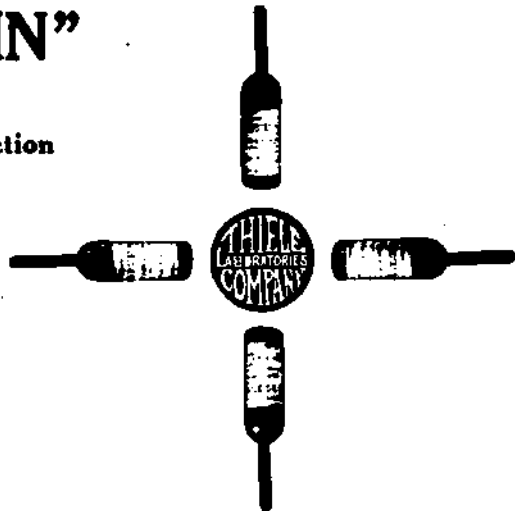
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A complaint charging J. B. Berry of Helena, Mont., with practicing veterinary medicine and surgery without a license was filed in the justice court November 16th.

I like Lacroix's "Animal Castration" very much. It contains much valuable information put in a very clear manner.

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I have examined the book "Wound Treatment" and find it very practical and complete. On the suturing and healing of wounds, it excels anything I have ever seen. I would not be without it for many times its cost. Any veterinarian will find it a valuable addition to his library.

Kentucky.

H. H. B.

I have read Lacroix's "Animal Castration" with a great deal of interest and find it full of valuable information of the most practical, thorough and recent methods. The description of "Cesarian Section in the Sow" alone is worth the price of the book. You can understand that I am well satisfied with it, and it is therefore worthy of my recommendation.

Beaver Springs, Pa. F. C. ROMIG, V. M. D.

Your book "Animal Castration," by Dr. J. V. Lacroix, was received a short time ago, and I must say that it is one of the best I have ever read on the subject. It certainly will prove to be very valuable to every veterinarian, but especially to recent graduates, as it is so practical, complete and easy to understand.

Wells, Minn. I. E. MIKOLAI, D. V. M.

"Special Cattle Therapy" is the most practical work I have ever had the opportunity

of reading, as I find a mint of valuable information in it that I have been unable to get from any other source.

South Dakota.

J. L. C., V. S.

MARCH AND APRIL VETERINARY MEETINGS.

Kentucky Vet. Med. Assn., Lexington, March.

Vet. Assn. of Saskatchewan, Regina, Sask., March.

Oklahoma Vet. Med. Assn., Oklahoma City, March 7, 8.

California State Vet. Med. Assn., Davis, Cal., March 8.

Texas Vet. Med. Assn., March 14, 15.

Maine Vet. Med. Assn., Biddeford, April 12.

Alumni Assn., U. S. College Veterinary Surgeons, Washington, D. C., April 15.

My expectations regarding "Special Cattle Therapy" were high because of its having been widely advertised. Upon reading it, I find it entirely beyond even what I anticipated in that it goes straight to the point on subjects that we meet every day, in active cattle practice, the collateral reading, if it may be termed such, to get these points being practically nil.

Merrill, Wis. L. J. O'REILLEY, D. V. M.

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Alvin Weatherbee, a retired farmer near Owosso, Mich., was tried in the local court on the charge of torturing a horse, November 11th. Weatherbee is said to have treated the horse for "side bone" and his treatment was so barbarous that the animal became unfit for use. The prosecuting attorney said: "We want a law that prevents men from posing as veterinary doctors and torturing animals with the treatments they have read about or have learned from their forefathers."

I have all the Veterinary Medicine Series except Dr. Kaupp's "Poultry Diseases" and will say every veterinarian ought to have

them in his library. Dr. Lacroix's "Animal Castration" is very good, especially to young graduates and students, also Steffen's "Special Cattle Therapy."

C. J. SIGMOND,
Pipestone, Minn. *State Examining Board.*

The public sales days at the South Omaha horse market will hereafter be on Wednesday and Thursday of each week so as not to conflict with the big eastern markets, a number of which have sales on Monday. The war horse inspection was resumed at South Omaha on January 3rd, and the French inspectors have since been at work every day.



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References: { American Jnl. of Vet. Med.
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After reading most of the contents of "Animal Castration," I will say that it is just what the busy practitioner is looking for—a concise book written from a practical standpoint. I think this work by Dr. Lacroix is written in a very comprehensive manner.

A. G. WADLEIGH, D. V. S.

La Junta, Colo.

I am well pleased with "Wound Treatment" and can highly recommend it to my brother practitioners. I consider it the best reference work I have in my library on the subject. I cannot see how so much knowledge can be contained in one volume.

Hampden, N. D. T. F. CRAIG, V. S.

"Wound Treatment" was received some time ago and is very satisfactory. Some of the treatments advanced therein may not meet my entire approval, but by a careful perusal of the entire volume, one cannot help gaining decidedly better ideas of what should be done. It is altogether the best book of its kind that I have seen.

CHAS. H. BEERE, M. D. C.

Waterbury, Conn.

"Special Cattle Therapy" is a book that every veterinarian should have in his office.

Ill.

Dr. H. C. S.

The Association of Kentucky Horse, Jack and Mule Breeders met at Lexington, January 6th. The sessions were held at the agricultural college. Among the papers presented was a review of experiments on forage poisoning by Dr. Robert Graham of Lexington.

The three books "Special Veterinary Therapy," "Animal Castration" and "Wound Treatment" came duly to hand, and in my judgment, it matters not how good the practitioner's library may be, they are a valuable addition.

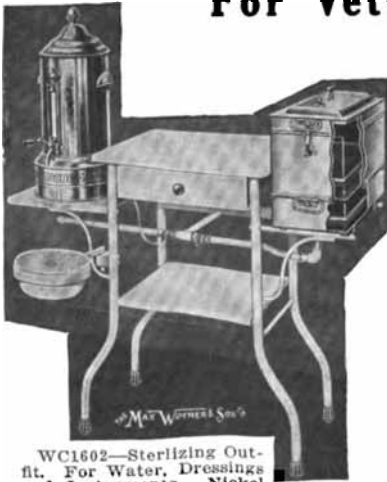
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Dr. L. G.

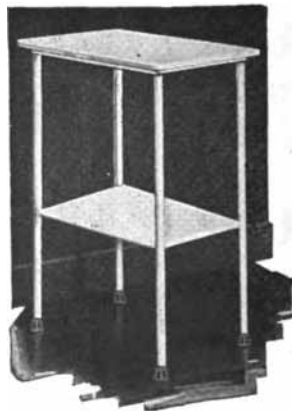
Dr. Charles Keane, State Veterinarian of California, has taken steps to combine the positions of County Veterinarians of Colusa and Glen counties at a salary sufficient to enable the veterinarian representing both counties to devote his entire time to the work.

Stockmen of Kentucky recently called upon the legislature to appropriate \$68,494.63 to pay one-half of the loss suffered through the slaughter of live stock on account of foot-and-mouth disease. The federal government has already paid the stockmen half their losses, and the state was asked to follow the lead of other states and pay the other half.

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Equine Laminitis or Pododermatitis

By ROBERT C. MOORE, D. V. S., St. Joseph, Missouri.
President of the St. Joseph Veterinary College.

THE horse's foot may be described as that part of the digit from the top of the hoof to the ground surface of the sole, wall and frog, and consists of the skeleton, ligaments, distal end of perforans tendon, coronary band or cushion, sensitive laminae (podophyllous tissue) sensitive sole and sensitive frog (velvety tissue) and the horny laminae (keratophyllous tissue) all incased in the horn which in turn, is covered by the periople, a transparent layer secreted by the coronary frog band or periopic ring, which is continuous around the top of the wall with the bulbs of the frog.

The foot may be considered as a skeleton invested in a bag of highly sensitive, very vascular secreting tissue, investing the bottom of the os pedis and extending up around the os-corona or second phalanx, and distal end of the perforans tendon where it becomes continuous with the skin, of which it is a part.

This membrane is termed keratogenous, because it secretes horn tissue. At its upper border, we find a narrow band of villous tissue that surrounds the top of the hoof, extending from one heel around anteriorly to the other lodged in the cutigeral groove on the inner surface of the horn termed the coronary band or cushion. Below this is the sensitive laminae or podophyllous tissue extending to the toe of the os pedis.

Beneath the os pedis, the keratogenous membrane is called velvety tissue, which is subdivided into sensitive sole and sensitive frog and secretes respectively the sole and frog.

It will be seen that the foot is really a continuation of the structures above, the sensitive structures being a continuation of the true skin or dermis, while the epidermis or protective portions are rep-

resented by the horny tissues, better developed of course, because the distal end of the extremity needs greater protection.

The sensitive laminae are highly supplied with sensory nerve tissue and are extremely vascular. Perhaps nowhere in the body do we find a tissue so rich in capillaries, and on its surface is found in almost continuous venous plexus. The veins of the foot are valveless, allowing the blood to flow in either direction. These vessels coalesce above the hoof to form the digital veins.

With such highly developed sensory tissue and so extremely vascular, bounded within by bone and without by unyielding horn, it is not difficult to understand why pain is so great during hyperemia and exudative inflammation of the sensitive laminae.

Inflammation of the sensitive laminae may be divided into two general classes. In the first class may be placed all those local inflammations due to local causes, as traumatism, etc., and be sub-divided into infectious and non-infectious, while to the second class belong the diffused or sporadic form, involving all of the sensitive laminae of one or more feet and known as laminitis or founder. The latter only will be discussed in this paper.

Etiology.

Among the predisposing factors may be mentioned:

1. Bad conformation of feet.
2. Disturbed digestion.
3. Irregularities in circulation.
4. Nervous disorders.
5. Prolonged rest.
6. Shedding the coat.

While under the head of Exciting Causes may be mentioned:

1. Any mechanical irritation.
2. Fast work on hard roads.
3. Long journeys on hard, rough or heated roads.
4. Faulty shoeing.
5. Long continued standing.
6. Chills.
7. Overfeeding.
8. Cold drink.
9. Foods that tend to excessive fermentation.
10. Excessively rich foods.
11. Micro-organisms and their toxins.

It is generally conceded that horses, having broad flat hoofs with depressed soles and thin walls, are more predisposed to laminitis than those provided with more upright and heavier walls and concave strong soles.

The wedge shape of the *os pedis*, as it fits into the triangular shaped hoof also bears an important relation to laminitis.

The horse with the flat foot usually has an oblique fetlock. This places the sole of the *os pedis* nearer a horizontal plane, which results in distributing a larger percent of the weight on the sensitive frog which is heavy and quite elastic under the posterior part of the *os pedis*, navicular bone and distal end of the *os-corona*, which materially relieves the pressure on the sensitive laminae of the sole and anterior portion of the wall.

Horses with upright, strong walls and strong concave soles usually have higher heels and more upright fetlocks, which places the direction of the toe and anterior wall of the *os pedis* more downward, thus greatly increasing the wedgelike pressure of the *os pedis* on the sensitive laminae. There is no doubt but the flat foot would be more susceptible to such exciting causes as, errors in shoeing, long and hard work on dry, hot, hard and rough roads, but the opposite conformation is surely more disposed to such exciting causes as, long continued standing, indigestion, disturbances in the circulatory and nervous conditions, etc.

The excessive capillary and venous circulation in the sensitive laminae, surely

renders it very susceptible to obstructions from pressure. It is a well known fact that venous circulation is much more easily obstructed than arterial.

From this viewpoint it is evident that the greater the declivity of the *os pedis*, the greater the pressure on the sensitive laminae. The greater the pressure on the sensitive laminae, the greater danger of venous hyperemia, which so readily leads to effusion between the sensitive and non-sensitive laminae and produces pain by pressure, which is the key to the distressing line of symptoms associated with laminitis.

The causes arising from disturbed digestive functions are many, and the naming them is perhaps of secondary importance to an understanding of how such derangements act to bring about hyperemia of a tissue so remote from the alimentary tract as the foot. As has already been noted, the sensitive laminae are a continuation of the skin, and while it is modified to meet the requirements of an extremely exposed surface, it is also greatly intensified in its nervous and vascular organization, made necessary by the excessive use and wear of the parts.

It is well known that both in men and the lower animals, certain disturbances of digestion produced marked hyperemia of the skin, and oftentimes with manifestations on the cutaneous surface. Perhaps no better example of this can be cited than the so-called nettle rash or urticaria and kindred conditions, that so often appear on an otherwise healthy animal in a few hours, and may disappear as rapidly.

Many people can testify to the extremely uncomfortable symptoms following dietetic errors, as eruptions and itching of the skin, associated with a feeling of fullness, so marked at times, as to cause a sensation of stiffness of the hands and feet.

Dermis hyperemia from dietetic errors is probably brought about through nervous reflex to the vasomotor centers or to the nerve endings, or possibly to both.

Passive hyperemia of the dermis of

parts of the body other than the foot is not accompanied by severe pain, because the yielding nature of the tissues prevents serious pressure on the nerve endings that would otherwise exist from increase in tissue bulk, either from effusion or engorgement.

Conditions are greatly changed in the foot. Here we find the dermis (sensitive laminae) incased between the bone and the (epidermis) or horn tissue, both unyielding structures. The increase in the tissue bulk from either engorgement or effusion causes not only severe pain, but also obstructs venous circulation and soon produces by back pressure on the capillaries and arterioles, an active hyperemia which may terminate in inflammation.

The question might be asked why does laminitis not always accompany such dermic hyperemia? This does not seem difficult to understand. It is well known that many predisposing causes to disease exist without development of disease. But if a marked predisposing cause exists, and during such existence, a sufficient exciting cause be applied, the disease usually results.

Among such exciting causes that may apply, might be mentioned, as previously stated, any mechanical irritation, such as fast work on hard roads, long journeys on hard, rough or heated roads, faulty shoeing, long continued standing, etc.

Among the causes of the digestive disturbances that so often lead to laminitis might be mentioned extremely rich food or foods containing a large amount of certain elements that the digestive organs in their existing condition cannot digest and assimilate, hence become irritants; new foods, such as new hay and oats that have not passed through all their normal chemical changes outside the body, and are liable to produce excessive fermentation within the body; eating a heavy meal when tired from excessive work and not having sufficient nervous energy to stimulate digestion; eating too large a quantity of food at one

time, engorgement of the intestinal canal with water, thus diluting the digestive juices to a point where they will not be effective; drinking large quantities of cold water; chilling the mucosa and thus robbing it of the blood supply necessary to provide the essential secretions; eating a full feed and immediately going to hard work, the physical effort demanding so much of the nervous energy and circulation that the digestive tract is robbed of its essential elements; chronic diseases of the digestive organs, interfering with normal digestion; sudden changes in feed, thus loading the stomach with substances that it is not accustomed to digesting, etc.

Various constitutional diseases weaken the circulation and predispose to passive hyperemia and edema, either by weakened heart action or lowered vasomotor tension. Effusion under such circumstances is most marked in the pelvic limbs, because they are farther from and farther below the heart, and the backward venous pressure is greatest at the lowest point.

When the animal is in a standing posture we would naturally expect the hyperemia to be most marked in the feet, which is no doubt intensified by the great vascularity of the parts.

Add to this the exciting cause of continued standing, which is the position usually assumed by the equine in such diseases, thus forcing the wedge-shaped os pedis down into the triangular-shaped hoof to compress the laminae, and we surely have another combined predisposing and exciting cause for inflammation of this region.

If the horse is allowed the freedom of a loose box stall or a paddock, where he can move about, the change of position of the feet will tend to relieve the venous stasis in the laminae and lessen the danger of passive hyperemia.

Nervous disorders that might tend to produce laminitis could probably be summed up in those conditions that would lower vasomotor tension and the pheno-

mena following would be similar to that given above.

Long continued rest always tends to reduce tissue vitality, and overloading with waste products predisposes to passive hyperemia. Animals are less vigorous during the seasons when they are shedding their coats, and exposure, that at other times they would stand with impunity, would then produce conditions that would tend to predispose the animal to passive hyperemia of dependent parts, and then if a sufficient exciting cause is present the disease is likely to develop.

Improper shoeing is sometimes a factor in causing laminitis. Raising the heels changes the position of the os pedis, increasing the declivity of its anterior wall, thus lessening the pressure on the sensitive frog and increasing it on the laminae of the anterior part of the wall and the anterior part of the sensitive sole, may be factors.

Again it may be induced by too close paring of the sole and wall and tight nailing of shoe, causing undue pressure on the sensitive sole and on the laminae at the toe of the wall.

Parts Involved

In the great majority of cases laminitis is confined to the front feet, somewhat rarely it is seen in all four feet, and still more rare in the hind feet only.

Laminitis is rather common in one front or one hind foot as a result of continued standing on the one to relieve the opposite one incapacitated from bearing weight caused by disease or accident.

The front feet are nearer the heart than the hind ones, hence venous pressure is less at the sole of the front than at the sole of the hind feet; this would render the front ones slightly less susceptible to passive hyperemia from a weak circulation than the hind ones. This slight difference is far more than offset by the increased weight they bear.

The front feet being placed more centrally under the body, carry the major part of the weight, hence the pressure

on the sensitive laminae is much greater than on that of the hind ones. Also the horse stands on the front limbs without muscular effort, so when free from pain does not shift the weight from one foot to the other as he does with the hind ones, where muscular effort is essential to weight bearing and calls for rest. The moment weight is off the foot, pressure is relieved and obstruction to circulation removed. This probably explains why such a very large percentage of the cases of laminitis from general causes are confined to the front feet.

Symptoms

In order that we get a clear understanding of diffused inflammation of the sensitive laminae throughout all the varying stages of the condition, we will try to separate the symptoms of the acute, sub-acute, and chronic forms of laminitis from those of its varying sequelae.

The acute form is generally ushered in very suddenly. Often a horse that is perfectly free from symptoms of the disease is found a few hours later so stiff and sore than he will scarcely move. They stand like they were riveted to the ground. If forced to move the evidence of pain subsides to some extent after they have gone a short distance, to return more severe than ever after they have been allowed to stand for a short time. If the disease is confined to the two front feet, the hind feet are placed well under the center of the body to support the weight and the front ones are advanced in front of a perpendicular lines so as to lessen the weight they must bear. If they are made to move, the same position of the feet is maintained. If made to turn in a small circle, they do so by using the hind feet as a pivot, bringing the front parts around by placing as little weight on them as possible.

Placing the hind feet so far under the body, arches the back and often leads to errors in diagnosis, the condition sometimes being taken for disease of the loins or kidneys.

If all four feet are involved, the ani-

mals stands in the usual position assumed in health, but if urged to move, the least effort to do so usually brings on chronic spasms of the entire body. In very severe cases, a slight touch of the hand will develop the spasms. At times they are so severe, and have such short intermissions, that the disease has been mistaken for tetanus. However, the chronic nature of the spasm should prevent such an error. If they are lying down, it is difficult to get them to arise, and if they do so, they show marked symptoms of pain for some time after rising.

If the disease is confined to the hind feet, they are placed well forward to relieve the strain on the toe caused by the downward pull of the perforans tendon, but in place of the front feet being kept in front of a perpendicular line, as they are when the disease is confined to the front ones, they are placed far back under the body, so they will carry the maximum share of the body weight of which they are capable. The position of the feet is of great importance and offers symptoms that should not be overlooked.

When the disease is confined to one foot, the symptoms offered by the position assumed by the animal, will vary with the conditions of the previously lame foot.

If the lesion in the previously afflicted foot has recovered sufficiently to permit the animal to bear its weight upon it, he will do so, and entirely or partly relieve the one in which laminitis has developed.

If the previously afflicted foot should still be incapacitated, then the feet of the opposite extremities of the body will be placed in a position to bear their maximum possibility of body weight, and the one in which laminitis has developed will be placed as far in front of the perpendicular line as possible to bear the required weight, and the animal, thus compelled to bear weight on the diseased laminae, will be subject to all the nervous irritability and spasmodic conditions mentioned when all four feet are diseased.

The temperature usually ranges from 103 deg. F. to 104.5 deg. F., but should

the exudate become septic, the temperature will go higher.

The pulse is usually quite characteristic. It is full and strong, giving one the impression that the heart is strong, throwing a full volume of blood with moderate arterial pressure, with a pulse rate ranging usually from 40 to 60 beats per minute.

The resistance to the flow of blood through the engorged capillaries of the sensitive laminae causes a marked bounding pulse in the digital arteries, sesamoidean arch and large metacarpal and radio-palmar, arteries of the front legs and the digital arteries and sesamoidean arch and great metatarsal arteries of the hind legs.

The nearer the foot, the more pronounced the throbbing. The arterial throbbing is best felt by grasping the digit below the fetlock from the anterior surface, allowing the thumb to rest over one digital artery and the finger over the other. The same method may be applied just above the fetlock, where the great metacarpal divides to form the digitals.

Should the arteries in either, or both of these localities in the front leg be obscured by edema, the arterial condition may be determined by examining the radio-palmar artery where it passes between the skin and posterior annular ligament of the carpus as the ligament stretches from the posterior border of the trapezium to the head of the internal splint bone. If edema should interfere with palpation in the lower regions of the hind leg, the conditions of the circulation of the foot and limb may be determined by examining the great metatarsal artery where it passes over the antero-external aspect of the proximal end of the great metatarsal bone.

Of all the symptoms of laminitis, I consider a careful study of those afforded by the pulse to be of first importance to the diagnostician. If one familiarizes himself with the symptoms furnished by the arterial circulation, he should be comparatively free from errors, even though the examination was made in the dark.

Palpation and Percussion. The symp-

toms afforded by these means are of importance. The increased heat of the hoof is often very perceptible in palpating the part, but owing to the thickness of the horn tissue and the effect of the atmosphere on its surface, the evidence afforded is variable. If the hoof is hot, it is evidence of inflammation within, but the absence of perceptible heat, might not prove to the contrary.

Pressure upon the wall and sole with the hoof testers or shoer's pinchers is always a good method of detecting soreness, as is also the tap of the shoeing hammer.

In the chronic and sub-acute forms the symptoms are similar to those above enumerated, but less marked.

The chronic form may develop as a mild chronic inflammation or result from imperfect resolutions of an acute attack.

The lack of complete absorption of exudate may lead to connective tissue organization. New tissue thus formed interferes with normal circulation and results in chronic inflammation and pressure on the nerve endings. This renders the tissue more sensitive, hence slight exciting causes often bring on sub-acute attacks.

The symptoms in the sub-acute attacks rarely become so severe as in the acute form, but the oft repetition renders the horse useless.

The rheumatic laminitis that is sometimes mentioned is probably rheumatism of the white fibrous tissue of legs and feet.

Parturient laminitis is probably due to the action of toxins upon the blood. The standing posture being the exciting cause.

Course and Terminations

Laminitis may terminate in the following ways:

- 1st. Resolution.
- 2nd. Partial resolution (chronic form).
- 3rd. Transverse rotation of os pedis with descent of the sole.
- 4th. Infection of exudate. Purulent discharge. Septicemia. Sloughing of the hoofs. Absorption of toxins and death.

In some of the sequelae of laminitis, certain stages of inflammation are present to the end of life, while in others the inflammation appears to subside entirely and the only inconvenience the animal suffers is from anatomical changes that occur, and which can never be overcome. The time of their occurrence may be modified by the intensity of the inflammation which can usually be fairly well determined by the degree of pain present.

As a result of the vascular engorgement an exudate is soon thrown out on the surface of the sensitive laminae which is most marked around the anterior part of the wall and sole. The deposit of the exudate between the laminae of the sensitive and insensitive structures tends to destroy tissue continuity, thus loosening the attachment of the hoof to the bone, through the medium of the sensitive tissue.

The downward pressure of the toe of the hoof is due to the downward and backward pull of the perforans tendon on the sole of the os pedis through the bony angle of the fetlock and the fulcrum of the navicular bone. If the horse remains standing during the attack, the continued strain on the perforans tendon tends to rotate the os pedis on its transverse axis which is made possible by the dissolution of continuity between it and the wall, presses the sole downward and pulls the toe of the os pedis away from the wall. In time the pressure upon the sole depresses it below the level of the wall, giving the bottom of the foot a convex instead of normal concave shape commonly called *drop sole*.

As the toe of the os pedis descends it of necessity draws away from the wall leaving a space which is filled by exudate, which usually organizes into an imitation of horn tissue, often dry and crumbly in nature and yellow in color, constituting the so-called *seedy-toe*.

The inferior check ligament arising at the back of the carpus and inserting to the perforans tendon in its metacarpal region, converting that tendon into a

passive, inhibitory or limiting structure from the proximal end of the metacarpus to the sole of the os pedis, which limits dorsal flexion of digital articulations.

When the os pedis rotates on its transverse axis, the distance between the two attachments of this limiting apparatus is diminished and admits of an unusual degree of dorsal flexion of the digital articulations during advancement of the limb, this permits the heel to come to the ground first, and the toe a moment later. This condition is often noticed in horses that are otherwise free from lameness, so we must conclude the inflammatory condition has completely subsided in such cases. As a farther result of this elongation of the check apparatus, the weight and wear is mainly on the heels, permitting the toe to become elongated and turned up so as to give the anterior wall a concave appearance from above to below.

Partly as a result of the dissolution of continuity of tissues of the foot, and partly as a result of the alternating of the sub-acute attacks, either of which causes a perversion of hoof formation, rings are formed around the hoof giving it a corrugated appearance.

Chronic laminitis is usually confined to the front feet, unless it is a sequelae to the acute form. The symptoms are the same as those enumerated when the acute form is confined to the front feet, but modified in proportion to the degree of inflammation present. If it develops as a chronic disease, little or no hoof changes are noted but if it is the remains of an acute attack, the hoof changes will be in proportion to the degree and duration of the acute stage.

Lameness in chronic laminitis is always in accordance with degree of inflammation present and may extend from a slight chronic lameness to complete inability to work.

Two symptoms are always present. First, the feet are kept well in front of a perpendicular line, both in standing and moving, second, throbbing of the digital arteries is always present. These two

symptoms coupled with its chronic nature and bilateral tendency is sufficient evidence upon which to base a diagnosis, but may be farther verified by palpation and percussion of the hoof.

This form of laminitis or chronic pododermatitis is often mistaken for navicular disease (podotrochitis) but the differentiating symptoms are quite plain. In chronic laminitis, as stated, the feet are well advanced and weight largely borne by the heels and frogs which are broad and well developed.

In navicular disease, the step is short and groggy with a tendency to stub the toes to the ground and save the heels and as a result the toe of the shoe or hoof is well worn off, the quarters become long and upright and frog atrophied.

In laminitis, lameness is relieved by flat shoe and round or rockered toe and increased by raising the heels which forces the os pedis into the triangle shaped hoof with greater force, thus increasing the pressure on the sensitive laminae and relieving the weight on the frog.

In navicular disease, the lameness is increased by bar or other shoes with frog pressure or elevated toe, but improved by high heel and short toe, because raising the heel increases the angle of the perforans tendon as it passes under the navicular bone and relieves the pressure at that point.

The high toe diminishes the angle at the navicular and increases the pressure between the perforans tendon and navicular bone. The bar shoe causes direct pressure on the inflamed navicular region.

The symptoms furnished by the arterial circulation is also important. The throbbing of the digital arteries, as above stated, is due to resistance to the flow of blood through the congested venous and capillary systems in the sensitive laminae. In navicular disease, the inflamed area is not very large and the structures involved are of low vascularity, and the resistance is not sufficient to produce a noticeable effect on the arterial walls,

hence the digital pulse is throbbing in chronic laminitis, but normal in navicular diseases.

In very severe forms of laminitis, especially where it involves all four feet, infection of the exudate may occur and a purulent inflammation result with abscess formation about the coronet and pus formation at the toe.

The circulation may be so completely arrested as to cause gangrene and sloughing of the hoofs, or the absorption of toxins from septic processes may cause death.

At other times the extreme and protracted pain causes the animal to assume the decubital position so long, that complications arise with fatal termination.

Prognosis

As already stated, equine laminitis is a grave disease, and one in which complete recovery is not common.

The disease is not often fatal, perhaps never except through arising complications. Owing to the anatomical construction of the parts, it requires but slight pathological change to produce lameness. Comparatively few cases of the more severe forms of laminitis ever completely recover.

Treatment

Treatment, to be effective, should be rendered early so as to obviate anatomical changes.

As the attack is usually sudden and often occurs in plethoric horses with full blood supply, the efforts to cut the disease short should be directed toward lessening the volume of the circulating medium and lowering blood pressure. For this purpose, free blood letting has long been practiced and is still recommended by good practitioners.

It is only to be recommended in strong, vigorous and otherwise healthy horses, and then only in the hyperemic stage for the purpose of unloading engorged vessels. The amount of blood to be extracted would depend upon the size and condition of the horse, usually from four to ten quarts or a sufficient amount to cause the pulse to become smooth, soft and reg-

ular and the skin moist. Venesection is usually practiced upon the jugular vein, but theoretically, we believe, the blood should be extracted from some vessel that would directly unload the engorged vessels of the foot; for this reason, when the disease is confined to the front feet, we have preferred to open the internal subcutaneous veins in each forearm. These vessels are very superficial, which render venesection easy, and a sufficient quantity of blood can soon be extracted from the two to accomplish the desired results.

It has seemed to be reasonable to believe that extracting blood from these vessels should be as applicable to the relief of hyperemia of the feet as extracting blood from the jugular is for relief of cerebral hyperemia. Bleeding from the toe, or coronary plexus has been recommended, but is of doubtful efficiency. The amount of blood that can be extracted from either of these localities in a given length of time is insufficient to unload the engorged vessels to a degree that will be beneficial. Furthermore, wounds about the feet are always prone to infection, and should be avoided whenever possible.

Another method of lessening blood pressure is to diminish the supply by reducing the heart's action. This is probably best done by the liberal use of aconite. Here experience has taught that the best results are obtained by pushing its administration rapidly until its physiological action is obtained.

Ten to twenty minims of fluidextract of aconite should be administered and if its physiological action is not manifested by champing the jaws and drooling from the mouth in one hour, the dose should be repeated and this process continued every hour until such symptoms are manifested.

The administration of such heroic medication should be intrusted only to competent attendants, who will watch carefully for the toxic symptoms and discontinue the remedy as soon as they are present, else serious harm may result. In

many instances one such course of treatment will be all the medication the patient will need, but if in 24 to 48 hours convalescence is not well established and the pulse has become full and strong, then and then only, should the same dosage be repeated.

Perhaps next of importance to relieving hyperemia by reducing blood pressure, is to relieve as far as possible, any mechanical resistance to circulation within the hoof.

The excruciating pain caused by the slightest movement often induces the horse to stand almost motionless for hours. The long continued uninterrupted pressure of the os pedis on the sensitive laminae is no doubt of great disadvantage in the treatment and should be overcome as early as possible.

The standing posture also favors displacement of the os pedis. If the patient persists in standing he should be cast on a good and comfortable bed and as soon as he ceases to struggle to get up, the restraint should be removed and if quiet they will usually remain in the recumbent position. Should they refuse such rest, narcotics may be used, cannabis indica, gelsemium, chloral hydrate and opium are used.

The bowel should also receive prompt attention. If the attack has developed with the intestinal tract well loaded with ingesta and the bowels not over active, a laxative or mild cathartic should be given, otherwise purgatives are contra-indicated.

Laxative foods, plenty of pure drinking water, with frequent warm rectal injections are much more practical than drastic purgatives. If medicinal agents are needed, arecoline in small repeated doses is admissible but in no case should it be given in doses large enough to produce griping or other distressing constitutional symptoms.

Four to six drams of aloes is often serviceable. One ounce doses of oleum lini orally repeated every hour for 24 to 36 hours is often serviceable. Rectal ad-

ministration of the same in pint doses and repeated is often efficient.

Drenching with the horse in a recumbent position is always dangerous, and should be avoided when possible. If pain is severe, subcutaneous injections of morphin may be helpful.

In treating this disease, as in others when a reasonable amount of a drug has been administered without effect it should be at once discontinued. For the sake of the dumb animal and the love and respect of our profession, do not make an apothecary shop out of your patient.

Potassium nitrate is often highly recommended in the treatment of laminitis, but my personal experience has not proven its efficiency. Perhaps as a deobstruent and to promote elimination, it is indirectly beneficial. To obtain such results it should be given in moderate doses and continued for some time.

Various other agents have been recommended in the treatment of this disease, but their mode of action, if they possess any, is not sufficiently understood by the writer to be presented here.

Everything that can be done to make the animal comfortable should be carried out carefully. Strict cleanliness is always important.

A roomy box stall, well lighted and bedded, and if in fly time, well screened, is essential. Only a light laxative diet should be permitted. Green grass in season and roots and mashes in winter. Plenty of pure water at a moderate temperature as often as the animal will drink, and if the weather is cold, protect the patient with blankets.

If they persist in lying for more than three hours at a time, they should be turned over. If shod, the shoes should be removed as soon as the attack is noticed, and if the hoof is extra long or the sole thick, both should be carefully pared.

Ligating the digital arteries, with a view of starving the inflammatory process has been recommended. The theory is surely good, but would seem to be

difficult to carry out without complete destruction of the arteries. It might be worthy of more study.

Local applications in the treatment of laminitis has many advocates and various methods have been suggested.

A method often employed by the layman is to tie the patient so he will stand in water, some believing that running water possesses special virtues. Many practitioners of the present day prefer to either stand their patients in water or mud, while some prefer cold packs and others hot applications, either hot water or hot poultices. Apparently all of these various methods have proven beneficial and it is hard to say that either is without merit.

From our present knowledge of the tendency of the os pedis to rotate on its transverse axis during weight bearing, it would appear that any treatment that requires the horse to stand for any length of time is contraindicated and dangerous and should be avoided.

Why some patients are more benefited by cold than heat, while with others the reverse seems to be true, is a question difficult to answer and no definite rule seems to apply.

Cold applications in the form of cold water and ice packs were used by the writer for many years, but for ten or more years past, preference has been given to warm soothing applications, with apparently much better success.

Of cold applications, the ice pack is surely the best. The crushed ice should be mixed with wheat bran and be applied to the feet. Bran absorbs the water from the melting ice and lessens moisture in the stall and assists in maintaining the low temperature. If ice cannot be had, rugs wrung out of cold water and applied to the feet and frequently repeated, may be substituted. Large packs of bran frequently wet with cold water will be helpful. Hot flaxseed poultices applied as hot as the horse can bear and repeated two or three times daily has proven most beneficial.

Some advise hot water for two or

three hours with the view of relaxing the tissues to overcome the hyperemia and immediately follow with very cold applications to produce contractions of the vessel and prevent re-engorgement.

A bag made out of strong cloth, one to two inches in diameter, filled with potassium nitrate and tied around the coronet and frequently wet with cold water has apparently been beneficial in sub-acute laminitis, although in these cases, the acute symptoms usually subside with a few days' rest, so the supposed benefit might not have been real.

Neurectomy is often very beneficial in relieving lameness from chronic laminitis, as well as lameness from the various sequelae, but any form of neurectomy that produces complete and permanent anesthesia of the foot is always dangerous and should be avoided.

In quite an experience with median neurectomy for the relief of such lameness I can say no bad results have followed.

While median neurectomy does not afford complete relief from pain, it does modify it to a large extent and usually renders a horse serviceable for ordinary work and, in my opinion, should always be performed.

Shoeing is of great importance and demands the skill of the best shoer.

It is well known that elevating the heel increases the pain, hence a level shoe is indispensable. The greatest pain is experienced at the moment the foot breaks over on the toe, hence a shoe constructed so that downward pull on the toe by the perforans tendon will be reduced to the minimum, will give the animal the greatest amount of relief. This is probably best obtained by having the rear two-thirds of the web flat and the anterior one-third rounded from below upward like a rocker, commonly called the rocker or rolling motion shoe.

If the sole is not too sensitive, a wide web and seating is advisable as it equalizes the weight on the sole and wall.

A leather pad placed between the shoe

and the hoof with a moderate amount of oakum saturated with tar oil placed above the leather to keep the bottom of the hoof soft is also helpful.

Thick rubber pads with a thick rockered toe that does not raise the heel above a level is also serviceable as they

relieve concussion. In the acute form, a rocker shoe should be applied as soon as convalescence has progressed to a point where the horse is inclined to remain standing a good share of the time and then, and then only, is walking exercise beneficial.

An Experience in Mexican Meat Inspection*

By O. E. TROY, D. V. S., Raton, New Mexico.

WHILE sojourning in southern California endeavoring to regain a nervous equilibrium which had been severely taxed by a season of serum producing I was surprised to receive a telegram from a representative of Gen. Villa, asking me if I would consider a position as veterinarian to assume the duties of establishing and maintaining a system of meat-inspection which would be recognized by the U. S. Dept. of Agriculture. They informed me that my name had been suggested and approved by the Department.

Accordingly after settling the necessary preliminaries I proceeded to El Paso early in November, 1914, to find in Jaurez, Mex., a concern which I shall designate as the Jaurez Packing Co. busily engaged in remodeling an old slaughter house according to suggestions of a representative of the U. S. B. A. I. I learned that the scope of the inspection would be limited to the one plant, and that the Governmental authorities were inclined to keep the expense of inspection as low as possible, there being no regular appropriation for its maintenance but the expense to be paid out of a general fund.

The establishment of inspection being for the avowed purpose of exportation of beef; it did not have the moral support of the Mexican people or governmental authorities and improvement of local conditions or the inspection of locally consumed product was not desired.

*This article was written before the estrangement of Villa and Carranza.—E. H. R.

The U. S. Department of Agriculture assumed a paternal supervision over the preparation of the plant and a final inspection report was rendered to Washington and approved before slaughtering for export began.

In the interim, between the time of my arrival and the opening of the plant I arranged the preliminaries of inspection and secured the services of a good assistant, although at a salary not consistent with the service needed and expected.

Right here I will emphasize what I consider one of the fundamental faults of the Mexican people is, that they oppose in every possible way the advancement of the working people, and therefore any Mexican with sense and ambition will seek employment with foreigners in preference to his own people. I had noticed this tendency in former association with Mexicans but never so clearly or pertly expressed as when I applied personally to Senor Villa for a small advance in salary for an assistant. He stated that the man in question was a refugee and that they were showing him special consideration in allowing him to work at all. To establish a thorough inspection I realized that perfect system in slaughtering was essential and one may imagine the difficulty of securing system among men whose very natures are opposed to systematic life.

We were, however, moderately successful and I believe that in so far as locating and eliminating unfit meat from food channels is concerned, our work was on

a par if not superior to the average inspection in the United States.

Having stated above that the inspection did not have the moral support of the Mexican people or authorities I will cite the following incidents as a basis for this conclusion; shortly after the plant opened I received a visit from Senor Villa, expecting of course that he would be interested in the inspection methods I took advantage of the opportunity to explain the system that I had adopted and the purpose of the same. I proved, however, to be a poor entertainer and after a poor show of interest the Jefe remarked "these are ideas of the Americans but we have lived very well without them."

Another case: Local butcher shop men were obliged for a time to use inspected meat and I required them to come for the meat in clean wagons and to provide covers. This regulation proved an almost unbearable burden to them and great was their relief when arrangements were made for them to secure meat from an uninspected plant where no restrictions as to cleanliness were imposed.

The manager of the plant, an admirable man in many ways and a good average Mexican, could not comprehend and never became reconciled to destruction of carcasses or parts on account of disease. To prevent it he first tried bribery, then threats, and finally he would stand with tears in his eyes deploring the wilful waste, when obliged to see a carcass tanked.

Luckily for the Mexican people communicable diseases among the range cattle are practically nil. Tuberculosis exists around Ciudad, Jaurez and Chihuahua because condemned dairy cows from the El Paso district find a market there. It exists in sections of the state of Aguas Calientes and Jalisco probably for similar reasons. Liverflukes (*Distoma hepaticum*) are very prevalent among southern Mexico cattle and as high as 90 per cent of livers are condemned.

Cysticercus bovis is found to a lim-

ited extent in cattle from all sections but the main pathologic conditions encountered are due directly or indirectly to horn puncture wounds.

A great percentage of the cattle slaughtered during my term of inspection were thin or depleted by long railway journeys and my greatest trial was the separation of carcasses which should be deemed emaciated. On ante-mortem inspection I refused entry to all cattle unduly thin. On the killing beds I marked for cooling tests all carcasses which were questionable, realizing, however, that constant handling of thin carcasses creates in (I believe any inspector) a tendency to leniency, I arranged with the U. S. Department of Agriculture to report to me any carcass or part which did not comply with U. S. requirements; by this means I hoped to keep a constant check on my own work and a second check on that of my assistants. Up to the date on which the plant ceased operation I had received practically no complaint on the product received in the U. S. Imagine then my surprise when I received from Washington a telegram stating that "on account of unsatisfactory conditions in Jaurez plant, no more meat will be admitted after May 7th", *the date on which I received the notice.*

I immediately took steps to ascertain wherein my work had been found lacking but up to date I have been unable to obtain any detailed information on the subject.

Realizing that my efforts, from the standpoint of results, had proved a failure I sent in my resignation which they did not, at the time or have they yet, accepted, but later we arranged an indefinite leave of absence which probably is equivalent to the above.

Many of my experiences in Mexico bring out interesting points regarding the people who are giving us nationally no little concern and I shall endeavor to recount a few of them.

Following Gen. Villa's successful southern campaign when he became master of all the states to Mexico City we

received large shipments of cattle from tick infested districts; these cattle were held upon a deserted ranch some kilometers south of the plant until needed for slaughter. Believing the danger of infesting the district with fever ticks was imminent (probably multiplying my inspection troubles by giving me Texas fever to contend with on the killing floor) I prevailed upon the authorities to allow me to visit this range with a view of devising a system of quarantine that would prevent the widespread distribution of ticks and the infection of northern cattle. My only available time for this trip was on Sunday. So armed with a letter and passport I boarded the southbound train Saturday night. To my surprise and disgust the military inspector refused to accept my passport and I was obliged to go to a telephone and call Gen. Villa's secretary; in the meantime the train pulled out.

Not to be outdone I secured an order to the train dispatcher and he provided transportation on a train following. I found poor accommodation at the station at which I got off but I was ready the next morning at daylight to leave the military camp and ride in company with a captain and a squad of soldiers to the range in question. We arrived at an old headquarters ranch about 10 a. m. and I beheld conditions which made me feel inclined to change my opinion about Uncle Sam's duty toward Mexico. I felt like urging conquest. The ranch was an old Spanish grant, long ago deserted by its refugee owner, the buildings of Spanish type but massive stone structures which will last as long as the hills on which they are built; a system of chutes and corrals all of rock with basis of the fence eight feet wide tapered to four feet at the top. Three or four families were tenanted there who apparently produced nothing, **living on** rations and beef. We were served with a crude but excellent meal after which I looked over the ranch and we returned to the railroad camp.

The evening I spent talking to differ-

ent members of the garrison, the conversation with one from which I will quote.

I desired to learn what their ideas and ideals were; so I asked this man, a fairly intelligent lad of about 25 years, why he was soldiering, to which he made the following reply: "I was living in the south and worked north along the railroads when I learned that laborers were often attacked by squads of soldiers, accused of belonging to the opposition and shot; they were forbidden arms and had no means of self-protection. I therefore joined the Villa army, for in it at least I have a fighting chance." Many is the soldier who is soldiering for a similar reason. There is little feeling or show of patriotism and an almost unanimous belief that the "Jefes" are getting rich.

At another time I had an opportunity to observe the personnel of the Mexican army owing to the following circumstances: Early in the winter the army under Gen. Cabral was sent north to route the Carranzistas out of the state of Sonora. I arrived at the plant one morning to find the plant and its environs in possession of numerous squads of men, women and children, the men wearing the remains of a khaki uniform, a belt of cartridges and a gun; all of them were under-sized, and many mere boys whom I doubt could sight the guns they carried without a rest; their horses (crow-baits) occupied the corrals and pens of the plant, and I found the manager of the plant at a loss as to how he would get cattle in to kill. I accompanied him among the squads of people in an effort to find the officer in charge but every time we found a man who claimed to be in authority another disputed his right. We finally singled out three of the most likely appearing individuals and secured their aid in moving the ponies and passing the cattle into the knocking pens. I cite this incident to show the existing military organization and discipline. Later in the day these same people came in squads and carried away every particle of offal (intestines, tripe, spleens, etc.), with which to replenish their short

rations. At all times the flesh of cattle which died or arrived dead in cars was sold in local markets or hauled away by individuals for food purposes. Considerable loss in shipping cattle on Mexican roads is the rule as their motive power is very deficient and feeding stations do not exist and it is very common for cattle to be en route 60 hours without feed, water or rest. These conditions bring forcibly to one's attention the value of our 28-hour law.

Conditions in Mexico are in a sad state, industry is paralyzed, the only medium of exchange is a fiat money which at present has a gold valuation of one cent on the peso.

Localities which are not intrinsically self-supporting are often destitute of food and the effect of the lack of proper food is noticeable everywhere, especially in the small children. Pick up almost any child found playing in the street and you find their bodies emaciated with a protruding abdomen, indicating distension of the stomach with indigestible and unsatisfying food.

Mexico needs peace (I will reserve unexpressed my opinion of how it can be made possible); she must find a man

from within or without her domain who can wield a hand of iron yet who has combined in his make-up a sympathetic foresight which will prevent the hardening of his heart or to state the case simpler he must enforce the laws severely and unswervingly but educate and develop the people and allow change and modification of the laws to their changing needs.

A democratic form of government is impossible of realization in Mexico for years to come and the longer this war of destruction continues the farther it is pushed into the future; as the progressive poverty makes the education of the masses more and more difficult.

Since my withdrawal from Mexico the United States has permitted the re-establishment of inspection on an entirely different plan which I hope will prove successful, and if the present inspectors have been enlightened of the errors made in the past and can thereby avoid them in the future, I will feel that I have contributed to their success. Personally I deem my short experience in Mexico as most interesting and well worth while but I have no regrets at being out and well away from turbulent Mexico.

In submitting a case to a physician, surgeon, or veterinarian, there is implied a tacit agreement that the professional man shall use his best knowledge and treatment, and this implies also an agreement to submit to such operative measures as seem to him necessary. Whenever an operation is not anticipated by the owner of an animal which is submitted to the care of a veterinarian he should inform such owner before performing the operation, unless the conditions are such that it is impossible to reach the owner without jeopardizing the

life of the animal.—Hemenway, "Essentials of Veterinary Law."

No man has a right to break the laws under which he is living. Incidentally to his professional work a veterinarian may subject himself to penalties under enacted statutes or ordinances. Thus, where a local law gives a body or an officer the authority to prevent cruelty to animals, and a man has been legally ordered not to work a horse, a veterinarian who advises the owner that the horse may be worked may thereby incur the penalty.—Hemenway, "Essentials of Veterinary Law."

A Message to the Seniors in Our Veterinary Colleges Upon Whom the Future of the Profession Depends

By JOHN L. TYLER, D. V. S., M. D., Pomona, California.

IF there is any one thing I like to do, it is to get the eye and ear of the young man just starting his professional career. Usually when you have done that, you have secured his attention also. The young man especially appeals to me, for the future of our profession depends largely upon him. As a class, he is different from the older men in our profession, who form a link between the extreme old and the new order of things as seen in the young men. As a class his educational training is of a higher order, and perforce more is expected of him. We older fellows are past the impressionable age, and largely what we are we will be for all time to come. But the young man has possibilities that were only dreamed of and not enjoyed by us older men in the profession.

There are a few things I always want to impress upon the young man at the beginning of his life's work. Life is made up largely of two things—set backs and get-backs. These two terms cover about the whole scope of human endeavor. The first comes to us unsolicited; the second depends largely upon our own efforts and our ability to grasp the situation and use our natural and acquired forces. How necessary then that we lay the right foundation at the start! For that reason the young man should early lay a foundation both sure and secure, on which to build his future career. Usually in laying a foundation, we use only one corner-stone—at least, we only give the one any great amount of attention. But in laying life's foundation, it is well to pay strict attention to all four, that we may stand four square to

the world. The four stones should stand for the four cardinal principles which to my mind should govern every young man's life.

First, be an optimist.

Second, be honest.

Third, be studious.

Fourth, be industrious.

I place optimism first because if you have the other three and lack optimism, your life is likely to be a failure as you do not get all that is coming to you out of life—you degenerate into a cynic or a pessimist, lessening your capacity to either benefit yourself or any one else. Of all the people in the world who need to cultivate optimism, it is the practitioner of medicine in any of its branches. He is continually thrown in contact with trouble and pain; his very existence depends upon trouble; he gains his living at the expense of others' misfortunes. How necessary then that he be able to dispense something more than powders and pills! But before you can dispense anything, it is necessary to stock up. The optimist is very apt to be also an idealist. Hitch your ambitions to a star, and with them mount to heights unknown to him, who of common mold contentedly plods a lower way.

Honesty needs no defense or elaboration. It constitutes one of the basic principles that go to make up a successful life, and there is nothing I could say that would enhance its importance; so, why attempt the impossible?

Studiousness is a virtue that may be either inherent or acquired, but in either case it is a necessity. Times and conditions change, and we must advance with them, and only by study and observation

can we expect to maintain our proper place in life's race. The nature of our profession throws into our care that most priceless gift—life. What will a man not give for his life, and what will not some of our patrons give for an animal's life, especially if by saving it we increase his worldly goods? Life is the one thing that comes to all creatures alike and but once. Unbidden it comes, and unbidden it goes, and aside from a proper use and enjoyment of it, is beyond our control. So you see what a precious gift is entrusted to our care. What wonder then that we should explore every channel of knowledge and equip ourselves to conserve and guard it! We as veterinarians have a double duty to perform—conserve animal life and guard the human through the enforcement of sanitary measures and the protection of our food supply. Be studious then and keep abreast of the times. Nothing stands still—either you are advancing or you are slipping back. Never be content with your present knowledge of things.

In industry and its results, we see the culmination of all our fondest dreams. It affords the one outlet for all our pent-up preparedness and en-

thusiasm. In its practice we are able to realize upon our other assets and turn them to practical use, both for our own good and that of others. The laggard is soon left behind in this day of rapid transit and becomes an object both of pity and scorn, and sooner or later often becomes also an object of charity. There is a great difference between enthusiasm and industry. Some men become very enthusiastic while sitting on a nail keg or some other kind of a keg at the public loafing place, wherever it may be, but it ends there. So no matter how well prepared we are, if we fail to use our talents, we fail.

To sum up then in closing—

First; always hum a tune in the face of Adversity, and she will turn her back on you.

Second; in your dealings, be clean-cut like a diamond, and you will sparkle from any angle.

Third; court the goddess of knowledge and press the suit vigorously.

Fourth; practice these virtues at all times, and you will live up to the Latin phrase *Sic vos, non vobis*, and later become a living synonym of another Latin quotation, *Experto crede*.

An automobile may properly be upon the public road, and a horse may be frightened thereby, but if the horse chances to be unusually nervous the autoist would not be liable. On the other hand, an autoist running at a high rate of speed by a horse should be held strictly liable for any damage which may result.—Hemenway, "Essentials of Veterinary Law."

In law a distinction is made in the ownership of different kinds of animals. One may have an absolute ownership in such domestic animals as the horse, cow, sheep and hog. The law gives him full protection in such ownership. The own-

ership of dogs is different. Dogs are called qualified property in the common law, under the idea that they are normally animals *ferae naturae*, that is wild animals, which have been captured and tamed. By the laws of many states dogs are made property; but we have very many decisions which insist that a dog is property only while within the provisions of the law. Thus, when the law says that a dog must be licensed, or must wear a collar, or must wear a muzzle, if the thing required by law is omitted by the owner in the care of his dog, the animal will not be considered within the protection of the law.—Hemenway, "Essentials of Veterinary Law."

Equine Laminitis*

By W. J. MARTIN, V. S., Kankakee, Ill.

In presenting the subject of equine laminitis for consideration, my object is not to bring forward anything new or startling pertaining to the etiology, pathology or treatment of this disease. The idea was to present a practical subject for discussion and try and bring out the views of as many present as possible as to the best methods to be employed in the management and treatment of this disease, one of the most painful of the many common diseases of the horse. If this can be done, the time spent in preparing this paper will not be considered ill-spent.

To the country practitioner laminitis is a very common disease. As met with in country practice, the disease is, in my opinion, of a more severe nature than that usually met with in city practice. This is easily accounted for when you take into consideration that laminitis is to a great extent, a dietetic disease; and that the food supply is much more abundant and cheaper in the country, than in the city. Again, the work of horses in the country is much more irregular than in the city. In the treatment of laminitis the country practitioner is often handicapped by the distances that intervene between him and his patient so that he is unable to give the animal the daily attention it so urgently requires. Again, the carelessness of the country owner is often a drawback, as he sometimes waits several days before calling a practitioner. This does not occur so often in a city practice where, as a rule, horses are more carefully looked after, and attendants are more adept in the care of horses, than are those in the country.

There there is no disease of the horse that demands prompt medical attention

to ensure recovery than laminitis. In every case a delay of from 24 to 48 hours is dangerous and tends to depreciate permanently the value of the animal. Where treatment is began early, the reverse is true. The disease generally runs a favorable course in a few days, say a week or ten days. In delayed cases, serious and often fatal complications ensue. When called to treat such cases, it is always good policy to give a guarded prognosis; if you do not, you will often wish you had. In early treated cases, but slight anatomical changes take place within the hoofs, heart, lungs, and other important organs, and these will soon recover from the shock of the disease.

I am not going to bore you with a long discourse on the pathology of the disease, because doubtless you are more familiar with that subject than I am. If you are not, a reference to any of the standard text books will set you right. We will take up for consideration but two forms of laminitis, viz., general laminitis, or that form of the disease that is met with in all classes of horses unconnected with wounds, bruises, etc., and the septic laminitis so common in the mare after parturition.

General Laminitis.—As stated above, this disease is common in all types of horses, though in country practice it is largely confined to heavy draft animals. It is especially common in draft stallions. This is largely due to these animals environment. Stallions when they first begin to make their spring circuits often fall victims to laminitis. Draft stallions are as a rule kept during the off season months in small out-houses or box stalls. In general they get little exercise or care. Often their quarters remain uncleaned for months at a time, and their feet receive practically no attention.

*Presented at annual meeting of the Illinois Veterinary Medical Association, Chicago, Dec., 1915.

Often you will find that their shoes have been allowed to remain on their feet for months at a time, hence their feet will be found in bad shape, deformed, sole partly decayed, and the frog and heels the seat of thrush. As a rule they get no grooming and their food usually consists exclusively of straw and corn. It is not to be wondered at that these animals fall easy victims to laminitis, while travelling over muddy roads in inclement spring weather. It has been my experience that many of them do, and I am free to admit, that for downright suffering I have never seen anything in the whole calendar of equine diseases to equal this form of laminitis. You get all the complications that you are conversant with, and some that you never thought could exist in the equine organism. The disease is almost invariably of such a severe type that it will require all your skill to conduct it to a favorable termination. Quite often the reverse occurs.

Conformation of Hoof.—While it may be true in many cases of laminitis occurring in old city horses that the hoofs are in many cases badly formed or distorted, flat, pointed, etc., this does not as a rule hold good in the case of country horses. Some of the severest forms of laminitis I have ever seen, occurred in horses whose feet prior to the attack were almost perfect in form. This is especially so among farm horses suffering their first attack. In a large majority of such animals you will find they never had a shoe on their feet, so that improper shoeing can not be charged with causing the disease. Of course, bad shoeing, or shoes left on too long, help to aggravate the trouble. Laminitis occurring in horses whose feet are affected with septic infection such as thrush, suppurating corns, etc., are very apt to have an unfavorable termination, much more so, than when the hoofs are well formed and sound.

Authors state that the exudation that takes place within the hoofs during an attack of laminitis is supposed to occur

in the external surfaces of the sensitive lamina. This may be so, but I am inclined to think that the same process takes place in every other tissue inclosed within the hoof including even the periosteum of the bones.

It has been proven in my experience with not only laminitis but in many other diseases of the equine hoof, that white hoofs like white skin is much more subject to disease and to respond less favorably to treatment than hoofs of a darker color. Why this should be so, I am unable to say, and so far as I am aware, physiology gives us no explanation.

In attacks of laminitis involving the front feet only, it has been my experience that there is almost invariably one foot more seriously affected than the other, and in a large majority of such cases it is the left one. Why this should be so, I am unable to say. Perhaps some one present may be able to give me the desired information.

Some authors claim that laminitis may, in certain cases, involve the hind feet only. This theory I am satisfied is untenable. In fact I have never seen such a phenomenon occur. The exact reverse appears to be the case. I have never seen a case of laminitis occur in the hind feet without the fore feet being affected also. I am now referring to a true case of laminitis and not to the traumatic, rheumatismal or so-called metastatic type of the disease, and which in my opinion, is not true laminitis. Neither have I ever seen laminitis involve one fore and one hind foot as some authors state may occur. In some cases of laminitis that primarily involve the fore feet only, the disease has been transferred to the hind feet by the animal maintaining a standing position for too long a time and the undue weight placed on the hind feet was the cause of the inflammatory action.

Laminitis occurring in, or following an attack of influenza, pneumonia, etc., is as a rule, much less severe than the form we have been discussing. Of

course, laminitis following any of the above mentioned diseases may terminate fatally, but we should bear in mind that the laminitis is, or was, but one of the many serious complications that quite often follow in the wake of these diseases and that such might have led to a fatal termination, if laminitis had not made its appearance. We should here view laminitis as an indirect cause of death.

Etiology.—This in my opinion is obscure. We know in a general way that as a rule laminitis is due to a congestive or inflammatory action that is taking place within the hoofs, and in fact, in every other important organ of the body as well. We know that certain untoward conditions to which an animal has been exposed are very apt to bring on an attack of laminitis, such as overfeeding, hard and fast work, indigestion, certain atmospheric conditions that produce a sudden chilling of the body, febrile diseases, ingestion of large quantities of cold water when the animal is heated; all these and many other phenomena we know are very likely to cause laminitis, but as to why, we as yet know scarcely nothing.

In septic laminitis of the mare, we know, or think we know, that the disease is due to microbial invasion of the uterus with that organ acting as culture receptacle for bacteria that speedily cause decomposition of the fetal membranes or other lochial debris that may be within the uterus. We know, or at least we think we know, that each and every living organism is a battle ground in the widest sense of the word. When the balance of power between the contending organic bacteria or microbial bodies that act injuriously on the body, and the living cells whose function it is to protect that body are equal, a condition known as health will prevail; when the reverse is the case, ill health results. We know that proper food and hygienic methods go a long way toward preventing disease, yet disease is common where even the best forms of sanitation pre-

vail. Why should this be so? Biology teaches that life is a constant struggle for existence between good and evil microbial organic life. The function of one seems to destroy, the other to build up and preserve. A horse that to all appearances is enjoying perfect health is suddenly attacked with acute laminitis, due as we suppose, to errors of diet, hard labor, atmospheric changes, etc.; this is largely supposition on our part. It seems to me, that we as a profession have to a large extent been unable to penetrate the veil of mystery, that surrounds the etiology of many of the most common animal diseases. I have never believed that many of the causes that are supposed to cause laminitis, had very much to do in bringing on the disease; in fact I have merely considered many such merely extraneous conditions favored the rapid progress of the disease, the true cause of which we know next to nothing.

My opinion is that laminitis and many other dietetic diseases are largely due to microbial activities within the animal organism. I am now referring to general laminitis, that acutely rapid and severe form we so often see and that is in no way connected with wounds or other extraneous causes. We know, or think we know, that many equine diseases are caused by the animal eating grain, fodder or grasses that are contaminated with the spores of disease producing microorganisms, such as anthrax, black leg, spinal meningitis, and a host of other diseases. Why should the case be different in horses suffering from laminitis due to eating large amounts of new oats, corn, new hay, etc.? I can see no reasonable explanation why such a pathological condition should not occur in laminitis. We know that ensilage is a very dangerous food for horses, we know that many hundreds of horses died in this state during the past winter from eating ensilage. The symptoms presented in every case that I saw were typical of an intense ptomain poisoning that principally affected the brain and

spinal cord. This kind of food appeared to have a special affinity for these parts of the animal's system, why should not new oats, corn, hay, etc., produce a toxic condition, such as we call laminitis? I believe they do. I also believe that the forms of microbial infections that cause laminitis, has a greater effect on the circulation of the blood than on any other part of the animal economy.

In the study of the etiology of many of the common diseases of the domestic animals, we have made but small, if any advance in the past or even up to the present time. In many instances, we have been simply groping, as it were in the dark. For example: How many of us who see horses die quickly and in the most intense agony, from so-called colic, know, or even have the remotest idea, as to what caused the animal's death? We call it colic, enteritis, impaction, etc., and let it go at that. If bacteriologists would devote a small part of their time to the study of the etiology of the more common diseases of domestic animals, they would in my opinion, be well repaid for their labors. They would find I believe, for instance, that many of those deadly intestinal diseases of equines were largely if not entirely due to micro-organisms contained in the animal's foods. Anthrax bacilli is in my opinion, often the cause of death in many of those rapidly fatal cases of colic, while ptomain poisoning often plays an important part in causing other dietetic diseases. I am merely calling your attention as to the course I think should be taken in the search for more light on the etiology of the many common diseases of domestic animals.

Diagnosis.—The symptoms of acute general laminitis are so plain that he who runs may read. We see the rainbow shape of the animal's body, back arched, hind limbs thrust forward under the body as far as possible, the fore limbs are also advanced to a certain extent, with the weight of the body as nearly balanced on the heels as possible. An intense congestion of the feet which

renders them extremely hypersensitive to the slightest manipulation. The pulse is full and bounding, patches of dewy perspiration are seen over various parts of the body. The temperature may vary from 104° to 107° F. The face is haggard and drawn, and the respiration rapid. All these phenomena are indicative of the intense bodily agony the animal is enduring. If lying down, the animal will groan with pain; if standing, it will appear as if nailed to the floor. It will be almost impossible to move it out of its tracks. This is especially so in heavy animals. The bowels are as a rule constipated, the feces are expelled with difficulty and coated with shreds of slimy mucus. In quite a number of country cases when the animal has eaten large amounts of green or recently cured fodder, severe diarrhea is often present. Pericarditis, in a more or less severe form, is found in practically every severe case of laminitis. In fatal cases, death is mainly due to heart inflammation. In my experience, the hind feet are less often affected than the fore ones. In heavy animals where both fore and hind feet are involved, the prognosis is much more doubtful.

Treatment.—In this disease the administration of large amounts of active medicinal agents is in my opinion contraindicated. Good management and careful nursing together with a restricted diet in the early stages have given me the best results. Tincture of aconite in small doses given at short intervals in combination with salines or diaphoretics as nitrate of potash, spirits of nitrous ether, or even sulphate of magnesia in small and repeated doses as indicated. When pain is severe, a few doses of fluid extract of gelsemium gives relief. To clear out the intestinal tract, arecalin in small doses repeated at regular intervals give good results, and its use may be prolonged with benefit for a period of one or more days. In the early stages of the disease, this drug has given good results in almost every case. Cold water enemas also are of value; they should

be given in small amounts, and at regular intervals, say every four hours. Cold water allays fever, keeps the intestines cool and moist and also acts as a mild laxative. Chlorid of sodium may be added to the water with benefit. The patient should be encouraged to drink cold water, let them have it in small quantities and often, and always see that the water contains some saline, as potassium nitrate, magnesium sulphate, etc. In heavy plethoric animals, I practically withhold all solid food for at least three days.

If the animal is inclined to persistently stand, it should be carefully laid down in order to remove undue weight from the feet; animals should not be permitted to remain down too long, for with many such cases that are permitted to do so, it is often almost impossible to get them on their feet again. I think a certain amount of standing and exercise is beneficial even in the early stages of the disease. Of course a happy medium should be sought between the prone and upright position if possible.

I am a firm believer in the efficacy of water applied to the feet. This is confirmed after long experience in its use. When the weather is warm, I favor cold water or even ice packs when ice can be obtained. In cold weather warm water gives the best results. I have always found it good practice to get the patient into a tub of water as soon as possible; have the bottom of the tub covered with an old rug or straw to act as a cushion for the feet. Use antiseptics in the water. You must use discretion as to the time an animal should remain in the tub. After taking the animal out of the tub, I have its feet well rubbed with tincture of capsicum, annointed with crude petroleum oil and then done up in a wet pack. I consider crude petroleum oil to be the best application for the horse's foot that has ever been discovered. I have used it for many years in diseases of the hoofs, and the longer I use it, the better I like it. Another excellent article for the feet

of horses just recovering from acute or even chronic laminitis, is the ordinary surgical boot of the surgical instrument makers. This article is cheap, very practical, easily applied and affords animals great comfort. They are especially indicated in heavy stallions. I have had stallions that wore these boots for several weeks at a time with great benefit. I recall one case, that wore them for about three months. The boots should be well cared for, kept clean and well oiled, while in use.

I do not as a rule remove the shoes in the early stages of the disease, unless they are badly fitted or have been on the feet for a long time. For the ordinary case, I think we do more harm than good in the early removal of shoes. After the first few days when everything is going well with the case, a short course on potassium iodid or sodium salicylate will hasten resolution and absorption.

Recurrent Attacks of Laminitis

Of course you all know that an animal that has had one attack of laminitis is very liable to have another one. A predisposition toward the disease seems to exist in the system. The period of greatest danger I have found to be within six weeks from date of original attack, the longer an animal goes from this date without a relapse the less liable is this to occur. It would appear, that after a recovery from laminitis, the animal's system is to a greater or less extent, charged with certain toxic elements, that within certain periods of time predispose to a secondary attack, as time passes, this toxic element is to a great extent eliminated from the system.

Alum.—I have used alum quite extensively in treating laminitis in the ordinary work horse and I must confess that I have never been able to secure the wonderful results from its use that we hear so much about at the present time. In fact, I think that alum plays but a very small part in curing a case of laminitis. Finlay Dunn, in speaking of the

therapeutic action of alum says: "Alum is slightly irritant and astringent. Alum is speedily decomposed in its passage through the intestines and is excreted in the feces, which is rendered firmer and odorless." Where the use of alum has been so highly lauded in the treatment of laminitis, I am of the opinion that it was perhaps good nursing and nature and not the alum, that performed the cure. There is one thing I will say in favor of alum, and that is, that it is practically harmless and precludes the use in the hands of its advocates of more drastic drugs. In other words, it gives nature a chance to perform a cure unimpeded. Alum as a curative agent for laminitis was for many years one of the "secrets" of the Gipsy horse traders.

In the early stages of laminitis when the pain and suffering is severe, the hypodermic use of quinine and urea hydrochlorid, cocain and adrenalin chlorid in solution are beneficial, when used along the nerve trunk of the limbs. Great care, however, must be taken in making such injections. The strictest antiseptic precautions must be used. At times when to all appearances all this care has been taken, swelling of the limbs or even sloughing at the site of the injection will occur. I sometimes think that this condition is due in a measure, to the intense inflammatory action going on within the entire structure of the limbs more than to any lack of asepsis. There is another drawback to the use of local anesthesia. The loss of sensation and the consequent removal of pain in the feet, may cause the animal to place its entire weight for too long a time on its inflamed feet and thus cause a rapid descent of the pedal bones within the hoof, that might not otherwise have occurred.

Parturient Laminitis

This disease as you know, is common in the brood mare. In my experience it does not occur more often after a difficult parturition than it does in a normal one, or in cases of abortion, where the delivery takes place with but the slight-

est exertion. It is a common experience with me, to find severe cases of this disease in mares, with their living foals by their sides, and, who the owner will inform you, had not the slightest trouble in foaling. Again, on farms on which contagious abortion is rife, there you will quite often find the disease; again, the retention of the placenta cannot always be blamed for causing the disease, because quite often you will find that the placental membranes were expelled about the same time, or shortly after delivery of the fetus. However, never let an opportunity pass without making a thorough search for any fragment of the membranes that perchance might remain in the uterus. In large mares it often happens that a fragment of the membranes may remain attached high up in the cornu of the uterus beyond the reach of the longest arm; here it may remain for several days, until gradually loosened by decomposition it will descend into the body of the uterus. When called to treat one of these cases, do not fail to make a careful search of the uterus for a few days, or until you are satisfied no fragments remain. As you are all familiar with the symptoms of this disease, I will at once pass to the treatment.

Treatment.—The treatment of this form of laminitis does not differ greatly as regards the use of drugs from the previous mentioned form. The high temperature is best combatted with aconite, followed by salines, rectal enemas and water applications to the feet. I have found the salicylate of soda to be very beneficial in this disease. It should be given in full doses. When septic infection is plainly present, sulphocarbolate of zinc or even phenol given in the form of a syrup, is indicated. I have also used bacterins with considerable benefit. The uterus should receive particular attention. As stated above, you will find in many of these cases that the uterus is partly or even wholly filled with lochial fluid; in this will be found broken down debris of the uterine mem-

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D. M. CAMPBELL, Editor, Evanston, Illinois

Subscriptions from the United Kingdom should be sent to our London office in care of Messrs. Baillière Tindal & Cox, 8 Henrietta Street, Covent Garden, London, England.

"Preparedness" for Veterinarians

MUCH interest has been aroused by the announcement in these pages last month that a list of veterinarians is desired who are willing to serve in the army in case of the United States becoming involved in war. Further, the army bill, providing for an increased regular army, now before Congress and the punitive expedition dispatched against the bandit Villa, have centered attention on military matters.

If the House Army bill be enacted, the appointment of about sixty additional army veterinarians will follow; two veterinarians for each regiment of cavalry and two for each regiment of artillery. In addition to these, there will be a smaller increase in the number of veterinarians in the Quartermaster's Department.

Veterinarians who wish to enter this regimental service will have to pass an examination in the subjects taught in veterinary colleges and in several high school subjects and in equitation. It requires about ten days to take the examination. The antecedents and moral character of applicants must be above reproach. Applicants must be graduates of accredited veterinary colleges and not over twenty-seven years of age.

If the present army veterinary bill passes both Houses, it is proposed that

another bill be enacted to form a veterinary reserve corps on the same lines as the Medical Reserve Corps, which accepts medical men who pass a prescribed examination and who are then subject for duty whenever called upon. Immediately they are put on duty, they assume the position of army officers in the Medical Corps and receive the rank, pay and allowances to which they are entitled.

Failing the passage of the army veterinary bill, it is proposed that a committee of members of the American Veterinary Medical Association be formed for the purpose of collecting the names of veterinarians who offer to serve in case of war. The duties would be inspecting meat, hay, grain, horses, mules and regular veterinary work at hospitals located at base and mobile depots behind and along the battle lines.

It is advised that only veterinarians whose ability and responsibility are certified to by a responsible national organization of veterinarians, i. e., the A. V. M. A., will be accepted by the War Department on this list of civilian veterinarians available for military service in case of war, because it will give the preference to men who belong to an accredited and recognized organization that is in a position to vouch for each veterinarian accepted as a member.

Army veterinarians at present receive the pay and allowances of a second lieutenant of cavalry, viz.: \$1,700 per year with house, light, fuel and \$150.00 per year if he buys a horse suitable for an officer's charger and \$50.00 more if he buys another horse, making \$200.00 per year for two horses. Every five years up to twenty years, he gets an increase of ten per cent of his pay. He and his family receive free medical and dental services.

Veterinarians who wish to enter the Veterinary Reserve Corps, if they are not already members, should prepare a blank like the following and send it to Dr. R. Vans Agnew, Fort Leavenworth, Kans.

Street
 Town State.....
 Married or Single..... Age.....
 Preference of Duties.....
 Knowledge of Riding (good, poor, no).....
 Are You a Member of the A. V. M. A.?.....
 Will You Serve in the Veterinary Department
 in Case of War?.....
 Date
 Name

Unofficially the Quartermaster's Department has stated that they are in sympathy with legislation for a veterinary reserve corps, and if the Army Veterinary Bill is enacted, we should at once bend our efforts to procuring such legislation.

In a recent communication, Dr. Hoskins says: "The present status of that measure is a very satisfactory one indeed. It emerges from the House Military Committee as a section of the Hay Army Reorganization Bill endorsed by the entire Committee and will in my judgment meet with the approval of the House, probably in the next fortnight. I feel very sure that if the Senate and House bills reach conference we shall be able to hold our section in the ball and, therefore I look with strong hopes for its passage. Our battle will again be in the Senate, first to procure favorable consideration by the Senate of the House bill and to agree in any conference bill to retain this part of the House bill which will bring us the realization of our

hopes. Your Journal can now help us. What a calamity that our splendid writer, Dr. D. Arthur Hughes (Garrison Steele) is gone!"

SALMON MEMORIAL FUND

At the 51st annual meeting of the A. V. M. A. the many suggestions, offerings and proposals for some fitting testimonial to the late Dr. D. E. Salmon, were given the fullest consideration, and a committee was named to carry out the purpose of the following recommendations:

1st. That the Salmon Memorial Fund shall be undertaken by this body and that a stated committee will be appointed by this organization for the carrying out of the purpose of this movement.

2nd. That the form of testimonial shall be of an educational character, that may cover a scholarship, a fellowship, or some advanced or special work of interest or import to the veterinary profession, as may from time to time be recommended by this committee for the action of the association.

3rd. That to this end a sum of monies of not less than ten thousand dollars be raised by popular subscription from the upwards of seventeen thousand of veterinarians in North America; this money to be invested under the direction of this association so that the income of four or five hundred dollars may be annually awarded to some one or more along the lines above referred to.

4th. That said scholarship or fellowship shall be in an American veterinary college, and if a fellowship not to be taken in the college of which the successful person awarded the same shall be a graduate thereof.

There are more than seventeen thousand veterinarians in the United States and Canada, all of whom owe a debt to our late co-worker. The standing of our profession in North America and abroad has been largely contributed to by his lifetime of useful and sincere service. The form of testimonial must appeal alike to one and all in that it fittingly commends his life, that it will keep his memory green in the minds of the present and future profession and it will be a testimonial that will stimulate

every young man to emulate his example of devoted, unselfish work for his profession.

May we invoke you to lay aside in approaching this duty every other thought save that of the untiring and unselfish side of the more than twenty-five years of official service that marked his splendid career.

The subscriptions to date* are:

Personal Tribute Roll

(\$25 Each)

- J. C. Meyer, Cincinnati.
 - L. H. Howard, Boston.
 - H. B. Cox, Philadelphia.
 - C. A. Schaufler, Philadelphia.
 - C. J. Marshall, Philadelphia.
 - S. Brenton, Detroit.
 - F. H. Schneider, Philadelphia.
 - John R. Mohler, Washington, D. C.
 - J. F. DeVine, Goshen, N. Y.
 - M. H. McKillip, Chicago.
 - W. Horace Hoskins, Philadelphia.
 - R. W. Ellis, New York City.
 - J. F. Winchester, Lawrence, Mass.
 - S. H. Gilliland, Marietta, Penn.
 - W. G. Hollingworth, Utica, N. Y.
 - V. A. Moore, Ithaca, N. Y.
 - A. M. Farrington, Washington, D. C.
 - M. W. Drake, Philadelphia.
 - A. D. Melvin, Washington, D. C.
 - D. M. Campbell, Chicago.
 - Otto Faust, New York.
- Total, \$525.

Subscriptions from State Associations

- Massachusetts Vet. Med. Assn.....\$100
 - New Jersey Vet. Med. Assn..... 100
 - Ohio State Vet. Assn..... 100
 - Wisconsin Vet. Med. Assn..... 100
 - Michigan Vet. Med. Assn..... 100
 - Mississippi Vet. Med. Assn..... 20
-
- Total\$520

Miscellaneous Subscriptions

- Geo. H. Burns, Brooklyn, N. Y.....\$ 17
- John Reichel, Glenolden, Pa..... 10
- John W. Adams, Philadelphia..... 10
- H. W. Dustin, Morristown, N. J..... 10

- D. E. Buckingham, Washington, D. C. 10
- A. S. Cooley, Cleveland, O..... 10
- H. C. Crawford, New York..... 10
- F. H. Miller, New York..... 5
- Garry T. Stone, Norwick, N. Y..... 5
- Geo. Ticehurst, New York..... 5
- Wilson Huff, Rome, N. Y..... 5
- Chas. Cowie, Ogdensburg, N. Y..... 5
- Benj. McInnes, Charleston, S. C..... 5
- G. C. Faville, N. Emporia, Va..... 5
- Thomas Fraser, Richmond, Va..... 5
- J. C. Ferneyhough, Richmond, Va. 5

Total\$122
 Miscellaneous to be listed later, \$252.
 Grand total to date, \$1,419.

The names of all donors will be published together with the amount of their subscriptions to this fund. The publication of the list of those giving sums smaller than five dollars is withheld at this time for lack of space and for the further reason that a number of them have signified their intention of increasing their subscription and it is desired to give each credit for the full amount of his subscription.

Subscriptions by States

The total amount subscribed from states to date is as follows:

- Pennsylvania\$298
- New York 266
- Massachusetts 156
- Ohio 135
- Michigan 125
- New Jersey 111
- Wisconsin 106
- Dist. of Columbia 86
- Virginia 51
- Illinois 50
- Mississippi 20
- Maine 5
- South Carolina 5
- Iowa 3
- Connecticut 1
- Canada 1

W. HORACE HOSKINS,
Sec.-Treas. A. V. M. A. Committee,
Chairman Pennsylvania Committee.
 Philadelphia.

*March 15, 1916.

ANOTHER HOG CHOLERA SPECIFIC

Another has been added to the more than ten thousand positive specifics for the prevention and cure of hog cholera. This one, which has received wide publicity in the farm press, comes from a source apparently more reliable than any of its predecessors since Benetol flared forth seemingly with the backing of the University of Minnesota. In the case of Benetol, the University of Minnesota hastened to explain that while Professor Carroll had been a professor in the institution, he was no longer in any way connected with the university and that the university did not assume any responsibility for or endorse Benetol or his claims for it.

Now comes Dr. Chas. W. Duval, Head of the Division of Pathology and Bacteriology, Tulane University, New Orleans, with an inexpensive, simple and sure preventative of hog cholera. He appeared before the agricultural committee of Congress, and taking from his pocket a small vial held it before the members, saying: "In this vial there is enough material to vaccinate 500,000 hogs, and in my laboratory there is enough of this material to immunize every hog in the United States." Dr. Duval explains that this immunization is a simple process. The material may be suspended in salt solution and injected hypodermically or worked up in glycerin, put on ivory points and the hog immunized by scratching him behind the ear with the vaccine point.

Dr. Duval explains that any one who knows enough to sit astride a hog's back and hold him can do this vaccinating properly. Many veterinarians who have handled hogs by the tens of thousands will be surprised to learn of this new way of holding a hog, "sit on his back and hold him"—or hold to him. In the case of large hogs, pos-

(Continued on page 331)

BOOK REVIEW

Nineteenth Annual Report of the United States Live Stock Sanitary Association

This report is the most important ever issued by this association, which is noted the country over for the high scientific tone of its splendid yearly meetings and the excellence and permanent importance of the reports which it has published.

This report surpasses each of its predecessors, not only because of the annual progress that the association is making, but because this meeting, December 1 to 3, 1915, followed immediately after the eradication of the 1914-15 outbreaks of foot-and-mouth disease, and it contains much, very much of what is so far the most important chapter in the history of the live stock industry in this country. Furthermore, the more important and enduring papers presented at Assistant Secretary of Agriculture Vrooman's foot-and-mouth disease conference held in Chicago immediately before the live stock meeting are also included in this report.

Because of the permanent importance of this report, it has been substantially bound in cloth; the other reports of this association have been issued in paper binding. It makes a volume of 194 pages, probably half of which is printed in small type. Its contents, therefore, may be said to equal in amount that of the ordinary veterinary textbook of 300 pages. To obtain the widest possible distribution of the report, the association has placed merely a nominal price upon it; sufficient only to cover the cost of publishing with no charge for procuring the material that goes into the report.

Among the more important articles in this report, we find the following:

An Ideal State Law for Co-operation Between State and Federal Authorities in Work of Eradicating Contagious Animal Diseases, by Dr. C. J. Marshall, State Veterinarian of Pennsylvania.

What General and What Specific Rules Should be Observed in Fixing the Periods and

(Continued on page 332)

Pictorial Review of Noted Veterinarians

By WINTHROP WORTHINGTON

D. Arthur Hughes

M. LITT, Ph. D., D. V. M.

THE establishment of this department was under consideration for a matter of two years before it was actually started, and during all that time Dr. Hughes' faith in its advisability never wavered. Until almost the time of the appearance of the first installment, we had expected to call it "Who is Who Among Veterinarians and Why." The selection of the above title "Pictorial Review of Noted Veterinarians" was on the motion of Dr. Hughes. The instantaneous and continuous success of this department, a feature unique in American veterinary literature, was wholly due to the splendid ability of Dr. Hughes as a writer, for the biographies that have appeared herein since the department was arranged were wholly his work, only the selection of the personages for the write-ups being the work of the editor.

Dr. Hughes possessed one of the best and most broadly trained minds in the veterinary profession; few, even among his intimate acquaintances realized his breadth of vision or his ability to weigh and adjudge matters, to decide upon their relative importance. He was strong for traditions and for precedent. He thoroughly believed that a history of the veterinary profession of America—a record of its small beginning and

of its progress step by step, its trials, its defeats and its victories—was a pressing need to stimulate loyalty to the profession and optimism as to its future. The writer and Dr. Hughes had many conferences during which the material that each had collected for this prospec-



Dr. Arthur Hughes, Ph. D., M. Litt., D. V. M.

tive history of the profession was gone over together. A common expression of Dr. Hughes during these conferences was, "I grant that event was spectacular but it was without historical importance—it had little or no far reaching or permanent effect upon matters veterinary. In history events must be assigned to their position upon a basis of relative

importance," and his reasons were generally conclusive.

It was in large part to add to the available material for his history and to arouse interest in such matters that he favored the inclusion of the biographies of living veterinarians in the *AMERICAN JOURNAL OF VETERINARY MEDICINE*.

Dr. Hughes' contributions to veterinary periodicals both in this country and in England were voluminous and always in demand by publishers and readers as well. He, it was more than any or all others combined, that fired the enthusiasm of the whole profession for army veterinary legislation. During all the years of the struggle for this legislation up until Dr. Hughes began the publication of his powerful and convincing arguments in favor of it, this legislation was regarded with indifference by the profession as a whole. His series of articles published under the name of Garrison Steele in this journal during the many months that the Army Veterinary Bill was pending before the sixty-third Congress, have never anywhere nearly been equaled for their effect in arousing the profession to a realization of its need for this legislation.

In writing these sketches for the "Pictorial Review," Dr. Hughes chose a pen name—Winthrop Worthington—solely to avoid a certain restraint that he might otherwise have felt in writing of many who were his intimate acquaintances.

The Pictorial Review will probably be continued after a few months, but however well it may be written, we know there are a great many who will regretfully miss the enlivening, sprightly sketches of "W. W." as he was beginning to be familiarly called.

Of the obituaries of Dr. Hughes, the following from the *Alpha Psi Quarterly* is best.

Gamma Chapter has lost one of her most distinguished honorary members; the Chicago Veterinary College faculty has lost one of its most successful teachers; the Quartermaster Corps of our Army has lost one of its most faithful employees; the veterinary profession of America has lost one of its most illustrious members; veterinary literature has lost one of its most brilliant lights.

We hardly know whether to say that Dr. Hughes was a literary genius with a veterinary training or a veterinarian with an unusual amount of literary ability. Perhaps it makes no difference, but in either event we can truthfully say that the examples are extremely rare where the two characteristics have been so successfully combined in one man.

Dr. Hughes was an Englishman by birth, having been born in Liverpool, on the 15th day of March, 1870. When fourteen years of age, he came to the land of his adoption, the United States. In 1893 he graduated from Albion College, with the degree of Bachelor of Letters. Two years later he was granted his degree of Master of Letters by Cornell University. In 1898 the same institution conferred upon him the degree of Doctor of Philosophy. Several years later his eyes turned to the veterinary profession, and he decided to enter the New York State Veterinary College at Cornell. Having completed this course he secured his veterinary degree in 1903.

From January, 1904, up to March, 1906, he was veterinary inspector in the Bureau of Animal Industry, stationed at the National Stock Yards, at East St. Louis, Ill. He was then transferred to the Quartermaster Corps of the U. S. Army, and stationed at Omaha, Nebr., as veterinary inspector of food animals, meats and meat food products. He held similar positions at Kansas City, Chicago and Buffalo. During 1913 and 1914 he was temporarily stationed at Fort Worth and Galveston, Texas, as inspector of supplies for the U. S. Army.

As a teacher he was professor of dairy inspection, milk hygiene and medical botany, in the Chicago Veterinary College, from 1906 to 1915. In the latter year he was given additional work in this institution, and at the time of his death he was professor of meat hygiene, milk hygiene, abattoir and dairy inspection methods, and medical botany. He met his classes the week immediately preceding his death, and seemed to be in excellent spirits, although he had just recovered from an attack of la grippe.

As an editor he was best known as the editor of the *Chicago Veterinary College Quarterly Bulletin* for the past eight years; as a collaborator of the *American Veterinary Review* from 1904 to 1915, and as the author of numerous articles in the *AMERICAN JOURNAL OF VETERINARY MEDICINE*. In the latter journal Dr. Hughes' articles did not always bear his name, but those who knew his style, his ideas and his ideals could readily see through the thin fabric of his noms de plume.

As an author, he published "Botany: Preparatory to Veterinary Medical Studies" (Continued on page 312)

Department of Surgery

By L. A. MERILLAT, Chicago,
Professor of Surgery in the McKillip Veterinary College.

Cold Abscess of the Shoulder of Horses

THE so-called cold abscess of the shoulder of horses is both an interesting study and an important disease. It is interesting because the cause seems to have been regarded as a mystery by many who have written about them; it is important because it is a disabling disease that does not always respond as promptly to treatment as many would have us believe.

The disease attacks chiefly draft horses, especially the heavy draft type, and is seen most frequently in those animals more or less reduced in strength from hard work. Sometimes, although not often, there is a history of strangles or influenza, some months previous to the appearance of the lump. The right shoulder is more often attacked than the left in city horses, but in rural horses there seems to be no such point of predelection. The location is uniformly at the lower aspect of the collar seat, related to the brachiocephalicus muscle. Some bulge out at the dorsal margin of this muscle, some at its ventral margin while others push right through its body. Ignoring entirely the acute deep-seated phlegmons of this region which sometimes appears in the form of a diffuse bulging of the region, but which is called "cold" because the inflammation does not reflect to the surface, the cold abscess of the

shoulder is tumor-like in appearance. It is hard, painless, spherical or ovoid, and feebly moveable in the surrounding musculature when manipulated. Picked up with both hands the fingers trace the growth deeply into the substance of the neck where it seems fixed, rooted attached. The skin, the subcutem, the panniculus, carnosus, and even the external part of the underlying muscle tissue are not implicated. The disease is deep. Sectioned, the scalpel after invading these outer normal structures, passes through a dense fibrous or fibromuscular formation into an abscess cavity that is often very small, so small that it is sometimes difficult to find, but which sometimes encloses several ounces of pus, containing both the staphylococcus and streptococcus. If the fibrous tissue is partly enucleated and the cavity packed with an antiseptic wadding the remainder of the growth will sometimes disappear with the subsequent process of cicatrization. Sometimes this same result will follow lancing. There are cases, however, which do not respond to these simple methods, cases which the simple treatments leave only partially cured and cases where a recurrence follows.

Our observations prove to our entire satisfaction that the disease is always a suppuration of the prescapular

lymph nodes caused by bruises and abrasion of the skin and subcutem located along that part of the shoulder upon which the collar presses. Injections of methylin blue solutions and there along the shoulder from a point just below the mane down to the level of the brachio-cephalicus, followed by a post mortem a few hours later will show that the prescapular nodes are already stained with the solution. This experiment explains with what facility these lymph nodes also bruised from the collar can become infected with microbes which invade the skin of the collar seat. *The prescapular lymph nodes tortured with pressure fall prey to the microbes which gain entrance through the bruised integument along the seat of the collar.* We have never attributed much importance to pre-existing infectious diseases as a predisposing factor and are inclined to view the cases following such ailments as mere coincidents. The fact that the prescapular nodes have no direct connection with the mucous membranes of the air passages leave them immune to attack from microbes inhabiting that field.

The right shoulder is attacked more frequently than the left one in city horses because draft teams turning out of street car tracks for approaching cars draw heavily upon the right shoulder and often as the right wheel surmounts the rail further injury is inflicted by the wicked whipping of the tongue. We have noticed a pronounced decrease in the number of these cases since the old style street car rail has been replaced by the new grooved rail. It requires a hard pull to drag a laden dray from the old style car tracks; while on the new tracks the wheels deflect from them easily. On the old rails the tongue often whips wickedly; on the new rails this seldom occurs. This whipping of the wagon tongue which occurs also in teaming over rough roads wickedly snatches the breast chains or neck yoke and the

resulting impact is felt at the level of the hame-ring which corresponds to the location of the prescapular nodes. It is probably a succession of blows that provokes the trouble in our urban draft horses, but it is evident, however, that constant heavy traction may have the same effect.

The treatment a practitioner should employ must vary in strict obedience to the duration of the trouble. New cases yield promptly to *simple incision, to incision followed by a perfunctory cauterization of the interior, or to incision and partial enucleation of the fibrous tissue*, while old cases require *total ablation of the fibrous tissue surrounding the abscess cavity*. The history must not be depended upon to determine the duration because it is often misleading. The trouble may exist for weeks before there is any external evidence that anything is wrong. Usually the lump is said to have developed in a few days, but when a closer investigation is made there is seldom any difficulty in eliciting from the driver a confession that the patient has been working as if in pain for some time previous to the actual appearance of the enlargement, and not infrequently horses known to have such enlargements are worked week after week before treatment is sought; the lump is so benign in appearance, so inconspicuous and so painless on superficial pressure that no especial importance is attached to it until it becomes large and disabling. It is, therefore, evident that the history supplies no criterion upon which to base the plan of treatment. The treatment is determined from the character of the growth after it has been incised. Simple incision is successful only when it is found on section that the muscular tissue still predominates over the new formed fibrous tissue. The enlargement "melts away" only in those cases wherein the sclerosis is not very far advanced, that is where the marbled surface of the sectioned growth is more

reddish than whitish. Here the muscular elements are not entirely crowded out by the new fibrous elements and when the pus cavity is evacuated and drained by incision or partial enucleation the degenerative process, deprived of its exciting cause, is arrested, and the lump gradually shrinks into the depths of the muscles. In many cases, however, the patient, apparently cured, still carries a hidden node that can easily be detected by deep palpation. This node may remain dormant or even disappear, or it may at some future time react to new causes.

This, however, is by no means the behavior of the older cases. Here, sectioning, partial enucleation or cauterization, or a combination of all three are positively ineffectual. While these plans of procedure may occasionally shrink up the old growth to the level of the shoulder too often a hard, deep lump remains. It may be the size of an egg, a baseball or even larger and is always painful to the horse when pulling a load and is certain sooner or later to "kick up" into a more extensive and more irregularly rooted sclerotic growth than its predecessor. Sometimes these much lauded simple operations end in a fistulous tract that heals very slowly and when finally cicatrized the enlargement is extant. A repetition of the same procedure is now futile and if practiced will make the growth still more permanent, besides marring the skin with an infolding scar that will be the source of annoying superficial collar sores.

Treatment.—The kind of treatment required to effect a permanent cure with the least possible delay can only be determined by inspecting the interior of the tumor after it has been dissected. We secure the patient on the operating table and after preparing the field conventionally, administer chloroform. The operation is somewhat too painful without anesthesia and the invasion too inaccessible for local anesthesia,

and if a total ablation should appear necessary as the operation proceeds the hazard of cutting large vessels and the difficulty of handling them are increased by the powerful contractions of the neck muscles as the patient struggles against the painful dissection. The operation should never be attempted in stocks or with any other form of standing restraint as it is sure to result in a bloody running fight even in apparently tractable subjects, and no effectual extirpation could be thus carried out to a satisfactory issue.

A free incision overlapping the growth above and below is made through the skin and panniculus carnosus and the bleeding vessels snapped up with the hemostats. The flaps are drawn apart with tumor forceps and the incision carried down as near as possible through the middle of the growth to the abscess cavity. Although there is always some fibrous tissue below the abscess no attempt is made to incise this. The tumor forceps are now transferred to each lip of the bisected growth and drawn upward and apart so as to expose the interior. If it is found that the growth is still safely muscular in character we simply enucleate a part of each wall and then cauterize the interior well with a hot iron but if the growth seems hopelessly fibrous then we proceed to extirpate the entire mass. When in doubt the latter measure is to be chosen in preference to the former because it is always certain to lead to a prompt recovery and the other *may* not.

The extirpation of such a fibrous mass permeating irregularly into the surrounding musculature from the pre-scapular nodes beneath requires careful dissection. There are vessels to manage in front, behind and at each side of the growth, and beneath it a radical of the carotid artery and several radicals of the jugular must be ligated. In spite, however, of this dangerous field we succeed with proper use of lemo-

stats and ligatures to control bleeding so completely as to obviate packing the cavity afterward. The dissection begins at the sides. The growths are drawn out with great force as the muscular tissue is separated from the fibrous tissue with the scalpel and tissue forcep. In this tense condition there is no bleeding. From time to time hold of the tumor forcep is relaxed so as to disclose any vessels that may have been cut. This dissection continues downward until the fingers can be pushed into the areolar tissue under the growth which can now be undermined by blunt dissection. Both sides having been thus dissected loose the growth now hangs by each end. The attachment posteriorly is tied off in sections and cut loose, then the growth is hinged forwards out of the cavity. The few bleeding vessels are snapped up and the cavity baled out. Often this exposes the jugular vein to full view and the pulsations of the carotid visible or easily felt with the fingers. The growth is still attached—anteriorly. The external part of this remaining attachment is muscle that must be tied off and detached. The internal or deep part consists of the prescapular lymph nodes, a large artery and several veins. A clamp forcep is now snapped on this remaining peduncle and the growth cut loose. Sometimes we have reinforced the clamp with a ligature and leave both to assure a safe hemostasia of these large vessels. More recently we have trusted entirely to the clamp which is left on forty-eight hours. The cavity is loosely wadded with gauze or with cotton dripping with mercuric chloride solution and the cutaneous lips held together with a tumor forcep. The cavity is sprayed several times daily with iodoform and ether mixture or with a solution of iodine and ether. Cicatrization is rapid.

Conclusions.—1. As recent cases respond to simple evacuation of the pus cavity it is important to prevent the

formation of the new tissue by prompt intervention. Procrastination is costly as there are indeed few cases that point and then cicatrize spontaneously. The ultimate destiny of the large majority is toward the formation of fibrous tissue that will eventually require extirpation.

2. The cases which yield so promptly to simple incision of the abscess cavity are new cases; old cases recur after such treatment.

3. We have never been able to confirm the statement of Dollar that some of these abscess develop entirely within the muscle tissue. We have never yet failed to find them rooted into the prescapular nodes.

D. ARTHUR HUGHES.

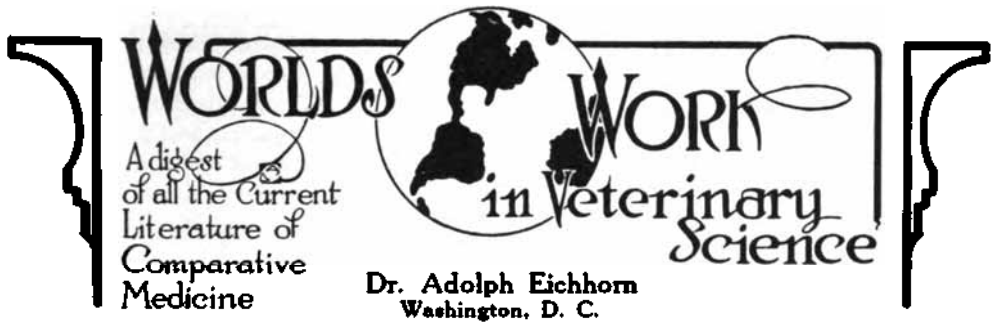
(Continued from page 308)

(1914). With Dr. A. Liautard he translated the French work of Godbille, "Lymphatic Glands in Meat-Producing Animals" (1915). He had in preparation, with Dr. Liautard, "The Application of the Anatomy of Food-Producing Animals in Meat Inspection."

As an association worker, he was a member of the American Veterinary Medical Association, and served as a member of the committee on Intelligence and Education, 1907 to 1909, and as chairman of the committee on Veterinary History since 1913. Both the Chicago Veterinary Society and the Illinois State Veterinary Medical Association saw fit to confer honorary membership upon him.

Dr. Hughes was a frequent contributor to our best veterinary, medical and agricultural periodicals. He was the author of over four hundred articles printed in the *American Veterinary Review*, the *AMERICAN JOURNAL OF VETERINARY MEDICINE*, the *Veterinary Journal* (London), the *New York Medical Journal*, the *Cornell Veterinarian*, *Proceedings of the A. V. M. A.*, the *Cornell Countryman*, the *Chicago Veterinary College Quarterly Bulletin* and last, but not least, the *Alpha Psi Quarterly*. At the time of his death he had an article in preparation for the *Quarterly*.

Dr. Hughes died of pneumonia, at his home, 10521 Longwood Boulevard, Chicago, Ill., at 5:15 P. M., Monday, February 14, 1916, after a brief illness of only four days. His health had undoubtedly been undermined by an attack of la grippe which had preceded his last illness, but from which he seemed to have recovered. His funeral took place from his late residence, at 2 P. M., Thursday, February 17, with Masonic ceremonies.



Disinfection of Raw Animal Products
By Drs. Aujeszky and Zimmermann
(Wiener Tierarztl. Monat. schr.,
July, 1915.)

Raw products from animals which have died or have been slaughtered on account of infectious diseases should be disinfected in such a way that in the destruction of the infection the utilizability of the raw products would not be affected. At the same time disinfection should be simple, easily carried out and cheap. According to the opinion of the authors which was rendered before a veterinary council of Hungary the skins of animals affected with sheep pox, hemorrhagic septicemia, foot-and-mouth disease, or pleuro-pneumonia may be best rendered harmless by drying, and this method suffices also in scabies. In erysipelas the skin should be dried from six to eight weeks or treated with a five per cent solution of milk of lime for at least two days. The latter method proves satisfactory also in hog cholera. In blackleg the skin should be placed for 24 hours in a two per cent hydrochloric acid solution and an addition of salt. For the disinfection of hoofs, claws and horns a simple boiling for one-half to three-quarters of an hour appears to be the most recommendable. Hair and bristles should also be boiled from one-half to three quarters of an hour, whereas wool should not be sterilized in this manner, but should be treated for 24 hours in cresol water or in a three per cent carbolic acid

solution, or by formaldehyde solution. Wool may also be sterilized by washing it in a five per cent warm ammonia soda solution.

**Animal Experiments with Tuberculo-
mucin**

By Weleminsky. (Berl. Klin.
Wochenschr., 1915.)

The author succeeded by cultivating for years strains of tubercle bacilli in obtaining substances which continuously increased in their therapeutic action. At the same time in culture fluid a substance formed which could be precipitated with diluted acetic acid in the form of mucus-like clumps, the tuberculomucin possessing all the characteristics of a true mucin.

The therapeutical value of this preparation has been tested in experimental tuberculosis on guinea pigs and in spontaneous bovine tuberculosis.

In the infection of guinea pigs with the slightly virulent mucin forming strains (bovine and human) and in subsequent injections of tuberculomucin he succeeded in entirely curing several tubercular animals, and in others he arrested the tubercular processes as compared with the control animals.

Weleminsky especially emphasizes that its influence both in bovine and human infections in guinea pigs was quite notable, although the preparation from the human type was principally employed.

The experiments on cattle were undertaken on animals showing advanced

forms of tuberculosis such as emaciation and with manifestations of clinical symptoms of pulmonary tuberculosis. After the first injection the author claims to have induced an improvement in the cough. The necessary subcutaneous injections with the tuberculomucin were then repeated in intervals of three to four weeks until the cough entirely ceased. In severe cases it required eight injections of 5 to 6 c. c. doses. In the slaughtered animals the encapsulation of the tubercular foci in the lungs could be demonstrated.

The prepared tuberculomucin in pure form does not possess toxic properties and its curative action in tubercular guinea pigs has been proved.

Treatment for Infectious Gastro-Enteritis

By Albert (Munch. Tier. Wochensch., 1915.)

In citing 22 cases Albert gives his experiences which he has collected in the therapy with white clay. In order to insure good results it is essential that the doses should not be too small. It is absolutely necessary that the clay mixture should flush out the gastro-intestinal canal in its entire extension; the bacteria in all the folds of the mucous membrane must come in contact with the finest clay particles.

The remedy is not subject to decomposition in the gastro-intestinal canal on account of its inorganic properties without being utilized through all parts of the intestines. It penetrates into the finest folds of the mucous membrane until it leaves the rectum in the form of a clayish excrement.

It is further essential to subject the animals to a strict diet after the administration of the remedy until a satisfactory action is obtained, all nourishment except water being avoided. When used in this manner the white clay never fails to exert its action. We possess in the same a remedy which deserves first place in modern therapy. If the mortality figures which occur in the diseases of the

intestinal tract are considered such as gastric and intestinal inflammations of horses and cattle, especially in forage poisonings (mycoses) and the hemorrhagic forms, the prognosis is usually unfavorable. These affections resist the treatment with opiates, and preparations of salicylic and tonic acids, etc. The digestive disturbances of calves which occur during weaning are continuously causing great losses, but especially high is the mortality of white scours in calves which occurs immediately after birth. Up to 80 per cent or even more of the affected animals die as a result of this treated disease of newly borns. In this remedy we possess an effective weapon against destructive diseases. (The dose suggested by various authors consists of a preparation of a thick creamy liquid with the aid of the white clay and water of which $\frac{1}{2}$ pint should be administered every three to four hours. Another author suggests the administration of four to five tablespoonfuls of a mixture consisting of 700 grams of white clay and 10 grams of salicyltamarin. A. E.)

Shrapnel Removed by Electro-Magnet Rudert (Zeitsche f. Veterinark 1915)

Pieces of shrapnel penetrated into the rump of a horse to such a depth that several attempts to remove them by operation failed. In the latter course a 15 c. m. long fistula developed. From a nearby hospital Rudert obtained an electro-magnet. He shaved the hair around the wound, disinfected and anaesthetized the part. Then he placed the magnet onto the same, which attracted the piece of shrapnel with such a force that it bulged out the skin over it, but would not draw it through the skin. He therefore made an incision into the skin 3 cm. long and by again placing the magnet onto it the foreign body was then readily removed. The course of the channel through which the piece of shrapnel was removed was in a perpendicular line to the fistular tract. The foreign body was 5 cm. long, 1 cm. wide, and 0.5 cm. thick. The wound healed in two weeks.

Therapeutic Digest

By MART R. STEFFEN, Milwaukee, Wisconsin

DR. CHARLES H. DUNCAN, New York, a physician who gained some notoriety among veterinarians about a year ago through the writing of an article in which he attempted to revive the old theory of Telegony, is again sliding over on the veterinary side of the fence in an article on Autotherapy which appeared last month in the *Medical Council*. Here is the chapter:

"The autotherapeutic treatment of mastitis consists in the filtering of the discharge from the breast, and injecting the bacteria-free immunizing filtrate hypodermically. The inflammation subsides within twenty-four hours.

"Where the milk supply of a recently delivered female is scanty, the reinjecting of ten drops of the mother's own milk subcutaneously over the biceps muscles will stimulate the mammary glands into action quickly.

"Many veterinary physicians employ it in the treatment of high-bred dogs and cows.

"Tests on cows indicate that milk from a very recently delivered cow injected into another cow that has been lactating for several months and whose supply of milk has been diminishing will stimulate the mammary glands of the latter into renewed activity."

While it looks rather fishy, we will not laugh until we have tried it out. If the news, for such it is to us, came from anyone but Dr. Duncan we might have a little more faith in it. But we happen

to know that the doctor seems to have a mania for this "like cures like" method of therapeutics. For the past seven or eight years he has been in convulsions over it.

Therapeutic Tips

Never dilute sp. aetheris nitrosi with water until just before it is administered. It loses its ethyl nitrite rapidly after being diluted.

Warming phenol solutions very markedly increases their antiseptic action. A 5% phenol solution containing 4% sodium chloride is vastly more antiseptic than is the phenol alone; warm this solution and one has an effective agent.

Owing to chemical disintegration, or the urine being kept alkaline by various bacilli few of the urinary antiseptics are effective, even hexamethylin failing in a large proportion of cases. The relative efficiency of methylene blue renders it probable that the ultimate urinary antiseptic will be one of the anilin dyes.

Clinical experience of some years ago was not at fault in ascribing activity to potassium chlorate in septic throat diseases. Part of the ingested chlorate is excreted in the saliva, thus supplying an antiseptic for hours. Then, too, the presence of septic matter reduces the chlorate, liberating nascent oxygen.

Alcohol, although possessed of some nutrient properties, must be regarded

purely as a drug, and it must be used only within its indications and in reasonable dosage. Large doses are never indicated.

Shock is one of the cardinal indications for alcohol, since it increases the amount of blood on the arterial side and relieves venous accumulation. Even here its use should be only for a brief period.

Nearly all Journals of Human Medicine of the present time are disgustingly full of eugenics and the propaganda for birth control. Many of the writers seem to be lacking in every human attribute from the standpoint of morals. Here are a few lines out of a contribution to a very popular medical journal by an instructor in obstetrics in regard to the subject of destroying the life of defective children: "The method you mention is poor, for not every child will die, and if murder be committed it should be done in a sure and authorized way."

Thank the Lord you are a veterinarian; and can look the world in the eye squarely.

From the contents of present-day medical journals it appears that modern, high-brow physicians have less scruples about murdering a child about to be born than the average veterinarian has about killing a seventeen-dollar calf in utero.

Let's all spit.

Oppenheimer, in the *International Journal of Surgery*, gives some interesting remarks on tetanus. Among other things he says that "the toxin is demonstrable in the blood several days before clinical symptoms manifest themselves; four days in the sheep. It is self-limited in the blood even in fatal cases. The same rule evidently holds good for the nervous system in recovered cases, the neuro-toxin exhausting itself. The greatest, hence the principal, factor in producing death is the rapid and terrible exhaustion due to the muscular contractions, and not the toxemia nor the neuro-toxins. This means that if we can control the convulsions and maintain the

patient's strength, the toxins will gradually lose their force and we can save many cases heretofore doomed to positive death."

For suspected intestinal parasites Stone, of Brooklyn, gives this test. Take equal parts of ether and HCl, place in a test tube with feces and shake. Eggs will settle to the bottom of the tube.—*Medical Times*.

Coniin hydrochlorid, a salt of the alkaloid coniin, is used in azoturia only for it's effect on the delirium. It has no effect on the condition itself. The results from Azolysin are just as good when coniin is left out, except that, in very bad cases, the delirium is not controlled so well.

Tuberculin and Tuberculinizations

By Moussu (Rec. de Med. Vet., July, 1915.)

The author considers the intrapalpebral method (subcutaneous injection of $\frac{1}{8}$ to $\frac{1}{4}$ c. c. of diluted tuberculin) as the best, since it combines the advantages of both the subcutaneous and the intradermal applications without possessing any of their disadvantages.

A Simple Remedy for Treating Wounds Which Proved Highly Satisfactory in the Balkan War

By Chrysospathes (Munch. Med. Wochenschr., 1915.)

The author recommends for the treatment of all wounds, and especially for decubitus ulcers, the application of liquid paraffin with $2\frac{1}{2}$ per cent of iodoform. The mixture proved to be a very effective antiseptic stimulating granulations without causing signs of intoxication. In order to avoid irritation of the skin surrounding the wounds from the protracted use of the iodoform in this mixture it is advisable to cover those parts with vaselin. To prevent the adherence of bandages to wounds the gauze coming in contact with wounds should also be covered with vaselin.

Queries and Answers

The editor will reply to queries appearing here, as he is able and as opportunity permits, but he does not want, nor cannot undertake to monopolize this portion of the department. Any reader who can furnish further and better information in reply to any query is urgently requested to do so. Where the treatments advised in these replies is adopted it is hoped that those employing them will report their results whether good or bad. In all cases give the number of the query when writing anything concerning it.

Is the Alum Treatment for Laminitis a Logical One?

On account of a discussion at our recent meeting of the Minnesota State Veterinary Association and in view of articles that have been published from time to time in the *AMERICAN JOURNAL OF VETERINARY MEDICINE* I should like to call attention to certain features as they appear to me.

Laminitis in its severest form is apparently often produced by superpurgation. This has occurred in quite a number of cases under my personal observation where aloes seemed to be the exciting cause. I have noticed that in practically all articles on treatment as they appear in *The AMERICAN JOURNAL OF VETERINARY MEDICINE* the first thing mentioned is arecolin or eserin. (See Vol. X, No. 2, page 133, Vol. X, No. 10, page 756, also Vol. IX, No. 10, page 753.) I ask is arecolin or eserin indicated in cases where there is already severe purgation?

"Winslow" says alum diminishes all secretions in the alimentary canal and constipation ensues unless the dose is excessive—alum does not occasion any astringent action in the body outside the digestive tract."

Quitman says, "It coagulates pepsin, thus it would derange or entirely arrest digestion; it also stops peristalsis and produces constipation but may produce diarrhea by irritation. It arrests secre-

tions in general and in the circulation constricts the capillaries."

In the alum treatment we are told to first excite peristalsis and secretions and then proceed to constrict or arrest—we are told to reduce blood pressure by the use of aconitin and then proceed to constrict the vessels with alum (aconitin is supposed to bring results by dilating the blood vessels, allowing the blood to flow away from congested areas into dilated peripheral vessels).

These points are very interesting to me. Perhaps the editor will explain. Note that in Vol. X, No. 10, page 756 it is admitted that the use of alum is purely empirical. It does seem to me that its action can be and should be placed on a sound basis of physiological action.

Veterinarians who attend association meetings will recall the fact that when a common every day subject like laminitis is up for discussion almost every veterinarian present seems ready to talk and it's surprising how well satisfied they seem to be with their own line of treatment, but if they are close observers they will be surprised to find how many valuable horses are to be found—cripples—and unsound for life as the result of structural changes in the feet following laminitis. In view of this fact I hope to bring out some good advice from veteri-

narians who are "students" as well as successful practitioners for it hardly seems reasonable that every case of laminitis—*severe* cases I mean (anyone can treat light cases) can or should be treated exactly alike. This communication is based on the belief that many able veterinarians have adopted the alum treatment as the very best; and it is being used extensively and as a result some interesting reports and discussions are due.

I have written rather hastily and have possibly not made the points clear. Possibly our editor or someone else can give satisfactory explanation.

REPLY BY THE EDITOR—There is plenty of authority for saying that superpurgation, or rather the intestinal irritation resulting from superpurgation, sometimes (not often) causes laminitis, and I suspect it has been this weight of authority and not his own experience, carefully scrutinized, that has led Dr. Higbee to pronounce it the cause in cases that have come under his own observation. Let us disregard for the moment the teaching of text books and suppose that all cases of laminitis (except those due to mechanical interference with the circulation in the foot, due to long standing on one foot while resting its injured mate) are caused by the absorption of the products of microbial activity—bacterial toxins to be more specific. Let us suppose that these bacterial products are absorbed, except in parturient laminitis, from the intestinal tract where they are produced because of a temporary abeyance of those fluids or vital processes or whatever they are that ordinarily inhibit the putrefaction of the intestinal contents. Now with this made-to-order theory for the origin of all cases of laminitis, let us critically examine all the statements in the foregoing query and note the result.

1. Severe cases of laminitis sometimes (we can't agree to use "often" there) follow superpurgation; Dr. Higbee has noted it following superpurgation due to aloin. Aloin in small doses may be an

appetizer—in moderate doses it surely empties the intestinal canal, prevents absorption of toxin of decomposition and opens the most active channel for the elimination of toxins reaching the blood from other sources and is of great value in pneumonia and other inflammatory ailments; but given in poisonous doses—doses sufficiently large to cause superpurgation, its effect is quite the opposite. So used, it causes a suspension of those activities that prevent intestinal putrefaction, and this takes place as is evidenced by the extremely foul smelling feces and by the great depression of the patient and other evidences that he shows of autointoxication. It may also cause an acute congestion or even inflammation of the intestine from the irritation of the aloin or of the products of the putrefaction or of both. This is a condition favoring a rapid absorption, and when the products absorbed are right, laminitis results. Perhaps it does not occur oftener because the intestinal flora is so variable, and one group may get in the lead and overgrow the others one time and another group another time and so on.

A number of facts could be cited to show that laminitis is not due to a "sympathy" between the mucosa of the intestine and the sensitive lamina of the feet; but for lack of space, a single one must suffice. There is no regularity to this sequel of laminitis. If a certain type of degree of superpurgation caused laminitis, there would be some regularity to it. We could place some dependence upon a prediction that a certain case of superpurgation would be followed by laminitis, but quite the contrary is the case.

2. Because superpurgation may be followed by laminitis, the advisability of using the active hypodermic cathartics is questioned. Neither arecalin nor eserine can cause superpurgation. The action of the former does not continue longer than an hour after administration and of the latter not more than eight hours. The action of either is mild after the first few minutes.

I do not think that anyone has recommended either arecalin or eserin where there is severe purgation. Where the intestinal canal is fairly well emptied and its contents fluid, I should be inclined to rely upon intestinal antiseptics to hold in check harmful bacterial growth.

3. The use of alum in the treatment of laminitis is held to be without reason other than the empirical one that it is beneficial. If laminitis is due chiefly to an autointoxication, good and sufficient reason for the administration of alum can be shown based upon its known physiological action. It is the most powerful intestinal astringent that I know of and has the fewest disadvantages. I have not noted constipation following its use nor diarrhea, nor a stopping of peristalsis, nor indigestion, and in any case its action lasts at most only a few hours, and if it did all these, it could not much matter. Quitman says, that it constricts the capillaries. If this is true, a thing of which I am not certain, is it not reasonable to suppose that as with other vaso-constrictors, e. g. digitalis, there is a selective action on the part of the capillaries (not of the drug) and those that need it most, i. e., those of the affected feet in laminitis, are constricted most? All body cells exert this selective action in the assimilation of food, the tissue needing most any particular kind of food circulating in the blood, gets it.

Our first consideration in laminitis should be to remove the cause—to stop the absorption of the toxin in the intestinal tract that is producing the condition. This we accomplish by partially unloading it by the use of the active hypodermic cathartics and stopping absorption by the surest and most harmless of intestinal astringents. Whether the astonishingly prompt and certain action of alum in this case is due wholly to its astringent action or whether alum combines with the harmful bacterial products chemically and forms an innocuous combination, I can only surmise, and it is unimportant. At any rate, when alum is administered, the onslaught of

the disease is promptly stopped. Irreparable damage may already have been done if the case is a neglected one, but whether administered early or late in acute attacks, the *progress* of the disease is stopped immediately.

4. The early and vigorous administration of aconitin in laminitis to its full physiological effect, is most logical. Assuming that laminitis is due to absorption of harmful products from the intestinal tract permitted through the deranged functioning of the organs of digestion, or assuming that it is due to an extension of the inflammation from the mucosa to the sensitive lamina, or that it is a reflex from a sudden chilling of the skin, we have in any of these conditions a disturbed circulation, and aconitin is the first and foremost of circulation "equalizers." Furthermore, in laminitis there is an elevation of the temperature, an almost invariable indication for aconitin. A speedy return of the temperature to normal, a very marked diminution of the pain and improved conditions generally, appear coincident with the symptoms of full physiological effect of aconitin when given in cases of laminitis, which constitutes assuredly an important part of its treatment.

5. Elsewhere in this issue, Dr. R. C. Moore enumerates a long list of contributing causes of laminitis, to all of which we could agree. There are many contributing causes to almost all disease. Following this, he enumerates a very considerable list of exciting causes. In our own observation, we have been unable to see the connection between most of these exciting causes of laminitis, occurring admittedly in many instances coincidentally with it, but we believe they are coincidents solely or at best only remote or contributing causes.

Laminitis is very common along the western shore of Lake Michigan, and in almost every case occurring here, it is obviously due to a chilling of the body surface, which, as is well known, produces slight or marked derangement of the digestive functions. Further lamini-

tis is particularly prevalent in sections of the country where farm horses are fed largely on new wheat. In these cases, it is plainly due to a rather mild indigestion caused by overloading with a concentrated and somewhat indigestible feed. It occurs in farm horses everywhere from overeating. These three causes all producing rather mild indigestion, produce laminitis with remarkable regularity. The same cannot be said of any of the other causes cited in classical works on veterinary medicine. It is difficult to cite a case where mildly deranged digestion is not or may not be present. It is easy to cite cases where all the other causes which have been given are absent. Again, all cases respond to the treatment as outlined below exactly as if they were the indirect result of digestive derangement. They do not respond to the removal of the other causes cited by Dr. Moore in his splendid article on this subject.

6. There is far more objection to the use of alum in the treatment of laminitis among the older practitioners than there is among those of less experience. At first glance, this would appear to be an argument against the alum treatment, but is it? The alum treatment of laminitis is a very old one. Twenty-five years ago it was the main reliance of empirics for this disease, and among the older practitioners, there are many who are strongly prejudiced against it on this account.

7. The reply to Dr. Higbee's query has already been prolonged to an undue length, particularly as so much space has been given elsewhere to this subject in this issue; but notwithstanding it is a repetition of what has been published several times within twelve months, we will briefly outline the treatment of laminitis to which Dr. Higbee refers.

Where the case is seen early, as it frequently is in country practice, and almost invariably is in city practice, the animal is given two or three small doses of arecalin or eserin, preferably the latter, sufficient to produce an active peri-


stalsis and a number of passages of feces. Aconitin or aconite is administered in full doses every half hour until the temperature is normal and the animal shows evidence of sweating in the region of the flanks and elbows. The pulse will by this time have become soft and be scarcely distinguishable in the digital arteries. This will ordinarily require from eight to fourteen hours. The owner is instructed to put wet swabs on the feet and to wet them every half hour. As Dr. Moore says, this may be of no benefit, but it certainly can do no harm. It satisfies the owner and keeps him from doing something that might be harmful.

The administration of the alum is the most difficult part of this treatment. Ordinarily the owner cannot administer it at all. It must not be given in a drench or with a dose syringe, because of the difficulty in swallowing it, unless it is enormously diluted. It should be given in capsules, two ounces at a dose, and eight ounces given during the first day. This means four calls for the veterinarian, but it is worth it to the owner if any veterinary service is worth its cost to him. On the second day, the hypodermic cathartic may or may not need to be repeated. The aconitin almost surely will not need to be repeated, but it is ordinarily advisable to give at least two doses of alum the second day. Few cases will need any further treatment, and the horse can go back to work on about the fifth day.

If cases exactly the same as this are treated in the same way without the alum, they recover so as to need no further treatment in about a week, and it requires a week or ten days longer before they are really serviceable for hard work. Should this same treatment without the alum be commenced on the third day of the attack, ultimate recovery in severe cases is quite unlikely, but even at this late stage, eserin and aconitin combined with alum will give good results in the majority of cases.

(Continued on page 333)

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary Medicine



It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

Vesicular Exanthema of the Horse

Vesicular exanthema, sometimes commonly called genital horse pox, is an acute, highly contagious disease in the horse with which we should be familiar because of its similarity to dourine. Under ordinary conditions it is spread only by the act of coitus, and for this reason it is found most frequently during the breeding season of the year. It consists of a local infection of the genital organs much like dourine, but of a less serious nature and usually terminating in complete recovery.

Occurrence—The disease is common in Germany, Austria-Hungary, Denmark, Scandinavia and many parts of the United States. I have had a few outbreaks of the disease to contend with in western Idaho during the past three years. The disease is confined principally to the equines and the bovines, but sheep and swine have been known to have the disease. It is also possible for man to contract the disease. In cattle it develops an eruption which is very hard to distinguish from cow pox.

Etiology—The germ causing the disease has never been isolated, it probably being of the filterable variety. It exists in the serous and purulent exudates in the vesicles and ulcers found on the genital organs of the affected horse. The pe-

riod of incubation varies usually from three to six days, but may run its course as soon as twenty-four hours after infection. The disease does not seem to be contagious from one species of animal to another.

Symptoms—The first symptom of the disease in the mare is a hyperemia and hyperthermia of the vulva, usually just inside of the labia. Dark red spots then form, which soon change to a pea-sized vesicle or pustule filled with a clear yellowish fluid. These later break, leaving small erosions on the mucosa. Soon a muco-purulent discharge is noticed, which soils the tail and neighboring parts. Urination is more frequent, and because of the denuded mucosa straining may be noticed. Quite often one may notice signs of sexual excitement. Eruptions usually appear also on the external surface of the labia and on the perineum. They behave very similar to those on the inside of the labia. The vesicles may become confluent and there is formed a brownish scab from an eighth to a fourth inch in diameter. After a few days these scabs come off, leaving white pitted scars for several weeks, and by these scars one can usually tell that the animal has recently had the vesicular exanthema.

The disease usually lasts from two to

three weeks and during that time new pustules are forming while others are healing. Occasionally the eruptions will appear also on the udder, and there is swelling and tenderness of the organ.

In very bad cases lymph glands and lymph vessels will swell and suppurate and abscesses might form in the udder and about the anus near the tail. There will at the same time be constitutional disturbances, high fever, stiff gait, severe emaciation, and sometimes death, the disease lasting as long as six months. But it is very seldom that the disease will get this bad, there usually being no constitutional disturbances at all.

In the stallion the disease is very similar to the disease of the mare, there being present the same kind of eruptions which usually are formed only on the penis and prepuce, seldom on the sheath. There is a marked tendency of the pustules to coalesce or come together so that there will appear raw patches of mucosa, sometimes an inch square. It is usually hard to find any pustules that have not ruptured, as they are so easily ruptured after they are formed. The raw patches formed in the wrinkles where the prepuce joins the penis are sometimes very slow and obstinate to heal. The opening of the urethra is usually swollen and congested, and from it you will notice a grayish mucopurulent discharge.

Course—The course of the disease is usually brief, but under proper handling recovery is hastened and more certain. The exact nature of the contagion is not known, but it is somewhat sporadic in form in that it cannot be traced to any certain source, but will start in some vicinity where it had never been seen or heard of before. A diseased stallion will usually give it to every mare to which he is bred. If the patient does not recover in two to three weeks it is because of a complication in the nature of a septic infection, which will vary in severity, even causing an occasional death. In the mare the disease will sometimes be followed with a chronic vaginal catarrh which may cause sterility.

Diagnosis—From the symptoms I have given one will readily notice the similarity of vesicular exanthema to dourine, and so, in order to quickly diagnose the dreaded disease, dourine, one must be familiar with both. In dourine there is usually a much greater doughy swelling, and the penis hangs out paralyzed partly within the prepuce, but out of the sheath. The depigmented areas in dourine are larger and more irregular and gradually spread. With dourine in the mare the vulva is so enlarged that the lower commissure is held open, showing large denudations of the clitoritis. The essential difference in the two diseases are these: in dourine there are no pustules or vesicles, but instead a depigmentation, and second, it is not as acute or mild a disease as is vesicular exanthema.

Treatment—The handling of vesicular exanthema lies mostly in its prevention. When it is found breeding should be stopped, and all diseased or exposed animals isolated. The stallion is the great propagator of the disease, and since the disease usually shows up during his breeding season it is very essential that he be cured as quickly as possible. The treatment consists essentially in the use of mild astringent antiseptics. The parts being so sensitive, one must be careful to not use drugs which are too irritating. In the cases I have treated I have had good results in treating the affected parts by irrigating them with a 1/1000 solution of potassium permanganate and afterwards dusting on an antiseptic drying powder consisting of one part of iodoform and seven or eight parts of boracic acid two or three times daily. The powder absorbs the exudate and hastens the healing.

In the stallion if the urethra is diseased it should be irrigated with the permanganate solution, using a bulb syringe, being careful to avoid forcing the solution up into the bladder, for in this way it may become infected. Persistent ulcers should be treated with either iodine or silver nitrate occasionally. The animal should be kept as free from sexual excitement as possible and should be fed a

mild laxative diet and given a reasonable amount of exercise.

The past spring I had occasion to take care of two small outbreaks of the disease. In one, a stallion and four mares which had been bred to the stallion became affected seemingly all at the same time. They were isolated and treated as I have described and in fifteen days' time the disease had disappeared. The other outbreak was among some range stock. The stallion was taken away from the mares and treated but the mares being rather wild were not treated. After eighteen days the stallion was well and was turned out with the mares and nothing more was heard of the trouble.

Weiser, Ida.

J. R. FULLER.

SATISFACTORY RESULTS IN THE TREATMENT OF ZYMO- TIC DISEASES OF THE AIR PASSAGES

In the following conditions I have found a mixed infection with a great preponderance of streptococci the point of attack and incubation being in the mucous and glandular structure of the throat: catarrhal fever, pneumonia, pleurisy, influenza (pink eye), purpura, laryngitis, inflammation, enlargement and suppuration of sublingual, submaxillary and parotid glands. Temperature varying from 103 degrees to 107 degrees Fahrenheit and other accompanying symptoms have been in proportion to severity of infection.

It has been my rule during sixteen years of veterinary practice to keep clear of all "fads" and to use only remedies of known value. By adhering to this principle my percentage of mortality had gradually decreased but, even at that, a review of my work shows a death rate in the above conditions ranging from 15 per cent to 25 per cent up to within the past two years. About this time my attention was called to *iodum-miller*, the soluble iodine.

The claims for this preparation were so great, yet so seemingly reasonable, that I said, "show me," and I was "shown." It has proved to be a valuable remedy and I have added it to my list of "reliable medicines."

During the past fall and present winter, in one of the most virulent of epizootics, I treated a large number of the above mentioned diseases in which my sole dependence was in the internal administration of Iodum-Miller and by its use the mortality was reduced from the former rate of 15 to 25 per cent to one-half of one per cent.

In cases of mild attack I gave a dosage of 15 drops Iodum-Miller in one ounce of water, by the mouth with a dose syringe, every two hours beginning at six a. m. and giving seven doses a day. In more severe cases I gave 30 drops Iodum-Miller in one ounce water every two hours during the day and throughout the night. In cases of malignant tendency the dose was increased to 45 to 60 drops mixed with two ounces water every two hours, the dose being increased or decreased according to amount of fever and general symptoms.

Iodum-Miller has supplanted both iodine tincture and potassium iodide in my practice. Because of its perfect solubility in water (hence its perfect and rapid absorbability into the tissues) Iodum-Miller is more dependable as a germicide than iodine tincture. Iodum-Miller, because of its germicidal action, is superior to potassium iodide for internal administration, potassium iodide not being a germicide.

I have found Iodum-Miller a trustworthy preparation of iodine in that it is always the same strength; it is soluble in any proportion of water; it never precipitates; it gives the full antiseptic and germicidal action of iodine with no damaging effect to healthy tissue but, on the contrary, it acts the part of a useful tissue stimulant producing active phagocytosis—an action much desired in the treatment of the foregoing diseases.

Further, its germicidal action when given by the mouth sterilizes the points of infection and incubation. It does not disturb the stomach but, to the contrary, I have found my patients feeding better under its administration and, therefore, not suffering depleted vitality as under former treatments.

T. W. HADLEY, D. V. S.

1737 Genesee St.,

Kansas City, Mo.

ETHICS PREACHED FOR THE OTHER FELLOW

I read the article written by Mr. Stewart, class '16, St. Joseph Veterinary College, exhorting all who come from our colleges to follow the professional ethics they are taught, etc. The undergraduate and new graduate is preached to along the lines of ethics, and then when he locates and endeavors to get himself a practice (a living) the very men who do the preaching do the most unethical things—actions that the new graduate would scorn to think of doing.

An illustration. A young practitioner located near the city line of a large city, was attending an Angora cat in which he diagnosed a "hair ball" located in the small intestines, and as the cat had not been sick very long, he administered a purgative in the hope that the obstruction would be gotten rid of without operating. In several days the obstruction had not passed although it had changed its position, and on mutual consent of all concerned, a consultant was called, a veterinarian who lectures one hour each week in one of our veterinary colleges and devotes a considerable portion of his time to exhorting his pupils to be ethical. He palpated the abdomen with the cat lying on her back and diagnosed ptomain poisoning. In the presence of the owner and the young veterinarian, he gave a five-minute discourse on the case, emphatically denying as often as he could the presence of an obstruction. The owner still retained the young practitioner on the case, and the next day he slipped the cat another physic pill unknown to the owner, and thirty-six hours after the "consultation" the cat passed a hair ball about one and one-half inches in diameter followed by several smaller ones. It is needless to describe the feelings of the young veterinarian during consultation and after the passing of the obstruction. How can a beginner be expected to be ethical with such an example as that and such fellow practitioners to deal with?

Another—I know a newcomer who

was called on an urgent colic case after the regular veterinarian could not be gotten. He used the stomach pump to good advantage and the horse made a good recovery, the owners were well pleased. In a week or two, after fruitless endeavors to get their regular veterinarian on another case, the newcomer was again called and treated the case successfully. Then, the owners approached him and asked him if he would attend their stock regularly. When the regular practitioner in the course of a month or so found it out, he wrote two sheets full of scathing material, which was a disgrace to the whole profession. This "regular" had all he could do and sometimes through busy seasons employed an assistant, and this stable had only about sixteen head of horses. Needless to say, the regular lost out entirely when he proved so small.

I write this to show how unethical we are, and these are only a few of the many instances that occur daily. Our profession is creeping upward along scientific lines, but we must remember that it is necessary to elevate it along ethical lines also. In other words, practice a little of the "golden rule."

W. B. MORGAN, V. M. D.

TWIN CALVES BORN TWO WEEKS APART

I was called on February 9th to Poplar River farm, owned by N. H. Withee, to operate on a cow. When finished, my attention was called to a two-year-old heifer which had given birth to a calf two days before. She had a haggard appearance. I advised the owner to quit milking her and turn her to pasture this coming summer.

On February 21st, I was called to the same farm to see this heifer. The attendant informed me that she was unable to rise without help. She was lying on her left side and eating hay. On examining her, I felt by pressure on her right side a hard lump, which I stated to the owner was a calf or a tumor. He laughed and said the calf was in the

pen. I dressed for the operation and found another calf—anterior presentation, one forelimb retained. The calf was delivered successfully. It weighed about sixty pounds and was alive. The heifer and twins are doing nicely.

JAS. O'DONNELL, M. D. C.

Owen, Wis.

IS "BLACK TONGUE" IN DOGS PELLAGRA?

Investigators have been studying pellagra for a number of years, each tried to find some organism or parasite for the causative agent of the malady.

The mortality was high; the disease claimed hundreds in the south each year, in fact but few recovered from aggravated cases of pellagra.

A few years ago a dentist, Dr. Houston of Monroe, N. C., became afflicted with the malady. (It is fortunate that he did.)

After considerable study of the disease he decided it was caused by errors in diet and went about to correct those errors.

He finally decided it was caused by a lack of sufficient nitrogenous food.

After placing himself on a highly nitrogenous diet he soon recovered.

He made his discovery known and hundreds consulted him and were cured. Still scientists considered him a crank and kept their eyes to the microscope looking for some causative agent, but none could be found, so Dr. Houston's theory was finally taken up and as the result pellagra has lost its terror.

Physicians now find it responds quickly to treatment and all that is necessary in ninety per cent of the cases is to place the patient on a highly nitrogenous diet, such as eggs, beans, etc., and the symptoms soon abate.

Beriberi is another deficiency disease that was very fatal until the cause was discovered and the ration balanced.

After studying these two maladies, I am forced to the conclusion that the so-called black-tongue is canine pellagra and have carried on a limited number of experiments to that end.

Cases that I have gotten hold of in the early stages of the disease have all responded to my treatment.

By early stages I mean those that have not entirely lost their appetite.

I give no medicinal treatment except a purgative if needed but place them on a diet of milk, eggs and raw meat. Give them all they will take and if they refuse it pour the milk and eggs into them.

I have yet to lose my first case with this treatment.

Am giving this, not to claim any discovery at all but to stimulate experiments along this line.

Let us not make the mistake that was made in the case of pellagra by trying to be too scientific and by so doing overlook the more common causes.

T. N. SPENCER.

Concord, N. C.

GASTROTOMY IN FOX TERRIER PUPPY

Fox terrier puppy four months old was brought to my hospital for treatment; had not eaten anything for four days, drank water but vomited it immediately, sedatives and astringents were given for two days, and water restricted. Six days pass and puppy could take nothing. I was then informed by owner that puppy had swallowed a peach stone.

I immediately advised an operation and the puppy was given a general anesthetic, opened up abdominal cavity and brought outside of abdominal cavity, a portion of stomach, and explored the balance internally, made an incision about one and one-half inches long, placed a suture in each end of the incision into stomach, so as to hold up the stomach, then took out a large peach stone, one overcoat button, one-and-one-half inches in diameter, and about twenty-eight worms. I flushed out stomach and stitched it up with black braided eye silk. The second day after, patient takes some warm milk, following with fluid diet every day and in one week puppy was taken home and appeared hungry all the

time. Heard from patient ten days later to the effect that he was getting fat and strong.

E. E. PATTERSON, D. V. M.

Detroit, Mich.

PERFORATED BOWEL IN THE HORSE

On November 5th, I received a call from Mr. Whittekein, at the Durham stock yards, to come as soon as possible and see a horse that had been gored by a steer. Upon inquiring as to the nature of the injury, Mr. Whittekein informed me that while trying to catch a steer that had escaped from the stock yards, the steer had gored his horse, just in front of the stifle and the bowels were hanging out about six inches. I directed him to get a clean laundered towel, wrap it around the bowel and hold it from coming out any farther until I arrived. Also to boil two gallons of water. Upon arrival, I found an aged bay mare, weighing about 1,000 pounds, perspiring freely, pulse and respiration accelerated, pawing and wanting to lie down. I administered one-quarter grain each of strychnin and atropin, placed my instruments in a pan to boil, then wrapped a sheet around the animal's abdomen, securely fastening it by sewing with strong twine, leaving the towel wrapped around the protruding bowel. The casting harness was then adjusted and the animal cast on a canvas blanket. Chloroform was then administered until anesthesia was complete. After thoroughly cleansing my hands I had the sheet and towel removed, the abdominal wound was about 8 inches forward of the stifle joint, and some 8 or 10 inches of the small intestine protruding. The bowel was somewhat congested, completely filling the circular wound in the skin made by the steer's horn. On examining the bowel I found a tear about 2 inches long from which fecal matter was discharging. I then irrigated the bowel and skin in the vicinity of the wound for several minutes with warm, normal salt solution, and placed pads of aseptic gauze wrung

out in salt solution around the skin wound and bowel. An assistant then held the bowel, grasped firmly between the gauze pads, exposing only the torn surface, while I stitched the wound with an aseptic gut suture, being careful to bring the serous surface in contact; turning the edge of the wound in about one-eighth of an inch. The bowel was again irrigated with warm salt solution, and the skin opening enlarged until the bowel could be returned to the abdominal cavity without using force. The muscles and peritoneum were found torn for several inches and the skin incision was extended until the peritoneum could be grasped with forceps, and was then stitched with a chromic gut suture. The muscles were also stitched with a chromic gut suture, and the skin closed with braided silk interrupted sutures, placing a piece of iodoform gauze at the lowest point for drainage. The hair was then clipped off around the skin wound, painted with tincture of iodine, and dusted with powdered camphalum. The animal lay quiet for about an hour after the chloroform was discontinued, then was assisted to her feet and placed in a box stall. Her head hitched short so she could lie down, and food and water withheld for 24 hours. Water was then given in small quantities. Food was withheld for another 24 hours. After this a light diet consisting of bran mash and a small quantity of alfalfa was allowed, and the wound dusted twice daily with camphalum.

November 6th, pulse and temperature normal.

November 7th, pulse and temperature normal. Animal very hungry, some edema around the wound.

November 9th, pulse and temperature normal, slight discharge of pus from the drain. Administered one ampule of polybacterians. Painted the wound with tincture of iodine.

November 15th, stitches were removed. Wound healed except small place where drain had been. At this time animal was turned loose and allowed to lie down for

the first time since being injured. Also placed on full ration.

I credit the successful termination of this case, first to the administration of an anesthetic, second, to the free use of normal salt solution, third, not disturbing the hair or skin except to irrigate it with salt solution, until the bowel had been returned and the wound sutured.

A. P. DREW.

Grand Junction, Colo.



Sequel of Distemper in a fancy saddle mare.

APPRECIATES THE DISCUSSION OF LABORATORY AIDS TO DIAGNOSIS

In the March number, you publish a paper by Ralph B. Stewart, class of 1916, St. Joseph Veterinary College, which is of more interest to the classes from 1880 to 1910 than to the graduate of today. Why should there be any controversy as to the value of extending the length of time in a veterinary college, or the higher standard of entrance requirements, when a paper like the one mentioned above shows the high class of men we are now having added to the profession?

Twenty-five years ago, we were just high grade "horse doctors" beginning to strut and put on airs. Nothing but the horse was worthy of consideration.

Farmer Mills at that time was demonstrating "castration" in veterinary colleges, and foreign schools were teaching that "the ridgling operation was not successful."

Give us more papers from the boys yet in school who can think and act—more laws compelling higher standards of preparation to enter and longer terms to finish high grade men.

More praise to this class of young vets, and may we have more of them.

FRANK A. CRANDALL,

Chicago V. C., Class of 1895.
Buffaro, N. Y.

CHICAGO VETERINARY SO- CIETY DISCUSSES LOBELIN FOR AZOTURIA

The regular monthly meeting of the Chicago Veterinary Society was held at the Kuntz-Remmler Cafe, March 15th. The report of Dr. E. L. Quitman, Chairman of the Committee on History, in which was included a record of the organization of the society in 1896 and some account of its activities since that time, was of more than usual interest, and after much discussion was ordered printed and distributed to the membership.

In addition to a number of discussions brought up by those present at the meeting, Dr. Joseph Hughes entertained the members present with one of his characteristic chalk talks.

Dr. C. A. White formally discussed the operation for the removal of cystic calculi in horses and dogs, and Dr. A. C. Worms presented a report of several cases of azoturia that he had treated with extraordinarily good results by the hypodermic administration of lobelin sulphate.

Dr. Worms cited one case of azoturia in both posterior legs where the animal had been down on the street an hour and a half when he reached it and was very delirious, two men being unable to hold it from pounding its head on the street.

It was covered with sweat and several miles from its barn. It was one of those cases that Dr. Worms invariably ordered destroyed prior to his discovery that lobelin sulphate will relieve them. He administered one-tenth grain hypodermically, and the animal became quiet in fifteen minutes. It became restless in about two hours, and another one-tenth grain was administered with the same result as the former dose. It was not until three hours after Dr. Worms saw the case that he was able to get an ambulance to take the horse to the barn. On reaching the barn, the animal was again delirious and was promptly quieted with another one-tenth grain of lobelin sulphate. No other treatment was given, and a speedy recovery followed. Four or five similar but less violent cases were reported in which the results of this treatment were satisfactory.

GLENN BROWNE,

Chicago.

Secretary.

REPLY TO J. P. FOSTER'S INQUIRY ABOUT HARTWIG'S PROCEDURE AGAINST TORSION OF THE UTERUS

Hartwig's procedure against torsion of the uterus which differs from previous plans only in the use of two arms instead of one arm was first brought to my notice in a discussion before the Wisconsin Veterinary Association two years ago. I have never had the opportunity to try the operation and mentioned it because it seems so feasible and was reported by no less than three very able veterinarians as having been successful in their hands. These men practicing almost exclusively among dairy animals seemed competent judges and knowing them to be experienced veterinarians and truthful men I had no reason to question their plain statements of facts. The reply to Foster should come directly from Hartwig, who, I am sure, would be glad to report the cases he operated upon to the readers of the JOURNAL if asked to do so. I have no doubt that the plan is not 100 per cent successful and that some

cases will baffle even the two strongest arms, but if it were only successful in a small percentage of the cases, it would still inure to the benefit of those who adopted it, because without the operation the mortality is 100 per cent. Fleming has not, in any of his writings, mentioned this bi-manual procedure. Although he does use the term "thrusting the hands and arms into the cavity" he clearly shows he intended that only one hand and one arm should be used at the time. The veterinary profession has surmounted many obstacles that seem hopeless to the veterinarians of 1877.

L. A. MERILLAT.

HOG WITH FOUR KIDNEYS

Recently while making a post mortem examination of retained carcasses at one of the large packing houses, I noticed a hog with four kidneys, two on each side. The anterior kidney was situated normally. It was flattened dorso-ventrally and elongated posteriorly. The inner border bore a deep groove from the hilus to the posterior end.

The posterior kidney was situated at the entrance of the pelvic cavity. It was normal as to shape but undersized.

The ureter and blood vessels after leaving the hilus of the anterior kidney, passed back through the groove in its internal border, then through a bed of fat to the anterior end of the posterior kidney, which they entered through a special opening; here the ureter dilated to form the pelvis of the second kidney and passed out through the true hilus. The suprarenals were normal.

The weight of each pair of kidneys was sixteen ounces, the normal weight for the same sized hog being about twenty ounces.

This is the first case of this kind that I have ever noticed although it is quite common to find one kidney misplaced and situated as were these extra kidneys.

E. H. JEWETT, JR.

East St. Louis, Ill.

SUPPORT FOR "AUTO-THERAPY"

I wish to say a few words in defense of D. D. K.'s article in the March number of your valuable journal, in which he states that he gave the patient orally a solution of pus, obtained from a fistulous withers, and had good results. While this may be a crude method of practising autotherapy, yet I know of two prominent physicians who use this method in treating gonorrhoeal cases.

Personally, I should much prefer the bacterin treatment, and especially if I were the patient, yet is it not reasonable to suppose that the administration of the causative agent in this manner might stimulate the formation of antibodies, which in turn would have a beneficial effect upon the lesion from which the pus was taken, provided it was a chronic condition? And theoretically, is not this treatment as rational as the reinjection into the blood stream of exudate taken from the pleural cavity of pneumonia patients, a practice that is claimed to be beneficial?

Vaccines when introduced into the blood direct, produce an immunity against certain diseases. May they not have the same effect, only perhaps to a lesser degree, when taken up by the blood through the alimentary canal?

B. E. MILLER, D. V. M.

Nashville, Mich.

REPLY: To my mind the oral administration of suppurative discharges from fistulous tracts, gonorrhoeal lesions or other chronic suppurating conditions, is the very antithesis of scientific treatment and cannot by any possibility have any beneficial therapeutic effect. The injection of pleural exudate subcutaneously, not into the blood stream, in cases of pneumonia is not a parallel case, nor is the cutaneous or sub-cutaneous use of vaccines. Only antibodies (serums) and not vaccines or bacterins should be injected as Dr. Miller says, into the blood stream.

The changes in biologic products that occur in the intestinal canal are such as to wholly prevent any immunizing effect from their absorption through the intestinal mucosa.

We shall welcome a further expression of opinion in this matter.



FLOYD E. CARROLL.

The Kansas City Veterinary College Senior Class of this year claims the distinction of having among its number the champion saddle rider of the world. He is Floyd E. Carroll of Wheatland, Wyoming. Carroll won his title in a contest against a big field of expert horsemen at the 1914 Frontier Day celebration in Cheyenne, Wyoming. He is 24 years old, and following his graduation from college will enter the employ of the State of Wyoming as a veterinary inspector.

UTERUS RUPTURED IN FOALING

I will report a case in a Belgian mare weighing about 1600 lbs., seven days past due to foal. The owner visited the animal as 10 p. m. and again at 2 a. m. and found her apparently all right and showing no indication of foaling. At 6 a. m. when he went to the barn, he found the mare dead with the whole of the large colon and floating colon expelled through the vagina but no colt.

On autopsy, I found the conditions as before described outwardly and inwardly a rupture of the floor of the uterus about sixteen or eighteen inches. The head and fore feet of the fetus extended through into the abdominal cavity, it being a breech presentation,

the hind part of the body of the fetus being in the uterus. The large and floating colon had gotten through the rupture in the uterus and had been expelled through the vagina.

How did it occur? Has any one seen anything just like it?

J. HARRISON, V. S.

Kalamazoo, Mich.

REPORT OF THE SALMON MEMORIAL COMMITTEE*

Just a little over a year ago as the news of the death of the lamented Salmon had spread over our land, there seemed to arise in many centers a wide-spread desire that, in some way, somehow, this good man's name should be preserved to the future generations of the profession as it was endeared to the generations of today.

Men in the profession as well as those in allied work, the outgrowth of his fertile planning mind, commenced to vie with each other as to plans and means for the perpetuation of the name and fame of Salmon, that would continue to add incentive to men to do great work for a country's benefaction and a world's advancement.

A common impulse felt that at the nation's capital, the theatre of action of his nation-wide service would be the most fitting place to mark in some imperishable way his great achievements and happily indeed this plan will not be wholly lost, for in bronze on the walls of the Department over which he presided will be placed a reproduction of the face that all loved who were privileged to know the innermost thoughts of this public savant.

The splendid school at Cornell University of whose Veterinary Department and under the tutelage of that great sage and nestor of the profession, Prof. James Law, he entered the initiatory course of veterinary science in that institution, seemed to attract the thoughts of many that in marble or stone we

might preserve there his memory and forever proclaim his great gifts to the people of our land.

Massachusetts ever ready to recognize such distinguished services readily joined the plan and other centers of interest in this movement were planning to join in the completion of the same.

Pennsylvania was not idle in its interest in the project, and groups of her professional representatives were thoughtfully considering how best the plans might be made nation-wide and in what form would it best commend itself to every member of the profession in the most remote village and town of our country. In what way could his life and services be best memorialized that his work should go on and continue to add to the uplift of our profession, to which he gave his whole life, unselfishly, devotedly and with the richest triumphs that fall to the lot of man in public service. Out of these conferences came forth the plans, now the accepted ones of the American Veterinary Medical Association and under its auspices in process of completion.

How in unison with his whole life of unselfish devotion to his profession, the field of higher veterinary education and service would be his by choice, provision for future scholarships in American veterinary colleges, for deserving young men, would gladden and delight his heart were he to have been the architect of these plans.

A fellowship to be provided for in some American veterinary college that would aid some deserving graduate practitioner to further enrich the profession in greater knowledge of obscure problems that await our solution.

His more than twenty-five years of constant study of the serious problems of contagious pleuro-pneumonia, Texas cattle fever, swine plague, hog cholera and other animal diseases would gladden his heart if he was living today to know that some plan was extant by which this work was to be further advanced.

*Report to the Pennsylvania State Veterinary Medical Association, Pittsburgh, Penn., Feb. 22nd-23rd, 1916.

A sum of money to be annually devoted to the investigation of some scientific problem, free from the oft-times sordid desire to so investigate that commercial ends might be subserved would have appealed strongly to him who ever kept submerged the commercial side of his public services that scientific advancement would be best conserved and that a nation's people should be benefited by the results of the investigations he directed and conducted.

The consummation of these plans are now in the hands of a committee of seven created by resolution of the A. V. M. A., consisting of Drs. J. F. Winchester, of Massachusetts; J. G. Rutherford of Canada; S. Brenton, of Michigan; J. S. Anderson of Nebraska; David F. Fox of California; A. D. Melvin, District of Columbia, and your humble servant of Pennsylvania.

Plans have been inaugurated to raise one-fourth of this sum by obtaining one hundred subscriptions of twenty-five dollars each, another fourth by obtaining 250 subscriptions of ten dollars each and then endeavor to raise the equivalent of one dollar for each licensed practitioner in each of the forty-eight States, this task to be completed in three years.

Michigan, New Jersey, Pennsylvania, Massachusetts, Ohio and Wisconsin have each appropriated one hundred dollars through their associations. Virginia has raised upwards of one hundred dollars, New York more than three hundred dollars, while many of the other states have started movements of a similar character.

I have now twenty-one of the one hundred twenty-five-dollar subscriptions that we hope to raise, and more than fifty of the two hundred fifty ten-dollar subscriptions aimed at by the committee. Upwards of one-fifth of the amount is now assured and the co-operation of all is earnestly appealed for.

Pennsylvania with her more than eight hundred licensed practitioners should raise eight hundred to one thousand dol-

lars of this sum and I fully believe they will do so.

All monies contributed will be kept intact for the purposes of the project and it is hoped that the A. V. M. A. will bear all the clerical and other expenses of procuring the same through its resident state secretaries or by appropriation from its treasury so that every dollar contributed may be made to conserve the purposes of the fund.

W. HORACE HOSKINS,
Chairman.

ANOTHER HOG CHOLERA SPECIFIC

(Continued from page 306)

sibly the "joy ride" would recompense the operator for the work of immunization.

A simple, easily applied, inexpensive and sure preventive of hog cholera may have been discovered at last. Let us hope that it has. The importance to the agricultural interests of the news of such a preventive is beyond calculation. The high and responsible position of Dr. Duval tends to give one confidence in the pronouncement, but the manner in which this alleged preventive has been presented to the public arouses suspicion. The presentation was altogether too spectacular. According to Dr. Duval's statements, he has experimented with this only one year. The natural caution of the ordinary scientific man would prevent him from boldly proclaiming a discovery of this kind with no more than a year's time in which to check up his results or without having his results checked by others.

We believe veterinarians will do well to watch and wait and to keep an open mind. State agricultural experiment stations and the Bureau of Animal Industry may be depended upon to thoroughly try out this preventative, and if it is successful, to announce it promptly. If it is not successful in their

hands, no private practitioner can afford to experiment with it to the probable loss to his clients and his own prestige.

Prof. Duval's method of preparing the hog cholera vaccine is not new. It consists in drying and heating the virus until it is attenuated to a point where it will not produce cholera but will confer immunity. It has been tried numberless times by others and may be said to be a refined method of accomplishing what the farmer tries to do when he partially burns carcasses of hogs dead of cholera and feeds them to the remainder of his herd.

BOOK REVIEW

(Continued from page 306)

Duration of the Different Forms of Quarantine Against Foot-and-Mouth Disease, by Dr. V. A. Moore, Director of the New York State Veterinary College at Ithaca, N. Y.

Economic Effect on Business Men as Well as Farmers of Temporary Outbreaks and of Permanent Presence of Live Stock Disease, by Dr. A. J. Glover, Associate Editor of *Hoard's Dairyman*.

The Use of Concrete in Sanitary Farm Equipment, by Norman K. Wilson, Construction Engineer, Portland Cement Co.

Forage Poisoning, by Dr. Robert Graham, Agricultural Experimental Station, Lexington, Ky.

The Advisability of State-Wide Compulsory Pasteurization, by W. B. Barney, Dairy Commissioner of Iowa.

Hog Cholera Investigations, by M. Dorset, United States Bureau of Animal Industry.

Advantages of Closer Co-operation Between Bureau of Animal Industry and State Officials in the Control of Contagious and Infectious Diseases, by Carl Vrooman, Assistant Secretary of Agriculture.

Co-operation with Bureau of Animal Industry in the Control and Eradication of Contagious and Infectious Diseases, by Dr. O. H. Eliason, State Veterinarian of Wisconsin.

Inspection of Live Stock for Interstate Movement, by Dr. D. F. Luckey, State Veterinarian of Missouri.

Sanitation in Connection with Transportation of Live Stock, by A. J. Davies, North Pacific Railway, St. Paul, Minn.

Disinfection of Local Stock Yards and

Farm Premises, by Dr. F. A. Bolser, Assistant State Veterinarian of Indiana.

Effective Quarantine as a Factor in Controlling Foot-and-Mouth Disease, by Dr. U. G. Houck, United States Bureau of Animal Industry.

Summary of Investigation on Immunization Against Anthrax, by Dr. Adolph Eichhorn, United States Bureau of Animal Industry.

Infectious Pneumonia of Cattle, by A. T. Kinsley, President Kansas City Veterinary College.

The present edition of this report is sure to be exhausted soon, and we urge readers of the *AMERICAN JOURNAL OF VETERINARY MEDICINE* to apply at once for a copy. Address Secretary J. J. Ferguson, U. S. Yards, Chicago, enclosing \$1.00. If you are not satisfied with the report send it to me and I'll give you a dollar for it; the supply will be exhausted soon and it will bring a premium then.

KENTUCKY ENACTS A VETERINARY PRACTICE LAW

Veterinarians of Kentucky led by Dr. S. F. Musselman, State Veterinarian, Dr. Robert Graham and others of the agricultural experiment station, have finally succeeded in procuring the enactment of a fairly satisfactory law regulating veterinary practice in that state. As has been the case in all other states adopting such laws, we may now look to see the number of qualified veterinarians in Kentucky increase very materially and matters veterinary in the Blue Grass State improve to the very great benefit of the agricultural interests of the state.

EQUINE LAMINITIS

(Continued from page 302)

branches or fragments of the placental membranes. Metritis of a more or less severe form is always present in these cases.

In this disease I have found the double stomach tube of the utmost value. Pass it into the uterus and evacuate its con-

tents. Often you will find that the tube will become blocked up with the debris. To prevent this, it will be necessary to pass your arm into the uterus and place the hand in the form of a hollow cone over the ends of the tube. After you have emptied the uterus, have a large supply of warm water ready, fasten your pump to the tube and fill the uterus as full as possible with the water, then syphon out, and continue this process until the fluid passes clear. The water should be warm, 105-110° F. When no atmospheric air is permitted to enter, it is astonishing what little effect in the way of scalding, hot water has on the surfaces of the uterus. I use no antiseptics of any kind in the water. I think they do more harm than good. There are few in or out of the pharmacopeia I have not used in this disease. After you have thoroughly washed or rather scrubbed out the uterus draw all of the water out. Then take a handful of sterilized white vaseline and with this smear all over the entire uterus, or as much of it as you can reach. The process of washing and smearing should be practiced for several days, at least once a day. Care should be taken to avoid septic infection of the arms, while treating this disease.

Parturient laminitis is not as a rule as severe a disease as general laminitis; generally the feet are not so extensively inflamed as in the latter disease. Of course we do occasionally find just as severe forms of parturient laminitis as in any other form of this disease. In my experience, this is exceptional, and is usually found in mares that have been in filthy surroundings, or when medical attention has been delayed. It is in such cases that we meet with fatalities, or often permanently deformed feet and a crippled animal. The diet should be light, bran, green food or small amounts of good hay. A restricted diet to a mare suckling a foal and suffering from this disease must not be carried too far, as the milk secretion in all of these cases is markedly diminished, and in the severe

forms, entirely suppressed. When this is the case, it becomes necessary to furnish the foal with an artificial diet. This may be prepared as follows: Fresh cow's milk, two parts; warm water, one part; and sugar, Q. S. to sweeten. Feed foal often, say every two hours. The foal's bowels should be carefully watched, as constipation is apt to ensue. If this should occur do not give castor oil, give refined petroleum oil in same doses, you will find that this will give much better results than castor oil.

IS THE ALUM TREATMENT FOR LAMINITIS A LOGICAL ONE?

(Continued from page 320)

The foregoing applies particularly to cases following a sudden chilling of the body surface when the animal is heated, the ones that the owner attributes to an unusually hard pull with a heavy load or to a long drive on the hard roads or to any of a dozen things that are not the cause. For the cases that are due simply to overeating or eating some indigestible food, the treatment is the same, except that more attention is given to unloading the bowels by means of hypodermic cathartics, probably repeating them night and morning for a couple of days.

To treat a bad attack of laminitis right and put the animal back to work within a week, requires a large share of the veterinarian's time during two days, but if the horse be a valuable one, scarcely any other service a veterinarian can render his client will be more profitable to him, for the cost in feed, care and depreciated value of a case of laminitis that strings along for thirty days, amounts to more than the plug that you have left when the case is over, if the animal does not finally die from septic infection. These cases should receive our prompt attention and our best efforts at the very outset, or we should not undertake their treatment.

ARKANSAS VETERINARIANS MEET

The Arkansas Veterinary Association held its annual meeting in Little Rock, Feb. 14th and 15th. Dr. X. G. May, president, Fort Smith, presided. This was the best attended meeting the association ever held. Addresses were made as follows:

Dr. C. D. Stubbs, assistant veterinarian Arkansas Experiment Station, subject, "Hog Cholera." This address was followed by a discussion on the same subject lead by Dr. J. E. Gibson, field veterinarian of the U. S. Department of Agriculture, and Dr. John D. Reardon of the Royal Serum Company, Kansas City, Kans. Dr. A. E. Wight, federal veterinarian in charge of tick eradication work in Arkansas gave an address on "Tick Eradication." The subject of interstate inspection of live stock was discussed by R. M. Gow, Dr. X. G. May and Dr. J. L. Hearne, of Texa. kana, Ark. George Wilkes of the Mulford Company gave an address on serum production.

The following officers were elected: Dr. Geo. W. Temple, president, El Dorado, Arkansas and R. M. Gow, secretary-treasurer, Little Rock. The next meeting will be held in January, 1917.

The association passed a resolution asking for the passage of the Loeb Bill, a copy of said resolution being forwarded to the Arkansas representatives in Congress. This bill was presented by Dr. J. E. Gibson.

Since the passage of the Arkansas Veterinary Practice Act, by the 1915 legislature, going into effect June 1, 1915, there has been more interest manifested in veterinary practice and the Arkansas farmers and stock men are bringing in better cattle and hogs and within the next few years, there will be openings in all our farming communities for qualified veterinarians.

R. M. Gow,
Secretary-Treasurer.

Little Rock, Ark.

MISSOURI VALLEY VETERINARIANS HOLD BIG MEETING.

The Semi-Annual Meeting of the Missouri Valley Veterinary Association held in Kansas City, Mo., February 1, 2, and 3rd, was marked by an unusually large attendance and a program of scientific interest and practical value. About 170 members and 200 visiting veterinarians registered, in addition to a large number of students from the Kansas City and St. Joseph Veterinary Colleges. Thirty-one new members were added to the roll.

The scientific program was as follows:—"Why the Horse Has Colic More Often Than Other Animals," by C. L. Wilhite; "Some Legal Phases of Veterinary Practice," by D. M. Campbell; "Equine Laminitis," by R. C. Moore; "Poisoning of Animals," by N. S. Mayo; "Greater Accuracy in Clinical Diagnoses," by R. R. Dykstra; "The Anatomy of Cryptorchids," by S. L. Stewart; "Some Things That Happen to Serum Producers and Serum Users," by E. K. Glover; "Kansas City's New Milk Ordinance and How it Operates," by W. H. Phipps; "Observations on the Treatment of Jacks and Jennets," by Stanley Smith and H. C. Carver; "Necrobacillosis in Pigs," by S. W. Alford; "Hemorrhagic Septicemia," by Chas. Murray; "Hemorrhagic Septicemia in the Form of Mad Itch," by J. T. Brown; "Does Infectious Pneumonia (Swine Plague) Exist in this Country?" by A. T. Kinsley. Case reports and general discussions of the papers presented added much to the interest and value of the program.

The third day was devoted to the clinic and a splendid demonstration of bovine splanchnology by S. L. Stewart. A specially prepared subject was used in which all important visceral structures were demonstrated by electric illumination and their positions and surgical and physiologic importance explained by appropriate remarks. Clinical cases were handled by Drs. Jos. Hughes, J. S. Anderson, J. V. Lacroix and others. An



One of the features of the recent Missouri Valley Veterinary Association meeting in Kansas City was the appearance of the Kansas City Veterinary College band. Composed entirely of students of the school, the boys rendered selections in a manner on a par with the average professional band. They played at the annual convention dinner at the college. The members of the band are: Whitlock, Schmock, Raile, Lewis, Rouper, Lanberger, Edwards, Gilmore, Wattenberg, Anderson, Smith, C. B. Smith, Denny, Connaway, Norman, Williams, Douglas, Miller, Dunphy, Bernhardt and E. F. Moran. Moran is the band director. He is from Iron River, Michigan. Prior to coming to Kansas City he attended the Michigan Agricultural College and was a member of the college band there. Dr. S. L. Stewart is Faculty Manager of the band.

interesting demonstration of a new rectal injection appliance was given by Dr. O. B. Morgan. This syringe is inserted and held in place by exhausting the air from within the rectum, the same negative pressure serving to inject water into the bowel. The apparent advantages of the appliance lie in the simplicity of its operation, the safe degree of pressure applied and its automatic retention. From 10 to 12 gallons of water can be injected into the average horse.

During the regular session a resolution urging the passage of the Lobeck Bill upon members of Congress and another commending the plan for preparedness of the veterinarians of the United States for military service, as presented to the Association by Dr. R. Vans Agnew of the 5th U. S. Cavalry, were adopted.

R. F. BOURNE, *Secretary.*
Kansas City, Mo.

NEW YORK CITY VETERINARIANS HOLD SPLENDID MEETING

The regular monthly meeting of the Veterinary Medical Association of New York City was held at Carnegie Laboratories, 338 East 26th street, New York, on Wednesday evening, March 1st. The meeting was called to order at 8:30 p. m. by President Geo. J. Goubeaud.

After disposing of the routine business, Dr. Goubeaud reported some interesting cases of trichinosis in the human family. The afflicted ones being an Italian family, father, mother and several of their children and a male boarder. There were others said to be affected in the immediate neighborhood owing to the custom of sharing or exchanging meats with each other. Some of the afflicted ones died, others in which the disease seemed to be less intense, lingering with an apparent tendency to recover. Dr. Goubeaud observed several of the cases during the

illness and was also present at the post mortem examination of those who died.

He explained that the convulsions and pain occasioned by this disease was the most pathetic sight of indescribable suffering he had ever witnessed, giving as his opinion that the affection exceeds in agony that due to either tetanus or rabies.

The post mortem lesions were rather vague but the parasite was recovered in the deltoid muscle.

The doctor further explained the difficulty of tracing the source of the infected hog or hogs owing to the peculiar suspicion and low order of intelligence of those living in the neighborhood where the disease appeared, and consequently no information could be gained as to the physical condition of the hog carcass or carcasses, but stated that in his experience the living hog when affected showed no evidence of the disease.

The next was a paper presented by Dr. Chas. J. Chase of Bay Shore, N. Y., entitled "Interesting Characteristics of Animal Parasites."

This paper dealt with the definition of parasites and their prevalence, affecting as they do in one way or another most animals, pointing out that the common method of animal infection was through food and water. He recited the life history of the common bot fly as showing the cycle rather common to the insects infecting animals. This particular insect using the horse's body, principally the legs, as a nesting place so to speak, and the horse in turn by licking the egg into his digestive tract playing the role of an incubator. The importance of controlling and eliminating blood sucking insects is emphasized when we consider some of the deadly diseases that depend upon these insects for their transmission from host to host.

In discussing these Dr. Chase repeated the recent reports that have been current relative to the source of infection of rather numerous cases of anthrax in the human family in and about New

York city, authorities believing insects a factor in these cases.

He also spoke of a man in Brooklyn now suffering with trypanosoma infection commonly known as "sleeping sickness," having been inoculated by the tsetse fly while recently exploring in Africa.

The speaker then reminded us that the common house fly in our own midst is much more of a menace than the public seems to be conscious of. He reviewed the various stages which this pest passes through; the egg, maggot, pupa and adult, stating that 86° F. and moisture offer a favorable environment, and that all filth, particularly manure piles, are breeding places. Under these conditions a rapid evolution requiring about 9¼ days, completes all transformations; the females being able to deposit from 75 to 150 eggs every three or four days, beginning her industrious life when from nine to twelve days old. It is estimated that a pair of flies may be the progenitors during the summer months of offspring that would reach such numbers that from our limited knowledge of mathematics we were deprived of the laudable pleasure of following the essayist in his calculations. The number of diseases and disorders that the fly is capable of disseminating is almost as numerous.

The essayist next discussed intestinal parasites and the importance of examining the feces in equine and canine practice for parasites where emaciation and anemia are prominent symptoms. He closed his remarks by citing a case of filaria infection in a dog, and passed around a bottle containing great numbers of these, of unusual length, which he had taken from the heart of a patient.

The next was a general discussion on the subject of azoturia, many present reciting peculiar cases that had come under their observation and the varied treatment indulged in from year to year. Dr. Cochran still adheres to bleeding. Dr. McKinney has abandoned bleeding

after trying it to his satisfaction; relying upon strychnin, turpentin, oil, physic and chloral. He also believes that the percheron horse is more susceptible than any other breed. Drs. Gannett and DeVine believe that small repeated doses of sodium chlorid in addition to other treatment has a beneficial effect in inducing the animal to drink plenty of water.

Dr. Schroeder reported a case that was down where an electric shock from the car track caused immediate recovery.

At the close of the discussion the president read a letter from Dr. Hoskins relative to the Salmon fund. Dr. DeVine explained Dr. Hoskin's desire to secure a certain number of subscriptions from each state of \$25.00 each for this splendid cause and appealed to the generosity of those present who could afford it to answer Dr. Hoskin's call. The Resolution Committee offered a resolution for the changing from the present custom of a monthly meeting to quarterly meetings. Dr. Greissman introduced a resolution making it a violation of the Society's ethics for a veterinarian to employ an unlicensed assistant. These resolutions were received and laid on the table.

Goshen, N. Y.

J. F. DEVINE.

COLORADO VETERINARIANS

The Colorado Veterinary Medical Association held its Annual Meeting at the rooms of the Gentlemen's Riding and Driving Club in Denver, Colorado, on January 18th. It was attended by the largest number of Colorado veterinarians which have ever attended a meeting of this association.

One important item of business was the apparent oversight of the law makers in leaving the veterinarian out of consideration in formulating the prohibition measure which went into effect on January 1st. Apparently under the law the veterinarian has the same right to obtain alcohol or any alcoholic substance that any other citizen has, but is not given the special consideration which is extend-

ed to physicians. A committee was appointed to consult with the Attorney General on the matter in order that relief might be had. Six applicants were elected to membership.

Dr. A. P. Drew, president of the Association, discussed the matter of "Milkweed Poisoning in Cattle," a disease which has become quite prevalent in the vicinity of Grand Junction. He gave details of a number of cases where it was quite apparent that poisoning had been due to this weed (*Asclepias verticillata*). He had sent a considerable quantity of the weed to the State Agricultural Experiment Station where alcoholic, glycerine and watery extracts have been made and tested out on rabbits without any evident effects. Not only did this disease seem to affect cattle but was also supposed to kill sheep.

Dr. C. G. Lamb gave a very interesting discussion of the proceedings of the U. S. Live Stock Sanitary Boards, and the special meeting called by Secretary Vrooman to consider foot and mouth disease.

The paper entitled "Sundries," which brought out a discussion of azoturia and of ulcers of the intestine of dogs due to streptococci, was given by Dr. G. W. Dickey.

"Sanitary Police Control of Hog Cholera" was discussed by Dr. R. H. Bird. He advocated much more stringent measures on the part of the state sanitary authorities in controlling hog cholera, and pointed with pride to the results of such control in the San Luis Valley.

Dr. C. G. Lamb, state veterinarian, being present admitted that more control was needed in order to eradicate the disease, but he contended that the impetus must come from the hog raisers themselves, and that they must take an active interest in the matter if any permanent results were to be secured. He pointed out that the eradication of the disease in the San Luis Valley was due to the efforts of the growers themselves rather than any regulations made by the state.

Dr. C. C. Stewart discussed "A Pneumonic Condition in Young Calves" in his district, giving the symptomatology and asking for more information.

"Perforated Bowel in the Horse" was discussed by Dr. A. P. Drew (published in this issue) and accompanies this communication.

Dr. V. J. Ayres discussed some unusual cases that had occurred in his practice.

Dr. J. D. Paxton had a paper on a peculiar disease of hogs, which the members present were unable to diagnose.

The election of officers resulted as follows:

F. D. Hylton, Longmont, president; L. R. Dillon, Pueblo, first vice-president; T. H. Quinn, Greeley, second vice-president; I. E. Newsom, Ft. Collins, secretary-treasurer.

The next meeting will be held about the first of June at Fort Collins.

STRYCHNIN BEST FOR KILLING HORSES

I see in the March JOURNAL that the veterinarians are discussing ways of putting horses out of misery. I see some say strychnin is no good. One man says he gave thirteen grains and it took thirty minutes for the horse to die. If he had injected it into the lumen of the jugular two and one-half to three inches, he would have put the horse out in thirty seconds, and there would have been no spasms. The horse would have been dead when he hit the ground. I would rather use strychnin than anything I know of.

WARNER SIDENER, D. V. M.
Potomac, Ill.

N. E. INDIANA MEETING

The Northeastern Indiana Veterinary Association held its annual meeting clinic at Ft. Wayne, February 15th. A clinic was held at the hospital of the late Dr. Dr. W. F. Myers, where operations were performed by Drs. O. L. Boor of Muncie, C. R. Baumgartner of Arcola, Brick-

er of Kendallville and Roberts of Indianapolis. A feature attracting great interest was the exhibition of a five-legged calf, having a perfectly formed leg protruding from its back. A banquet was given in the evening followed by a program, which included addresses by Dr. A. H. Stoker of Ossian, Dr. A. F. Nelson, Indiana state veterinarian, Dr. C. V. Connell of Decatur, Dr. G. M. Roberts, and Dr. Ed D. Leach of Ft. Wayne. The members paid a tribute of respect to the memory of Dr. W. F. Myers by rising in their places when reference was made to his work and service. The officers elected for the ensuing year are as follows: President, Dr. A. H. Stoker, Ossian; vice-president, Dr. George W. Gillie, Ft. Wayne; secretary-treasurer, Dr. C. R. Baumgartner, Arcola.

KANSAS VETERINARY MEET

The twelfth annual meeting of the K. V. M. A. was held in the City building, Kansas City, Kansas, January 5-6, 1916. It was one of the best meetings ever held by the Association and interest did not lag from start to finish. In addition to interesting papers and talks by the members, the association was very fortunate in having Dr. A. Eichhorn of the B. A. I., Washington, D. C., and Dr. H. F. Palmer of H. K. Mulford Co., take part in the program.

Dr. Eichhorn's paper "The Treatment of Diseases with Biological Products" was an excellent paper and created much interest and discussion.

Dr. Palmer gave an illustrated talk on the Manufacture of Biological products.

Dr. L. W. Goss, Pathologist, K. S. A. C., and member of the association, gave an interesting illustrated talk on the outbreak of foot and mouth disease in Kansas.

Dr. J. W. Guilfoil was elected president for the coming year; the present secretary was re-elected.

Fifteen new members joined the association. The next meeting will be held at Wichita, January 2-3, 1917.

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APRIL AND MAY VETERINARY MEETINGS.

Maine Vet. Med. Assn., Biddeford, Me., April 12th.

Alumni Assn. U. S. College of Vet. Surgeons, Washington, D. C., April 15th.

WISCONSIN VETERINARY MEDICAL ASSOCIATION

The Wisconsin Veterinary Medical Association held its annual meeting at the State Capitol, Madison, Wis., Jan. 18-19 and 20, 1916.

The unusually large attendance, and the great interest manifested, was conclusive evidence of the fact that the Wisconsin Veterinary Medical Association is a real live organization.

We had the pleasure of having Dr. J. V. Lacroix, of Kansas City, with us who gave us a very interesting talk on "The Surgery of Fistulous Withers," which was followed by a demonstration of same at the Clinic the next day.

We were also very fortunate in securing Dr. H. Preston Hoskins, of Min-

nesota, as one of the speakers. He spoke on "Some Phases of the Use of Serum in Controlling Hog Cholera." We were fully convinced that there was still much to learn pertaining to this broad subject.

The dinner session, attended by 150 guests, was held in the brown room of the Park Hotel, Jan. 19, and proved a joyous occasion, Dr. L. A. Wright, acting as toast master. Brief speeches followed the banquet, directed by the toastmaster, in which the following took part: C. P. Norgord, head of the State Board of Agriculture; S. A. Baird, president of the State Breeders' Association; A. Hopkins, secretary of the State Breeders' Association; Dr. Joseph Hughes, Chicago; Dr. J. V. Lacroix, Kansas City; Dr. H. P. Hoskins, of the University of Minnesota and Dr. O. H. Eliason, State Veterinarian of Wisconsin. All made special pleas for co-operation between the veterinary profession and the live stock breeders.

Dr. A. S. Alexander, professor of ani-

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mal husbandry of the University of Wisconsin, proved his ability as an instructor and entertainer when he gave his talk on "Rural Life in Scotland," illustrated by stereopticon views, this being the real "after dinner mint" of the occasion.

After two days of strenuous work in the convention hall, the third and last day was devoted to clinical work at Dr. J. P. West's Infirmary, in charge of Drs. Lacroix, Heer, Ferguson and their worthy assistants.

The following literary program, in conjunction with several very interesting committee reports, was carried out very successfully:

Use and Limitation of the Tuberculin Test, Dr. C. M. Crame.

Tuberculosis Eradication, Dr. J. P. West. State Inspection, Dr. O. H. Eliason.

Establishment of Inspected Herds, Dr. J. F. Roub.

Avian Tuberculosis, Dr. B. A. Beach.

The Dog as a Carrier of Parasites and Disease, Dr. H. E. Horel.

The Effect of Pituitary Gland Extract on Milk Secretion in the Cow, Dr. F. B. Hadley.

Some Phases of the Use of Serum in Controlling Hog Cholera, Dr. H. P. Hoskins.

Necrobacillosis, Dr. G. A. Gettelman.

Mastitis, Dr. D. E. Murphy.

Hydrocele in a Yearling Bull, Dr. R. S. Heer.

Stricture of the Esophagus, Dr. L. A. Wright.

Fistulous Withers, Dr. J. V. Lacroix.

Some Specific Substances which Influence Reproduction, Prof. E. B. Hart.

Hemorrhagic Septicemia, Dr. L. J. O'Reilly.

Acute Hemorrhagic Enteritis, Dr. W. R. Swan.

Forage Poisoning in Cattle, Dr. J. F. Roub.

Vaginal Polypus, Dr. V. S. Larson.

Pneumonia in Cattle, Dr. R. E. Schuster.

The following officers were elected and installed for the ensuing year: Dr. L. J. O'Reilly, Merrill, president; Dr. Herbert Lothe, Sharon, vice-president; Dr. W. A. Wolcott, Madison, secretary; Dr. J. F. Roub, Monroe, treasurer.

The meeting was voted an entire success and adjourned, to meet at Menom-

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W. A. WOLCOTT,
Secretary-Treasurer.

Madison, Wis.

A BANQUET AT THE G. W. U. V. C.

At the annual banquet of the Veterinary Medical Association of George Washington University, the toastmaster, Dr. Maurice C. Hall, introduced the various speakers in verse. Some samples of the introductions are as follows:

Dr. David E. Buckingham, Dean of the College of Veterinary Medicine.

David E.

Buckingham, he

Teaches us cynology.

He knows the dachshund and the pug;

Fu' well he kens th' Airedale mug;

He judge dogs with ease and grace;

The doggies love his smiling face.

When Fido eats of too much jam,

His mistress yells for Buckingham.

He'll cure an o'erfed Pekingese

Till it can eat Limburger cheese.

For David E.

Buckingham, he's

As long on dogs as a dog on fleas.

Major Dwight E. Altmann, U. S. A. Recently military observer and attaché with the German army.

When a soldier's not engaged in his employment,

Or a planning how to shoot his fellow man,

His capacity for innocent enjoyment

Is just as great as any peaceful man.

His feelings he with difficulty smothers

When a fortress on a hill top must be won,

O, take one consideration with the others,

His life is not a wholly happy one.

When some military dut's to be done, to

be done,

Then is when his life is not a happy one.

When a veteran is through with wars and fighting,

And no longer does he hear the cannons roar;

When his uniforms the ladies all delight in,

And his stories keep them coming back for more;

It is then he feels that life is worth the trouble,

In the knowledge of a duty that is done;

And the ladies wish each officer was double,

So that every girl at least could capture one.

When the military duty all is done, all is done,

It is then his life becomes a happy one.

In comment on Major Altmann's speech.

Dr. G. I. Blanchard, President

Dr. E. B. Hollecker Lab. Supervisor

Mr. Veterinarian

If you get results in your vaccinations, it will be gratifying to yourself, as well as your clients.

You can get this by using MISSOURI VALLEY SERUM.

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La Junta, Colo.

Dr. B. H. Vance,
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Cooper's Fluid is a 60 per cent Compound Cresol Solution of great purity and splendid efficiency—excellent for all clinical work.

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Cheap—Reliable—Pure.

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In eight months 20,000 American motorists have followed their example and are saving \$50 to \$200 a year in their tire expense.

We Deliver Free without a cent deposit, allow you to be the judge. Durable Treads double the life of your tires and are sold under a signed guarantee for 5,000 miles without puncture. Applied in your own garage in thirty minutes.

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Gentlemen:—Please send me without obligation, full information, sample and guarantee.

Name

Address

My Tire Size are

When my dad was a soldier things weren't like they are today.
 They did a lot of fighting, too, but in a different way.
 When Johnny Reb and Yankee clashed, the Springfield gun was new
 And the cannon were of smaller bore than a German forty-two.
 When my dad fought Apaches, there were no aeroplanes
 To spy into arroyos and guard the wagon trains.
 The Indians fought with arrows then; they didn't play football;
 And when a soldier lost his head, he lost it—scalp and all.
 Dad was a doughboy under Grant, and in Geronimo's day
 He rode the Tonto Basin trail in a cavalryman's array,
 And we may yet be army vets, if war should come some day,
 So we take great pleasure in hearing what the major has to say.

Dr. Charles Wardell Stiles. Professor of Zoology, United States Public Health Service.

You've heard a lot about the man who made the hookworm famous;

Who said "I know we're lazy, but, by Jingo, you can't blame us,
 With a million hungry hookworms gnawing holes in our duodenum,
 That can't be soothed by drink or food or forty-rod or laudanum."
 Well, here's this Stiles who went to help the pore ol' sufferin' South,
 And take away the co'n pone from the hungry, hookworm's mouth;
 This man did such a right good job at privy building, he
 Was called the Privy Councillor and made an LL. D.

Dr. John P. Turner. Professor of Theory and Practice of Veterinary Medicine.

John P. Turner, he
 Teaches us practice and theory.
 He talks of tumors melanotic,
 Of why a cow dreams dreams erotic.
 He knows diseases symptomatic,
 Enzootic and sporadic.
 He gives cows aqua colorata
 And waits till he has further data.
 When bossy feeds on wire and nails,
 He hearkens to the owner's wails
 And bids the butcher play his part
 Before the nails break bossy's heart,
 For John P.

How to Judge Anti-Hog Cholera Serum

What is a potent anti-hog cholera serum?

Defibrinated blood of hyperimmune hogs, collected under strictly sanitary precautions at a time when the immunity is at its highest point.

When is it produced?

Eighteen days after the immune hogs have been hyperimmunized, at which time they return to their normal condition.

How is it produced?

Under U. S. Government License Number 46, subject to Federal Regulations and Inspection.

Where is it produced?

At the modern sanitary laboratories of the St. Joseph Live Stock Serum Company.

How do you know that our product is as represented?

Because we kill our hyperimmune hogs outright and collect all of the blood at one time. Visit our plant and be convinced and when you vaccinate, use ST. JOSEPH LIVE STOCK SERUM CO'S. SERUM.

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DR. E. J. NETHERTON,

Laboratory Supervisor.

St. Joseph, Missouri.

Your Patronage is Respectfully Solicited.

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JUST WATCH IT COME ROLLING IN
WHEN YOU USE

Veterinarians Special Collection Stickers

500 REMINDERS FOR \$1.00

Begin the new year right by collecting your accounts.

Entirely new and different. Especially adapted to the needs of veterinarians.

Courteous, forceful, tactful, good-will retaining and result-getting.

No Bother. No Letters to Write

Just stick them onto your monthly statements and clean up those old accounts.

1. ACCOUNTS ARE DUE on receipt of statement for services rendered. Prompt payment is desired on business principles.

HOW THE TIME DOES FLY!

2. I know just how these little oversights occur. Don't bother to explain. Simply send payment by return mail. I shall appreciate this greatly.

PAST DUE!

3. I expected a prompt reply to my last statement. Please don't disappoint me this time as I am counting on your payment by the _____

LET'S GET TOGETHER!

4. Just what IS the trouble? This is my fourth statement. Surely I deserve the courtesy of an immediate reply.

5. I appreciate your patronage and am glad to serve you. In return I expect prompt payment of my charges. Please save us the mutual annoyance of further action by immediate settlement.

GUARANTEE: If these stickers do not collect 25 times their cost we will refund your money without question.

EXTRA STICKERS IF NEEDED—3 for 1 cent.

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No more generous typewriter offer was ever made. Do not rent a machine when you can pay \$2.50 a month and own one. Think of it—Buying a \$100.00 machine for \$48.80. Cash price, \$48.46. Never before has anything like this been attempted.

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Perfect machine, standard size, standard keyboard writing 54 characters with the four Medical Characters, back spacer, tabulator, two-color ribbon, ball bearing type bars, ball bearing carriage action, ball bearing shift action. Comes to you with everything complete, tools, cover, operating book and instructions, ribbon, practice paper—nothing extra to buy. You cannot imagine the perfection of this beautiful reconstructed typewriter until you have seen it. I have sold several thousand of these late style Model No. 2 machines at this bargain price and every one of these thousands of satisfied customers had this beautiful up to date machine on five days' trial before deciding to buy it. I will send it to you F. O. E. Chicago for five days' free trial. It will sell itself, but if you are not satisfied that this is the greatest typewriter you ever saw, you can return it at my expense. You won't want to return it after you try it—you cannot surpass this wonderful value anywhere.

You Take No Risk—Put In Your Order NOW

When the typewriter arrives deposit with the express agent \$9.80 and take the machine for five days' trial. If you are convinced that it is the best typewriter you ever saw, keep it and send me \$2.50 a month until our bargain price of \$48.80 is paid. If you don't want it, return it to the express agent, receive your \$9.80 and return the machine to me. I will pay the return express charges. This machine is guaranteed just as if you paid \$100.00 for it. It is standard. Over one hundred thousand people own and use these typewriters and think them the best ever manufactured.

The supply at this price is very limited; the price will probably be raised when my next advertisement appears, so don't delay. Fill in the coupon today—mail to me—the typewriter will be shipped promptly. There is no red tape. I employ no solicitors—no collectors—no chattel mortgages. It is simply understood that I retain title to the machine until the full \$48.80 is paid. You cannot lose. It is as great a typewriter opportunity as you will ever have.

Do not send me one cent. Get the coupon in the mails today—sure.

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HARRY A. SMITH,
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Ship me a No. 2 L. C. Smith f. o. b. Chicago, as described in this advertisement. I will pay you the \$40.00 balance of the SPECIAL \$48.80 purchase price, at the rate of \$2.50 per month. The title to remain in you until fully paid for. It is understood that I have five days in which to examine and try the typewriter. If I choose not to keep it I will carefully repack it and return it to the express agent. It is understood that you give the standard guarantee for one year.

Name

Address

Turner, he
Is some practitioner, believe me.

Dr. Albert Hassall. Assistant Zoologist,
United States Bureau of Animal Industry.
When Doctor Hassall was a boy, he was
his mother's pride and joy,
So far as she could ever see, he would be
all a boy should be.
But he at last became a vet. Don't be sur-
prised—there's lots worse yet.
He was obsessed to study worms and, so
his mother oft affirms,
He'd sneak into the house at nights, his
pockets full of parasites.
When on the downward trail one starts, it's
hard to change to better parts,
No matter how we try and try—at last doc
joined the B. A. I.
Since then his life has been just one
damn thing succeeding others done.
Cahooting with Charles Wardell Stiles, he's
published eighty-seven miles
Of catalogues, and still of cards unpub-
lished there's a million yards.
When doc became an M. R. C. V. S. he
knew anatomy,
And won gold medals as a vet. By jove,
he knows the damn stuff yet!
I'd like to publish catalogues and know
the worms of sheep and dogs

And know anat. Such learnin's rare. He's
long on that—but short on hair.

Dr. Cooper Curtice. Veterinary Inspector,
United States Bureau of Animal Industry.
Cooper Curtice of the B. A. I., by the nine
gods he swore
That ticks did more things to a cow than
just abstracting gore.
Said he "Now when a bovine is bitten by a
tick,
It very often happens that the bovine comes
down sick."
And Consul Salmon called his chiefs and
solemn council held:
"If ticks are guilty of this thing they
straight must be expelled."
By Doctors Smith and Kilbourne the facts
were quickly checked,
And Cooper Curtice's surmise was found to
be correct.
And now the tick is on the run; no quarter
is in store;
He's driven to the dipping vat and rises
nevermore.
And children of a future day beneath a
brighter sun,
Shall read how in those bygone days great
deeds of worth were done.

Dr. George W. Pope. Assistant Chief,

Wimsetts Anti-Fis-Tract

Anti-Fis-Tract is a scientific and in-
expensive treatment for Fistula of
the Withers, Poll-Evil, Shoe Boil,
Quittor, Deep Humeral Abscesses,
Actinomycosis of the Parotid Region
in cattle, and all such tracts or ab-
scesses containing a Pyogenic Mem-
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Having been on the market two years
and passed the experimental stage it
is worth the consideration of any Vet-
erinarian that wants quicker results
and less labor than with the old time
methods.

Your money refunded if you are not
satisfied.

Put up in tablet form, price, \$1.00 per
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100 Private Bath \$3.00 to 5.00	4.50 Up

Total 600 Outside Rooms
ALL ABSOLUTELY QUIET

Two Floors—Agents' New Unique Cafes and
Sample Rooms Cabaret Excellent

Therapogen

Little short of

a Specific in contagious abortions and foetal discharges. The ideal antiseptic and healing agent for obstetrical and surgical work. Mild, yet effective. A splendid deodorizer. For internal and external use. A Thymol-Terpene Compound but not a coal tar preparation.

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An aromatic, non-toxic, excellent substitute for Iodoform. Accelerates granulation and healing process.

Their Therapeutic Actions

in producing highly gratifying results, speak louder than any words.

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Shelton, Neb.

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Night 137

Quarantine Division, United States Bureau of Animal Industry.

If I could be terribly dignified—but I couldn't be that thing if I tried,

Any more than I'd weigh two hundred pounds if I tried till a hundred years rolled round,

For dignity seems to have left my mind since I left my high schools days behind—

But if I could pull the bluff, I'd try to be a chief in the B. A. I.

This being a senior may swell our bean, but soon comes June and we're rookies green,

Drawing our fourteen hundred per and working ten hours a day for Her.

In the course of time promotions come; babies come faster, but the coin helps some;

While over us supervisors rule and inspectors in charge teach us more than school;

And far away from our paltry griefs, more orders come from division chiefs.

Far, far from the rabble's maddening crowd, the Big Chief sits like a far off cloud;

Like some rich uncle who's swept the floor and run the errands and tended store

And saved his coin for a rainy day, till now he's retired on a prince's pay.

So in his guarded sanctum he may look down like Jove on the likes of me.

But Congress and Cabinet officers, too, keep him in an everlasting stew,

And these are the stones in the cherry pie of the Heap Big Chief of the B. A. I.

The division chiefs have someone to cuss, while nobody cares a hang for us,

And if I had the nerve I'd certainly try to be some kind of chief in the B. A. I.

EXCERPTS FROM LOCAL NEWS-PAPERS.

Cattle scabies has spread to wild elk in northwestern Wyoming and 10,000 elk are suffering from the disease according to State Veterinarian A. W. French. There is no way to combat scabies successfully except by dipping, and as it will be impossible to dip wild elk, the scabies must run its course in the herds. Wild elk are also suffering from the effects of eating mouldy hay provided by the federal government. About 150 head have died from this cause. No other hay is available, and the use of the moldy product must be continued regardless of its effect on the animals, which would starve if they were not fed.

Efforts on an extensive scale are being

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Our plant is conveniently located to the second largest stockyards in the world, where opportunity for securing material is unequalled. Our facilities for producing a serum of the highest quality is unequalled.

Our product is scientific and up to date. This serum is of known high potency and is thoroughly tested on our own herds before being shipped.

Full directions for use with all shipments. Information upon request.

NOTE: We supply pure-bred immune boars and brood sows.

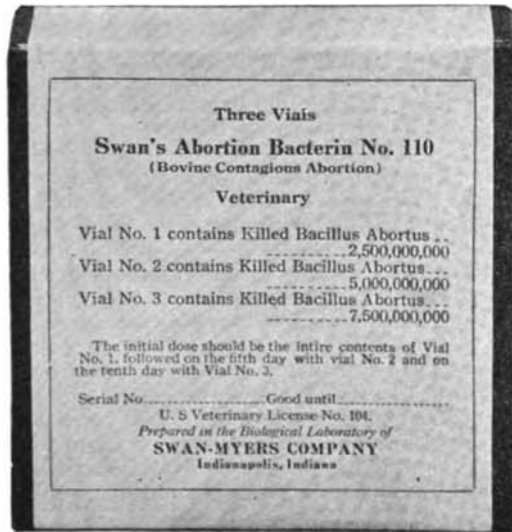
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(Bovine Contagious Abortion)



A New and Successful Vaccine

Purpose—To Immunize Against Contagious Abortion

Modern Veterinary Science has found that vaccination is the most satisfactory treatment of this condition.

When the infection appears in a herd, each animal should receive at least three injections—each as early as possible.

Special Note—Tear out this page and paste it in the back of your ledger or day book. Then when you are badly in need of this vaccine you will know just where to get it.

This product is marketed in three-vial packages at \$9.00 per dozen packages.

Write for Our Bacterin Book with Clinical Suggestions

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BIOLOGICAL DEPARTMENT . . . INDIANAPOLIS, INDIANA, U. S. A.

LOUSINE

(WORD MARK)

A powder containing pyrethrum, tobacco naphthaline, precipitated sulphur and a higher phenol. For the destruction of lice on animals.

IT IS EFFICIENT AND ECONOMICAL

Supplied in Neat Sprinkle-top Cans.

Per dozen 6-oz. cans, f. o. b. Chicago.....\$2.00
Per can, delivered......25

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Los Angeles

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made in Uruguay for the extermination of the cattle parasite known as "garrapata." A recent decree of the ministry of industry provides for the division of the whole country into three zones—the infected, the intermediate, and the clean. Cattle may be transported freely only from the clean or uninfected zone. The infected and intermediate zones are divided into sections or classifications, according to the extent of the infection and the necessity for isolation or treatment of the cattle by medical baths under the supervision of the government veterinary inspection service.

In an opinion to the Oklahoma State Board of Agriculture, the attorney general declared that the sale of diseased cattle, horses or swine in the state of Oklahoma is in violation of the state law. Two sections of the law were cited in support of this ruling.

Dr. C. C. Mix, of Battle Creek, Mich., was elected president of the Michigan State Veterinary Examiners' Board at a recent meeting. Dr. Mix has been a member of the board for a year.

Dr. A. F. Nelson, state veterinarian of Indiana, sued Lenora E. Nelson for divorce in the superior court on February 16th.

They were married March 8, 1888, and separated January 24th, of this year.

Dr. W. H. Timmons, of Cincinnati, resigned as a member of the Ohio State Board of Veterinary Examiners, February 16th, having been appointed federal veterinary inspector at Marion, Ind. Dr. Timmons had been in the employ of the Bureau of Animal Industry in addition to the position he held with the state.

Two workmen in a tannery at Confluence, Pa., are said to have contracted anthrax from handling skins that came from China.

Dr. R. C. Leu, a veterinarian of Mascoutah, Ill., was sued for \$2,000 damages by Louis Stapf, who charged that the doctor had assaulted and injured him. Stapf was awarded damages of \$50 by the court.

It is reported that a cow at Hillsboro, Ill., ate fifteen pounds of home-cured tobacco, but her life was saved by a veterinarian who gave her an equal amount of lard.

Dr. Benton Allen has moved to Dunlap, Ill., where he has established an office for veterinary practice.

Figs, calves, fowls, lambs and goats to

Paul Juckniess, D. V. S.
Ex-Stat. Veterinarian

F. W. Smylie

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Manufacturers of

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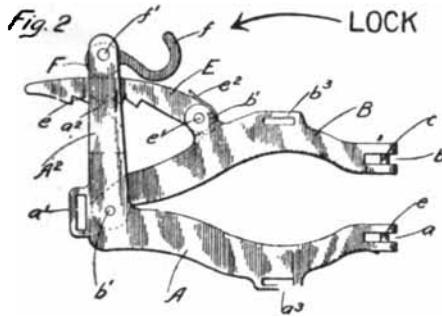
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"Safety"
Mouth
Speculum**

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It is anatomically correct and provided with safety locks that prevent closing accidentally under any circumstances. The simplicity of the device is shown in the illustration. Besides the addition of the safety locks it has improvements that make it the *Safest, Most Practical and Durable Speculum* of this pattern on the market.

Price with Cupped Plates, only.....\$10.00
Gum Plates, extra per pair..... 1.50

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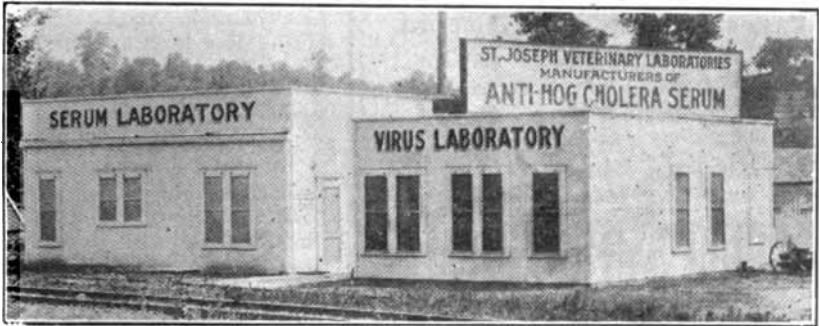
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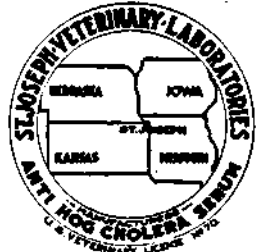
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Write us for pictorial trip through our plant and other literature and our special price to veterinarians. A man on duty all night. Only six blocks from depot, express offices. Automobile service. Telephone, wire or write us your order and let us demonstrate our excellent service to any part of the country, and number you among our many satisfied customers, several of whom have volunteered the report that they have not yet lost any hogs with our serum.

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PASTEUR'S
Original and Only Genuine
ANTHRAX
VACCINE

Single and Double Treatment

is without comparison as a reliable preventive of Anthrax (Charbon).

The **DOUBLE** vaccine, introduced by us into America in 1895 and successfully used by veterinarians on over 75,000,000 animals, is still used wherever possible as the best known preventive of this disease.

The **SINGLE** vaccine is rapidly winning in popularity with those having large herds and where double vaccination is a burden. The single Anthrax Vaccine has been used in all parts of the world on over 25,000,000 head, with the best of satisfaction.

Anti-Anthrax Serum

(Institut Pasteur, Paris)

makes it possible to immediately immunize animals preparatory to using the vaccine, thus saving a large number of animals that would otherwise die before the vaccine alone could take effect.

Further particulars on request.

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366-368 W. 11th St. 17 N. La Salle St.

Sole Concessionaires of the
Original and Only Genuine Pasteur's Anthrax Vaccine, discovered by Profs. Pasteur, Chamberland and Roux.

EUCAMPHOL

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Disinfectant and Antiseptic for Internal and External Use

The veterinarians' reliable standby.
Frequently honored with imitations.
Never equalled in quality and reliability.
Insist on the original.

Pasteur Laboratories of America

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366-368 W. 11th St. 17 N. La Salle St.

the value of \$1,000 are reported to have been killed by eagles in Ozark county, Missouri, recently. The big birds are said to be more numerous in that vicinity this year than ever before.

Ten camels coming from Jamaica, W. I., where they had been used in desert scenes for the movies, were quarantined at Bridgeport, Conn., in February, pending an examination for foot-and-mouth disease.

Dr. W. S. Decker, of Twin Falls, was appointed a member of the Idaho State Board of Veterinary Examiners last January, to succeed Dr. John Akin, of Nes Perces.

Dr. Nathan D. Davis, a veterinarian of Bolivar, Mo., jumped from a third-story window of a hotel at Springfield, Mo., while delirious and died, February 4th. He was being treated for ptomaine poisoning.

A mare valued at \$150 belonging to a Scott county, Kentucky, farmer is said to have died recently as a result of eating sauerkraut.

The Minnesota State Veterinary Examining Board quizzed thirty-one candidates for veterinary certificates, January 11th, at its annual session. Six were new applicants and the others had failed at previous examinations.

"Scotty" Allan, the famous driver of racing dogs in Alaska, has conveyed to the firing line in France more than four hundred Malamutes from Alaska and Labrador. One hundred dollars each was the price paid for the dogs.

Dr. Fred E. Reid, of Wellman, Iowa, has associated himself with Dr. Tom Downing, and the new firm will be known as Downing & Reid, with their office at Washington, Iowa. Dr. Ralph Downing, of Kalona, succeeds Dr. Reid at Wellman.

The members of the senior veterinary class of the Kansas State Agricultural College have adopted "swagger sticks." They have explained that this is in order that they may be distinguished from other students.

Dr. A. L. Hoaglund, of Ottumwa, Iowa, was sued by R. C. Owens for the alleged death of his horse which he claimed was caused by the malpractice of the veterinarian. The latter filed a cross petition asking a judgment against Owens for services in treating the horse. The doctor won

IMPORTANT

Due to the many inquiries we are receiving regarding our ability to supply **PASTEUR'S ANTHRAX VACCINE, Single and Double, Etc.,** during this season, we take this means to notify the trade that we are in a position to supply all demands for this vaccine and all other **PASTEUR** products, including Profs. LeClainche and Vallee's

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ASSOCIATION MEETINGS

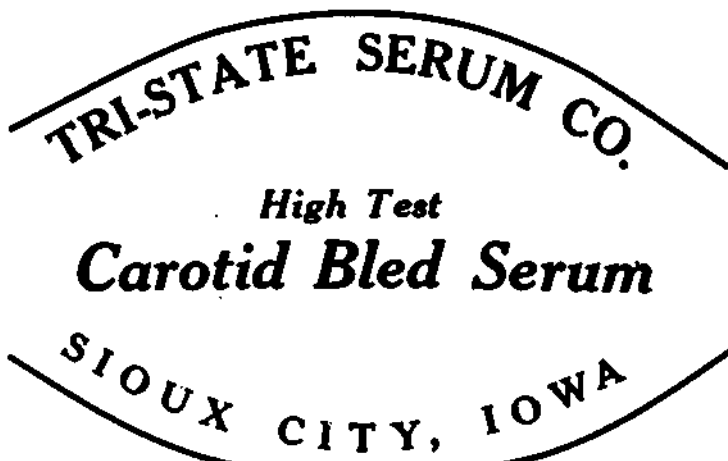
The information given below is up-to-date and has been furnished by the secretaries of the various associations listed. Secretaries are requested to supply us with data regarding their associations after each meeting; otherwise, the association will necessarily be dropped from the list. We ask secretaries to kindly co-operate with us in keeping before the members of their associations the date and place of the next meeting.

Name of Association	Date of Meeting	Place of Meeting	Secretary
Alabama Vet. Med. Assn.	Feb. 18, 19.	Auburn, Ala.	C. A. Cary, Auburn, Ala.
Alumni Assn., Col. of Vet. Med., O. S. U.	Jan. 10, 1917.	Columbus, O.	W. R. Hobbs, O. S. U., Columbus, O.
Alumni Assn., N. Y. State Vet. College	June 10, 1916.	New York	P. K. Nichols, Fort Richmond, N. Y.
Alumni Assn., U. S. Col. Vet. Surg.	April 16, 1916.	Washington, D. C.	Chas. M. Mansfield, 1344 Newton St., Washington, D. C.
American Vet. Med. Assn.	Aug. 21, 25.	Detroit, Mich.	C. M. Haring, Berkeley, Cal.
Arkansas Vet. Med. Assn.	January, 1916.	Little Rock.	R. M. Gow, Little Rock.
B. A. I. Vet. Assn. of So. Omaha	2nd Wed. in Mch., June.	So. Omaha, Neb.	J. W. Gilfoe, c/o B. A. I., So. Omaha
California State Vet. Med. Assn.	Sept. Dec.	Univ. Farm, Davis, Cal.	Secretary of Cal., Berkeley.
Central Canada Vet. Assn.	Jan. 18.	Ottawa, Ont.	H. D. Sparks, 448 Wellington St., Ottawa
Central N. Y. Vet. Med. Assn.	Last week in June and Nov.	Syracuse, N. Y.	E. H. Yunkan, 2244 N. 18th, Philadelphia
Chicago Vet. Society	2nd Tues. of month.	Chicago, Ill.	W. B. Switzer, Oswego, N. Y.
Colorado Vet. Med. Assn.	June 1.	Greenwich, Conn.	Glenn Brown, 3206 Lowell Ave., Chicago
Connecticut Vet. Med. Assn.	January 27.	Greenwich, Conn.	J. E. Newman, Ft. Collins, Colo.
Genesee Valley Vet. Med. Assn.	Aug. 23, 24, 1916.	Rochester, N. Y.	R. C. Giffard, Waterbury, Conn.
Georgia State Vet. Assn.	Monthly	Savannah, Ga.	O. B. Webber, 154 Andrews, Rochester.
Hudson Co. Vet. Practitioners' Club	February 3, 4.	Jersey City, N. J.	Peter F. Bahnen, Capitol Bldg., Atlanta
Idaho Assn. of Vet. Graduates	July 26, 27.	Blackfoot, Idaho.	B. D. Blair, 733 Montgomery St., Jersey City, N. J.
Illinois State Vet. Med. Assn.	July 19, 1916.	Pocatello, Idaho.	C. V. Williams, Blackfoot, Idaho
Illmo Vet. Med. Assn.	Dec. 17.	Peoria, Ill.	O. C. Engsbretson, Berkeley, Idaho
Indiana Vet. Med. Assn.	Jan. 17, 18 and 19, 1916.	Belleville, Ill.	L. A. Merrill, 1927 Wabash Ave., Chicago
Iowa Vet. Med. Assn.	Jan. 5-6, 1916.	Indianapolis, Ind.	L. R. McKinley, Fremburg, Ill.
Kansas Vet. Med. Assn.	March	Ames and Des Moines.	A. F. Nelson, Indianapolis, Ind.
Kentucky Vet. Med. Assn.	2nd Tuesday of month.	Ames and Des Moines.	H. B. Treman, Rockwell City, Ia.
Keystone Vet. Med. Assn.	3rd Monday of month.	Kansas City, Kan.	J. H. Burt, Manhattan, Kan.
Los Angeles Vet. Med. Assn.	April 12, 1916.	Lansing, Ky.	Robt. Graham, Lexington, Ky.
Maine Vet. Med. Assn.	Feb. 15.	Philadelphia	L. B. Davis, 287 E. Girard, Philadelphia
Manitoba Vet. Assn.	4th Wed. each month.	Los Angeles	J. A. Dal, 18th & Pacific, Los Angeles
Massachusetts Vet. Assn.	1st Tues. & Wed. after 1st Mon. in February.	Biddford, Me.	E. E. Maddocks, Augusta, Me.
Michigan State Vet. Med. Assn.	Jan. 10, 11, 1917.	Winnipeg, Man.	W. Hillon, 275 James St., Winnipeg.
Minnesota State V. M. Assn.	2nd Tues. & Wed. Jan.	Worcester in Sept.; Boston rest of year.	S. A. Cahill, Boston, Mass.
Mississippi State Vet. Med. Assn.	July 7, 1916.	Lansing, Mich.	W. Austin Ewalt, Mt. Clemens, Mich.
Mississippi Valley Vet. Med. Assn.	Last week in July.	St. Paul.	G. Ed. Leech, Winona, Minn.
Missouri Vet. Med. Assn.	Jan. 28, 29.	Marksville, Miss.	E. B. Norton, Greenville, Miss.
Montana Vet. Med. Assn.	2nd Mon. in Aug., 1916.	Galesburg, Ill.	W. Lester Hollister, Avon, Ill.
Nat'l Assn. B. A. I. Employees	1st Tues. & Wed. in Dec.	Omaha, Neb.	R. F. Bourne, 1336 E. 15th, Kansas City
Nebraska Vet. Med. Assn.	Aug. 2, 3, 4.	Neosho, Mo.	C. D. Folse, 1338 E. 15th St., Kansas City
New York State Vet. Med. Society		Bozeman	A. D. Knowlton, 302 S. 4th St., West Missoula, Mont.
		New York City	S. J. Walkley, 163 N. W. Ave., Milwaukee
		Lincoln, Neb.	S. W. Alford, Lincoln, Neb.
		Ithaca, N. Y.	C. P. Pitch, Ithaca, N. Y.

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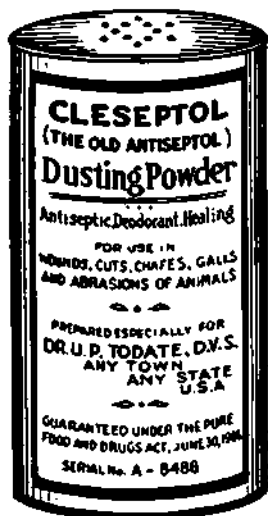
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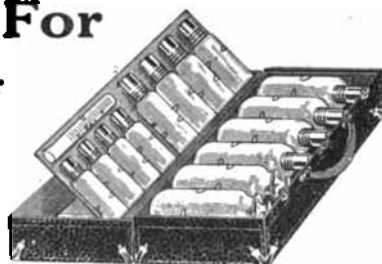
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Name of Association	Date of Meeting	Place of Meeting	Secretary
North Carolina Vet. Med. Assn.	June 28, 29, 1918	Wrightsville Beach, N. C.	J. P. Spoon, Burlington, N. C.
North Dakota Vet. Assn.	3 days, last week July	Fargo, N. D.	W. J. Mulroony, Havana, N. D.
Northeastern Indiana Vet. Assn.	Feb. 15		U. S. Richards, Woonsocket, R. I.
Northwestern Ohio Vet. Med. Assn.	Feb. 16	Toledo, O.	Paul E. Wood, Ottawa, Ohio.
Ohio State Vet. Med. Assn.	Jan. 11, 12, 1917	O. S. U. Columbus, O.	F. A. Lambert, care O. S. U., Columbus
Ohio Valley Vet. Assn.	Feb. 8, 9, 1918	Terre Haute, Ind.	G. J. Behrens, Evansville, Ind.
Oklahoma Graduate Vet. Med. Assn.	July	Oklahoma City	R. C. Smith, Edin.
Oklahoma Vet. Med. Assn.	March 7, 8	Oklahoma City	S. H. Gillier, Norman, Okla.
Oregon Vet. Med. Society	June, 1918	Probably Corvallis, Ore.	B. T. Simms, Corvallis, Ore.
Pennsylvania State Vet. Med. Assn.	Feb. 22, 23, 1916	Pittsburgh, Pa.	E. H. Yunker, 2344 N. 18th, Philadelphia.
Rhode Island Vet. Med. Assn.	2nd Tues. Jan.	W. Wayne, Ind.	C. E. Baumgartner, Arcola, Ind.
Schuylkill Valley Vet. Med. Assn.	June 14, 1916	Reading, Pa.	C. R. Pottelger, Reading, Pa.
South Dakota Vet. Med. Assn.	July 11, 1916	Lake Madison	S. W. Allers, Watertown, S. D.
Southern Aux. Cal. State Vet. Med. Assn.	3rd Wed. Dec.	Los Angeles	A. Dell, 16th & Pacific, Los Angeles.
Tenn. Vet. Med. Assn.	Nov. 17, 18, 1915	Chattanooga, Tenn.	J. H. McMahon, Columbia, Tenn.
Texas Vet. Med. Assn.	March 14, 15, 1918	Not decided	Alton A. Foster, Marshall, Tex.
Twin City Vet. Med. Society	Once a month	St. Paul	C. C. Palmer, St. Paul, Minn.
U. S. Live Stock Sanitary Assn.	Dec. 1, 2, 1915	Chicago	J. J. Ferguson, U. S. Yards, Chicago.
Utah Vet. Med. Assn.	Feb. 5	Loran, Utah	E. P. Coburn, Brighton City, Utah.
Veterinary Assn. of Saskatchewan	March, 1918	Regina, Sask.	E. G. Chasmar, Hanley, Sask.
Vet. Med. Assn. of New Jersey	2nd Thurs. in Jan.	Trouton, N. J.	E. L. Loblein, New Brunswick, N. J.
Vet. Med. Assn. of N. Y. City	1st Sat. each month	New York City	R. S. MacKellar, 361 W. 11th St., N. Y.
Vet. Med. Assn. of Geo. Washington Univ.	1st Sat. each month	Washington, D. C.	C. W. Rippon, 3115 14th St., N. W., Washington, D. C.
Vet. Med. Society Wash. State College	1st and 2nd Tues. ea. mo.	Pullman, Wash.	Claude Holden.
Virginia State Vet. Med. Assn.	July 13, 14	Ocean View, Va.	W. G. Christian, Blacksburg, Va.
Washington Vet. Med. Assn.	June, 1918	Seattle, Wash.	Carl Coster, Bellingham, Wash.
Western N. Y. Vet. Med. Assn.	Last week in June	Suffalo, N. Y.	F. P. Fahr, 56 Prospect Ave., Buffalo.
Wisconsin Vet. Med. Assn.	July	Menominee, Wis.	W. A. Wolcott, Madison, Wis.
York Co. Vet. Med. Society	1st Tues. after 1st Mon. of each month.	York, Pa.	E. S. Bausticker, 325 Newberry, York, Pa.

the case and was given a judgment of \$31.50, but the jury recommended that in view of the fact that the plaintiff lost his horse, the defendant should not collect his fees.

Dr. J. D. Fair, of Millersburg, was recently elected a member of the Ohio Board of Veterinary Examiners.

After a long illness, Dr. Louis A. Greiner, of Indianapolis, Ind., one of the oldest

practicing veterinarians in Marion county, died at the age of 61, on March 3rd. Dr. Greiner came to this country from Alsace-Lorraine when a boy. He studied veterinary medicine in Pennsylvania, but received his degree from the Indiana Veterinary College. He was one of the founders of that school and was a member of the faculty for a number of years. He also established the Terre Haute Veterinary College and at the time of his death was vice-president

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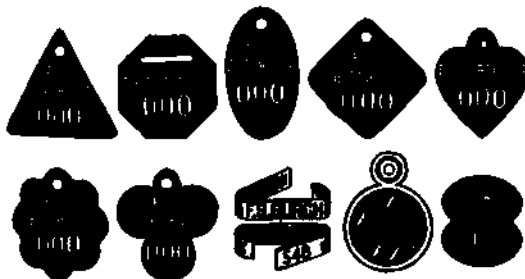
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and principal stockholder. The doctor leaves a widow, two daughters and two sons. Both of the sons are veterinarians, Dr. Joseph Greiner, of Indianapolis, and Dr. Adolph Greiner, of Detroit, Mich.

Dr. C. D. Schirmer, of Ashland, Wis., was fatally injured when a snowplow jumped the track near Glidden, Wis. Thirty-two ounces of blood injected into the doctor's veins, failed to save his life.

A bill is pending in the Mississippi legislature requiring the state veterinarian to make his headquarters in Jackson. He has been staying at Starkville.

Later reports will show the bill was defeated.

Dr. Lloyd K. Magley, of Decatur, Ind., and Miss Conrad, of Root township, were married on March 2nd. The doctor is a graduate of the Indiana Veterinary College and conducts a prosperous practice at Decatur.

Dr. B. F. Seeley, army veterinarian, at Fort Sheridan, Illinois, departed with his regiment March 13, for the Mexican border.

VETERINARIAN KILLED BY MEXICANS

Among the Americans killed in the Villa raid on Columbus, N. M., was Dr. H. M. Hart, an inspector in the Bureau of Animal Industry. Dr. Hart was a graduate of the Ohio State University class of '06. He resided in Chicago for some time after his graduation. His father, H. M. Hart, Sr., is the owner of the largest ice cream and confectionery manufacturing establishment at Columbus, Ohio. In addition, his mother and two sisters survive him.

Dr. M. R. Steffen while in the government inspection service at El Paso, Texas, was detailed to do so in the vicinity of Columbus, New Mexico. In "The Itinerant Horse Physician" he gives the following interesting description of the town and its environs:

The work was very interesting but no "snap" by any means. The transportation and hotel accommodations were far from being first-class, and the inspector found many things to worry about.

I remember one instance in which I was detailed to make an inspection of Mexican cattle across the line from Columbus, N. M. I left El Paso at six in the evening

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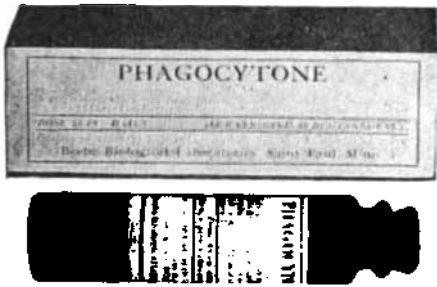
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Case report from American Journal of Veterinary Medicine.

Regarding the use of Phagocytone in pneumonia, I consider it far superior to anything I have ever used. Was called to a case last week, temperature was 106.5 deg. F., pulse 70, respiration 30. I gave a dose of Phagocytone and called next day. The temperature was 105 deg. F., pulse 60, respiration 24; left some stimulating treatment to be given. Returned the next day, and found patient about the same, only a little brighter. I doubled the dose of Phagocytone. The next morning the owner called me by telephone and said, "My patient seemed much better this morning, but I guess you better see him once more." I saw him that afternoon; temperature 101, pulse 52, respiration 22, and wanted to eat everything in sight. I prescribed a tonic and left.

F. E. BESSE, D. V. S.

Shell Lake, Wis.

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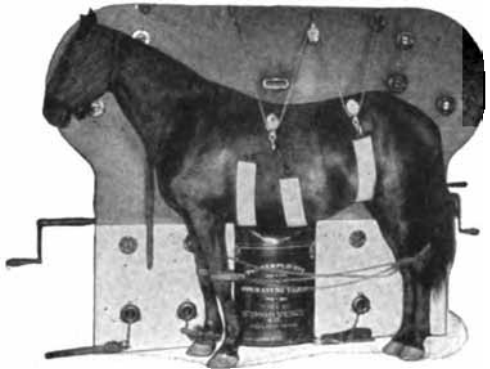
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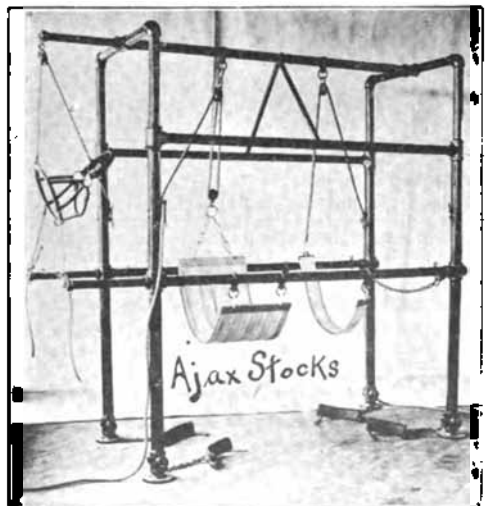
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on a mixed freight and passenger train, arriving at Columbus about midnight. Columbus at that time consisted of the depot, a section house, and the cow pens. Getting off the train, I asked the depot agent where I could get a night's lodging. He said there was no place "in town" where they put up travelers, but there was a man living about a mile west who usually "took them in." He pointed out a light to me in that direction, saying, "See that light? Well, that's the place."

I did not like the idea of walking a mile through that rattlesnake desert at midnight; I followed him into the depot and asked permission to sleep on the floor. At first he refused my request; but when I told him I was a federal officer, and after he had taken a look at my badge, he said I might stay.

So I made a pillow of my grip and slept away.

About 2 o'clock I awoke, chilled to the bone. Although the month was July, I was experiencing one of those cold nights so common in that high altitude; I don't believe I ever suffered so from cold, before or since, as I did there that July night.

I found it impossible to sleep again and got up with the intention of building a fire somewhere outside to get warm by, only to find that I had no matches. So I began

to walk up and down the track, keeping it up until sunrise, somewhere around four o'clock.

About six o'clock the agent got up and was kind enough to invite me upstairs to breakfast, a breakfast that I enjoyed too, thankfully.

I had just finished the breakfast when a rider appeared with an extra horse to take me out to the herd; twelve miles below Columbus they were, he said. You can imagine how I felt about riding twelve miles on a horse after walking the track the greater part of the night.

And then, when we got to their camp, the boss informed me that the herd had stampeded during the night; the boys had been successful in holding about half of them, around seven hundred head, and it would take a day or two to gather the runaways again. He thought, though, that I might look at those they held and issue a certificate on the entire shipment if I found these were all right; they were all "clean," he was positive, and he couldn't see why that could not be done.

I told him I could not do this; I would have to see every animal I certified. However, I told him that I would inspect the seven hundred head they had now and give him a certificate on that number if I found them all right. This he did not want, and I rode back to Columbus.



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Just received a 32-page supplement to our general catalog from the press. Write for it. If you do not possess one of our general catalogs ask for it too. We want you to have both. Do it today.

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See diagram of our combination vacuum tail-bleeding and hypering outfit on page 4 of this issue.

Dr. C. A. Stange, Dean of the Veterinary Department of Iowa State College, Ames, Iowa, is convalescing following a serious illness of the last three weeks. Dr Stange suffered from a nervous breakdown.

Dr. H. J. Sebaugh died at his home in Farmington, Mo., on Monday, March 20, following an illness of some weeks. Dr. Sebaugh was a graduate of the Kansas City Veterinary College. He practiced in Farmington twelve years.

TRIPLET CALVES

I see in the JOURNAL reports of several sets of twin calves and wish to report a set of triplets born on the county poor farm some time ago. All lived till they were slaughtered, and being a city meat inspector, I had the distinction of inspecting them.

Louisville, Ky. F. H. RIESTER, V. S.

I have examined the books "Special Veterinary Therapy," "Colics and Their Treatment" and "Special Cattle Therapy" and find any one of them to be worth the price of all three. You can't afford to be without them.

B. B. BOWERS, D. V. S.

Timberville, Va.

After a careful perusal of Lacroix's "An-

imal Castration," I can state that it is a valuable little book and should be in every veterinarian's hands, young and old. It refreshes the memory of the old and adds a fund of knowledge to the young that should be of great advantage to one just entering upon his life's work.

JOHN L. TYLER, D. V. S., M. D.
Pomona, Cal.

I have procured and read "Animal Castration" by Lacroix. It is well suited to the exigencies of the busy practitioner and if followed will also give a good impression of your work to the exoteric.

Kenton, Ohio. J. E. TURNER.

I have read Lacroix's "Animal Castration" through twice so as not to miss anything I considered worth noticing. I have found therein quite a few features new to me, which will be of value in my future practice. I have been castrating for a good many years now, having graduated in 1889, and have taken advantage of almost all text books on the subject, and still in this little book I have found something useful, and since it has proved useful to me, I doubt not but that it will be so to others.

THOMAS MILLAR, M. R. C. V. S.
Asquith, Saskatchewan.

- Abscesses
- Inflamed Glands
- Periostitis
- Bog Spavin
- Capped Knee
- Infected Wounds
- Harness Galls
- Bruises



- Burns
- Distemper
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San Mateo, Cal. CARL W. FISHER.

The slaughter of cattle infected with foot-and-mouth disease cost the government of Holland nearly \$3,200,000 in indemnities during 1915. They have decided to abandon the slaughter method and try some other way of combating the disease. One of the district veterinarians has advanced the theory that the disease is spread by the flocks of wild geese that fly over the Netherlands on their way to and from the south.

ALABAMA'S SERUM LABORATORY

The state of Alabama recently dedicated a \$25,000 laboratory for making serum and virus for the treatment of hog cholera at Auburn. It is situated near the buildings of the Alabama Polytechnic Institute. The bill providing for the laboratory was fathered by Col. Sam Will John, who in time hopes to see a commodious building for the Alabama College of Veterinary Medicine on the adjoining ground.

"I have read the articles in "Wound Treatment" and am well pleased with most of them. I think any veterinarian would find some good advice in reading these pages, as there is

something that comes up nearly every day that seems to be puzzling to the ordinary practitioner in dealing with the different wounds we have to treat. It seems that climatic conditions are sometimes unfavorable to treatment of a certain class of wounds.

Ayrshire, Ia. A. E. GATES.

CONTAGIOUS ABORTION IN CATTLE

Methylene blue in the treatment of contagious abortion has given me one hundred per cent results. I used it as Dr. Steffen's "Special Veterinary Therapy" advised on twenty-four head of cows belonging to Mr. Wm. Stellwrecht, and at present he has twenty-two nice healthy calves and has not had one cow that aborted. There are two cows to calve yet. I should like to know if there is any one else who has tried it out according to directions.

Shell Lake, Wis. DR. F. E. BESSE.

I purchased a copy of Hemenway's "Essentials of Veterinary Law" at the recent meeting of the Missouri Valley Veterinary Association at Kansas City, and since that time have given the work a careful perusal. I find it most essential, especially to one in my work and have never invested in any text that I have found more valuable.

ELMER J. JOHNSTON,
Sedalia, Mo. Deputy State Veterinarian.

H. H. DOWD, President

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An outbreak of dourine was reported in Crawford and Carroll counties, Iowa, the latter part of January. Dr. Simpson, of Denison, and Dr. Gibson, state veterinarian, took charge of the situation. Two horses were sent to Washington for scientific study of the disease.

Dr. C. R. Wildes, of Wichita, who is serving a 21 year sentence at the state penitentiary for robbery of the Chautauqua, Kan., bank, has already had an opportunity to put his veterinary training to good account. But for the timely arrival of Dr.

Wildes, the penitentiary's herd of hogs would have been wiped out by cholera, 75 head having perished before the doctor put in his appearance. It is said that it was largely through his efforts that the remainder of the hogs were saved, by the use of serum.

Dr. James A. Walrath, 54 years old, a veterinarian, of Brooklyn, N. Y., died January 16th, from pneumonia, after an illness of three days. Dr. Walrath was a graduate of the American Veterinary College, New York City, and practiced at Brooklyn for



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24 years. He was an inspector in the Bureau of Animal Industry during the Cleveland administration.

Forty sheep, out of a flock of four hundred, died on a farm near Collins, Mich., recently, it is thought from ensilage poisoning.

Dr. A. H. Davison, of Marshall, Ill., a graduate of the Terre Haute Veterinary College, will open an office at Westfield, Ill., the first part of April.

It is said that some one in Nevada thought it possible to rid the state of coyotes by spreading rabies among those animals, the idea being that the disease would kill the animals in a few years. He inoculated his coyote hounds with the disease and also trapped a few coyotes and turned them loose. The state is now overrun with mad coyotes.

Dr. Herbert Lothe, recently of Sharon, Wis., has moved to Waukesha, Wis., where he is to be associated with Dr. M. W. Downing.

Dr. T. B. Vaughn has changed his location from Pocatello, Idaho, to Elko, Nev., and will practice in Elko county.

Dr. A. T. Peters, of Peoria, was re-elected to the position of secretary-treasurer of the Illinois Live Stock Breeders' Association at a meeting held at Springfield, January 19th.

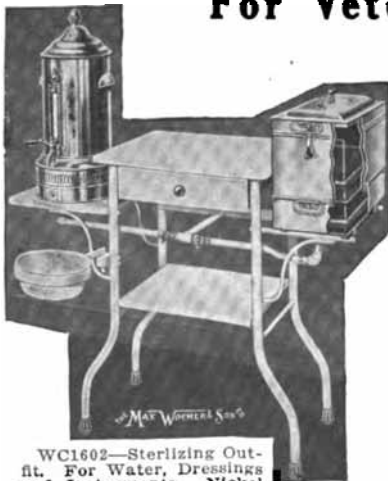
The Hillsdale County Veterinary Medical Association held its annual meeting at Hillsdale, Mich., January 19th. Dr. F. L. McConnell, of Reading, was elected president and Dr. A. B. Curtice, of Hillsdale, re-elected secretary-treasurer.

The Georgia State College of Agriculture, at Athens, Ga., will establish a veterinary course to begin in the fall of 1916. It will be a four-year course and lead to a degree of Doctor of Veterinary Medicine. Dr. W. M. Burson will be in charge. Dr. Lee M. Roderick and one other professor will conduct the course.

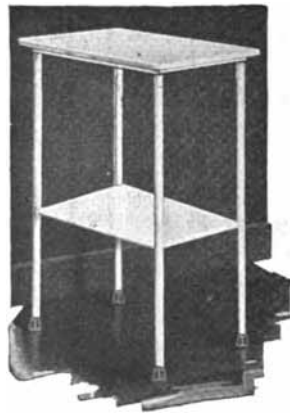
Dr. C. C. Mix, of Battle Creek, Mich., addressed the farmers' institute at Colon, Mich., on the subject of "Tuberculosis," January 27th.

Dr. A. L. Hoisington of Fremont, Ohio, died suddenly on March 1st. He was president of the Lake Erie Veterinary Association and had just returned from a meeting at Norwalk.

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No. 5

Epizootics During War and Their Control

By DR. HERMANN MIESSNER, Hanover, Germany.

Professor of Hygiene and Director of the Hygienic Institute of the Royal Veterinary College in Hanover.

I HAVE been asked to give a sort of resume of this little book. I find it difficult to do in the time at our disposal, but I shall be glad to answer questions regarding parts of the work not adequately covered in this brief paper.

This work is essentially a description of the methods employed in the German army at the present time for the control and eradication of disease among the vast number of horses on the various battle lines.

It is absolutely necessary, for the preservation of the health and efficiency of valuable horse material and for the prevention and lessening of epizootics, that the army have good horse hospitals and horse depots.

We distinguish two classes of hospitals and depots—mobile and immobile.

The mobile hospitals are situated at the rear of the fighting line and consist of three types—field hospitals, division hospitals and army corps hospitals.

The fighting and marching troops must have facilities for sending horses which are sick and unable to walk to

the rear of the fighting line for proper treatment, at which point mobile field hospitals are installed.

In order that sick and disabled horses may not impede the progress of fighting and marching troops, division hospitals are provided at the rear of the field hospitals. These hospitals are also mobile, so that they may follow the troops.

Horses which are much disabled or will require somewhat prolonged treatment are sent to the larger hospitals in the rear—to the army corps hospital.

Horses requiring special treatment, or which may be incurable and disabled, are sent to the large stationary hospitals at the garrison.

Horse Depots

To replace the large number of horses which are constantly falling out through death and sickness, depots are established at various points between the fighting line and the garrison from which healthy horses may be sent to the front.

There are large stationary depots at the garrison, from which the horses are transferred to the army corps depots; from these points they are in

*Presented at February meeting of the Chicago Veterinary Society by Dr. C. A. Zell, Chicago.

turn sent to the division depots, then to the field depots, and finally to the front.

In order to prevent the spread of infectious diseases, it has proven expedient to have the horse depots absolutely separate from the hospitals, so that horses returning from the front may not mingle with those in the depots. These depots receive, in addition to the fresh horses from the garrison, horses recovered from the division hospitals and newly bought horses.

Equipment of Hospitals and Depots

To prevent the spread of infectious diseases it is essential that all horse hospitals and depots be divided into three separate stables:

The first one receives new, incoming horses.

The second one is divided into three compartments, the first for horses suspected of suffering from glanders, the second for horses affected with distemper, and the third for other infectious diseases.

The third stable receives all horses which are absolutely free from infectious disease and ready to be sent to the front, to the respective depots.

All horses have separate watering and feeding equipment. When this is not possible, it is advisable to have solid partitions separating the horses, and each one receives food and water from an individual food and watering bag.

The hospitals and depots are provided with surgical instruments, drugs, transport cars for shipping horses which are unable to walk, a laboratory for making bacteriologic examinations, microscopes, glassware and also post-mortem rooms.

Only practical, experienced veterinarians are in attendance at the hospitals, one veterinarian being assigned to approximately 100 horses. These veterinarians not only take charge of the treatment, but superintend the feeding of the horses, paying special attention to the building up of horses in need of reconstructive treatment.

At the depots they also superintend the training and riding of the animals.

Before being accepted in any one of the hospitals or depots, every horse must be examined for glanders and other infectious diseases. The ophthalmic test is made immediately, and other serodiagnostic tests are used as far as possible. Such animals as are found to have glanders are killed immediately and the carcasses destroyed under antiseptic precautions.

All horses discharged from the hospitals and depots are marked according to their capabilities, either by cutting out some of the hair, branding the hoof or heel, or braiding a number of plaits in the mane or tail. By this method the body of troops may easily be determined if a case of glanders appears later on.

Horses which are no longer of value to the troops, and are only fit for agriculture, are sold to civilians.

General Measures for the Prevention of Epizootics

At the depots and hospitals, as well as with the troops, where there is possibility of contact with strange horses, particularly when infectious diseases exist in the neighborhood, every horse, without exception is inspected each week.

Horses which have been captured are not taken by the troops until they have been proven free from infectious disease (the ophthalmic and other serodiagnostic tests first being made).

Common watering and feeding arrangements are avoided, as this is the main source of infection among large bodies of horses.

Periodic disinfection of hospitals and depots with formaldehyd or milk of lime is carefully carried out.

Transposition and Mixing of Horses is Avoided

The mingling of army horses with the horses of civilians is prohibited, and for this reason cattle and sheep barns, as well as threshing sheds are used as far as possible.

Infected stables where diseased horses are taken care of have conspicuous signs inscribed with the kind of disease.

The troops are frequently instructed regarding the recognition of infectious diseases and the methods of preventing their spread.

Laboratories for Blood Examination

Immobile Laboratories

In the rear, approximately between the army corps hospital and depot and the garrison, at a fairly central location, are installed laboratories for making blood examinations of all the horses in this section, by means of the agglutination or complement-fixation test for the presence of antibodies of glanders.

These laboratories are in charge of a number of skilled veterinarians, with necessary assistants, to take care of this big task. These laboratories make as many as 1,000 tests a day.

In addition to the regular laboratory work, they furnish the necessary number of bleeding-needles, with special charts and blanks, to the troops, hospitals and depots.

Mobile Laboratories

For rapidly advancing bodies of troops, it has proven necessary to have mobile laboratories nearer the front, particularly at such times when difficulty of transportation would delay the sending of blood samples to the laboratories. These mobile laboratories are supplied with automobiles and carriages, and the samples are taken directly from the front to the laboratory.

The equipment of these laboratories is similar to that of the immobile laboratories, except that it is less cumbersome, to facilitate packing and moving from place to place.

Disinfection

By disinfection we mean the separation of infected objects from the infectious material. It consists first of the removal of the infectious material, and second, the destruction, or arrest

of growth, of the pathologic microorganisms. For this reason it is necessary to thoroughly clean the objects before using disinfectants.

I do not want to go into details here, because these facts are well known to everyone, but I do want to call attention to the essentials of a good disinfectant:

1. It must act quickly.
2. It must be easily soluble in water.
3. It must be inexpensive and easy to keep.
4. It must be only slightly toxic.
5. It should have a marked odor.
6. It should not damage the objects to which it is applied.

Disinfection of Equipment

The disinfection of metal pieces, such as chains, etc., is best accomplished through the use of heat.

Harness and other leather equipment of horses are soaked in some disinfecting solution, such as lysol, kreolin, etc., carefully cleaned and well washed with another disinfecting solution.

Disinfection of Stables and Cars

All material used for bedding should be removed and burned. The stalls are then thoroughly cleaned, either by means of steam, or at least by using a hot soda solution and stiff brushes. After thorough cleaning the disinfectant is applied.

The safest and easiest way of disinfecting is to use formaldehyd, milk of lime, or milk of chlorinated lime. It must be remembered that in the field we have to deal mainly with asporogenic microorganisms. Additional disinfecting methods must be used if there is infection with spore-bearers, such as anthrax.

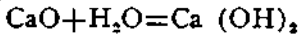
Formaldehyd (CH_2O) costs about 10 cents per pound. Fumigation with this is most effective when sufficient water is evaporated to saturate the room with steam. A five per cent solution has been proven most effective. It requires one quart of solution for a 10

cubic-meter room. An apparatus which is recommended for this purpose is Flugge's Formalin Disinfection apparatus, marketed by Hauptner, of Berlin.

In addition to this steam apparatus, the floors and walls of the stalls are sprinkled with a one to one and a half per cent solution of the formaldehyd.

This disinfection is repeated after an hour or an hour and a half, in order to secure more satisfactory results.

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20,000 water = thin milk

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A 1-1000 solution kills vegetable
forms.

A 1-100 solution kills spores in a
short time.

Infectious Diseases

To take up all the infectious diseases would make this paper too long. These are all described in the textbooks. However, if time permits, I would like to mention a few things of interest, as for instance the treatment used by the veterinarians in the field and the cases which they meet.

Glanders. In the diagnosis of this disease, clinical symptoms are no less important than biologic methods. Of

biologic methods the following are used:

The agglutination test.

The complement-fixation test.

The conglutination test.

The ophthalmic test.

Anthrax. In testing suspected animals, three cover-glass blood smears and three pieces of filter paper containing blood are sent to the laboratories. This material is taken from living animals, usually from the ear. In the case of autopsied animals the material is taken from the spleen. This method favors spore development. The smears are stained at the laboratory and examined for anthrax bacilli. With the other material three agar plates are inoculated, and in addition two white mice are injected. If anthrax is present, the mice die within 24 to 48 hours.

The percipitin method is also used extensively—Ascoli's method. This has proven very reliable and is used particularly in cases where the specimen is decomposed and no anthrax bacilli can be found.

For immunization, Sobernheim's method is used, 50 to 100 Cc. of anthrax serum being given subcutaneously to horses and cattle. Young cattle and sheep receive 30 Cc. As a prophylactic, a dose of 15 Cc. is given to horses and cattle, and 10 Cc. to sheep.

Rabies. The diagnosis is made by the demonstration of negri bodies.

After an incubation period of about four to eight weeks, infected horses show a morbid desire to bite, biting into any near object. They suffer from pronounced itching, and tear their own flesh. They also kick with front and hind legs at both men and animals. All rabid horses show an increased sexual impulse, with strangury and defecation. When the upper portion of the pharynx has become paralyzed, salivation and persistent chewing sets in, usually associated with gritting of the teeth. In some

horses the exciting and aggressive symptoms are absent, these patients standing with drooping head before the crib, staggering and lying down a good part of the time.

The stage of paralysis follows the period of excitement, the chief symptom being paralysis of the limbs. The animals usually die of severe dyspnea. The temperature is always high. The disease lasts four to five days.

Brustseuche, also known as contagious pleuropneumonia and influenza pectoralis.

Schütz described the *Streptococcus pyogenes equi* as the cause of the disease, but Ligniere claimed to have found bipolar bacteria which caused the disease. The later work of Robert Koch, however, has proven that these organisms are only secondary infection organisms, and that the real cause is a filterable virus.

The incubation period of influenza varies from 10 to 40 days. The symptoms of the disease consist of a rise of temperature, somnolence, cough, nasal discharge, and pneumonia. It may be divided into four stages: (1) catarrhal, (2) hemorrhagic, (3) hepatization, and (4) resorptive stage. The disease may result in pulmonary necrosis, abscess of the lungs, and gangrene.

The essential points in treatment are fresh air, fresh water, good food and stimulants.

Two forms of immunization may be produced—active immunization by the use of bacterins, according to the method of Schütz, and passive, by the use of serum, 150 to 200 Cc. The simultaneous method includes the use of both serum (100 Cc.) and vaccine (50 Cc.).

Salvarsan is also used in the treatment of the disease, 5 grams in 100 Cc. of water. The results are: reduction of temperature; increase of appetite; arrest of all pneumonic symptoms; rapid recovery; no subsequent

complications; decrease of the number of virus carriers. Other arsenical preparations, such as arsenosolvin and arsalyt are also recommended.

Influenza catarrhalis. The cause of this disease is not yet known, but is supposed to be a filterable virus. The period of inoculation lasts from four to seven days. The disease is very infectious and spreads very rapidly. The symptoms are familiar to all of you.

The course of the disease is generally mild, recovery sometimes beginning as early as the second or third day, although the disease usually lasts two weeks. Complications and after-effects need only be feared when the horse is worked and exposed to unfavorable weather during the beginning or convalescent stage. The disease may be followed by bronchopneumonia, frequently ending in gangrene, enteritis, heart weakness, dyspnea (edema of the glottis), nephritis, paralysis, and edema.

Thus far it has been impossible to complete the study of immunization methods, and the salvarsan treatment has proven worthless in this disease. Symptomatic treatment, with rest and good food, have given good results. Fever-reducing drugs are of no value. To combat the heart weakness oil of camphor, 10 to 80 Cc. subcutaneously, has given good results.

Coryza contagiosa equorum (distemper). This is, in horses, an infectious disease of the mucous membrane of the upper air passages, combined with purulent inflammation of the lymph glands, due to infection with the *Streptococcus equi* (Schütz). This streptococcus is not related to the human streptococcus. We recognize two forms of this disease, typical and atypical. Complications and sequels are:

1. Multiple abscesses of the lymphatics and in the skin of the head.
2. Gangrenous bronchopneumonia.
3. Metastasis, by way of the lymph track, in the lungs, liver, spleen, kidneys and intestines.

4. *Purpura hemorrhagica* (petechial fever).

The treatment consists of putting the patients at rest, isolating them and removing them from the common watering and feeding places. The stable should be ventilated and the horse receive good food. Expectorants are given to control catarrh of the mucous membranes. If dyspnea is present, tracheotomy is performed; otherwise the treatment is symptomatic. Salvarsan was tried extensively in Germany, with some good results (Barthel).

Of immunization treatment, active immunization with distemper vaccine, has proven of value in the treatment; passive immunization, by means of anti-serum, has not been tried sufficiently to prove its value. The simultaneous method as above has also been used.

Dourine. This disease is due to the *trypanosoma equiperdum*, of the protozoa group, which lives in the serum, moving with a sort of undulating movement. The demonstration of the parasites is not always easy; in fact, it is safer to use animal experiments with mice, rabbits and dogs. The disease is spread only in breeding, consequently the disease is of no importance in time of war.

The treatment is confined to chemotherapeutic measures; for instance, Arsenophenylycerin gives excellent results. Salvarsan is also said to give good results, as well as the recent treatment consisting of the intravenous injection of one to five per cent solution of Trypanene.

Mange in Horses

Three types of this disease are recognized: (1) *sarcoptes mange* (caused by the burrowing mite); (2) *dermatocoptes mange* (the sucking mite) and (3) *dermatophagus mange* (the scale-eating mite).

The demonstration of the mites is sometimes quite difficult. The material is scraped from the suspicious skin areas, especially the deeper parts of

the epidermis. The material is allowed to remain in a beaker, in 10 per cent KOH or NaOH solution for five or six hours. At the end of this time the crusts and dandruff will be dissolved, while the parasites will remain unchanged. The sediment is then examined under the microscope.

The sarcoptes mange begins generally on the head and the sides of the neck or shoulders, but may extend to the entire body if the animals are neglected. The disease begins with severe itching. After it has lasted for some time, thickening of the skin occurs and the nutrition is impaired. The hair falls out and the skin becomes covered with crusts and dandruff. On the eastern front of the war, mange has been very common among Polish and Galician horses, and many cases of transmission to the German troop horses have been reported.

Dermacoptes mange generally begins with the mane and tail, suprasternal fossa, on the inside of the thighs and over the mammary glands. The clinical symptoms are similar to those of *sarcoptes*, namely, itching, falling out of the hair, thickening of the skin, etc.

The dermatophagus, or *chorioptes mange* is the so-called foot-mange. The mites live in colonies in the fetlocks, where they remain in large numbers and cause fine, mealy scales to form.

The disease must be differentiated from lice (*hematopinus macrocephalus*); *dermanyssus gallinae* (bird-mite); acne (summer mange); and herpes tonsurans.

Because of the rapid spread of the disease, every skin eruption associated with itching is treated with mange remedies. The skin is first softened by applying green soap or 10 percent carboglycerin and allowing this to remain for 24 hours. This is then removed by washing and the mange remedy applied with a stiff brush.

Many so-called mange cures have been recommended, but I will mention

only those which have been used during the present war and which have proven satisfactory.

When other preparations were not handy, kerosene oil or two to three percent creolin solutions were used. Marek has recommended a mixture of:

Kerosine oil	1 part
Sesamum oil	2 parts

Peruvian balsam, four to five percent alcoholic solution, is very effective, but is too expensive.

Frohner's creolin linimentum:

Creolin spirit	aa. 100.0
Sap. vina.	800.0

Liq. cresol. saponat.....	1 part
Spirit dil.	9 parts

Marek recommends very highly the following tar liniment:

Tar liquid.	
Sulphur sublim. ....aa.	100.0
Sapo vina.	
Spirit	aa. 200.0

After four to six treatments with these two liniments, recovery always resulted.

Tubs have been installed in the hospitals, containing solutions for this purpose, these being so-called "mange dips."

Isolation of the patient, with careful disinfection after recovery, prevents the spread of the disease.

Since the animals concerned in war are mainly those used for transportation, namely, horses, the greater portion of the book is devoted to diseases of these animals.

Diseases of cattle, however, have also received attention, since these animals are also used for transport purposes, and also as meat supplies. Consequently, space has been given to such diseases as rinderpest (cattle plague) and lungenseuche (contagious pleuropneumonia of cattle); but it would take up too much time to review the entire subject, particularly since we are fortunate in not having to contend with these terrible diseases in this country.

Prevention of epizootics being more important than their control, the methods for the eradication of epizootics are discussed at length, all resources being mentioned which are necessary for the early detection and control of infectious diseases. The equipment of hospitals and depots, and blood examinations are fully described. The question of disinfection, which is of so much importance, is also taken up.

This is a splendid little book, and should be of value not only to the veterinarian in war, but also should be of help to the veterinarian in times of peace, since he must deal with the problem of the transmission of infectious diseases and the control of epizootics.

The members of the general medical and veterinary professions fail to realize commonly that they are all really engaged in the same work. Formerly veterinarians came from the ranks of the blacksmiths or farriers, just as surgeons were formerly the barbers. Both were formerly regarded as on a lower plane than physicians. but time has shown the intimate relationship which exists between the three. There is less real difference between the work of the human practitioner and the veterinarian than there is in the scope of the veterinarian's

work. The veterinarian is called upon to treat canary birds and elephants, and his treatment must vary in consequence. Bacteriology and surgery are essentially one for human beings and for the lower animals, and drug dosage must vary with the species of the patient. In this connection it may be interesting to note that in law digests the two professions are today considered and treated as one, and to look up a point in veterinary law, one must turn to the heading "Physicians and Surgeons."—Hemenway, "Essentials of Veterinary Law."

The Active Principle in Immune Sera

By W. H. BAILEY, D. V. M., Saint Joseph, Missouri
Instructor in the St. Joseph Veterinary College

Hyper-immune serums now occupy a very prominent place in veterinary therapeutics.

Following Ehrlich's side-chain theory we learn that the protective substances in body fluids, particularly in serum, receive the name "antibodies."

Antibodies may be divided into two general classes. First, those which are always present in the body tissues and fluids; they are termed normal antibodies (compliment). Second, those which are produced in more or less concentrated quality as the result of natural or artificial inoculation with certain microorganisms, toxins, or virus; they are termed immune antibodies (amboceptors, etc.).

Immune antibodies, in accordance with Ehrlich's theory, are divided into three orders. The first is of the simplest constitution, while the second and third are more complex. Without dividing antibodies into their orders the writer presents the following general discussion of antibodies or the active principle in immune sera.

a. Substances formed by the body cells which neutralize other substances, toxic to those cells, are termed antibodies.

Certain highly specialized cells, i. e., pancreatic cells, produce organic substances which may be found in the pancreatic juice, these substances upon coming into contact with certain food molecules (likewise organic products) combine with some molecules and convert them chemically to new compounds, which may be easily and rapidly absorbed into the body proper and assimilated by the tissue cells.

Such substances are termed enzymes and act chemically upon food

molecules. Antibodies act upon toxin molecules similarly.

b. These antibodies are specific; they neutralize only the substances which stimulate their production.

Pancreatic enzymes are specific; they act upon certain food molecules only. If food molecules, other than these specific ones are present, different enzymes are necessary. Thus the introduction of certain food molecules into the alimentary canal, stimulate certain body cells, i. e., gland cells to produce specific enzymes. A proteolytic enzyme cannot act chemically upon the starch molecule, but only upon the proteid molecule.

c. Antibodies are invisible, organic products of the body cells, found in all body tissues and fluids, which neutralize or in some way prevent the harmful effect of certain poisons (toxins) of macroscopic, microscopic or ultra-microscopic (virus) organisms.

Pancreatic enzymes are invisible. They are found in the tissue of the pancreas. These enzymes act chemically upon the organic constituents of animal and vegetable tissues used for food by the higher animal body. The action of enzymes is not destructive, but one which changes the food molecules chemically, so that they may be utilized by the body.

Antibodies neutralization of toxin is permanent in some cases, while in others the antibodies simply combine with the toxin, but do not alter it, for when the antibodies are destroyed, the toxins are set free and unite with the body cells. This will be noted later.

d. Antibody production by the body cells is stimulated to excess quantity (hyper-immunization) when toxin is repeatedly introduced into the

body tissues experimentally, but subcutaneous, intravenous, or intraperitoneal injection.

The production of the pancreatic enzymes is increased according to the necessity, i. e., depending upon the greater or less quantity and quality of food molecules present at the time of digestion. It is not necessary that the production of digestive juice be greater in quantity but more concentrated in quality or active enzyme content.

Further Comparisons

Antibody action is influenced by degrees of temperature, the same as is the action of enzymes.

An enzyme acts best at a certain temperature, termed the optimum; below that its action is retarded or entirely suspended, though the enzyme itself is not necessarily destroyed. If the temperature exceeds the optimum to any extent, not only is the action destroyed but the enzyme also. Antibodies are affected similarly.

Enzymes are produced by specific cells, i. e., pancreatic cells, parotid cells, hepatic cells. Antibodies are produced by all body cells in common. This is the general conception and may be true in all cases, yet occasionally there is reason to believe that there may be exceptions, as for instance, the highly specialized nerve cells may be the only ones concerned in the production of tetanus antitoxin.

For dealing with different food molecules, the body produces different enzymes. A specific enzyme for a specific food molecule is the rule. Antibodies are likewise specific. If the antigen (toxin) molecule by, for instance, a bacterium itself an antibody is produced which acts chemically (enzyme like) upon that antigen; the union of such antibody with such antigen results in solution, the bacterium (antigen) or bacteriolysis, consequently the specific antibody is termed bacteriolysin.

Stability of Antibody Neutralization

The union of a specific antibody to a

specific toxin does not necessarily destroy that toxin as in hemolysis; but in some cases the toxin is rendered harmless to the body only so long as the antibody remains united to the toxin. This is demonstrated by mixing pyocaneous toxin with its specific antibody so as to form a neutral solution. The solution may be injected into susceptible animals with no disturbance resulting. However, when such a solution is heated to a certain temperature the antibody is destroyed, and if it is now injected into the body, symptoms of toxin disturbance follow. Snake venom and its antibody, antivenin, act similarly. Thus in some cases, there is a direct union of specific antibody atoms to toxin atoms making up antibody-toxin molecules, such molecules being neutral so far as any toxic action upon the body cells is concerned.

It may be reasoned that all of the toxin bonds of union are saturated by antibody atoms, thus closing the chain, i. e., leaving no toxin bonds to unite with certain atoms (receptors) of the susceptible body cells.

Antibody saturation of toxin (antibody-toxin union) may not be a thermostabile one, but rather of thermostabile nature, so that the antibody atoms may become destroyed in part or in whole, leaving free toxin bonds of union, which in this case are thermostabile and unite with the body cells if brought in contact with them. In other cases the antibody neutralization of toxin is permanent, as in bacteriolysis, hemolysis, etc.

Demonstration of Antibodies

The presence of antibody content cannot be detected by examination of the body fluids microscopically, but is convincingly demonstrated by biophysic-chemic reaction in the test tube.

Thus, a rabbit receives several injections of washed sheep cells at different periods and in increasing doses intraperitoneally; a few days later, after the last injection of washed sheep

cells, the rabbit's blood is withdrawn, allowed to clot, and the serum (amboceptor) is collected. This rabbit serum (antibody) is now mixed with a suspension of washed sheep cells (antigen); in a short period the sheep cells undergo a structural (chemical) change, their hemoglobin is set free and the whole mixture becomes red throughout, hemolysis. The antibodies in the rabbit serum, formed by the body cells when the sheep cells (antigen) were injected, have united with the sheep cells in the test tube and caused their destruction.

We note the destruction physically by the red coloration of the whole mixture and chemically by the analysis, or breaking up of the sheep red cells. Such rabbit serum is said to be sensitized to sheep cells. It is commonly called amboceptor. This specific antibody (amboceptor) is also termed a hemolysin because it dissolved the

sheep red sell (antigen) and set free its hemoglobin.

Summary

a. Antibodies are specific organic products of all (or special) body cells, resembling in some respects the enzymes.

b. Specific antigens (toxin) stimulate the production by the body cells of specific antibodies. Antibodies are strictly specific.

c. Neutralization is more rapid at warm than at cold temperature. There is an optimum temperature.

d. A given amount of antitoxin will neutralize a proportionate amount of toxin.

e. Antibodies unite with toxins forming stable or unstable substances, i. e., that is neutral or harmless to the body cells.

f. Antibody action is more or less of a chemical nature.

Log of S. S. "Fremona"

By WM. S. LORD, M. D. V., West Baldwin, Me.

ON December 15th, I arrived at the Grand Trunk Docks, Portland, Maine, at six A. M., having shipped the day previous on S. S. "Fremona," bound to Bordeaux, with six hundred horses in charge, for the French Army. She was not a very prepossessing ship, not one of modern type, having been crossing the Atlantic for the past thirty-five years. Her quarters were aft, and my stateroom was over the greatest of all man's inventions—the propeller; and it was always working.

Leaving our pilot at House Island, we stood for the open sea; and soon found ourselves in a heavy cross-sea. The ship began to roll badly, and our cargo of horses, which were from Texas, did not take kindly to such treatment. As the ship would lurch from side to side in the sea, the horses

would scramble to try to keep their footing; one can scarcely imagine what a noise 600 horses will make when all trying to regain their feet. But after 24 hours, they got accustomed to the roll of the ship, and unless something unusual happened, one would never hear a horse, or know there was one aboard.

December 16th. The wind moderated, from the northwest, and sea became fairly calm. Passed Cape Race in the morning.

December 17th. Passed Cape Sable; sea very smooth.

December 18th. Passed Grand Banks late in the afternoon. Our wireless was shut off.

December 19th. Westerly winds, smooth sea and clear sky, going over the Banks of New Foundland.

December 20th (Sunday). Ship

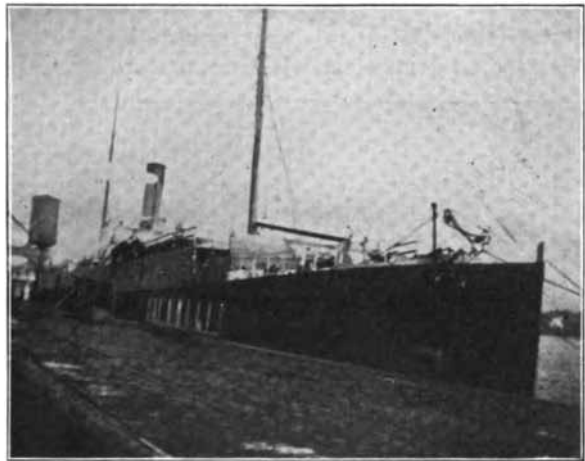
making about 9 knots, with a good glass. Horses all doing well. In the afternoon, it began to blow, and in a short time it was blowing a hurricane. About four o'clock in the afternoon, I was reading in the cabin, when our good ship "Fremona" shipped a sea and stove in a skylight, and then our troubles commenced. She soon began to labor badly, and at twelve o'clock at night I could feel the ship stop for an instant, and then roll over. One could hardly believe that a great ship of 4,000 tons could apparently lie flat in the sea and then right herself. I went out on the shelter deck, and you can hardly imagine the fright of those poor dumb brutes, as they had been thrown out of their stalls in many instances. All that night we worked, trying to get the horses back into the stalls, and Captain Melling and myself chose the lower deck, and one cannot appreciate the conditions as they were on that night. Our molasses cask that we used to water the horses had broken loose and was rolling about, together with hay, grain and horses. And every time the ship rolled they all came together, and one had to be quite an acrobat in order to keep out of the way and save broken limbs.

December 21st. On Monday morning we hove to and buried three of our horses that had succumbed during the night.

December 22nd. The wind had moderated some, the rain subsided and the sea began to go down. And I went on deck to look up the ship carpenter to repair stalls. When I told the carpenter what I wanted him to do, he said he was a carpenter, not a broncho buster, and wouldn't take any chances with them. However, if I could get a man to place the stalls in position, he would fit them out, and help me as best he could. I had a man on the lower deck, Mr. J. J.

Worth, of Saint Ausgar, Iowa, who came to my rescue, and was familiar with bronchos, and proved to be a life-saver on my trip, as my foreman was an old cattle foreman and not familiar with horses, and in the place he had shipped would have made a far better preacher than he did a foreman in charge of a load of horses.

December 23rd. I had my first night's sleep in seventy-two hours. The ship was doing fairly well, and did not roll badly, and I had no difficulty in sleeping. Captain Melling, Mr. Worth and myself worked all day repairing stalls. I thought I had seen, in my practice for the past 25 years, what I should term "bad horses," but they were nothing to what I had



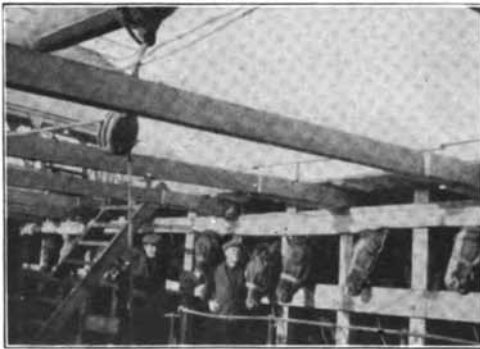
S. S. FREMONA

aboard ship. They would strike, bite and fight like wild horses. That evening the steward wanted my assistance in frosting his Christmas cake. So I armed myself with a Parke-Davis hypodermic syringe; after filling it with frosting prepared by the steward, I squirted on "Flags of all Nations"; and when we got through that evening, we had a Christmas cake, surpassed by none in this or any other country. Later on the steward appeared in the captain's room, to let him inspect the cake; and I shall always remember

the captain's remark, for he said, "Look out, steward; if you drop that cake, you will spoil my carpet."

December 24th. A good sea, and fresh southerly wind and fog. It was growing warmer as we neared the equator, and the horses on the lower deck began to suffer from the heat. Late in the afternoon, the foreman reported a horse dead on the lower deck forward, he having died from the ammonia gas, it being very hot.

The steward was today preparing for our Christmas dinner of roast turkey and English plum pudding. This was one of the most beautiful days on our trip. The sea was smooth, and one who has never been to sea can hardly realize the placid appearance the sea has on a beautiful day. It hardly seems possible that in a few hours that beautiful sea could be changed to a mass of white foam, and



ON BOARD SHIP

the water apparently as black as ink, and that great ship of 4,000 tons burden, with its six hundred-odd horses and seventy-odd men could be tossed about like a mere chip on a pond in a city park.

December 25th (Christmas). After eating a breakfast of English bacon and eggs, hot rolls and cereal, I went about my work dressing my horses, as most of them after being on ship-board a few days have their shoulders bruised from being thrown against the breastwork of their stalls; also a

great many horses suffered from catarrah of the eyes. When I arrived on the hurricane deck I found all of the officers promenading the deck, all dressed up like race horses, and looking as if they were ready to depart to Coney Island to a bull fight. Captain Melling gave each and every man aboard ship a Christmas present of a piece of tobacco and a glass of grog before each meal; and each seaman, stokers included, had a pet horse for which he had formed an affection on the voyage, and to which he gave a share of his Christmas dinner. I believe that seamen are more kindly at heart towards animals than men on shore. Every night one could go forward and see the stokers feeding some pet horse with a portion of his dinner, and the horse would eat anything from raspberry jam to plum duff.

December 26th. We lost one more horse from the lower deck from suffocation. We had five wind-sails set to carry fresh air to the horses in the hold.

December 27th. Southwest winds; rain, with mist. The captain had just come below and asked me to come on deck and see the Spanish land. It puzzled me how we could start from Portland, Maine, and, with our compass, after being off our course for two or three days in a gale, come out at the point that we had started for. We soon came in sight of Cape Finisterre. We now entered the Bay of Biscay, noted among mariners as the place of bad seas; and here the wind was in our favor, as it was just on our beam. I could see a Spanish ship making out of the bay under the mountains of the Spanish land, with the seas breaking clear over her, and I could readily imagine how our ship must have looked in the past days of our voyage under the same conditions. The Spanish coast is a magnificent one, a very mountainous country. The mountains seem to rise abruptly right

out of the water. We soon came to Cape Ortegal. This is apparently a mammoth boulder that rises abruptly out of the sea for hundreds of feet, and on top of it we would plainly see the lighthouse. Our horses now had become uneasy, as they could smell the air from the land and those that had appeared sleepy for so many days on the voyage were now wide awake.

December 28th. We left Cape Ortegal and made a straight run across the bay for Bordeaux. Up to this time I had lost six horses, and one other was badly bruised about the head, so much so that I believed it impossible for him to be of any value, and decided to destroy him and bury him at sea before going to port, thus making a loss of seven horses when I expected to reach Bordeaux, which was very gratifying to me.

December 29th. Kept on our course and sighted the lighthouse at the entrance to Bordeaux, called Cubre Point. At this time the wind began to freshen and a heavy sea began to make up and the ship in a few hours was rolling frightfully. Suddenly a sea struck her, and things "went galley-west." On each deck horses and stalls and everything movable were all mixed up together. We had wired, the day previous, for a pilot; but on account of the storm our pilot had not appeared, and as the captain had no chart, he did not dare to venture in without one. So there was nothing to do but put to sea. I think it was the wildest night that I ever put in on land or sea. Our horses were in terrible shape; many were thrown out about the deck, until it had the appearance of a slaughter house; it was no place for a nervous man. One horse on the upper deck was thrown out of his stall that night, and in doing so became wedged in between the hatch covers and the side of the wheel house, and there he stayed with all four legs in the air. I tried to rescue him, but in vain, as the ship rolled so badly it

was impossible to do anything for any of them, and he was given up for dead. In the morning at daylight the captain put his ship about and sailed for Bordeaux once more, and as we neared the river, we had the company of three other ships waiting for pilots. After steaming about an hour and no pilot appearing, our captain decided to start in himself, and after crossing the bar we picked up a pilot, who took us up the river to Puilliac, where we anchored at twelve o'clock midnight, thus ending our voyage of fourteen days.

At midnight, we steamed up the river and seven A. M. found us at the dock in Bordeaux.

December 30th. In the morning the stevedores came aboard, with their wooden shoes, and immediately began to prepare to discharge ship, knocking down partitions and putting up horse-runs. Soon afterwards, a French vet-



DISCHARGING AT BORDEAUX

erinarian came aboard and called for the veterinarian in charge, asked for my report, which I gave him; and he congratulated me on my small death loss. I found that there were much larger ships in port with a far greater death rate than ours. He was very courteous to me and showed me every attention, asked me what he might do for me, and I answered him in Yankee fashion, telling him that a trip to Paris would suit me, not for a moment surmising that I would get it. His interpreter answered, saying, "Yes, sir,

with pleasure." But after thinking it over, I found I would be taking some chances to go without an American passport.

The horses were now being led off the ship, and as they were led off they went to the army veterinarian, who inspected them for contagious diseases, and then to an army captain, who looked them over once more and decided which branch of the service they should go into. After that they were sent to the branders, who had stencils



BURIAL AT SEA

with the branch of the service and a number for each horse. Those stencils were placed on the horses' hind quarter and were painted over the stencils; some of them were well decorated after they had gone the rounds. Horses that were too badly used up were put into a two-wheeled, high-sided van, a French army horse ambulance, and driven away to their army hospital.

I now thought that I would go up town and do a little shopping. Everywhere one could find French women doing the work, electric cars were "manned" by women, both as motor-

men and conductors, and everywhere, in the stores and cafes, women were doing the work of men.

I had heard the captain, in a conversation with the French pilot, and he evidently could make him understand whatever he wanted to, and it looked easy to me. After arriving at a big store, I looked about for a silk counter, but was unable to make the clerks quite understand what I was looking for. They soon began to gather about me, and I realized that my difficulties had begun, as I was unable to speak a word of French, and I began to think that I might be looked upon as a spy. (All Europe is spy mad.) The only words that I could understand was the fact that one man asked me if I was a Spaniard. However, a clerk soon came to me, who could speak English and readily helped me out of my difficulties. I made my purchases, and was fairly well satisfied. The horses of France, particularly of the draft sort, are far superior to the horses in this country, and it was not an uncommon sight to see horses about the dock weighing 2,300 and 2,400. All horses there are driven tandem, one ahead of the other.

December 31st. At six o'clock, cloudy and raining. Pilot came aboard at eight a. m. Got anchor, and proceeded over the worst bar in the Atlantic, bound for Leith, Scotland, as we had a cargo of wheat in our hold for that port.

There has now begun another task, that of cleaning ship, and all our horsemen started in immediately to clean up before we got into Leith.

(Continued next month)

In Germany any one may practice medicine, without a license, but he is forbidden to assume the title of "doctor" or of "physician," unless he shall have passed an examination and received a certificate.—Hemenway, "Essentials of Veterinary Law."

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What Suggestions Have You for Making Veterinary Medicine Better?

READERS of VETERINARY MEDICINE send us many suggestions of great value, for improvement of the JOURNAL in contents and appearance; better ways of handling accounts; preferable methods of wrapping and mailing the JOURNAL, and other matters of a routine or mechanical character. We need not tell you, for you already know, how grateful we are for all of these helpful suggestions or how much we appreciate getting the views of our readers on these and other matters.

All told, much—a very great amount—of benefit both to the publisher and to readers has resulted from these kindly suggestions. Sometimes the suggestions have been more or less acrimonious, but that doesn't matter—send them that way if you feel that way—we accept them as kindly just the same, assuming that the provocation may have justified the means.

However, we receive not a few suggestions that on their face seem to make for desirable improvement, but conditions at this end, of which those sending in the suggestions are not aware, render them impracticable, and, sometimes to the disappointment of those making them, they are not

adopted. Among these latter, we will mention only two.

The suggestion has been made numberless times that we should run articles wholly on consecutive pages instead of continuing some of the longer ones to other parts of the magazine as is sometimes—not often—done. Our space is too limited to give all of the reasons why this is necessary in order to keep the appearance of the magazine up to a high standard. A glance through the great, popular magazines where millions are spent on appearance, and an examination of the highest class of medical publications, and of the leading trade publications, will convince you that all publishers find it necessary to continue articles to distant pages or sacrifice something in the appearance of the magazine; and how little is the disadvantage after all! If you are interested in an article, surely you will trail it through a single issue when the page on which it is continued is plainly stated.

A second suggestion that has been made as frequently as the foregoing, and that has not been adopted, is that we do not place reading matter on pages containing advertisements, so

that when the JOURNALS are bound the advertising pages may be omitted and all reading matter included. While the advertising in the AMERICAN JOURNAL OF VETERINARY MEDICINE constitutes for the readers a very important part of the JOURNAL, it is, of course, largely of only temporary value, and in having their magazines bound, many do not want to include it therein. But the same is just as true of some of the reading matter. Some of it is necessarily of only temporary value, and this and only this is included among the advertising pages. That the bound volumes may occupy as little space as possible, and be worth the most to subscribers for the space they occupy, it is just as necessary that reading matter of temporary value only, be eliminated from the bound volumes, as it is that advertising of a similar evanescent importance be left out. Of course, it is hard to tell in which class some of the matter published falls, whether in the class that it will pay the veterinarian to keep year after year or in the class that is of value to him for the present only. Obviously reports of meetings fall on this dividing line. Some may want to keep them; others may not care for them after once reading. Particularly is this true where no abstract of any of the discussions at the meeting is given. In the matter of reports of meetings, these reports have been included sometimes in the section containing advertising and sometimes in sections devoted wholly to reading. They fall so nearly on the line that we believe no serious mistake will be made by including the reports in either the one or the other section.

Let nothing in the foregoing discourage readers from sending in their ideas as to the conduct of this magazine. Most of these ideas are valuable to us, and all of them are welcome and receive careful consideration. Many suggestions from readers, as thousands know, have been adopted.

A SERUM FOR BLACKLEG

The Veterinary Department of the Kansas State Agricultural College has an extensive article in the *Farmers Mail*, Topeka, describing a serum treatment for blackleg that is being prepared at the college. The serum is made from cattle or preferably horses that have been hyperimmunized by increasing doses of blackleg virus. Fifteen to twenty-five c. c. of this serum will confer a passive immunity lasting about two weeks. During the existence of this passive immunity, a dose of virus, sufficient to kill four non-immune calves, is given and permanent immunity results.

The advantage of the serum treatment lies in avoiding the small loss incident to the vaccine treatment; the disadvantage, in the high cost of the serum and virus, about \$1.00 for each animal, and the necessity for treating each animal twice. Large doses (100 c. c. or more) of this serum have been administered to sick animals with rather encouraging results. The cost of the treatment, however, is too high for any but valuable pure-bred calves.

WINCHESTER FIGHTS TUBERCULOSIS IN MASSACHUSETTS

Dr. J. E. Winchester, of Lawrence, Mass., is the author of a bill presented to the Massachusetts legislature for compulsory tuberculin testing of dairy cows. This bill has met with violent opposition from the agricultural interests in Massachusetts, and following the first hearing before the agricultural committee of the legislature, its sponsor created a near riot by declaring on the floor of the legislative hall that the supporters of the bill had been subjected to unfair treatment and discourtesy at the hands of the agricultural committee, who were more interested in conserving the dollars of the dairymen than in conserving the lives of the babies in Massachusetts.

Dr. Winchester has created a great sentiment for his bill in the cities of

Massachusetts by speaking at public meetings called by the city health authorities and at luncheons given by the Rotary Clubs. The bill may fail of enactment at this session, but an educational campaign has been directed by Dr. Winchester that will undoubtedly result in its enactment or the enactment of a similar bill by some legislature in the near future.

SUCCESS AT LAST FOR THE ARMY VETERINARY BILL

The following telegram received from Dr. Buckingham just as we go to press is self explanatory and a matter for felicitation. There may even yet be rocks ahead of the Army Veterinary Bill, but they are not apparent at this writing and apparently the long arduous and oftentimes discouraging fight of the army veterinarians and their friends for recognition in the U. S. army is to be crowned with success speedily.

"As per my previous telegram, you know of the amendment to the Chamberlin bill for the reorganization of the army and providing for rank for veterinarians including major, was passed with but two dissenting votes in the Senate. The next day, the entire bill with its amendments passed and was referred to a conference committee composed of three senators and the same number of representatives.

"There is now no contention over the sections in the Chamberlin and Hay bills referring to veterinarians, hence the committee will be expected to report it favorably inasmuch as both Senate and House agree to rank for us. After the bill is reported out of conference, it will finally go to the President for his signature, when it becomes a law. There is little or no danger now, and the big fight is over.

"Veterinarians in the army will have to pass an examination to receive their rank just as line officers do, except that those men who have been in many years will take only one ex-

amination to jump from their present status of civilian to major as in the case of Dr. Griffin, Third Field Artillery, and others.

"(Signed) D. E. BUCKINGHAM,
"Chairman Legislative Committee,
"Washington, D. C."

The following letter from Mr. Hoskins is of interest to everyone who has worked for this Legislation:

Dear Doctor Campbell:

I want to personally thank you for all your helpful influences that have won so signal a victory for the army veterinarians.

The columns of your periodical always were open for our appeals and in the midst of all the happiness over our triumph there is one sad page in this historical campaign—the death of our esteemed colleague Dr. D. Arthur Hughes to whom this victory would have meant so much. His many forceful contributions through your Journal was a country wide education that contributed much to the successful termination of our cause.

For more than twenty years I have taken some part in this campaign and the last five years given much time and effort and no man ever directed a campaign who had a more loyal support than I enjoyed in all this period.

The commission and rank up to Major given us by the Senate will be concurred in by the House; and April 17th should be called "Freedom Day" for the boys in the Army.

I would like you to thank, editorially, every veterinarian in the land for their loyal support to those charged with directing this campaign the past five years; they all are deserving of commendation.

Philadelphia,
April 23, 1916.

W. HORACE HOSKINS.

CHANGE OF LOCATION

No, this is not the thousandth admonition to subscribers to notify this office of their change of address when they move although there are still subscribers who neglect this simple procedure absolutely necessary for the delivery of their journals.

This is a notice of our own change of address—of the removal of the editorial and business offices of VETERINARY MEDICINE from Dr. Campbell's hospital in Evanston to a new and better location in the city. A move was made necessary by the growth of both the publish-

ing business and the practice. The new location affords more room, is convenient to the plant where the JOURNAL is printed and has the added advantage of giving us editorial, business and publication offices all at one place, and of receiving our mail all at one address.

The additional work of moving four large dray loads of records, stock and office equipment and of rearranging them in the new building has forced a slight decrease in the size of the JOURNAL this month and delayed shipment on between 300 and 400 book orders for the greater part of a week; but all is arranged and running more smoothly than ever now.

Our new offices in the Madison Terminal Building, 9 South Clinton Street, are located in close proximity to the down town business district of Chicago and very convenient to most of the railway stations. Veterinarians visiting Chicago may call upon us at little or no inconvenience now, and you are cordially and urgently invited to do so whenever you are in the city.

BULLETINS EVERY VETERINARIAN SHOULD HAVE

State Sanitary Requirements Governing Admission of Live Stock, Bureau of Animal Industry, Washington, D. C.

Live Stock Sanitary Control Work in Tennessee, Laws, Rules and Regulations, Department of Agriculture, Nashville, Tenn.

Ophthalmic Test for Glanders, Bureau of Animal Industry, Washington, D. C.

Effects of Refrigeration Upon Larvae of Trichinella Spiralis, by B. H. Ransom, Reprint from Journal of Agricultural Research, Department of Agriculture, Washington, D. C.

Fermented Milks, by L. A. Rogers, Bulletin No. 319, Department of Agriculture, Washington, D. C.

Germ Content of Stable Air and its Effect Upon the Germ Content of Milk, by G. L. A. Ruehle and W. L. Kulp, New York Agricultural Experiment Station, Geneva, N. Y.

Forage Crops for the Colorado Plains by Alvin Kezer, Agricultural Experiment Station, Colorado Agricultural College, Ft. Collins, Colo.

Some Experiments with Agents Calculated to Kill the Trombidium Holosericeum, by B. F. Kaupp, North Carolina Experiment Station, West Raleigh, N. C.

The Present Status of the Pasteurization of Milk, by S. Henry Ayers, Bulletin No. 342, Department of Agriculture, Washington, D. C.

The Glands of Internal Secretions and their Importance as Therapeutic Agents, by Carey Pratt McCord, Reprint No. 78, 1915, Research Laboratory, Parke, Davis & Co., Detroit, Mich.

Inoculation Experiment with Pure Culture of Spirochaeta Hyos, Studies on Hog Cholera, by Walter E. King and Raymond H. Drake, Research Laboratory, Parke, Davis & Co., Detroit, Mich.

What is the Best End-Point of the Reaction in the Frog Heart Method of Digitalis Assay?; by H. C. Hamilton and L. W. Rowe, Research Laboratory of Parke, Davis & Co., Detroit, Mich.

Experiments in Vaccination Against Anthrax, by Adolph Eichhorn, Bulletin No. 340, Department of Agriculture, Washington, D. C.

Beriberi and Cottonseed Poisoning in Pigs, by George M. Rommel and E. B. Vedder, Reprint from Journal of Agricultural Research, Department of Agriculture, Washington, D. C.

Live Stock Sanitary Control Work in Tennessee (Laws and Regulations). Tennessee Department of Agriculture, Nashville, Tenn.

The Ophthalmic Test for Glanders, Bureau of Animal Industry, Washington, D. C.

State Sanitary Requirements Governing Admission of Live Stock, Bureau of Animal Industry, Washington, D. C.

The Pineal Gland in Relation to Somatic, Sexual and Mental Development (second paper) by Carey Pratt McCord, M. D., Research Laboratory, Parke, Davis & Co., Detroit, Mich.

Department of Surgery

By L. A. MERILLAT, Chicago,
Professor of Surgery in the McKillip Veterinary College,

Serous Sacs of the Shoulders

At this season of the year when horses are engaged in the vernal activities of the farm, plowing, tilling and seeding the spring crops, and every moment of fair weather must be utilized to rush this work to a seasonable climax, probably no greater calamity could befall farm horses than serous sacs of the shoulders. They totally disable horses much needed in the fields, and the period of disability generally extends through the entire busy season. They are fell misfortunes where horses are scarce and substitutes are not available and I think bring more despair to farmers than any other single ailment.

They consist of subcutaneous or sub-fascial extravasations of blood serum and lymph caused by bruising and are located on the shoulder at the chief point of traction. At first the extravasation is a mere infiltration of the tissue spaces but under the constant bruising of enforced service day after day they develop into collections of serum of considerable size extending across the collar seat and upward into the middle third of the scapular region. The sac at first is not walled off but later a limiting membrane will form to circumscribe the contents. Some become infected through cutaneous lesions and terminate as abscesses. The average serous sac of the shoul-

der when presented to the veterinarian for treatment is a bulging, slightly sensitive, fluctuating enlargement two or three inches thick, six inches wide and about ten inches long that is still without a well defined wall. It has been annoying the horse for about a week or more and is now submitted for treatment because further attempts to force service out of the brute would be cruel. Often it is a young horse that balks at any effort to make it pull. The practitioner, implored to hasten a recovery, usually lances the sac and leaves instructions to irrigate the interior with an antiseptic solution which he provides. In a few days the interior which was a sterile cavity becomes inflamed from the self-introduced infection and the patient goes through the slow course of cicatrization characteristic of infected cavities. That is, a month passes before the patient is healed and even at the end of that time there is a sensitiveness of the shoulder that annoys the patient for some weeks longer. Some horses so affected are more or less disabled during the whole summer season. With these salient points in mind it seems important to study out a treatment that will shorten the period of disability as much as possible. The healing of such a lesion involves the reattachment of the sep-

arated elements. That is, the skin must reattach itself to the superficial fascia or in the deeper varieties the deep fascia and panniculus carnosus must reattach itself to the underlying musculature. The reparative process required to attain these ends is more rapid if not hindered by infection. Contrary to the general impression, free lancing and irrigation, which is always followed by suppuration, retards healing and is certain to excite a sensitiveness that will disappear very slowly. Our best results have always been obtained by strictly aseptic management, while free lancing, packings and irrigations have always in our hands transformed this benign sac into an infected cavity that cicatrized stubbornly and that often required subsequent evacuation.

Our plan of handling these injuries and the plan applies equally well to serous sacs of the buttocks caused by breechment bruises, is as follows:

Wash and disinfect well a small field about two inches square at the very lowest part of the sac, shave the hair and paint well with tincture of iodine, then evacuate the contents by an incision three-quarters of an inch long made with a sterilized scalpel. Part the lips of the incision with a sterilized forcep and press out every drop of serum by gentle strokes of the hand over the sac. Control completely any bleeding from the small vessels that may have been cut. Generally there are one or two vessels that bleed stubbornly. These must be controlled, otherwise the bottom of the cavity may fill up with a blood clot that will complicate matters. If the horse is in the hospital where aseptic attention is assured we simply wash the incision loosely with a wick of iodoform or sterilized gauze twice a day and at each dressing carefully press out the serum that is accumulated. After four to six days of this careful dressing the sac is already closed above; only the lower part still yields a limited amount of serum when

pressed with the hands, and even if through some error the incision has become infected the suppuration is slight and the infected zone limited to its immediate environs. At the end of a week to ten days no further attention is required.

In the outside practice where aseptic wound dressing can not be expected we apply a drainage tube instead of the gauze wicks and then forbid any interference except that of faithfully pressing out the serum twice a day by gently stroking the sac with the hands from above downwards. The tube for this purpose is a quarter-inch soft rubber hose about one and one-half inches long. We perforate one end with two holes and then transfix the hose just behind them with a finishing nail one and a half inches long. The tube and nail are then passed through the incision into the sac, leaving the other end protrude. The nail prevents the tube from falling out, as it now lays transversely across the incision within the sac. The tube may then be fixed by taking a stitch in the skin just above it. The tube and nail must have been previously sterilized and then handled so as to avert contamination while being put into place. The wound around the tube may be peppered each day with iodoform to prevent infection from without. At the end of six days the tube is removed but the stroking of the sac with the hands should be continued as long as there is any discharge.

A trial of these methods of handling serous sacs of horses will soon convince the most skeptical that such procedures are far superior to lancing and packing with oakum soaked in turpentine and linseed oil.

Unfortunately the foregoing plan applies only to the more recent cases. When a serous sac becomes old it is bounded with a pretty well organized wall consisting of fibrin permeated with fixed cells and leukocytes

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WORLDS **WORK**
 A digest of all the Current
 Literature of
 Comparative
 Medicine
**in Veterinary
 Science**
 Dr. Adolph Eichhorn
 Washington, D. C.

A simple effective treatment for infected wounds. By DR. MUNCH (Munch. Med. Wochenschr. No. 26. 1915).—The author, based on his five years' experience, recommends chlorinated lime for the treatment of infected wounds.

Chlorinated lime is one of the strongest, and at the same time most harmless disinfecting agents; its effectiveness results from the high chlorin contents and the alkalinity of the solution, while sublimate precipitates proteids, and thereby its penetration is affected, which shortcomings do not occur in chlorinated lime. According to Munch even badly soiled and contaminated wounds soon regain a fresh, healthy appearance from bathing with chlorinated lime. Its application is carried out as follows: Two tablespoonfuls of dried chlorinated lime are placed in a basin containing warm water. Since chlorinated lime clumps easily in water it is advisable to place it in a little sack, and to squeeze the same in the water. Care should be taken that the fluid should penetrate into all parts of the wound.

The author directs that the wound should be bathed twice daily for 20-30 minutes with the solution, and then dried with sterile gauze. Abscesses and phlegmons should be well opened and then bathed.

According to the author the prescribed treatment is especially adaptable for ulcerated and soiled wounds, such as occur in war, as a result of grenade or

shrapnel injuries. He further considers the treatment of prophylactic value against tetanus.

Field Notes. CAZALBOU, L. (*Schweizer Archiv für Tierheilkunde*, Bd. 57, p. 548-549, 1915).—The author made the following observations while attached to a group of artillery which took to the field in Belgium and after the retreat, was stationed near Arras. Marches were generally 20 kilometers (12½ miles) at easy paces. No excessive work was done by the horses, losses were minimized during maneuvers. It could hardly have been otherwise, as the strategic necessities had placed the utmost importance upon hygienic measures. Striking camp was the general rule, almost always in the assembled position; the animals remaining hitched, even when they could be unhitched, the harness was left on them. Under the circumstances the numerous harness wounds are not remarkable.

The three to five kilo ration of oats was always of good quality. It is not possible to say how much hay was requisitioned; when it was obtained, it was often insufficient in quantity and quality. Wheat or oat straw was then profitably utilized and the old saying "cheval de paille (straw) is a cheval de bataille" (a charger), was once more confirmed.

The figure for losses rose to 46% of the effectives: among the 247 horses lost or released, there were 75 deaths, 70

broke down, and 102 were returned to cities or to infirmaries.

Overwork affected a sixth of the total, mostly among requisitioned horses. This was due to hygienic conditions, defective feeding, lack of water, the difficulty of obtaining regular traction at easy gaits with horses of diverse temperaments, and finally to fatigue of those remaining, when, by reason of losses, the effectives were diminished in number.

Strangles affected the majority of the requisitioned horses; the attack was very mild, but the sick animals had to be worked and overwork was soon apparent.

Abortions were very frequent in the requisitioned mares: Cazalbou suspected that epizootic abortion was present; it was especially severe in the depots.

Tetanus (6 cases) was very rare. One hundred and thirty horses were wounded; mostly by fragments of shells, several by shrapnel balls. Sixty died in fulminating fashion; 31 were destroyed; 25 were discharged, and 14 entirely recovered. Out of 120 wounded by harness, 17 were discharged.

Ten destructions were necessary from gaping wounds on the plantar surface of the hoof; the pastern and its joint, etc. These were caused mostly by treading on fragments of bottles and other jagged bodies, on arriving at fortifications at night.

Contagious croupous follicular rhinitis in sixteen horses. By Army Veterinarian MARKS (ZEITSCHR. F. Veterinrk. No. 11, 1915).—Last September a peculiar affection of the nasal mucous membrane appeared among horse of the reserve squadron. The symptoms resembled greatly those of glanders, and were manifested as yellowish-white nodules, of sizes from a millet to a pea, the smaller sized nodules lying in close proximity to each other, forming a more or less raised surface. The larger ones, on the other hand, were more isolated. The nodules were in part covered with a membranous, yellow deposit, and gradually broke down, forming ulcers, which healed with cicatrization, in 10-12 days.

In some cases extensive, reddish-yellow, croupous membranes were also observed, which after a few days detached themselves in the form of coherent plates. The nodules occurred also in some of the horses on the borders of the nostrils, in the surrounding tissue of the nasal opening, as well as on the upper lip.

In some cases the nasal affection was associated with a conjunctivitis, and in three horses with a slight, painful swelling of the submaxillary lymph glands, which in one case developed abscesses.

The affection occurred mostly in horses standing alongside each other. The presence of an infectious agent could be accepted without doubt. The ophthalmic eye test and the blood examinations for glanders were continuously negative.

This condition, the rapid healing of the moist ulcers, the extension of the lesions to the skin, eliminated the suspicion of glanders, therefore the disease had to be considered as an "infectious croupous follicular rhinitis."

The treatment consisted in the touching of the affected parts with cotton which had been saturated in a diluted lysol solution.

Paralysis of the penis. (Zeitschr. F. Veterinrk. No. 7, 1915).—Cases of paralysis of the penis have been repeatedly observed among the horses of the army, and no specific cause could be attributed to the same. Thus in one single squadron two cases occurred, which manifested the following symptoms:

After a suddenly appearing swelling, with exudation, complete paralysis of the penis resulted, associated with a necrosis of the skin. The symptoms were not those of dourine. An infection is accepted as the cause in these cases.

One of these horses has been treated in the lazaret by the amputation of the glans penis, which resulted in recovery.

The relation of the rectal to the vaginal temperature in domestic animals. By DR. LAUR (Oester. Woch. F. Tierh. No. 29, 1915).—In healthy mares the vagi-

nal temperature is on an average 0.05 to 0.1° C. lower than the rectal temperature. In febrile diseases the vaginal temperature is 0.05 to 0.275° C. higher than the rectal temperature. The rectal temperature in cattle varies most markedly from the vaginal temperature during feeding, being usually higher in the former, up to 0.25° C. Contrary to horses and cattle, the vaginal temperature in sheep and goats is always higher, by 0.05 to 0.2° C., than the rectal temperature.

Parturition increases the vaginal temperature by 0.8° C. On the fourth day the difference amounts still to 0.3° C. Feeding results in an increase in the temperature in the rectum of 0.1 to 0.2° C., which is not the case in the vaginal temperature. The vaginal temperature in the dog is on an average higher than the rectal temperature, but no definite relation can be established. In rabbits the relative temperature variations are similar to those of the dog. The feeding in both species results in an increase in the rectal temperature of 0.2 to 0.4° C.

In hogs the vaginal temperature, with a few exceptions, is always higher by 0.05 to 0.4° C., than the rectal temperature.

Indication and effect of immunity in infectious abortion of cows. By ASCOLI (Zeitschr. F. Inf. Par. Krankh., etc., No. 17, 1915.)—The immunity which, according to experience, results after one or several abortions, induced the undertaking of experiments on artificial immunization. The immunization with serum was ineffective, on account of its rapid elimination. The results obtained in practice with the injection of cultures appears to be more favorable. Rightly, however, the objection was made that the apparently good results should not be attributed to the vaccine, but to the subsequent subsidence of the infection (immunity). Unobjectionable results with the simultaneous vaccination could be produced only in rats against a subsequent injection of cultures of abortion bacilli. Similar experiments with sub-

sequent test infections in cattle, sheep, and goats, have not yet been undertaken. Ascoli has therefore undertaken such experiments on guinea pigs, which are also susceptible for the abortion organism, and which after an artificial infection fail to develop clinical manifestations, the same as in the case of the chronic course in cattle. The guinea pigs were first immunized with dead abortion cultures, and then infected with living cultures. At the same time control animals were infected, without a previous immunization.

The results indicated that although the immunization failed to affect the development of the abortion bacillus in the body of the animals, the bacilli were rendered harmless by the active and passive immunization.

The conceptions of the killing of the virus and the clinical recovery from abortion should therefore be separated. This suggests that immunization should not be discontinued after a disappearance of the principal clinical symptoms of the disease, namely, after the abortions, but only after a complete destruction of the virus in the uterus and in the other organs of the body.

The intrapapebral reaction in the diagnosis of tuberculosis. F. FAVERO. *Il Moderno Zootatro*, 1914, page 116—The test consists of the injection of tuberculin into the tissue of the lower eyelid. In healthy cattle this treatment produces a strictly localized edema, which appears in from one to two hours. After twelve hours it entirely disappears. In tubercular cattle the edema which appears after one or two hours is less painful, warm and tense; it increases during the following 24 to 36 hours, and attains the size of a closed fist, remaining at about the same intensity for 12 hours, then it gradually subsides and disappears on the fifth or sixth day. The reaction is accompanied with the classical febrile curve. F. points out the advantages of this new method and recommends its application to practitioners.

Contribution to the study of rabies in cattle. ALBERTO BORELLINI. *Il Moderno Zooiatro*, 1914.—The author describes several cases of rabies in cattle in which during the entire course of the disease no excitement or convulsions were noted, but only paralysis.

The infection of the animals probably resulted from drinking water out of a well into which shortly previously a rabid dog had fallen. In one case the diagnosis was established by microscopical examination, in the other cases by animal inoculation.

PYORRHEA IN DOGS

Dr. W. C. Langdon, of Omaha, Neb., reports excellent results from emetoid and boremetine (Abbott) in the treatment of pyorrhoea in dogs.

Doctor Langdon first scales the teeth, cleaning them thoroughly, then gives emetoid 1-64 grain, three times daily to toy dogs and 1-6 grain for large dogs. He also directs boremetine to be used locally. The results of this treatment have been prompt and satisfactory.

SEROUS SACS OF THE SHOULDERS

(Continued from Page 388)

which later may even develop into a membrane of connective tissue. The corpuscles in the serum dissolve and leave a pure amber colored fluid as the contents of a sac that will sojourn indefinitely. When this stage has been reached it is best to lay the sac wide open, wipe out the interior with a sublimate caustic and then treat it as an open wound. Such cases will disable horses for six weeks or more, while the recent ones should be well in two weeks.

Collar Galls

Common galls of the collar seat are due to the rubbing off of the epiderm, partially or entirely. These are usually trivial matters if properly managed, but when neglected day after day as the horse is forced to work on, the

dermis becomes bruised and infected and a more serious lesion is produced. The proper attention of a collar gall is of course rest, but in lieu of this such expedients as drawing out the padding of the collar at the level of the sore or padding it above the sore are often worth recommending. It is, however, a fact that no changes of the collar are entirely satisfactory. The collar seems to rub the sore despite such attempts and not infrequently a sore develops at the new seat of pressure. A breast collar so often recommended for a horse affected with sore shoulders is a mighty poor substitute for a hame collar in a horse that must work hard. They generally cause breast sores that are more disabling than those on the shoulder. The best treatment for a simple gall is mercuric chloride solution one part to five hundred of water. This solution is rubbed briskly into the gall with pledgets of cotton at noon and at night. There are no astringent remedies that will equal this simple solution for a skin excoriation. In addition the collar is well cleaned twice a day and at every opportunity during the day the sweat is rinsed off of the shoulder. When the dermis has become tumefied there is no better remedy than common white lotion. A more popular wash for a veterinarian to prescribe as a general gall cure consists of methylin blue, one dram, tannic acid, one ounce and denatured alcohol, one quart. This will dry up sore shoulders very fast and while no means an adequate substitute for rest—the real cure—it usually gives good satisfaction.

WORTH SEVERAL TIMES THE PRICE

I was agreeably surprised in reading La-croix's "Animal Castration" as it is the best I ever read on the subject. It is worth several times the price and should be in the library of every veterinarian, and especially the beginner. GEORGE L. SMITH, D. V. S.

Cedar Vale, Kans.

Therapeutic Digest

By MART R. STEFFEN, Milwaukee, Wisconsin

Herzog, in *Muenchener Medizinische Wochenschrift*, describes a combination of quinine and veronal as being especially efficacious during the period of dilatation in labor. Reports upon 150 cases show this combination can not create pains, but seems to sensitize the uterus to the natural excitors of the pains.

Some of the newer tests for sugar in the urine are unduly sensitive, especially since, as shown by Folin, a sensitive test of his own devising reveals the presence of sugar in nearly every specimen of urine tested. It is probable that urine always contains a trace of sugar.

Deterioration of Galenicals

Frank R. Eldred, quoted in the *Scientific Bulletin*, says that as a class galenical preparations are surprisingly stable, the conclusion being reached by several laboratories, and that despite alarmist reports. Cinchona preparations may precipitate some contained alkaloids, and fluid extract of coca rapidly deteriorates. These are the two marked instances. Other well-made galenical preparations except some tannin-bearing products, stand up very well indeed, even fluid extract of ergot, against which unwarranted charges have been brought. Hatcher has shown that many galenicals 20 to 30 years old had retained their activities almost unimpaired. But all galenicals

must be well made and then well cared for.

Hyoscyamus acts more like belladonna than like opium; it contains hyoscyamin, scopolamin and atropin, the hypnotic action being due to the scopolamin.

If the article which appeared recently in the *Country Gentleman*, describing a new and very active preventative for hog cholera, is based on fact, there will be a panic in the serum business before long. This new article was described as a concentrated sero-vaccine which is said to produce prompt and life-long immunity. The originator is said to be an investigator in a southern experiment station.

The killing of horses has evoked considerable discussion.

In our opinion the dose of strychnin used by nearly all of the executioners was excessive. It has fallen to our lot to destroy horses occasionally, during a period of fifteen years' practice. No record was kept of the number but the experiences cover a sufficient number of such instances to be worth something as evidence.

Right at this moment, or any time, should our services be required we would give three grains of strychnin intravenously, no matter whether the horse weighed two thousand pounds or one thousand. When the strychnin is good and the injection is made correctly

and quickly, the result is all that can be desired. Our experience along this line has been so regularly satisfactory that we do not hesitate to make the statement that, if three grains of strychnin do not produce rapid death, the strychnin is not pure or the injection has not been properly made.

The one and only instance which we experienced in which the result was unsatisfactory occurred in a case in which the injection was left to an assistant.

Our experience was gained in altitudes as high as six thousand feet above sea level and as low as 28 feet. In high altitudes death follows more rapidly.

If there is a point of special worthiness in the technic we would say that it lies in injecting the solution very rapidly and in having a concentrated solution. Dissolve the three grains in two drams of very cold water, so that it is a mixture or suspension, rather than a solution. Then literally *shoot* it into the vein.

Questionable Preparedness

What I am about to say now has nothing to do with therapeutics, but it is in reference to a subject now on every veterinarian's mind.

At the recent meeting of the Missouri Valley Association Dr. R. Vans Agnew is reported to have aroused the interest of those present by stating that it was the earnest desire of the powers that be to list the names of all veterinarians with the War Department who would be willing to act in case of war as army veterinarians. Such veterinarians were requested to send their names to the doctor for the proper forms and further instructions in regard to the matter.

Those who have responded to the call have made the by no means new discovery that, like most other things of a similar nature, the matter is completely and discouragingly "bound round" with red tape.

While the aim and desire of those at the head of this project may be, and no doubt is, sincere and well-meant, the manner of conducting this veterinary

preparedness program does not appeal to the class of men that it is most desirable of.

The men wanted in a crisis such as this would be the hard-headed, hard-fisted, practical practitioners; men who are almost daily confronted with problems taxing efficiency initiative and executive proficiency. Such are the men that would be most reliable and most conserving in an issue of a war-like character. Especially would we need such men in case the issue should involve the invasion of an enemy's country, like Mexico; and from the present outlook it appears that that is where the issue will be raised the first time.

AND, such men are, from the very nature of their daily work, very much against red tape in any form, shape or manner. While they would most willingly tender their services in case of need and while they are no doubt responding, patriotically, in great numbers to this call for a veterinary reserve, the red tape connected with the project has the effect of cold water on their patriotic enthusiasm. The circular letter which they receive from Dr. Vans Agnew is pigeonholed; and, in most cases it remains pigeonholed.

One of the pieces of red tape is that the A. V. M. A. is to act as a censor on applications and appointments.

This is a very weak point, because the A. V. M. A. is pre-eminently representative of the purely scientific side of veterinary profession in America. From the standpoint of the practitioner a number of smaller veterinary associations are more representative. There are thousands of our best practitioners, the very men who would fit in this niche, who are not members of the A. V. M. A. and who, furthermore, may never be members of the A. V. M. A. This is unfortunate for them and the association also; but it is true.

Men who have proven their worth in a community, county, state or the nation (and there are thousands of them), do

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Queries and Answers

The editor will reply to queries appearing here, as he is able and as opportunity permits, but he does not want, nor cannot undertake to monopolize this portion of the department. Any reader who can furnish further and better information in reply to any query is urgently requested to do so. Where the treatments advised in these replies is adopted it is hoped that those employing them will report their results whether good or bad. In all cases give the number of the query when writing anything concerning it.

Query No. 216: A sorrel mare, six years old, weighing about nine hundred pounds, was presented to me for examination. She had an opening at the angle of the left lower jaw, rather at the inside, which had been open for several months, and was discharging a light, stringy, odorless liquid, and wherever this fluid dropped on the feet or legs to any extent, it caused the hair to fall out. This is mostly noticeable over the coronary band.

I have not treated the case at the present writing, but told the owner to fetch her over sometime, and I would see what could be done. My intention is to cauterize the channel with caustic soda or open the mouth of it and inject a ten per cent solution of chromium trioxid. Is this a fistula of the submaxillary gland, or is the duct clogged up, thus causing a break at this point? A fistula, I should think, would have an offensive odor, and a pus discharge. I might also state that the maxillary bone is not diseased, nor are there any bad teeth. The animal suffers no pain. What is the trouble here, and what treatment would be advisable? C. J. H.,
Iowa.

ANSWER—It is very probable that this is a fistula of the submaxillary gland—a salivary fistula. However, the discharge in a typical salivary fistula is thin, watery and not "stringy." The injection of equal parts of tincture of iodine and alcohol should serve in the course of ten days or two weeks, to

check all discharge. This combination of agents will destroy the gland and its antiseptic, desiccating and astringent effect tends to check all discharge. One or two ounces of this dilution of iodine injected every second day until three or four injections are made, will probably suffice.

Query No. 217—What may cause a rupture of the diaphragm in horses? Is it necessarily fatal?

ANSWER—Diaphragmatic rupture is classified by Hoare in his "System of Veterinary Medicine" as congenital openings and traumatic rents or injuries. Authorities are agreed that rupture of the diaphragm usually results fatally. This may not be due to injury done the diaphragm, but in practically every case strangulation of the herniated visceral organs is the more active factor in producing death.

Query No. 218—How would you handle or treat a case of difficult parturition in the mare, which was complicated with eversion of the rectum prior to the delivery of the foal? Also what chances for recovery would you expect?

ANSWER—Eversion of the rectum in the mare, as it occurs in some cases of dystocia, need not constitute a serious complication. It is met with in cases where, due to forceful labor and violent straining, the sphincter ani, which is more or less atonic, permits a portion of the rectum to protrude. Unless the protruding portion of intestine be-

comes lacerated or otherwise injured beyond repair, its replacement can be effected after having thoroughly cleansed all exposed mucosa, and no repetition of the condition is to be expected after delivery. Where straining is violent, it is necessary to retain the rectum in position by means of a purse-string suture; such suture may be removed after delivery has been completed if conditions permit, but if it is apparently necessary, the suture may be left in position for a day or two, in extreme cases. Evacuation of the rectum is effected in such cases by means of enemata, the suture being loosened enough to permit fecal matter to pass out when admixed with warm water. Injections of one-half-of-one-per-cent solutions of phenol in cotton-seed oil is helpful in such conditions when straining is due simply to pain caused by an inflamed condition of the mucosa of the rectum.

Query No. 219. Give the best way of treating gastric distension in the cow due to sour bran or chop-swill.

ANSWER: If one has a stomach tube at hand, the introduction of an ounce of formalin dissolved in three gallons of cold water, into the rumen by means of the stomach tube, will serve to allay fermentation and, by virtue of the reduction of temperature due to the introduction of cold water, there will immediately result a diminution in the volume of gas present. Any other good antiferment, if employed in sufficient quantity and properly diluted, should likewise produce the desired result. Alkaline solutions, especially aqua ammonia, are good agents to employ in such conditions, prompt relief occurring in many cases where a few ounces of ammonia water is given, suitably diluted, as a drench. Of course, where there is great distension of the rumen due to gas, immediate relief is to be had by employing the trocar, except in cases where the rumen is greatly distended with a pultaceous fermenting mass of ingesta, which does not permit of the escape of gas

through the cannula. In such cases, rumenotomy is the only recourse.

Query No. 220. Are the broad ligaments of the uterus necessarily ruptured in complete prolapsus uteri?

ANSWER: The broad ligaments of the uterus are not necessarily ruptured in prolapse or eversion of this organ. In fact, it is unusual that rupture occurs. Where eversion of the horns of the uterus takes place, it is reasonable to presume that rupture, in part, of some portion of the broad ligaments has occurred. It would be difficult to conceive of complete eversion of both uterine horns in the cow, without some rupture of their supporting ligaments. However, in the cow, because of the manner of attachment of the broad ligaments and where the ligaments are very long and well developed, it is possible that eversion of the uterine horns occurs without rupture of ligaments, though this is rare.

Query No. 221: What is the most effective treatment for oxyuris, inhabiting the rectum of the horse?

ANSWER: The rectal injection of from eight to sixteen ounces of a one per cent aqueous solution of Creolin-Pearson or other coal tar preparations in suitable dilution. This should be done two or three times daily for several days, and in obstinate cases, the subject needs to be dieted and purged with aloes or aloin prior to the giving of the local treatment. It may be necessary to repeat the treatment at intervals of ten days. Infusions of tobacco have been employed with good results, and in fact, unless the case is an unusual one, the oxyuridæ are easily destroyed.

Query No. 222: Is the bismuth paste treatment successful in poll-evil and fistula?

ANSWER: Bismuth paste is successfully employed in cases of fistula of the withers and poll, according to the reports of some veterinarians. However, since the radical operation of Williams for poll evil has proven so successful, there is no good reason for the employ-

ment of other means in cases of fistula of the poll. In fistulous withers, surgical treatment is likewise the more rational procedure and unless a practitioner is not equipped to do surgery, other means are not to be considered. Nevertheless many practitioners report good results from the use of this preparation.

Query No. 223: How would you advise a client, who told you he had a six-month-old colt, with a small umbilical hernia that was just as large but no larger now than at the time of birth?

ANSWER: Spontaneous recovery in cases of umbilical hernia is very rare. In a condition of this kind, where the subject is six months of age, unless the hernia be so very small that no possible inconvenience to the colt will result and little blemish exists, treatment is necessary. Surgical means of treatment are indicated, and the employment of skewers or clamps is the favorite method of the average practitioner.

Query No. 224: Is it advisable to inject solutions, etc., into open joints?

ANSWER: It is advisable, even necessary, to inject solutions into open joints, but discretion should be employed as to the character of open joint being treated as well as the manner in which such injections are made. As a rule, where open joints are produced in such manner that there is a free and unobstructed discharge of synovia and the injury has been inflicted so that infection of the joint is inevitable, one may inject the joint cavity with dilutions of tincture of iodine, e. g., tincture of iodine one part to alcohol three parts, or tincture of iodine, one, to glycerin, four.

Where a joint is open due to a puncture which has either completely closed, or because of the small diameter of the vulnerant, escape of synovia is impossible, one may employ such means as are described by Frost in "Wound Treatment"—the injection of one part of Lugol's solution of iodine in four parts of glycerin.

In the treatment of all cases of open joint, it is necessary to observe a most

careful technic with regard to asepsis. The wound margins should be cleansed by first clipping away all hair; the surface around the wound must be freed from all dirt or filth and the exterior of the wound may need to be curetted and otherwise cleansed. The exterior of the wound as well as the surrounding skin should be painted with tincture of iodine and every precaution possible taken to prevent the conveyance of contagium into the joint capsule from the outside.

Of course, much depends upon the particular joint that may be open, the character of the wound, the time which may have elapsed between infliction of the wound and treatment of same, and the resistance of the subject affected. If the navicular joint be open due to a nail puncture, one may expect that a septic synovitis will result, and injections in such a case are difficult to do, and results due to such possible injections are not usually good. Again, when the elbow or stifle joints are open, prognosis is not good as a rule because of the size of these articulations, extensive areas of inflammation and the pain experienced by the subject, as well as the persistency of synovial discharge, which eventually results in ankylosis. Where the offending body has done injury to portions of the articulating parts of bones, at the time that the wound has been inflicted, erosion of cartilage will preclude all possibility of complete recovery. Then, too, if destruction of much of the joint capsule occurs, regeneration of same will be impossible and ankylosis will result.

When neglected, joint wounds may suffer serious contamination and contiguous structures also may become badly involved in the process of infective inflammation. Some subjects because of individual resistance are not so seriously affected when joints become wounded and infected. Then, of course, there is the greater resistance possessed by some species such as the bovine subject. These as well as many other concomitant factors merit consideration in the handling of open joints.

Query No. 225: Is it good practice to use cold water for rectal injections?

ANSWER: The use of cold water for rectal injections is not advisable except for the purpose of reducing temperature or to facilitate evacuation of the rectum in the large animals. If the object is the stimulation of bowel action as well as a mechanical aid, tepid water containing one per cent of sodium chlorid or five per cent of magnesium sulphate is preferable. The introduction of large quantities of cold water into the rectum, not only causes the subject needless distress, but is not productive of the same beneficial results which attend the use of tepid water.

Query No. 226: What is the best method of treatment to pursue in cases of acute orchitis and epididymitis in a stallion? In your opinion, what per cent of stallions are rendered sterile by one or more attacks of the above mentioned diseases? Would you give a stallion suffering from orchitis and epididymitis and also influenza, influenza antitoxin?

ANSWER: In acute orchitis and epididymitis of stallions, the subject must receive attention early if treatment is to result successfully. An active inflammatory involvement of these structures, even when inflammation is due to contusion and is non-infective, needs be promptly and properly cared for. Where orchitis exists as a complication in influenza or strangles, sterility is more likely to result than in those cases which are due to injury such as bruises or chafing. It is difficult to form an accurate opinion as to the percentage of cases which are rendered sterile because of orchitis. Every case of acute orchitis, wherein there exists sufficient inflammation to cause the stallion distress, thermic disturbance, etc., is to be regarded as serious.

Absolute quiet and isolation of the stallion so that no sexual excitement be stimulated, if possible, is the first consideration. A purge should be given; the scrotum must be supported by means

of a suspensory bandage and kept so suspended until all inflammation has subsided. During the acute stage of inflammation, cracked ice may be confined within a suitable sack and kept in contact with the inflamed testicles by means of the suspensory bandage. Potassium iodid or soluble iodine may be given in full physiologic doses and the animal's comfort attended to in every way possible.

Influenza antitoxin would in no way be injurious in such a case. Mixed bacterins are indicated and are of value when given early in cases of influenza whether orchitis exists or not.

Query No. 227: Are convulsions a symptom sometimes met with in parturient paresis?

ANSWER: Occasionally one observes convulsions in parturient paresis, but they are not marked in typical cases. Where convulsions are pronounced, it is probable that they are due to complications—intoxications possibly resulting from absorption of septic material from the uterus. The so-called eclampsia is a complication or an attendant affection which is at times met with in the treatment of parturient paresis. In such cases spasms are clonic; the subject does not manifest the characteristic coma which typifies parturient paresis, and recovery, if recovery results, is tardy. In cases where convulsions are manifested, the routine treatment employed by many practitioners, which includes the administration of strychnin occasionally, results fatally. There seems to be in these cases an unusual susceptibility to the effect of strychnin.

THEIR TEACHINGS OF VALUE TO THE MOST EXPERIENCED

I have finished reading Lacroix's "Animal Castration," also "Wound Treatment" by Merillat, Hoare, et al, and I think the works are right up to the minute. No practitioner can afford to be without them. To read and digest their contents thoroughly will be of benefit to any veterinarian, as they have been of great value to me in my practice.

E. E. PATTERSON, D. V. S.

Detroit, Mich.

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

Alarming Symptoms of Approaching Dissolution Appear and Disappear from Unknown Causes

One morning some weeks ago, one of my clients telephoned me to come to his place, that he had a colt to castrate and that his family mare seemed a little sick. Having two or three other calls ahead of this, it was eleven-thirty when I arrived.

In the meantime, this man had telephoned to me twice to hurry as the mare was rapidly growing worse. On examination and duly considering the anamnesis, I found what seemed to me a conglomerated and insidious chain of symptoms. This mare, a little aged, was suckling a two months' old colt and the previous day had been bred; also coition had taken place within twenty-seven days before. The owner, being rather loquacious, voluntarily informed me that the mare had seemed absolutely normal in every respect until about seven o'clock that morning, when he noticed that she had refused feed and was standing near the center of the stall with her head lowered, eyes watering and an anxious expression on her face and that she had rapidly become worse since that time.

The following is what I found: Temperature, 96 degrees F., conjunctiva very hyperemic, schnyderian membrane cyanotic, all pendant parts algid and clammy; respiration deep and a little slow. The pulse from the mandibular coccygeal and digital arteries was absolutely imperceptible and barely perceptible from the carotid near the thorax, while by standing a distance of fifteen to twenty feet away on the left, one could distinctly hear each pulsation, and the walls of the thorax vibrated seventy-eight times a minute. Auscultation of the heart revealed no bruit indicative of valvular insufficiency, but it sounded as if every muscle fibre was contracting and relaxing to its utmost.

Borborygmus could be only slightly heard, and I noticed that the mare was shifting the weight every few minutes from one pelvic limb to the other. A halter was placed on the animal, and I noticed when she was led a few steps, that she was very weak, especially in the posterior limbs also after walking a few steps, she became very restless, and soon

the hyperpraxia became very pronounced. Dyspnea rapidly developed; the face became drawn; the eyes glassy; and that very familiar expression of approaching death was plainly noticeable.

All the time I was making this examination, my so-called mind was at work trying to arrive at a satisfactory diagnosis, as I knew the owner would ask what the trouble was as soon as I had finished. Several times a diagnosis was insisted upon, but I refused to render it and have not been able to satisfy my own mind yet.

However, I quickly put the patient on treatment, stayed with her most of the evening and all night, leaving her feeling quite well the next morning. She was kept on treatment for three days, after which she was as well as ever.

Will some one kindly tell me what I was dealing with?

Urich, Mo. J. N. JEROME.

ONLY ONE VENTRICLE IN THIS HEIFER'S HEART

Of all the organs which help to make up the anatomy of an animal, the heart receives the least attention upon post mortem examinations by the average practitioner, this being due perhaps to the small number of heart diseases and abnormalities found in animals.

I recently encountered a condition of two auricles and one ventricle in the same heart. This was found in a pregnant heifer killed for food purposes, the animal being in good condition. No temperature was taken; neither was the frequency of respiration or pulse noticed, but no doubt this would have been a very interesting one to auscultate.

My attention was first drawn to this condition by the fact that it was much larger than the normal heart and by the fact that its shape was greatly altered, the apex being rounded instead

of pointed and the anterior straight, while the posterior concave borders were both convex; in fact, the heart appeared more like a ball than like a cone.

I opened the heart through what I thought was the wall of the left ventricle from about two inches above the apex, cutting upward through the middle of auricle, and to my surprise I noticed that both auriculo-ventricular orifices opened into the same chamber.

Further examination showed that there had been no second ventricular chamber and that the ventricular septum was absent. All other structures such as the mitral, tricuspid and pulmonary valves were normally present.

Newark, N. J. PAUL RUNGE.

MILK FEVER CASES ON THEIR FEET WITHIN TWO HOURS

Although I believe there has been enough said about milk fever, I have never failed to have a cow on her feet in less than two hours and had them give as much milk as they did before, in spite of the fact that I have been told I was too late and could not save them.

I generally give strychnin one-half grain and atropin one-half grain hypodermically; then put three pieces of cotton about the size of quails' eggs in the medicine cylinder of my pump. The middle ball of cotton I saturate with chloroform. (Chloroform will destroy rubber if it contacts it.) While I am getting the pump ready, I have all the milk taken that can be gotten. I inflate the udder once while they are down and again when they get up, never giving any oral medicine until they get up; then cathartics as indicated.

I generally give one-half grain strychnin and one-fifth grain nitro-glycerin hypodermically just before I leave, providing I can stay four hours, or if not too far I return and give it in six hours.

C. C. MASHETER.

Tryon, Okla.

A CASE OF URETHRAL CALCULUS IN A BULL

I just returned from a visit to a ranch fifty miles southwest of town where I was called to attend a bull. On arrival at the ranch, I found the bull very uneasy, continually getting up, then lying down. He was also moaning and straining as if to pass feces.

I oiled my hand and arm, passed it into the rectum and found it empty, but the bladder distended to the point of rupture. I at once examined the tuft of hair at the orifice of the prepuce and found it to be very dry. I noticed that there was no swelling of the sheath. I then examined the S-shaped portion of the penis back of the scrotum and found it slightly swollen and causing great pain under pressure. I diagnosed the case as urethral calculus or gravel.

I at once ordered the bull cast, laying him on his left side, drawing the right hind limb well up toward the right shoulder and securing it there. I then thoroughly cleansed the field of operation with a solution of lysol dried it, painted with iodine, and made an incision through the common integument and underlying tissue four inches long and over the S-shaped portion of the penis. Raising that organ and feeling over the same, I found a hard obstruction in the lower portion of the sigmoid flexure. I made an incision one inch long, over and down to the obstruction, finding it to be a calculus or gravel the size of a large pea and completely obstructing the urethra. On removal of the calculus,

there followed a gush of urine. I then washed the incision in the penis with lysol and sutured with catgut, leaving the incision through the common integument open.

As this was a very valuable animal, I stayed at the ranch three days and dressed the wound each day with tinc-



BASKETBALL TEAM, CHICAGO VETERINARY COLLEGE
Dr. Liebold, Torrey, Anderson, Eckert, Mgr. Gieske, Murray, Roberts, Kay, Claruo.

ture of iodine. On the second day, the bull passed urine normally with no dribbling from the incision. The bull was ready for his feed as soon as he was let up from the operation. I ordered a bran mash for him three times a day for a week, hay being withheld that length of time. When I last saw him on the third day, he was lying down ruminating as though nothing had happened.

Baker, Mont. W. R. MORGAN.

TWELVE-MONTHS-OLD HEIFER GIVES BIRTH TO CALF

I was called March 20th to see a sick cow. The farmer stated a twelve-months-old heifer was trying to give birth to a calf. On examination of the heifer, I found the calf in a normal condition and delivered a live and fully developed calf. The heifer is alive but the calf was killed after it was out for the jaw bone was broken in delivering it. It is the first parturient case I have ever seen in a cow so young, and the farmer stated he didn't know the heifer was with calf until he called me.

W. A. ELVER, D. V. M.

Long Prairie, Minn.

Comment.—The foregoing reminds me of a recent case of my own that seems out of the ordinary. I was called to a case and found a very small Jersey heifer just thirteen months and two weeks old in the throes of parturition. She was lying on the floor, too weak to get up, but straining with considerable vigor, the head of the fetus presenting. I found that the four legs were turned backward, and although profound anesthesia was resorted to, I was unable to push the calf, which was a fair sized holstein, back into the uterus far enough to bring the legs forward. The fore legs were dissected off with considerable difficulty owing to the very limited amount of space in which to work. The fetus was then delivered, requiring a good deal of traction to bring it through the pelvic cavity. A number of bad lacerations resulted from the delivery.

After the heifer was cleaned up and made as comfortable as possible, she was rolled up on her back, and I took hold of one fore leg and one hind leg, asking the owner to catch hold of the other legs, and the two of us easily lifted her. We estimated that she did not weigh to exceed 350 pounds, and 300 pounds was probably nearer her correct weight. Unfortunately, she did not rally at any time afterwards and died forty-eight hours later.

I wonder how many others have delivered heifers in the 300 and 400 pound classes.—EDITOR.

WILL RUMINANTS DIGEST FLESH?

I saw a cow on January 7th that had calved on November 9th, and she passed from her bowels six feet or more of tissue, round in shape, size one inch in diameter, with the appearance of cooked meat on tearing apart. I thought it must be the fetal membranes of her calf. Could it have remained in the bowels two months and passed in a fair state of preservation? It seems queer to me, but I believe it was.

W. H. MCNAUGHTON, V. S.

Warren, O.

Comment. A number of cases have been reported where placental membranes or other flesh, sometimes intestines of other animals, have been voided by cattle, supposedly several weeks after ingestion; however, as in your case the time of ingestion was not positively known. It is not improbable that digestive processes in the cow may prevent the putrefaction of flesh.

A SEVERE CASE OF FOLLICULAR MANGE CURED WITH STAPHYLO-BACTERIN

A forty-five pound bull terrier, suffering from one of the worst cases of follicular mange I ever saw, was brought to me to be destroyed. The dog was a valuable one, and I decided to give Staphylo-Bacterins (Abbott) a trial.

As the patient was a large dog and suffering from follicular mange in its worst form, the crusts extending entirely over his back, I doubled the dose recommended. Under this treatment the dog made a rapid and complete recovery. The action of the Staphylo-Bacterins in this case seemed to be perfect.

Watertown, N. Y.

THOS. BURNS, V. S.

UNEXPECTED TEMPERATURES RECORDED IN TUBER- CULIN TESTING

Realizing that data on the subcutaneous method of tuberculin testing is available in voluminous quantities, it is with some hesitation that I offer this report. However, these two cases, I believe, contain lessons worthy of the veterinarian's notice.

The first report shows how extrinsic conditions may influence the after-injection temperatures and cause mistakes. Records on this case are as follows:

Breed, grade, Hereford; age, 12 years; weight 800 lbs.; time injected, 8 p. m.; amount injected, 2 c. c.; pre-temperatures, 2/8/10—9 a. m., 101.6; 12 m., 100.2; 3 p. m., 101.7; 5 p. m., 100.7; Post-temperatures, 2/9—6 a. m., 99.8; 8 a. m., 100.6; 10 a. m., 99.4; 12 m., 100.8; 2 p. m., 103.2; 3 p. m., 104.3; 4 p. m., 104.1.

It will be noticed that the temperature began to rise on the sixteenth hour after injection and reached a maximum of 104.3° on the twentieth hour, a rise of 3.5°, which, if considered alone, surely indicates the presence of tuberculosis. We did not make a diagnosis of tuberculosis in this case for the following reasons:

First; the cow originated from a herd known to be free from tuberculosis;

Second, the other cows of this herd proved by test to be free from the disease;

Third, and last but not least, during

the night after injection, this cow broke loose and gorged herself upon mouldy alfalfa, the effects of which were well marked by her physical condition during the latter part of the test.

Feeling that conditions did not warrant a positive diagnosis of tuberculosis in this case, we placed the animal in



BASEBALL TEAM, CHICAGO VETERINARY COLLEGE
Dr. Brashier, Bunn, Anderson, Mohr, Eckert, Mgr. Krownfeldt, Lorton,
Allen, Welch, Murray, Flynn, Galahue, Torrey.

quarantine and retested her on May 17, 1910, with a result that was negative.

The report of the second case, which is a puzzle to me, I hope will elicit a satisfactory explanation from some other veterinarian. The record is as follows:

Breed, Durham; age, 9 years; weight, 800 lbs.; time injected, 10 p. m.; amount injected, 2 c. c.; pre-temperatures, 2/24/10—9 a. m., 106.6; 11 a. m., 106.3; 2 p. m., 102.4; 5 p. m., 101.7; post-temper-

atures, 2/25/10—8 a. m., 101.1; 10 a. m., 102.2; 12 m., 101.5; 2 p. m., 101.7; 4 p. m., 101.0.

Upon my arrival at the place to take the first temperature, this cow was lying quietly in the yard in perfect contentment, was driven quietly to the barn and recorded a temperature of 106.6°. The only abnormal condition that I could detect, which, however, has no bearing on this high temperature, was that one-quarter of the udder was indurated and its function entirely destroyed.

To my mind, this case emphasizes the value of taking the normal or ante-injection temperatures at intervals corresponding as nearly as possible to the hours of the after-injection records as the normal fluctuations of individuals is extremely variable. Tests are often made by veterinarians who take but one temperature before injection, the second at the time of injection, making two temperatures taken close together on which to base a reaction. I believe this method is to a great extent responsible for mistakes in diagnosis that have given rise to prejudice against the test in many localities.

An animal with an abnormally high temperature before injection is not a satisfactory subject to test, and in this second case, I do not think that we have proved either the presence or absence of tuberculosis. I report this test to show that abnormally high temperatures are encountered without apparent cause and may occur after the injection of tuberculin, thus leading the diagnostician into error even though the most careful technic is observed.

O. E. TROY, D. V. S.

Raton, N. M.

LOBELIN SULPHATE AND SERUM FOR TETANUS

I used lobelin sulphat recently in connection with tetanus antitoxic serum on a bad case of tetanus, and was pleased with results. This was my first experience with lobelin sulphate in the treatment of lockjaw.

E. M. ALDRICH, V. M. D.

FISTULA DUE TO A PIECE OF IMBEDDED HOOF

I was called to see a mare that upon examination showed a running sore about five inches below the withers. There was only a small opening that would just allow my finger to pass in. It had been discharging two weeks when I was called. Upon enlarging the opening and exploring with my finger, I found a solid object that would move. I grasped it with a pair of forceps and pulled it out and was surprised to find a piece of hoof, about one and one-half inches square and from three-eighths of an inch to one-sixteenth of an inch thick. How it got there, I do not know, but it was probably driven into the flesh and broken off by a kick.

H. M. WAKELIN, M. D. C.

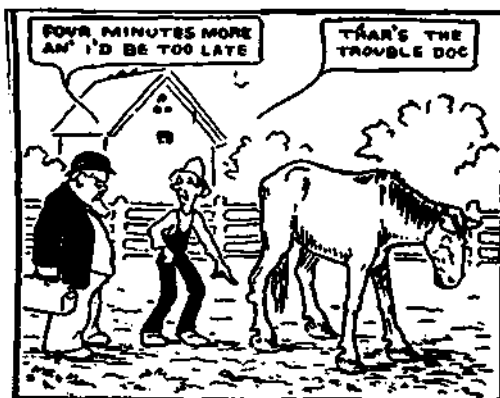
Melvin, Ill.

A SMALL SHOAT HAS 106 PIECES OF IRON IN HIS STOMACH

A rather unusual case in swine was observed by the writer on November 29, southeast of Crawfordsville, Indiana, which occurred as the result of making an investigation on a farm where the existence of sick hogs had been reported. The herd consisted of forty-five shoats, weighing from sixty to eighty pounds, three being sick. The smallest of the three sick ones, weighing approximately sixty pounds, appeared to be in the most critical condition and, according to the owner, had been sick four days.

The most conspicuous symptom the animal disclosed, aside from anorexia, was a severe diarrhea, the intestinal evacuations being dark colored, frequent and copious; temperature normal. In view of the fact that cholera was prevalent in the immediate neighborhood, an autopsy was suggested. As the suggestion met with the approval of the owner, the shoat was immediately killed.

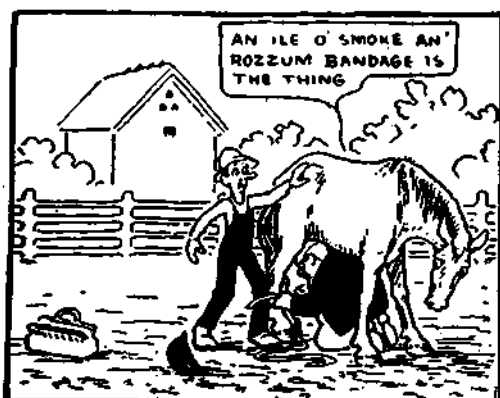
A painstaking examination was made of the entire carcass, but no pathological lesions were observed until the gastro-intestinal tract was examined. On dissecting the stomach, the gastric con-



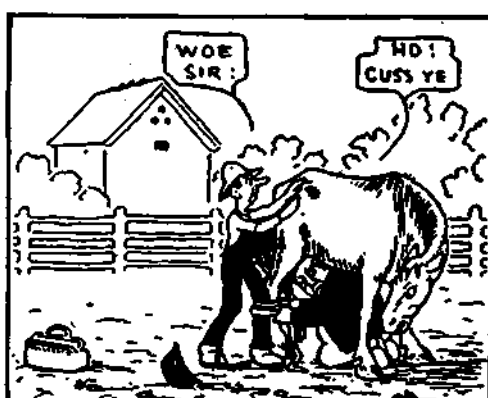
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VI

OUT OF THE DAY'S WORK

Courtesy of The Country Gentleman.

tents were composed of all kinds of nails, bolts, nuts, etc., that one would expect to find in a first-class modern blacksmith shop, consisting of horseshoe nails, wire nails, bolts, nuts, etc. A careful count of the pieces revealed the number to be one hundred and five.

The owner of the swine is a blacksmith, and his practice has been in the past to dump his ashes together with old horseshoe nails, etc., out in the hog lots. This afforded considerable pleasure and fascination to the hogs, and they were very fond of rooting in it.

I considered this rather an unusual occurrence, as I have never seen or heard of a similar case in swine before. I am at a loss to understand what caused the perverted appetite of the animals. No symptoms of rabies were disclosed.

ROBERT H. NUTT, D. V. M.
Crawfordsville, Ind.

TORSION OF THE INTESTINE IN A COW

On March 27th I was called to see a holstein cow. The owner gave the following history. The cow first refused to eat on the 24th, also ceased to ruminate. She appeared itchy in the back parts, as he expressed it, and stayed in a recumbent position most of the time. The last manure she passed was very scant and streaked with blood. They had dehorned the cow a few days before she took sick. The owner gave her four pounds of epsom salt in two doses with no movement of the bowels at all.

I found her temperature normal, pulse 42 per minute, back swayed, tail held erect, bloody discharge from anus, anxious expression; rectum inflamed and empty. When given rectal enemas, she did not expel the solution. I told the owner that the cow was suffering from invagination or twist of the bowel, invagination being more common than twist. I explained that it was too late to operate and that I could do nothing for the animal. I left a stimulant and anodyne treatment, saying that I wished to post her.

The owner called me on the 30th, saying that she had died. Upon opening the abdominal cavity, I found a portion of the small intestine to be misplaced. A portion about eighteen inches in length had become entangled. The stomachs and bowel anterior to misplacement were loose and filled with bowel contents. The bowels posterior to the misplacement were empty. Adhesions had taken place.

ERNEST E. STEINER, D. V. M.
Rittman, O.

DENTAL IRREGULARITIES IN CATTLE*

Irregularities of the teeth do not come to the attention of the veterinarian frequently in a cattle practice. When such irregularities do occur, they are usually so evident by their symptoms that the diagnosis is not difficult.

Probably the most common dental irregularity that occurs in the cow is the split and deflected molar; such molars are, in fact, more common than is generally supposed. Systematic examination of the mouth and the dental arches will disclose this abnormality quite frequently.

It is, however, astonishing to what length a split and deflected molar can grow in cattle without interfering to any great degree with mastication or the well-being of the animal. We have seen only a very few cases of ulceration of teeth accompanied by bony enlargements and subsequent abscess formation on the maxilla.

Now and then a case is presented in which deciduous molars are capping the permanent teeth, producing a certain degree of difficulty in mastication. This condition is very rare also.

The treatment of dental abnormalities in the cow does not differ materially from the treatment of similar conditions in equine subjects. Split and elongated molars are either extracted or cut down with the molar cutter. Ulcerated fangs are repulsed if they can not be grasped with the extracting forceps.

No manipulations of any extent should ever be attempted in the mouth of the cow without the use of a strong mouth speculum. Those not acquainted with the contractile power of the masseters of the cow should not chance experience to make this acquaintance. The power of the masseters in the cow is tremendous; aided by the scissor-like movements, of which the mandible is capable in this animal, it makes manipulations in the cavity without the use of a good mouth

*Reprinted from "Special Cattle Therapy."

speculum far from a safe procedure. A perfectly trustworthy speculum can be made from an ordinary plow clevis, when no other speculum is at hand. We have used a plow clevis for this purpose a number of times and with satisfaction. Care must be observed to keep it in an unright position, in case the cow moves the head suddenly. M. R. STEFFEN.
Milwaukee, Wis.

KILLING A HORSE

I noticed in the Queries and Answers Department expressions in regard to killing horses. I will say that we are professional men and supposed to do work superior to that of the laity. Strychnin causes great pain and should be discarded. Shooting and the axe are good if done by a good hand and eye. Inhaling chloroform is good, but takes too long.

My method of killing horses for the last fifteen years for the S. P. C. A. in New Jersey has been by the pithing method. I use this for various reasons—it is scientific and humane, looks very good to your client, is done quickly and mostly without a struggle. I have killed 130 horses by this method.

I put the animal in a recumbent position so there will be no mistakes for bystanders to talk about. I use two side lines with one assistant on the head with me, and a small child can safely sit on the head without any danger. The small seven or eight-inch trocar which I use for colics is employed, forcing it through the medulla oblongata. I may add that in the majority of cases I do not draw a drop of blood by this method.

E. B. BUNTING, V. M. D.

St. Joseph, Mo.

Memories of Old Doc Stone

By His Assistant

IV

Still Breakin' In

(Continued from the March Issue)

When I gets back to the hospital old Doc has just come in and I tells him what I done. "Fine, Kid," says he; "you done just right. I hopes you done the job nice and clean. In the mornin' we'll drive down there and see what sort of a job you done."

When we gets there the next mornin' Doc says the both of them jobs is fine done Only one I has the tube settin' a little to one side, and in the other one I has my skin incision a little too long, so that it shows and the skin sort of lops over the edge of the tube.

Of course now I knows it was a long way from bein' a fine job; but in them days I was proud of it. And both horses comes out fine, too. We leaves the tubes in four or five days when the swellin' goes down some and we takes 'em out.

One thing I nearly forgets to speak

about is something I learns from old Doc Stone, too, and that is dentistry. A whole lot of veterinary dentistry was done by the blacksmiths and horseshoers in them days, and people seemed to think that most anybody could "file" a horse's teeth good enough.

Besides this there was a lot of dental specialists running around the country what come out of a veterinary dental college of some kind or other. These specialists was mostly a bunch of grafters; they claimed that every horse's mouth could stand a little "fixin'," and if they can't get the job for a dollar they does it for a half. And the work some of them guys does in them days is pretty punk, and the poor horse what has to stand for it is sure playin' in hard luck.

Whenever they gets through with a mouth the poor nag is bleedin' like a stuck pig and mostly he don't eat a mouthful for a week after.

That was one way old Doc Stone used to judge whether a guy knows how to fix teeth; if he makes the horse bleed, that is. When Doc first shows me how to float a mouth he says to me as how I ain't no dentist until I gets so I can finish a job up slick and clean without drawin' a drop of blood. And it takes me a long time before I gets that far I can tell you right now. But finally I gets there; and to this day I sort of feels proud of the first mouth I could fix without drawin' any blood.

Just as soon as Doc thinks I got that dentistry business down "pat" he begins to let me do nearly all the jobs what come in. In the last eight or ten months I works for him I don't believe he tackles a single dentistry job himself; I does every one.

Just about the time I gets plenty confidence in myself about fixin' teeth I sort of gets in bad on account of a dentistry job.

It comes something like this: The feller what pulls off these here horse-breakin' stunts, Gleason was his name, blows into our town one day and puts in a week at the hippodrome tamin' all the bad horses what people brings him. Every time, durin' the performance, he gives a little talk on how some horses gets to be bad and so on, and one thing he says is that sometimes bad teeth makes a horse mean. I hears about how handy he is with some regular bad actors and how he sort of gives the vets a boost on the dentistry business, and so I asks old Doc for a chance to go down and watch him a while. Old Doc says sure I can go, and that night I goes.

And I likes the show fine and was sorry when it's out. The main feature that night was the tamin' of a big Shire stud what they calls the man-eater. He sure looks like a fierce guy, alright; and he acts like a real bad one, too.

This guy Gleason is right there with the goods though, and in about a half hour Mr. Man-eater loses his appetite for humans. Then this Gleason feller says as how here is a good example of

a horse what is mean because his teeth is bad, and as how tomorrow the man what owns him is goin' to have a vet fix them up.

Gee whiskers, thinks I; I only hopes he don't bring him to Doc Stone's hospital. I knows that if he does old Doc is pretty sure to turn the job over to me; and while this guy Gleason claims the stud is tame now I don't believe it; I notices when they takes him out of the ring they still has a inch rope on each side of his bridle for lead straps and two men on each rope.

The next mornin' while I stands in the pharmacy makin' up a mass for a bunch of aloes balls I hears the darndest racket out in the hospital; and when I goes out to see what it is there is Mr. Man-eatin' stud.

(To be continued)

QUESTIONABLE PREPARED- NESS

(Continued from Page 394)

not view with favor consorship on their qualifications by a body not representative of their branch of the profession; and when the issue is one like this, in which the individual *volunteers his body in addition to his ability*, he has his American right to stand at least a little bit on his dignity. And if you think these men have no dignity to stand on, go visit a few of them in their respective haunts; I know hundreds of them who are vertiable little kings where they abide. And many, very many, of these "veritable little kings" do not belong to the A. V. M. A. And, again, these are the kind of men that are made of, and have in them to over-flowing, the stuff that makes for good service in a calamity; the kind of men that are really wanted in this call for reserves and, also, the very men that the stipulations repel in the form of red tape.

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LAMINITIS WITH A PECULIAR SEQUEL IN A COLT.

At the A. V. M. A. meeting at Oakland, I spoke of a three-year-old colt which had laminitis from eating wheat. The front legs were bent back at the knee with a greater angle than the hind legs at the hocks. This happened within two days after it had eaten the grain. On my return home, I intended to take a picture of it, but found the legs as straight as ever with an almost unnoticeable swelling above the joint. So now the curiosity as it was is a thing of the past. What could have caused it, I am unable to say. The treatment I gave was the alum treatment.

J. O. STINER.

Lindsay, Cal.

IDAHO VETERINARIANS MEET

The Idaho Veterinary Medical Association held its first semi-annual meeting of 1916 at the Bannock Hotel, Pocatello, Idaho, January 27th and 28th. The meeting was called to order at 10:30 a. m. by the president, Dr. Geo. E. Noble of Boise. On roll call, twenty-four veterinarians were present.

The following program was rendered: President's address by Dr. Geo. E. Noble, giving a retrospective and a prospective view of the veterinary profession in Idaho. The address was a good one and was well received by the attending veterinarians. Dr. M. B. Wheeler of Pocatello read a paper on azoturia and its treatment. This was thoroughly discussed by several of the members present. Dr. Benj. Hendrick of Arco presented a paper on influenza and its complications, the paper bringing out many good points and a very good discussion, at the close of which the meeting was adjourned.

At 9 a. m., January 28th, the meeting was again called to order by the president. Dr. O. C. Engebretson of Burley read a paper on contagious abortion and its treatment. This paper brought out a very lively discussion by Drs. Noble, Rising, Wheeler and Whitney. Dr. N. K.

Whitney, of Rexburg, next presented a paper on differential diagnosis of nasal gleet and glanders. A short discussion followed the reading of this paper, but as the time was past the noon hour, an adjournment was taken until 1:30 p. m.

At 1:30 p. m. the meeting was called to order by the president. After a discussion on Dr. Whitney's paper on glanders, the subject of reimbursing stock growers for the loss of glandered horses was taken up. As Idaho has no laws to this effect, nothing can be done until the next legislature convenes, but it was agreed upon by all present that we will do all we can to get a bill passed to reimburse the farmers for loss of glandered horses. The matter was referred to the committee on resolutions with instructions to investigate the laws of other states relating to the reimbursing of losses of livestock killed to prevent the spread of contagious diseases, and to report at the next meeting.

The association decided to meet at Pocatello next July. After the meeting, all the members enjoyed a banquet at the Bannock Hotel.

O. C. ENGBRETSON,
Secretary-Treasurer.

Burley, Idaho.

TEXAS VETERINARIANS GET TOGETHER

In Fort Worth, March 14th and 15th, the Texas Veterinary Medical Association and the committee from the State Veterinary Medical Association formulated a plan of amalgamation for the two associations whereby a new association will be formed to automatically take over the membership of the two old associations. The name of the new association will be the State Veterinary Medical Association, this name being the one used in the veterinary practice act of Texas.

It was further agreed that the officers elected at the Texas Veterinary Medical Association meeting at Fort Worth

should be the officers of the new association until the spring of 1917 and in order to prevent any possibility of friction, veterinarians who had held office in either of the old associations, or who had served as members of the examining board of Texas, were made ineligible for office in the new association until after the spring meeting of 1917. Upon this basis the following officers were elected: Nicholas F. Williams, of Amarillo, president; W. G. Gregory, of Fort Worth, first vice-president; W. G. Brock, of Dallas, second vice-president; E. M. Wiggs, Greenville, secretary-treasurer.

The action of the Texas veterinarians at Fort Worth marks the closing of a disagreement between graduates of the state extending over a period of several years and prospects are now bright for a united effort of all the veterinarians of the state towards a common end.

In addition to this important action an excellent program and clinic was offered. The program included a symposium on

the subjects of anthrax, blackleg and hog cholera.

Among visitors who participated in the program were—A. T. Kinsley, president of the Kansas City Veterinary College; R. C. Moore, president of the St. Joseph Veterinary College; Herbert T. Palmer, representative of W. K. Mulford & Co.; Carl J. Norden, representative of the American Veterinary Supply Company, and F. R. Jones, demonstrator of the U. S. Department of Agriculture in hog cholera eradication work.

An excellent clinic was arranged at the hospital of L. C. Crabb, by the Local Committee, which comprised W. G. Gregory, C. M. Cloud, L. C. Crabb and L. F. Thompson.

THE ALABAMA VETERINARY MEDICAL ASSOCIATION

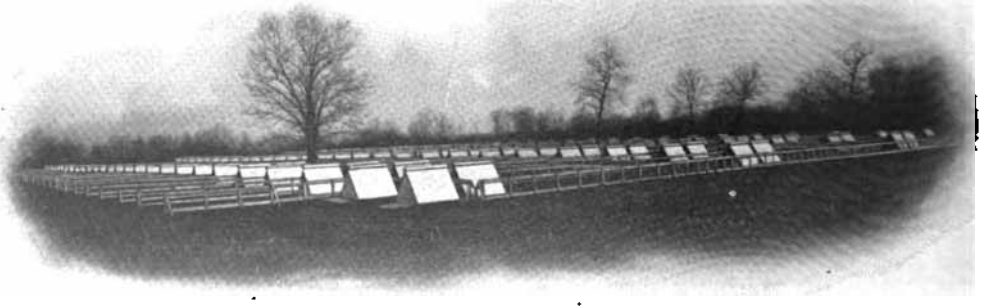
The ninth annual meeting of the Alabama Veterinary Medical Association was held at Auburn in the Veterinary Department of the Alabama Polytechnic Institute, February 18th and 19. There

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were twenty-five veterinarians present, mostly from Alabama and seventy veterinary students, a number of agricultural students and a few farmers.

President Andrade in his address called attention to the fact that Alabama has made considerable progress in the last year by securing the passage of a veterinary practice law. He also reviewed the progress of the veterinary profession in general.

The first paper read was that of Dr. W. W. Webb on abortion. In speaking about the causes of abortion Dr. Webb stated that many of the cases enumerated in the text books were rarely, if ever, factors in the production of abortion. He seemed inclined to think that infection and mechanical injuries of various kinds covered the greater number of causes of abortion.

The next paper was that of White and Williams on White Diarrhea in Chickens. The paper considered the coccidian variety and also the more troublesome type due to bacterium pullorum. This

paper was a review of the literature on the subject and presented nothing new or original.

Dr. C. W. Ferguson gave the anatomical reasons why solipeds are more subject to colic than other domestic animals. This paper led to a somewhat spirited discussion of the technical definition of colic.

King and Harget read a paper on the toxic effect of black locust in domestic animals. They first gave a review of the literature on the subject and then gave results of their experimental tests upon horses and cats. The toxalbumen found in the bark of this tree is soluble in ten per cent solution of salt and when given to an animal dissolved in this strong salt solution some of the purging action that may be attributed to the toxin may be due to the salt. This was especially brought out in the effect of the drug on a cat. Some one states that this toxalbumen affected animals similarly to that of belladonna. This is doubtful except for one or two things. It

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appears to dilate the pupil but its action on the heart appears to be entirely different from that of belladonna.

Dr. Geo. R. White gave an illustrated stereopticon lecture on cryptorchids. The illustrations and the explanations were very plain and thoroughly enjoyed by the members of the Association.

Dr. O. R. Eatman next reported a fatal case of volvulus of the small intestine.

Dr. L. E. Beckham reported several cases of parturient paresis where the affected cows failed to get down yet were true cases of this disease; they seemed to make a rather speedy recovery.

Dr. I. S. McAdory reported a case of injury of the external part of the radial region in a horse in which there was rupture of the popliteal and possibly the posterior radial arteries. He illustrated this case by using the limb of a "sub" to show the parts affected.

Dr. C. C. Middleton reported a case of intestinal calculus and presented the

broken calculus to the meeting. He stated that the animal passing this calculus had been fed on some sugar feed and it appeared that the calculus was made up of deposits of crystallized sugar about a small central stone. The calculus was turned over to the Veterinary Department of the college for analysis to determine its composition.

Dr. T. B. Gissendanner reported a case of low tenotomy. He stated that the separated parts of the perforans tendon had failed to unite.

Dr. L. F. Pritchett gave a short paper of the chief characteristics of bursati. He seemed to think that a diagnosis of bursati could be made by the peculiar odor that is associated with it, its recurrence in the animal being confined to the skin and subcutaneous tissue and its disappearance or subsidence during cold weather. He gave no permanent remedy but suggested the excision of the affected parts as often as possible might keep it down. Dr. White suggested in the discussion that the application of

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equal parts of tincture of iodine and chloride of iron would remove the kun-kurs and infection at a given place but that it was liable to return in some other part of the body.

Dr. J. R. Readon gave a synopsis of government inspection of serum plants.

On the night of February 18th, the Veterinary Medical Association of the Alabama Polytechnic Institute entertained the Alabama Association at a banquet. At this banquet there were about 150 in attendance and to say the least, it was one of the most enjoyable features of the meeting.

On February 19th, the whole day was devoted to a polyclinic. Dr. Geo. White was chief operator, doing more operating than any other veterinarian present. He castrated three colts standing, one mule in the recumbent position, operated on one cryptorchid boar, one boar with scrotal hernia and spayed one bitch. He also used his restraining apparatus on nearly all the animals operated with the exception of one that was placed upon

a Simplicity Operating Table. That case was tenotomy of the deep flexor tendon in a four-year-old stallion, the operation being done by C. A. Cary. A number of cases of lameness were presented to the veterinarians present who made the diagnosis and recommended treatment. Some of the cases presented were navicular arthritis, side bones, gonitis and one of the interesting cases presented was a fracture or dislocation of the atlas and axis in a roan horse. The surprising feature of this case was that the animal was living, but carried his head to one side and was unable to move the neck with any degree of safety. This case was discussed at length.

The veterinarians making examinations, diagnoses and suggesting treatment were Drs. Middleton, Howle, Lambert, Beckham, Eatman, Andrade, Gissendanner, Kearley, Cook and others. A very interesting case presented itself in the midst of this clinic by the appearance of a darkey with a three year old colt that had a choke in the thoracic part

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It tells, also, what is wrong with some veterinarians who are failures.

It tells some of these things in such a style—between the laughs and smiles—that the editor of the JOURNAL hesitated to publish them in the JOURNAL.

The story of "The Itinerant Horse Physician," complete as it is in this volume, is the sensation of the day in veterinary publications. Part of it appeared in the JOURNAL anonymously. When the author was at first asked for permission to publish his name as the author, he replied, "Not for ten thousand dollars". At a considerable sacrifice, he was finally influenced to permit his name to be used.

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of the esophagus. This choke was due to the animal bolting cowpeas in the hull. A rubber tube was passed by Dr. McAdory, locating the choke in the thorax. In all there were about twenty cases presented for the polyclinic.

The officers elected for the ensuing year were: President, Dr. R. I. Kearley, Andalusia, Alabama; vice-president, Dr. L. E. Beckham, Tuscaloosa, Alabama. secretary-treasurer, Dr. C. A. Cary, Auburn, Alabama.

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3. New born colt, temperature 105° F., pulse 80, slight colicky pains, makes repeated efforts to defecate, no feces being passed.

4. Heavy draft horse has had diarrhea for two days, discharges watery and offensive, tenesmus indicated by straining.

5. Angora cat has been vomiting for 24 hours. No solid material ejected, but frothy, watery fluid instead, palpation region of stomach painful, thirsty.

6. Dog, fox terrier, irregular appetite, declining in flesh, nervous, rough coat, segments of taenia marginata observed in feces.

7. Twelve pigs weighing about 150 pounds each, kept in dry lot, corn diet, un-

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Name

Address

My Tire Sizes are.....

thrifty, cough, ascaris suilla observed in feces.

8. Standard bred horse shows lassitude, tires easily when driving, erratic appetite, feces clay colored, no elevation of temperature, mucous membranes decidedly yellow.

9. Draft horse makes frequent attempts at urinating, considerable straining, rectal examination shows bladder empty and no calculi present, temperature and pulse normal.

10. Horse has copious muco-purulent discharge from both nostrils of seven days' standing, eats and drinks well, no disturbance in pulse or temperature.

No. 1.

℞ Pilocarpinae, gr. iii.
Gentiana, ℥iii.
Arecolone, gr. iss.
Aqua q s, ℥ii.
Misce et fiat.
Place on feed.

No. 3.

Barium chloridi, gr. iv.
Distilled aqua, cciii.
Misce. Sig. Hypodermically intravenously.

No. 3.

℞ Olij Castoriae, ℥iii.
Fluid extracti Nuci Vomicae, ss ʒ.
Sig. m. Give ʒi every hour.

No. 3.

℞ Pulvis Belladonnae, ʒi.
Pulvis Aloin, ℥iii.
Pulvis Nux Vomicae, ʒss.
℥ et fiat pulvis.
Sig. Give on feed 3 times a day.

No. 4.

Sodii Acetatis, ʒii.
Pulveris Opii, ʒvii.
Misce. et fiat.

No. 4.

Fluidextracti belladonnae, ℥iii.
Sodii bicarbonas, ʒiv.
Tincturae arnicae, ʒi.
Fluidextracti capsici, ʒiv.
Misce Sig. Give 3 ounces twice daily.

No. 4.

℞ Aloes Pulvis, ʒii.
Zingerberi, ʒi.
Nucis vomica, ʒii.
Eserine, gr. i-ss.
Sweet spirits of niter, ʒi.
Aqua qs, Pt. i.
Give orally at once.

No. 5.

℞ Apomorphine gr. ss.
Sig. Hypodermically.

No. 5.

℞ Ice cold water and cracked ice until relieved.

How to Judge Anti-Hog Cholera Serum

What is a potent anti-hog cholera serum?

Defibrinated blood of hyperimmune hogs, collected under strictly sanitary precautions at a time when the immunity is at its highest point.

When is it produced?

Eighteen days after the immune hogs have been hyperimmunized, at which time they return to their normal condition.

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Under U. S. Government License Number 46, subject to Federal Regulations and Inspection.

Where is it produced?

At the modern sanitary laboratories of the St. Joseph Live Stock Serum Company.

How do you know that our product is as represented?

Because we kill our hyperimmune hogs outright and collect all of the blood at one time. Visit our plant and be convinced and when you vaccinate, use ST. JOSEPH LIVE STOCK SERUM CO'S. SERUM.

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No work more important than this to Veterinarians has appeared in a decade; it takes up the whole subject in a systematic manner; giving the description, life history, and the means of eradicating or controlling animal parasites, or lessening the nuisances caused by them.

BRIEF TABLE OF CONTENTS

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II Parasites and Parasitism.	XIV House Fly Control.
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VIII Bedbugs and Conenoses.	XX Venomous Insects and Arachnids — Bees, Wasps, Spiders, Scorpions, etc.
IX Mosquitoes.	Appendix General Classification of Bacteria and Protozoa.
X Mosquitoes as Disease Bearers.	
XI Mosquito Control.	
XII Buffalo Gnats and Hornflies.	

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AND

Dose Syringes

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Scalpels, Bistouries, Tenatomes,
etc., are the best

WRITE US FOR PRICES

No. 5.

℞ Tincturae cocaine, gr. is.

Lini Olei, ℥ii.

Misce each separate.

Give with small amount of milk (each separate).

No. 5.

℞ Epicac, ℥i-ss.

Phenol, ℥i-ss.

Aquaes qs, Pt. i.

Misce et fiat solution of.

Give orally at once.

Followed by Dr. to clean out alimentary tract.

℞ Olei casteriae, ℥ii.

Milk qs, Pt. i.

Misce. Give orally at once.

No. 7.

℞ For 12 pigs with cough, unthrifty.

Set in a kettle of lye.

No. 7.

Magnesii Sulphata, lbs. xii.

Aqua qs, Cong. vii.

Misce. Give as a drench. Give each hog two drenches, one today and one tomorrow, each drench being 2℥.

No. 7.

℞ Pulvus Sodii Sulphatis, lb. 1.

Pulvus Nitrates, lbs. xxv.

Tr. arenae, ℥xx.

Misce. Sig. Give three lbs. twice daily in slop consisting of shorts, also change diet.

No. 8.

℞ Pulveris aloin, ℥ii.

Aquaes, ℥i.

Misce. Sig. Give at once.

No. 8.

℞ Hydrogeri mitis, gr. 60.

Petrolyten, gr. 60.

Make into four boluses.

Sig. Give one night and morning in ounce capsule by mouth.

No. 9.

℞ Tincturae iodi, ℥i.

Alcoholis, ℥vi.

Aquaes, ℥v.

Mi. Sig. Inject one (1) ounce into bladder every twelve (12) hours.

No. 9.

℞ Potassi Nitratis, ℥ii.

Give hypodermic injection intravenously; if no better in two days obtain same amount again and give dose again.

No. 10.

℞ Sodii chloridi ℥xv.

Aqua qs to make mild saline solution.

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Anti-Fis-Tract is a scientific and inexpensive treatment for Fistula of the Withers, Poll-Evil, Shoe Boil, Quittor, Deep Humeral Abscesses, Actinomycosis of the Parotid Region in cattle, and all such tracts or abscesses containing a Pyogenic Membrane.

Having been on the market two years and passed the experimental stage it is worth the consideration of any Veterinarian that wants quicker results and less labor than with the old time methods.

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Misce. Heat and allow the horse to inhale the steam.

No. 10.

℞ Phenol, 4 per cent.

Aquae qs.

Heat qs.

Sig. Steam animal good for a few minutes.

No. 10.

℞ Olei Eucalypti, ℥iii.

Olei Terbinthine, gr. xxxii.

S By syringe squirt up in head.

HERMAPHRODITISM IN THE OSTRICH.

By Stanley Elley, M. R. C. V. S.

In April of 1910 I was requested by Mr. E. T. L. Edmeades, of Kamnatie and Vergelegen (Oudtshoorn) to castrate about a dozen cock birds which it was intended to use later as foster parents for young chicks. When I arrived at Kamnatie I saw the birds in the kraal, to all appearances fully grown male birds, with feathers of from four to five months growth. The birds were in good condition, some being red-legged. The first two birds were operated upon successfully, and the third bird was chloroformed; but after making the incision and attempting to locate the right testicle, no trace of it could be found. I was informed that all the birds

were between seven and ten years old, so that the generative organs should be fully developed. My first thought was that the birds chosen by Mr. Edmeades for operation had by mistake been mixed with birds from Vergelegen, Mr. Edmeades' other farm, where, in 1909, I had operated upon a number of birds, but I was assured by Mr. Reggie Edmeades, who was present, that there had been no movement of birds between the two farms.

Failing to find the right testicle, I broke through the fold of peritoneum which normally separates the two testicles, and endeavored to locate the left one, but in place of a testicle I found what felt like a small ovary. Tracing this along, two flabby slightly elongated structures, somewhat the size and shape of an ordinary bean, were noticed, one attached to either side and the left about an inch anterior to the right. The whole mass was removed, and upon further examination proved to be an imperfectly developed ovary, to either side of which was attached a rudimentary testicle. The total weight of the ovary and testicles was barely two ounces.

After completing the operation I examined the bird "per cloacum," and found the penis was developed, but resembled that organ as seen in a young bird of about six months.

My reasons for recording this case are, firstly, that I believe it to be the first time

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This old, time-tried antiseptic, astringent, and cooling lotion in tablet form. For sore shoulders, harness galls and superficial wounds.

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Our product is scientific and up to date. This serum is of known high potency and is thoroughly tested on our own herds before being shipped.

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that hermaphroditism in the ostrich has been recorded.

Secondly, that it may be of service to any other operator confronted with a similar case. Thirdly, since it may serve as a possible explanation of some of the cases of disappointment which one so frequently hears of when birds are camped off for breeding but fail to pair. Finally, if this case be taken as a type of all hermaphrodite ostriches, it supports the fact first noticed by Mr. Walter Rubidge, of Graaff-Reinet, and later confirmed by Mr. P. D. de Villiers, of Beaufort West, namely, that a large proportion of castrated hens acquire the characteristic plumage of cocks; for here was a bird which could not be classed as either cock or hen, but in which the female organs of generation were at least as fully developed as those of the male, and yet the plumage was most distinctly that of the male, showing that if there is a doubt about the sex, the plumage will incline to that of the male.—*The Agricultural Journal* (Cape of Good Hope).

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Some time ago I received your book by Lacroix, "Animal Castration," which completes my set of your splendid series, and if a student be allowed to express his opinion, I think it covers, well, the whole subject of

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Toronto, Canada. G. H. SHULL.
Ontario Veterinary College, Class of '16.

Yes sir! Publish the little book "The Itinerant Horse Physician."

Snyder, Okla. J. W. SKAGGS, V. S. D.

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The new inspector stood with his knife in his hand,

His face was haggard and pale,
He was trying to "incise" every cervical gland,

As the hogs passed by on the rail.

They were coming at the rate of about nine a minute,

And the "header" was not cutting them right.

One would come by without a gland in it.
In the next they'd both be in plain sight.

"Each hog must be clean, and we want to be fair,"

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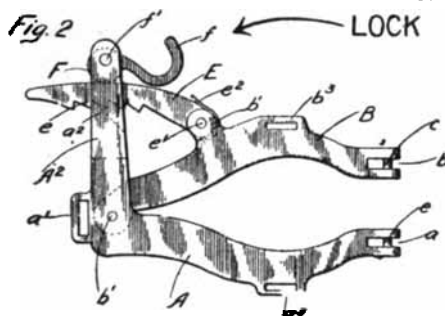
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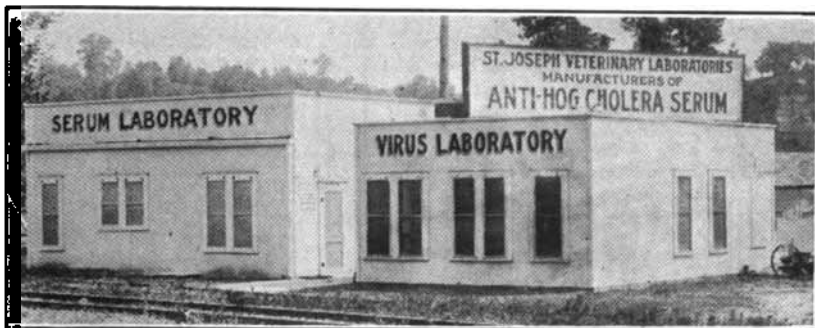
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"And you want to be sure they don't leave any hair,
Between hogs you can hone your 'incisor.'

"Slice up each gland as much as you can.
Hang out all 'Hog Cholera' and 'Plague,'
Look out for vaccination abscess in the ham,
Don't tag it—just break down a leg.

"Watch out for boils at the base of the ear,
And 'skurf' just inside the shoulder,
In case of 'tuberc' the gland will appear,
Full of pus or as hard as a boulder.

"When you find this-or-that, or other disease,
Your knife must be disinfected.
First hold in hot water to wash off the grease,
As the inspector in charge has directed.

"Now there is a hog that you ought to 'hang out,'
Put on your tags good and tight,
And be sure you don't mix the number about,
So the final man's count will come right.

"In whetting your knife don't spit on the stone,
Cause that is so very untidy,
Don't skip any cholera—cause it'll show in the bone,
And be picked up by our 'Man Friday.'

"Now I am going to leave you alone for the day,
I have to 'check up' a new label,
Be sure you don't let anything get away,
That you wouldn't want put on your table."

Next morning this inspector was found in his bed,
Both his hands were full of his hair,
The doctor came and said, "He's is out of his head,
Or having a horrid nightmare."

When the patient turned over and looked in their faces,
They could see he was in a bad way,
His left hand was cut in seventeen places,
And he said in a mumbling way.

"Head off that hog! He is not quite dead,
And his glands are certainly 'bad,'"
He reached up and pulled some more hair from his head,
The poor devil had gone raving mad.
CARL E. FREEMAN.
Galveston, Tex.

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Due to the many inquiries we are receiving regarding our ability to supply **PASTEUR'S ANTHRAX VACCINE, Single and Double, Etc.,** during this season, we take this means to notify the trade that we are in a position to supply all demands for this vaccine and all other **PASTEUR** products, including Profs. LeClainche and Vallee's

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After extended experiments in Europe, Prof. LeClainche, chief of the Sanitary Bureau of the French Department of Agriculture, and Prof. Vallee, Director of the Veterinary School at Alfort, France, have perfected the first improvement made in more than a decade in the prevention of blackleg.

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ASSOCIATION MEETINGS

The information given below is up-to-date and has been furnished by the secretaries of the various associations listed. Secretaries are requested to supply the data regarding their associations after each meeting; otherwise, the association will necessarily be dropped from the list. We ask secretaries to kindly co-operate with us in keeping before the members of their associations the date and place of the next meeting.

Name of Association	Date of Meeting	Place of Meeting	Secretary
Alabama Vet. Med. Assn.	Jan. 10, 1917.	Columbus, O.	C. A. Cary, Auburn, Ala.
Alumni Assn., Col. of Vet. Med., O. S. U.	June 10, 1918.	New York.	W. R. Hobbs, O. S. U., Columbus, O.
Alumni Assn., N. Y. State Vet. College.	April 18, 1918.	Washington, D. C.	P. K. Nichols, Fort Richmond, N. Y.
Alumni Assn., U. S. Col. Vet. Surg.	Aug. 31, 25.	Detroit, Mich.	Chas. M. Mansfield, 1344 Newton St., Washington, D. C.
American Vet. Med. Assn.	January, 1917.	Little Rock.	C. M. Haring, Berkeley, Cal.
Arkansas Vet. Med. Assn.	3rd Monday of month.	So. Omaha, Neb.	E. M. Gow, Little Rock.
B. A. I. Vet. Assn. of So. Omaha.	2nd Wed. in Mch., June, Sept., Dec.	Univ. Farm, Davis, Cal.	J. W. Giffen, c/o B. A. I., So. Omaha
California State Vet. Med. Assn.	Jan. 18.	Ottawa, Ont.	UNIVERSITY OF CAL., Berkeley.
Central Canada Vet. Assn.	Last week in June and Nov.	Syracuse, N. Y.	H. D. Sparks, 448 Wellington St., Ottawa.
Central N. Y. Vet. Med. Assn.	2nd Tues. of month.	Chicago, Ill.	R. H. Yunker, 2344 N. 18th, Philadelphia.
Chicago Vet. Society	June 1.	Ft. Collins, Colo.	W. B. Switzer, Oswego, N. Y.
Colorado Vet. Med. Assn.	January 27.	Rochester, N. Y.	Glenn Brown, 3806 Lowell Ave., Chicago.
Connecticut Vet. Med. Assn.	Aug. 23, 24, 1918.	Savannah, Ga.	J. E. Newsom, Ft. Collins, Colo.
Genesee Valley Vet. Med. Assn.	Monthly	Jersey City, N. J.	A. T. Gilyard, Waterbury, Conn.
Georgia State Vet. Assn.	Feb. 4, 1917.	Boise, Idaho.	A. F. Webber, 154 Andrews, Rochester.
Hudson Co. Vet. Practitioners' Club.	July 26, 27.	Pocatello, Idaho.	Peter F. Bahnsen, Capitol Bldg., Atlanta.
Idaho Assn. of Vet. Graduates	July 19, 1918.	E. St. Louis, Ill.	B. D. Blair, 782 Montgomery St., Jersey City, N. J.
Idaho Vet. Med. Assn.	April 17.	Indianapolis, Ind.	C. V. Williams, Blackfoot, Idaho.
Illinois State Vet. Med. Assn.	Jan. 17, 18 and 19, 1918.	Ames and Des Moines.	O. C. Engebreton, Burley, Idaho.
Illno Vet. Med. Assn.	Jan. 3, 4, 1917.	Wichita, Kan.	L. A. Merillat, 1827 Wabash Ave., Chicago.
Indiana Vet. Med. Assn.	April	Louisville, Ky.	A. R. McKinley, Freeburg, Ill.
Iowa Vet. Med. Assn.	2nd Tuesday of month.	Philadelphia	A. F. Nelson, Indianapolis, Ind.
Kansas Vet. Med. Assn.	3rd Wed. of month.	Los Angeles	H. B. Treman, Rockwell City, Ia.
Kentucky Vet. Med. Assn.	April 12, 1918.	Bufford, Me.	J. H. Burt, Manhattan, Kan.
Keystone Vet. Med. Assn.	Feb. 15.	Winnipeg, Man.	Robt. Graham, Lexington, Ky.
Los Angeles Vet. Med. Assn.	4th Wed. each month.	Worcester in Sept.; Boston rest of year.	L. B. Davis, 857 E. Girard, Philadelphia.
Maine Vet. Med. Assn.	1st Tues. & Wed. after 1st Mon. in February.	Lansing, Mich.	J. A. Dell, 16th & Pacific, Los Angeles.
Manitoba Vet. Assn.	Jan. 10, 11, 1917.	St. Paul.	M. E. Maddocks, Augusta, Me.
Massachusetts Vet. Assn.	2nd Tues. & Wed. Jan.	Clarksdale, Miss.	W. Hilton, 275 James St., Winnipeg.
Michigan State Vet. Med. Assn.	July 7, 1918.	Quincy, Ill.	E. A. Cabill, Boston, Mass.
Minnesota State V. M. Assn.	Last week in July.	Omaha, Neb.	W. Austin Ewalt, Mt. Clemens, Mich.
Mississippi State Vet. Med. Assn.	Jan. 28, 29.	Bozeman	G. Ed. Leech, Winona, Minn.
Mississippi Valley Vet. Med. Assn.	2nd Mon. to Aug., 1918.	New York City.	S. S. Norton, Greenville, Miss.
Missouri Vet. Med. Assn.	1st Tues. & Wed. in Dec.	Lincoln, Neb.	W. Lester Hollister, Aron, Ill.
Montana Vet. Med. Assn.	Aug. 2, 3, 4.	Utaca, N. Y.	E. F. Bourne, 1330 E. 15th, Kansas City.
Natl Assn. B. A. I. Employees			C. D. Poles, 1300 E. 15th St., Kansas City.
Nebraska Vet. Med. Assn.			A. D. Knowles, 343 E. 4th St., West Missoula, Mont.
New York State Vet. Med. Society			S. J. Walker, 133 N. W. Ave., Milwaukee.
			E. W. Alford, Lincoln, Neb.
			C. P. Fitch, Utaca, N. Y.

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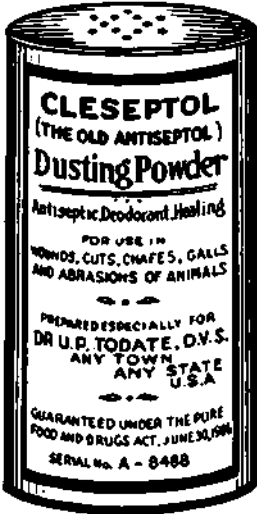
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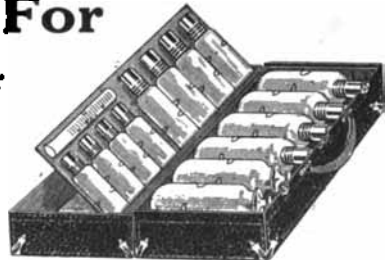
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Name of Association	Date of Meeting	Place of Meeting	Secretary
North Carolina Vet. Med. Assn.	June 22, 23, 1916.	Wrightsville Beach, N. C.	J. P. Bacon, Burlington, N. C.
North Dakota Vet. Assn.	5 days, last week July.	Fargo, N. D.	W. J. Malrooney, Havana, N. D.
Northeastern Indiana Vet. Assn.	Sept. 12.		C. E. Baumgartner, Arcata, Ind.
Northwestern Ohio Vet. Med. Assn.	Feb. 18.	Columbus, O.	Paul E. Wood, Ottawa, Ohio
Ohio State Vet. Med. Assn.	Jan. 11, 13, 1917.	O. E. U. Columbus, O.	F. A. Lambert, care O. S. U. Columbus
Ohio Valley Vet. Med. Assn.	Feb. 8, 9.	Terre Haute, Ind.	G. J. Behrens, Evansville, Ind.
Oklahoma Graduate Vet. Med. Assn.	July, 1916.	Oklahoma City.	R. C. Smith, Enid.
Oklahoma Vet. Med. Assn.	March 7, 8.	Oklahoma City.	S. H. Gillier, Norman, Okla.
Oregon Vet. Med. Society.	June, 1916.	Probably Corvallis, Ore.	B. T. Emma, Corvallis, Ore.
Pennsylvania State Vet. Med. Assn.	Nov. 22, 23, 1916.	Pittsburgh, Pa.	E. H. Yunker, 2344 N. 18th, Philadelphia.
Rhode Island Vet. Med. Assn.	2nd Tues. Jan.	St. Wayne, Ind.	U. S. Richards, Woonsocket, R. I.
Schuylkill Valley Vet. Med. Assn.	June 14, 1916.	Reading, Pa.	C. R. Fetzinger, Reading, Pa.
South Dakota Vet. Med. Assn.	July 11, 1916.	Lake Madison.	S. W. Allers, Watertown, S. D.
Southern Aux. Cal. State Vet. Med. Assn.	3rd Wed. Dec.	Los Angeles.	J. A. Dell, 16th & Pacific, Los Angeles.
Tenn. Vet. Med. Assn.	Nov. 17, 18, 1915.	Chattanooga, Tenn.	J. H. McMahon, Columbia, Tenn.
Texas Vet. Med. Assn.	March 14, 15, 1916.	Not decided.	Alton A. Foster, Marshall, Tex.
Twin City Vet. Med. Society.	Once a month.	St. Paul.	C. C. Palmer, St. Paul, Minn.
U. S. Live Stock Sanitary Assn.	Dec., 1916.	Chicago.	J. J. Ferguson, U. S. Yard, Chicago.
Utah Vet. Med. Assn.	Feb. 5.	Lowry, Utah.	E. E. Coburn, Brighton City, Utah.
Veterinary Assn. of Saskatchewan.	March, 1916.	Regina, Sask.	R. G. Chasmar, Hanley, Sask.
Vet. Med. Assn. of New Jersey.	2nd Thurs. in Jan.	Trenton, N. J.	R. L. Loblein, New Brunswick, N. J.
Vet. Med. Assn. of N. Y. City.	1st Wed. ea. mo. except July, Aug., Sept.	New York City.	R. S. MacKellar, 251 W. 11th St., N. Y. C.
Vet. Med. Assn. of Geo. Washington Univ.	1st Sat. each month.	Washington, D. C.	C. W. Rippon, 1115 14th St., N. W., Washington, D. C.
Vet. Med. Society Wash. State College.	1st and 2nd Tues. ea. mo. July 13, 14.	Pullman, Wash.	Claude Tolson.
Virginia State Vet. Med. Assn.	June, 1916.	Ocean View, Va.	W. G. Christian, Blacksburg, Va.
Washington Vet. Med. Assn.	June, 1916.	Seattle, Wash.	Carl Coster, Bellingham, Wash.
Western N. Y. Vet. Med. Assn.	Last week in June.	Buffalo, N. Y.	F. F. Fahr, 36 Prospect Ave., Buffalo.
Wisconsin Vet. Med. Assn.	July.	Menominee, Wis.	W. A. Wolcott, Madison, Wis.
York Co. Vet. Med. Society.	1st Tues. after 1st Mon. of each month.	York, Pa.	R. S. Bausticher, 325 Newberry, York, Pa.

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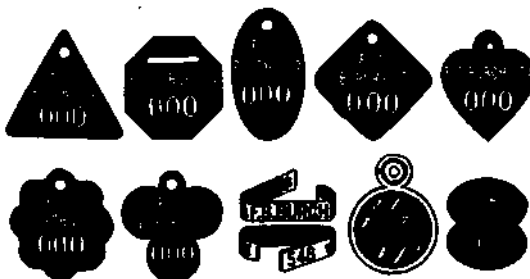
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Logan, Ia. F. B. COPELAND, D. V. M.

I think your publication of "The Itinerant Horse Physician" very good. It gets a reader more deeply interested, and it is also instructive.

Leaf River, Ill. DR. J. D. CORSON.

North Dakota, Texas, Kentucky and North Carolina agricultural colleges are giving first and second year courses in veterinary medicine, and Georgia will begin a similar course next year.

Contagious pneumonia of horses was present to an alarming extent in Pittsburgh recently. A large number of horses died, the Adams Express Co. having lost twenty-eight from this disease in a short time.

THE ILLUSTRATIONS HELP THE BEGINNER

I have carefully looked over the book "Animal Castration" by Dr. Lacroix, and I think it is a good work for the student, also for the man that is just starting out to prac-

tice. As I am a student, the illustrations are a great help.

Grand Rapids, Mich. W. D. IRELAND.

Dr. R. B. Corcoran, retired veterinarian of the United States Army and a resident of San Francisco, Cal., for many years, died recently and was buried with full military honors. Dr. Corcoran was 71 years old, joined the army in 1877 and was through several Indian campaigns and served in Cuba.

An appropriation of \$1,000,000 to the Rockefeller Institute of Medical Research for additional endowment needed for the department of animal pathology recently established near Princeton, N. J., was announced March 19th by the Rockefeller Foundation. This fund will be used to undertake the study of animal diseases.

The Veterinary Medical Association at the Michigan Agricultural College elected the following officers for the coming year: President, H. J. Stafseth, Minneapolis; C. S. Burgett, vice-president, Athens; secretary, H. A. Weckler, South Haven; treasurer, C. B. Olney, Fremont.

Dr. R. L. Bratton has changed his location from Rantoul to Roberts, Ill., where he will succeed Dr. H. J. Campbell, who expects to move to Wisconsin.

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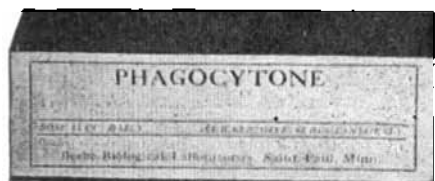
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Case report from American Journal of Veterinary Medicine.

Regarding the use of Phagocytone in pneumonia, I consider it far superior to anything I have ever used. Was called to a case last week, temperature was 106.5 deg. F., pulse 70, respiration 30. I gave a dose of Phagocytone and called next day. The temperature was 105 deg. F., pulse 60, respiration 24; left some stimulating treatment to be given. Returned the next day, and found patient about the same, only a little brighter. I doubled the dose of Phagocytone. The next morning the owner called me by telephone and said, "My patient seemed much better this morning, but I guess you better see him once more." I saw him that afternoon; temperature 101, pulse 52, respiration 22, and wanted to eat everything in sight. I prescribed a tonic and left.

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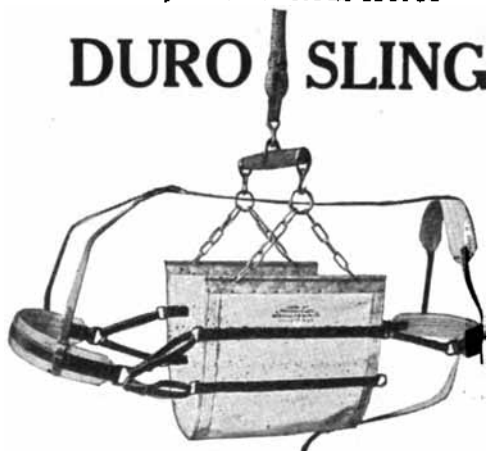
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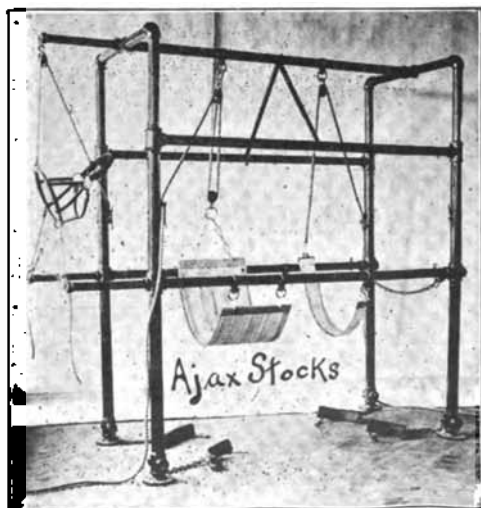
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"Recent investigations," according to a writer in the *Training School Bulletin* "indicate that in every thousand of the population there are three persons so weak in mind as to be dangerous to society. Even the most conservative investigators for at least twenty-five years have agreed that the ratio is at least two in every thousand. The feeble-minded people cannot care for themselves properly nor manage their lives with prudence. They become easy victims of vicious people. They are unfit for parenthood because their children almost surely inherit their defects. Most of these weak-minded people are at large. Their presence in the community complicates other social problems. Many tramps, drunkards, prostitutes, paupers, delinquents and criminals are what they are because without proper care and control it is impossible for them to be anything else.

"Eighteen States in the Union have so far made no provision for these, their weakest citizens. In no state is there anything like adequate provision for them. The great majority of them are free in the community, debased and debasing and ever increasing the number of the antisocial classes. There is unmistakable evidence that intelligent people and communities all over the country are being aroused to the menace of the feeble-minded. That it is a real menace no one

with knowledge of the facts questions. More than eighty-five in every hundred of this class are outside of state control. There is little or no check to their reproducing their kind. The administration of our penal, correctional and charitable institutions is seriously hampered and complicated by their presence in these institutions. More than a third of the states have made no provision for their care. There is nothing like adequate provision in even a single state. Our public schools face the necessity of providing educational facilities suited to the needs of retarded and backward children, and the even greater necessity of so adjusting this special work that the retarded or merely backward child shall not be identified with the true mental defective."

I have had the pleasure of examining "Essentials of Veterinary Law" by Dr. Henry Bixby Hemenway. It is well written and contains a vast amount of valuable information for the practicing veterinarian. Every veterinarian who reads it will derive much benefit from it, and it would make a valuable addition to his library. The profession is indeed fortunate to have such a book published.

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Dallas, Texas. **DR. FLOWERS.**

A. Van Cycle, of Twining, Mich., was arrested on the charge of acting as a veterinary surgeon without a state license. His case will come up for trial April 1st.

Representative Mann, of Illinois, in a speech in the House of Representatives, February 1st, charged that much of the \$2,500,000 fund appropriated by Congress to fight foot-and-mouth disease, had been misapplied, some of it having been spent on an ostrich farm in Arizona. He said there had been "gross violations of ethics, if not of the law." He offered no proof to substantiate his bald statements.

ITS TEACHING AN AGREEABLE SURPRISE

I have examined "Wound Treatment" with great care and was surprised to find the book to be what it is. It is a work I have long looked for. It is concise, practical and to the point. It fits me O. K. and should be in the hands of every veterinarian, and those who haven't a copy don't know what they are missing. Now when I have a wound to treat,

I know I am treating it in the proper way. Words fail me to express the real worth of this book.

Crofton, Neb. **J. M. CANFIELD, D. V. S.**

INVALUABLE TO THE VETERINARIAN

"Wound Treatment" by Merrillat, Hoare, et al, is an invaluable book for any veterinarian. I believe the general condemnation of the promiscuous use of strong antiseptic solutions is a good point for better results. Give nature a chance.

Normal, Ill. **J. G. BLUM, M. D. C.**

Officials of the New York Department of Health have announced that all shipments of shaving brushes from London will be examined for the presence of anthrax germs. Dr. A. K. Chalmers, Health Officer of Glasgow, Scotland, informed the New York officials that "living, thriving anthrax germs" had been discovered in brushes shipped from London.

Twenty-six persons were bitten by a mad dog at Van Alstyne, Texas, March 1st. Thinking the puppy was in play, a number of persons allowed it to snap at their hands and legs. The dog died in a few days and upon examination at the Pasteur Institute, it was found to have rabies.

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I have partly perused Lacroix's "Animal Castration," and feel more than repaid already. I consider it an excellent book for the busy practitioner or the recent graduate. I am now sending for Saunders' "Canine Medicine and Surgery," which will complete my set of the VETERINARY MEDICINE SERIES except for the first volume. I consider them all invaluable—an abundance of knowledge, easily accessible, in small volume.

WILLET C. MOUNT, D. V. M.
Red Bluff, Cal.

PROPOSED MISSISSIPPI DISINFECTANT LAW

House Bill No. 892, by Mr. Kyle. Read twice and referred to the Committee on Health and Quarantine.

§1. Be it enacted by the Legislature of the State of Mississippi, That the State Board of Health shall fix the standard of disinfectants to be used for any purpose whatsoever by the State and every County in the State.

§2. No disinfectant shall be offered for sale or sold or purchased for any purpose embraced in the first section of said Act unless a sample of such disinfectant shall have been first submitted to the State Chemist for chem-

ical analysis, and upon the basis of such analysis the State Board of Health shall approve said disinfectant as being up to the standard so fixed by the State Board of Health.

§3. All expenses incident to the analysis and approval or disapproval of said disinfectant shall be paid to the State Board of Health by the person, firm or corporation offering such disinfectant for sale.

§4. A fee of not less than \$5.00 shall be paid by the person, firm or corporation offering said disinfectant for sale to the State Board of Health to cover the cost of registering a copy of the analysis with the State Board of Health; and a certificate shall be issued by said State Board of Health, showing that said disinfectant so offered for sale is up to the standard as fixed by the said State Board of Health.

MOST PRACTICAL WORK ON CASTRATION

I received Lacroix's "Animal Castration" and have read it from cover to cover. I think it the most practical work on animal castration that I have ever had the opportunity to read. Every country practitioner should have it.

Davis, Ill.

B. F. Hoover, V. S.

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G. W. DENTON, D. V. M.
LaFontaine, Ind.

I received your book, Dr. White's "Animal Castration" and will say it is the best I ever saw. Your book "Poultry Diseases and Their Treatment" is fine. All the books I have ordered are splendid and I think they are all worth more than many times their cost to any veterinarian.

Dresden, Tenn. J. B. L. TERRELL.

Dr. Joseph P. Connors, Leslie L. Richardson and John Duggan, of Leominster, Mass., were brought into court by the Massachusetts S. P. C. A., March 31st, charged with cutting the bone of a horse's tail for the purpose of docking. Dr. Connors claimed the operation

was performed because of a diseased condition of the tail, while the prosecution maintained it was done because the "class" demanded that the tail be cut. The three defendants were found guilty and each was fined \$100. They appealed the case.

Dr. Earl W. Maxwell, of Kingstown, Ohio, who has been serving as state field veterinarian, has been regularly appointed to that position by the state board of agriculture at a salary of \$1,200 a year.

The Mississippi house passed a compulsory cattle dipping bill, which applies to the entire state, March 13th.

A four years' course in veterinary medicine, leading to the degree of Doctor of Veterinary Science, will be included in the 1916-1917 curriculum of the Agricultural and Mechanical College of Texas.

According to figures submitted by Wm. D. Hunt, of Brookline, Mass., at the annual meeting of the New York State Association of Horsemen, the value of horses in the United States is three times that of all the automobiles in the country. He said there are at present about 25,000,000 horses on farms and in the cities. This is 7,000,000 more than were reported in 1900. The total value of the

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horses in the country is \$3,032,282,000, while the estimated value of the 1,800,000 automobiles in the United States is \$1,260,000,000. Horses have decreased 200,000 in number through exportation since 1909, but their total value has increased \$4,000,000.

Dr. C. J. Dibble, of Hudson, Mich., while treating a horse for tetanus, accidentally injected a quantity of antitoxic serum into his own hand. The doctor became quite ill as a result, but has since recovered.

LIKES LACROIX'S METHOD OF SPAYING

Lacroix's "Animal Castration" is a great book. The chapter on "Castration of the Dog" (spaying) is fine. It alone is worth the price and more. I am well pleased with all the books of the "VETERINARY MEDICINE Series."

Providence, R. I. J. D. JONES, M. D. C.

GIVEN A PROMINENT PLACE ON HIS DESK

I have carefully read Lacroix's "Animal Castration" and must say I consider it a most valuable little volume on the subject. The other eight volumes of the set also occupy a very prominent place on my desk.

DR. CHAS. S. PLASTERER,
Valley Center, Kans.

Dr. Fred R. Wiedner, of Savannah, Mo., was arrested on a charge of burglary, March 13th. He was accused of having stolen feed from the barn of the Nichols sanitarium.

An unusual heat wave in Argentine during March caused an enormous mortality among livestock. In one district in the Province of Santa Fe, alone, from five to six thousand head of cattle died, involving a loss of nearly a million dollars to the ranch owners.

According to Dr. W. H. Lytle, State Veterinarian, the Oregon state livestock sanitary board is considering recommending to the legislature that the law be amended so that veterinarians may be appointed for each county. Dr. Lytle states such a plan would increase the efficiency of the department without increasing the expenditures.

Dr. J. W. Harmar recently changed his location from Paris, Ark., to Little Rock, Ark.

The Westport, Mass., board of health has appointed Dr. William W. Kirby to take care of the work of inspection of cattle, which will be done without charge to the owners.

Dr. Peter F. Bahnsen, state veterinarian of Georgia, has named Dr. Wm. E. White, of Thomas county, and Dr. Ray Kelley, of Val-

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dosta, as agents of the state bureau of animal industry, to co-operate with federal agents in the spring campaign against the cattle tick.

Dr. J. F. Stoner, of Villa Grove, Ill., and Miss Hallie M. Chipman, of Momence, Ill., were married on March 18th.

Dr. Clarence Griffin, formerly of Potomac, Ill., has moved to Bismarck, Ill.

Dr. E. R. Majors, a veterinarian, was killed by Dr. C. S. Lynch, a practicing physician of Hugo, Okla., in a shooting scrape at Boswell, Okla., March 23rd. Dr. Majors had filed suit for \$30,000 damages against Lynch for alienating Mrs. Majors' affections. Before dying, Dr. Majors stated he and his brother were attacked by Lynch, who had a shotgun. The friends of Lynch claim he acted in self-defense. Dr. Majors' brother was seriously wounded.

Dr. W. F. Jones, for many years an inspector in the Bureau of Animal Industry, has resigned and gone into practice at McCook, Neb.

The State Live Stock Association of Illinois was organized at Peoria, Ill., March 28th. About one hundred farmers were in attendance.

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"I have the book 'My Best Paying Prescriptions' and think it is a dandy."—Dr. S. M. Nissley, Bellefonte, Pa.

Dr. E. T. Baker of Moscow, Idaho, in ordering a second copy of the book, says, "I have the little book, but think so much of it, want to give one to a friend of mine."

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Dr. F. E. Johnson, of Charleston, Ill., has opened an office for veterinary practice at Westfield, Ill.

Lacroix's "Animal Castration" is a very useful and practical little volume, well worth the price.

Hazel Dell, Ill.

R. F. REEDS, V. S.

FOLLOW ITS TEACHINGS TO ELIMINATE THE EMPIRIC

Lacroix's "Animal Castration" is indeed a fine little work; in fact, I consider it the best I have ever seen on the subject. It bears evidence on every page of having been written by one well acquainted with both the theoretical and practical sides of the subject. I believe the only way we can ever eliminate the empirical castrator and "handy man" is by not only knowing how to do superior work but by actually doing it. No pains should be spared to execute a perfect technic, as nearly as possible. The results will speak for themselves and the public will awaken to the fact that it pays to employ a veterinarian to do this work even though he charges a good fee. To follow the teachings in Lacroix's book is to do good work and for that reason, I can most heartily recommend it to any practicing veterinarian.

Secretary of Agriculture Houston, on March 31st, issued an order removing all quarantines and restrictions against the shipment and movement of livestock on account of foot-and-mouth disease. The order specifically removed the quarantine from a small territory in Christian County, Illinois, the last area which was under suspicion.

Dr. B. F. Carter, a veterinarian of Norristown, Pa., and Miss Elizabeth Bisbing, were instantly killed April 2nd, when the automobile in which they were riding was struck by a freight train. Miss Bisbing and Dr. Carter were to have been married in May.

Dr. Stanley C. Brouse, of Eaton, Ohio, a graduate of the Ohio State Veterinary College, located at Boston, Indiana, April 1st.

J. V. Stevenson, of Smith township, Pa., was awarded damages to the amount of \$1,001, in his suit against F. W. Dorsey for the alleged misrepresentation of a certain dairy herd sold by the defendant to the plaintiff. Mr. Stevenson claimed that Mr. Dorsey guaranteed the cattle to be sound when they were not, which it was averred, was known by the defendant. Several veterinarians were called as witnesses.



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Animals that Prey Upon Sheep

By E. T. BAKER, Moscow, Idaho

WHILE all live stock suffer from the depredations of predatory animals, the sheep man, however, is a heavier loser than the owner of other domestic animals. In the Eastern states, the mongrel dog has nearly ruined the industry; in the Western states, where sheep are raised by the million, a varied assortment of animal pests annoy the stockmen.

Notwithstanding the bounties given by both the state and by live stock associations, it is not an exaggeration to say that over five million dollars worth of sheep are destroyed annually by predatory animals in the West alone. Some years ago, when California offered a bounty of five dollars per coyote, over 70,000 were killed in one year, and to keep from becoming bankrupted, the state repealed the law. Last year, in only nine months of the year, nearly 15,000 coyotes were killed in Idaho and presented for bounty, and the appropriation exhausted. Because these campaigns against predatory animals have been only sporadic, it has allowed them to increase enormously during the past few years and become a serious menace to the stock industry. If every state would offer a uniform bounty for the next ten years, these marauders would soon become practically exterminated.

The chief predatory animals are the coyote, lynx, wild cat, cougar and wolf. The bear is classed as one, but is grouped in bad company, and the prairie dog is a nuisance in destroying the grass on the range where it abounds. The coyote does as much damage as all the others combined; the wolf is annoying to cattlemen especially, as it does not care much for mutton. It is a common estimate in the West that a coyote destroys \$100 worth of property a year, and a wolf \$1,000. The mountain lion or cougar is the particular enemy of deer, one cougar killing on the average fifty of these beautiful timid animals a year. Only one bear out of a hundred perhaps does any harm to the stock man.

The Coyote

"Th' durndest, sneakin'est reptile thet lives" is the unanimous verdict of all western stockmen. This animal is a member of the dog family and has all the cunning attributes claimed for him by disgusted "buckaroos" who have exhausted their patience in trying to shoot, trap or poison him.

While civilization drives the rest of wild animal life still farther back into the mountains, the coyote seems to appreciate the coming of the emigrant. With the greatest of enjoyment he

lives off of fat lamb or veal, and no cleric relishes chicken any better than he. In the most unlooked for places,

eral government starting a region-wide campaign against the worst enemy of the sheep man.

Wild Cats and Lynx

A bobcat getting among a band of sheep seems to kill for the sole pleasure of killing. A hundred or more sheep will be found dead, untouched, save for the gash in the throat. They are very cowardly and shy, and for this reason, do not cause a great deal of damage. Still, one bobcat with a taste for blood, will make life a tragedy for any sheep man until it is destroyed. Bobcats are rather easily treed with good dogs; then they may be knocked in the head with a club amid great rejoicing.

Last year, Idaho and Wyoming paid a bounty on over fifteen hundred

wild cats and lynx, or about one-sixth



Coyote

sometimes not forty rods from the barn, the coyote rears a husky family of five to ten young and manages to support them in comfort and affluence despite the high cost of living, which because of him is made even higher for the meat consumer.

In the spring the coyote welcomes lambing time, and when the band of sheep are driven to the summer range, he accompanies the outfit. Many a lamb straying too far from its mother provides a juicy dinner for the unseen but ever present coyote. In the fall, he returns, invigorated after a summer vacation in the mountains, and dines with regularity on turkey, ducks or chicken. He is too cunning to be trapped; too wily to be shot; and the best way to get rid of him is to run the brute down with hounds.

In the past few years, in the Northwest, coyotes have been spreading rabies to an alarming extent. It is hoped that this will result in the Fed-



Wild Cat

as many bounties as were paid on coyotes.

Wolves and Cougars

Fortunately for the sheep man, these two animals do not seem to relish mutton as much as they do deer, cattle or horses. The wolf is especially dangerous to the cattleman and often kills for mere pastime. It is very difficult to destroy, being almost as cunning as the coyote. They breed rapidly, and some sections of the West are so infested with them that it is almost impossible to raise



Wolf Pups in Front of Den



Wolf Den

hounds, for when treed, they make little effort to get away, resembling a cat in this respect. They are powerful, and one who has looked into the smiling face of a cougar treed by several dogs will never forget the sight.

About one hundred wolves were killed in Idaho and Wyoming and possibly a dozen cougar last year.

Bear

This harmless animal is the victim of a bad name, due to an occasional bear turning "meat eater" and destroying stock with frightful rapidity. The average bear, however, attends strictly to its own business and keeps away

horses or cattle.

The cougar or mountain lion is a great coward and shuns civilization. It does great damage to deer, and occasionally one develops a taste for young lamb. They usually stay close to some body of water where the deer come to drink, and kill one or two a week. The only way to hunt cougar is with good



The Old Wolf Shot and Helpless

from the white man as though he were a bill collector.



A Sheep-Killing Bear

Bears are often mischievous, and sometimes a sheep-herder will return

to his camp and find his light house-keeping outfit slightly mussed up and worse from wear after the visit of a prowling bear. The bacon and sugar will be found to be among the things missing, and much profanity will be indulged in by the outraged herders.

Bears are not predatory animals and should not be classed as such.

Prairie Dogs

This pest merely destroys the range. It has been estimated that thirty-two of these busy little animals will eat as much grass as one sheep, and as a single village contains thousands of these little animals, it can readily be seen how destructive they really are to the range.

They are combatted with poisoned wheat, and in the early spring when the grass is scarce, this method kills them by the thousand.

The Importance of Regular Attention to Accounts

In spite of every precaution accounts are bound to pile up on the books unless they are regularly followed up with statements and other reminders. Business houses recognize this fact and keep after their accounts in a routine fashion without fear of losing their trade by asking for their money when it is due. The veterinarian should place his practice on a business basis and should adopt the practices of business houses in the handling of his accounts.

In sending statements, he should recognize this fact: The statement soonest received is soonest paid. The first of the month is the generally accepted time for sending statements. Progressive houses mail their statements a few days before the first so that the statement will be on hand bright and early in the game. Some houses even go so far as to close

their books on the 28th or 29th of the month so that they can mail their statements early.

One successful practitioner has said that he got better results by mailing his statements on the fifteenth instead of the first. Because, he said, "then my statement does not compete with the butcher's, the baker's, the rent, and the whole host of other bills which the average man receives on the first." It would seem that there is a great deal of wisdom in that.

If the first statement does not bring in the money it should be followed up within thirty days at the longest, with a written reminder or personal visit. The personal visit is of course the most effective, although because of the possibility of making the patron angry, many prefer to write and take a chance of

waiting longer for their money. This has chiefly to do with letters and other written "duns."

The "Foundation" of the System

First, a definite policy should be adopted to rule the spirit and wording of all "duns." The policy which works out best in the long run is—"Continued, consistent courtesy, under every provocation." This does not mean that one is never to come to the parting of the ways with a debtor, but that when the time does come the debtor is to be impressed with the absolute fairness of treatment which he has been accorded and that no matter what action may be taken there is no personal rancor. Avoid the use of such terms as "dead-beat," "no good," etc. Remember that the man who is down today, may be on the top of the heap tomorrow, and treat him as if he were on top today. It is this policy that collects after the end of five or ten years and makes a good friend and customer out of the erstwhile "dead-beat," even though the account may have been in the hands of a dozen collectors in the meantime.

Next a fixed routine for the handling of accounts should be perfected. There is no necessity for the special machinery such as is used by the credit man of a large business, which would be an "elephant" on the hands of the average practitioner. Undoubtedly every veterinarian has a ledger or card account system, devoting a single card or ledger page to each patron's account. On the margins of these accounts pencil notations can be made which will cover all statements, reminders, etc., sent on that account. When the account is closed these can be erased or left as reference for the "next time."

We will assume that the first statement is sent in March. Either the date —3/1/16, or the initial of the month "M" is noted, followed by the figure "1." Later will appear 4/1/16—2, or A.—2, etc. Promises to pay, etc., may also be noted in this way and used as a basis for future follow-up.

Duns may be in the form of simple written notations on the statement, various "forms" attached to or accompanying it, or personal letters. The use of written notations is being generally substituted by printed stickers or rubber stamps, their value being in the time they save and their more effective appearance. Collecting by letter is really a form of advertising, you sell a man the desire to pay your bill first, and as in all advertising the unusual, the personal equation, the "you and I" element is what attracts and compels.

What to Say

Give your man a chance. He *may* have overlooked your first statement (although he probably didn't), or he may have paid the butcher bill and had none left. So try to get under the skin, with something like this:

I am sure you must have overlooked my statement of last month as I know your attention to such matters is usually very prompt. Your prompt attention at this time will have the same appreciation you would feel were conditions reversed.

Or I am counting on your check to help meet some of my drug bills by the tenth.

Or Prompt settlement is desired on business principles.

Or I know just how these little oversights occur. Don't bother to explain. Simply send your check by return mail and I shall appreciate it greatly.

Get away from the "past due—please remit" style of wording your reminders. Make them live with reasons why the account should be paid and paid quickly. The next reminder should follow quickly after No. 2. Set the pace and the debtors will respond. If you send your "duns" monthly the debtor will think and promise in months. If you follow him up weekly you are more apt to get settlement within as many weeks as you otherwise would in months. Your third reminder should get down to brass tacks—

Surely you received my two previous statements. Why have I not heard from you?

Or I am prompt in responding to your call. Will you please be as prompt in responding to this statement?

Or I am sorry you were compelled to de-

lay settlement last. Will you please give my account preference this month?

Or PAST DUE—this is my third statement. Surely I deserve the courtesy of a prompt reply.

The next reminder is even more insistent and should set a date by which time you expect a response.

Do you realize that your account is four months old? Just why have you not paid. I am willing to accept partial payments if this will accommodate you. Please let me hear from you before the tenth.

Or Let's get together. Just what is the trouble? Come in and see me today and we'll talk it over.

Or I had counted upon an immediate reply to my last reminder. Please don't disappoint me now.

By this time you can place your man in one of three classes. Either he is so hard up he *can't* pay, or he intends to put you off as long as possible ("I pay my bills when I get ready"), or he is the pure unvarnished "dead-beat" who won't pay. With the first there is nothing to do but coax, and offer a "dollar-a-week" plan of settlement. With the other two there should be no further delay. A final notice, insisting upon settlement by a certain day should be sent, and followed up promptly with whatever action may be necessary to enforce settlement. Don't be too squeamish at this point. Even if you should lose their future patronage (which is not so certain as some would have us believe) you have gained their respect, and usually, their money. Write the man who is hard-up something along this line:

I never become uneasy when any of my good friends fail to respond to my statements. I know that there is only one reason for non-payment and that is positive inability to pay. But of course that does not help me in the payment of the accounts I must contract to carry on my practice.

"What is soonest started is soonest finished." You want to get this debt off your hands and I am willing to help you by accepting it in small installments, as small even as \$1.00 per week. You surely can arrange to send me this much each week and at that rate it will only be _____ weeks until all is paid.

You know I have every confidence in you. By arranging to take care of this little account in this way you will vindicate my faith in you.

If this does not bring results, see him personally and offer to accept his note dated conveniently ahead.

If he belongs to the second or third class, the thing to do is to bring him about sharply. No half-measures are justified at this time. Write him somewhat as follows:

I appreciate your patronage and am always glad to serve you. In return I expect prompt payment for my services. Please do not make more aggressive action necessary by further delay. I do not want to embarrass you but shall have to take definite action unless I have your remittance by the fifteenth.

If you do not hear from him on the "fifteenth" then *do something* right away. Either give the account to your collector for immediate attention, take whatever action you are accustomed to with desperate accounts.

The Bank Draft

A bank draft just at this stage is usually productive of results and should be resorted to more generally. In some communities there is considerable importance attached to a bank draft and the drawee feels that it must be honored or he will be forever under the stigma of "bad credit." Fortunately this impression is rapidly disappearing, but just the same, the drawee naturally wants to appear in good standing to the bank and will honor the draft rather than have it returned dishonored. It is best to notify the debtor several days in advance that the draft is to be made at a certain time if payment is not received. A simple, businesslike, impersonal notification is best.

As I have not yet received your remittance for the enclosed account I shall find it necessary to draw upon you for the amount through the _____ Bank if payment is not made by _____.

Never draw without sending a notice in advance.

When you send the draft to the bank, send also a notice to the debtor:

In accordance with my notice of _____ I have today drawn upon you through the _____ Bank. Please honor the draft at once and oblige.

If the draft is drawn at "sight," the bank will present it right away and if

not paid return it the same day. If it is drawn at "three days" or "five days" it will be held that long in the bank after notice has been sent, giving the debtor an opportunity to get the money and protect the draft. Some drafts are made with instructions to the bank to turn them over to the local attorney if

not paid. In this case the bank will deliver the claim to the attorney and the next notice the debtor receives will be from the attorney's office. If the draft is returned direct it is advisable to send a "final" notice without further delay, and to take vigorous action toward the enforcement of the claim.

Log of S. S. "Fremona"

By WM. S. LORD, M. D. V., West Baldwin, Me.

(Continued from May issue)

January 1st. New Year's Day. Three a. m. was awakened by the steward, who wished me a happy new year, as new year with the English is a great day. At seven a. m. we were well into the Bay of Biscay, and the ship was rolling badly once more. We passed the Saints Rocks, and thus about two p. m. These are the most northerly coast of France, and we rounded here and bid farewell to the famous Bay of Biscay. And we made into the English Channel with a heavy sea and a northwest wind blowing a gale. At ten p. m. the mate came from the bridge and called the captain and notified him to come on deck, which he did, and could see a man-o'-war which signaled us with her Morse lights to shut down our engines. As she came alongside we could readily see her ensign, and were relieved to find she was a French battleship. After giving him the desired information, he notified us to proceed.

January 2nd. We had a good sea, and proceeded down the Channel toward the Straits of Dover, passed the Isle of Wight. As we proceeded along the Channel we met numerous torpedo boats, cruisers, etc., and as we neared the Straits of Dover we soon got into company with numerous ships of all nations, but it being along about midnight at this time, we could see the lights of the different ships, all trying to keep behind and let the other fellow take the first

chance. We sailed along through the night at half speed, with numerous searchlights playing about. At 1:45 a. m. an information boat stopped us, asked us where we were going, etc., and notified us not to proceed into the North Sea until daylight.

January 3rd. Hove anchor, and started into the North Sea, and we still had the company of the numerous ships from all parts of the world, and each one tried to be behind, and not in front as is usually the case, as at that time the North Sea was strewn with mines, and each captain would a little rather have the other fellow take the first chance. We proceeded all day and through the night and in the North Sea at that time it was pretty tough reckoning, as there were no lighthouses, no buoys and no light-ships. Finally, that night, we anchored off Hull in the River Humber. Most of the ships in our company left us here and proceeded up the river to Hull, while we hove anchor and proceeded on our course towards Leith. Here we were notified by an English pilot, who came alongside in a trawler, to keep within a mile and a half of shore, as the English admiralty would not be responsible for any ships outside of the mile and a half limit, as they were sweeping the shores with mine-sweepers, and deemed that our safest course.

January 4th. The weather was clear and the sea smooth. In the afternoon we came up to Filey Brigg

Reef, and here we saw a Norwegian ship ashore on the reef with all lights burning, she evidently having struck a mine and went onto the reef in the night. And soon afterwards we passed a big Belgian steamer, and it reminds me of our mate, a typical Scotchman, and a born sailor, who seemed to be never so happy as when it blew. He made the remark, when he saw the Belgian ship, "I pity the poor slob; he has no home to go to." As we made up the coast we sighted a torpedo boat coming straight for us, "full steam ahead." He came up alongside, inquired for our papers, and as many others had done, told us to proceed. We passed Whitby and Scarborough, which, the day before, had been visited by the German Zeppelins.

January 5th. At eight a. m. we made May Island, which is claimed to be one of the best and most modern fortifications in the world. We proceeded up the road, and could see, in the distance, Inch Keith Island, on which stands the strongest and most modern fortress on the English coast. Soon after we were notified by the examination boat to stop and came to anchor. Our pilot came aboard and we proceeded up to the docks at Leith, Scotland.

January 6th. I went to visit Edinburgh in the evening and happened to go into the Union Station. As it happened, there was a troop train bound to London, and I shall never forget the sights of that evening. Young men, just in the prime of life, parting with their mothers and sweethearts, men of all stations in life parting with their wives and children; and I can assure you it was a sad sight.

One of the sights of Edinburgh is the stock market and public abattoir, which is the finest in the world. The main entrance is a building of stone, all laid out in shrubbery, and everything, from the time you enter to the time you come out, is nothing

but tile. The cattle markets are all sealed pens. The slaughter houses are finished in white tile, with corn markets the same. After we discharged our cargo, we proceeded to South Shields, on the River Tyne, and here took our cargo for home.

At Shields the city was under martial law, with headquarters for artillery training; and I suppose that there must have been 30,000 horses in that city alone. The horses were in the streets, fed out of troughs made of planks, and here the horses stood day and night, with no blankets, and the mortality must have been something enormous, and it seemed to me that there was a lack of judgment somewhere in the English army.

On our trip from Leith to Newcastle, January 24th, was the day of the great sea battle in the North Sea. It was a dense fog where we were, and our ship must have been within fifty miles of where the battle was then taking place.

January 26th, at midnight, we started for home, and the captain decided to take the northern route, around the northern coast of Scotland. As we proceeded up the coast, for the Orkney Islands, it was very dark in the day, as it was so far north. At 1 p. m. we sighted a Norwegian ship ashore, and on fire, on the Orkney Islands. The captain signaled her with the Morse system, asking if she wanted aid, and as we received no answer, proceeded on our course. At 4:15 we passed the most northerly point of the Orkney Islands, cleared the land, and were once more free from mines and submarines, bound once more for the "Land of the Free." And you can bet at about that time those stars and stripes looked good to me.

January 29th. Friday. The weather was fine and clear. Sighted a full-rigged bark, and shut down 45 minutes to allow engineers to repair piston rod. At 11 a. m. we sighted a

(Continued on page 479)

AMERICAN JOURNAL of VETERINARY



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GUARANTEED PAID CIRCULATION OVER 7 500 MONTHLY

Address all communications to the AMERICAN JOURNAL OF VETERINARY
MEDICINE, 9 South Clinton Street, Chicago, U. S. A.

Subscriptions from the United Kingdom should be sent to our London office in care of Messrs. Baillière
Tindal & Cox, 8 Henrietta Street, Covent Garden, London, England.

A New Field for Veterinarians

"Rags! Old iron! Bottles! R-a-g-s!" and most persistently "Rags!", discordantly calls that humble merchant of our back allies and the junk yard with a frequency never heard before. What has that to do with opportunities for veterinarians? Just this. The same cause that accounts for the unwonted activity of the rag-picker and his bone-yard steel will bring about conditions that will make a certain class of veterinary practice grow as canine practice has grown in a decade—yes, far more, will make it grow even as porcine practice has grown since Dorset and Niles first demonstrated that hog cholera can be prevented and hog raising may be made something more than a gamble.

The world is simply short of wool. The production has been somewhat lessened and the consumption enormously increased by the great war in Europe. Veterinarians who have made, recently, any additions to their barns or hospitals, erected chicken houses or other buildings on which they have used roofing paper, have probably received a shock, simultaneously with the bill for the roofing paper. Inquiry will reveal that the 200% to 300% increase in price is due to the European demand which has taken millions of yards to be used in trenches and dugouts; and roofing paper is made of wool and tar.

When next fall's suits are on the market, you will be apprised of this shortage in wool in another way, and by the spring of 1917 the price of wools will convince the most skeptical of their rarity.

For reasons cited below, it may be predicted with certainty that the high price of wool must continue for many years, and sheep raising heretofore carried on principally on the great ranges of Australia, New Zealand, Argentine, Africa and our own western states, will become an important industry throughout the farming districts. Sheep possess less resistance to disease than any other domesticated animals, and their presence in large numbers in any particular district must have an important influence on the amount of veterinary practice to be done in that locality.

Wool like meat is a necessity, and like the meat producing animal, the wool producer is not a subject for elimination through progress and invention as was the driving horse and as the draft horse of the cities is being supplanted even now. The advent of the sheep industry in a locality means a permanent addition to the veterinarian's opportunities for service in that community.

For explanation of this increase in the price of wool and its permanence, the

following facts may be cited. The people of the world are clothed in fur, wool, cotton and silk and sunburn. A mere handful wear fur; some six hundred millions wear wool; eight hundred millions wear silk and cotton, and the remainder almost nothing at all. With the rise in their standard of living, the inhabitants of a country wear more wool. Particularly is this true in the tropics where cotton is being more and more reserved for the humble peon, and in China and especially in Japan where the wealthier classes are discarding silk for wool. The world's demand for wool was increasing faster than its production even before the present war. Let us see what effect the war has had upon it.

Nowhere near enough new wool is produced to clothe the wool-wearing people. It is made to do by mixing it with cotton and silk, and even more by using the wool fibers over and over again. Here is where the rag man comes in. A good suit may be worn till it is worn out; the ragman gets it; it goes back to the mill, is torn up and reappears as a somewhat cheaper suit. Eventually the ragman gets it again, and the third time it may appear as a fair grade of overcoating; after going the rounds again, it can be felted into a durable cheap cloth. It is no longer handled on State street but is sold at bargain sales on Milwaukee avenue. On its fifth round, it is still serviceable for stuffing horse collars and upholstery, and finally when the fiber, which has become shorter and shorter each time it is worked over, is reduced nearly to dust, it is made into roofing paper. It is estimated, that one-fourth of the wool used in this country, is this worked over material, and that in England, more than five-eighths of the wool used in the manufacture of cloth has its source in the rag trade.

Unheard of quantities of wool are being used by the European armies, and most of it disappears forever; the soldier's woolens are buried with him, or burned on the battlefield or thrown away

where the rag picker doesn't pick; it is not reclaimed as in normal times.

Tommy Atkins fights in about fifteen pounds of wool, and five million Tommies have enlisted. The Russian soldier wears considerably more wool than does Tommy Atkins, and hundreds of thousands of Russian uniforms have been made in this country. Then there are blankets, stockings, sweaters, etc., by the shipload. To make matters worse, countries producing one-eighth of the world's total clip of wool are now at war and the industry interfered with, more or less demoralized. Should the war end, before another winter, it will take years and years to catch up in the production of wool, even under the stimulus of a high price; should the war extend through another winter or several of them, it would appear that the numbers dressing in feathers and paint and smiles and sunshine will be augmented.

Preparedness has been a popular topic recently with contributors to this magazine as with contributors to all other publications. Surely preparedness is as important for a profession such as ours as it is for the nation. In fairness and candor, it must be admitted that when the wave of porcine practice came upon us not a few were unprepared for it, and during the first few years of that practice the results of some were a discredit to themselves and a detriment to the whole profession. The farm papers are not yet through howling about some of those regrettable occurrences; some of them probably never will get over them.

Sheep practice should not catch us in the same predicament and will not if the AMERICAN JOURNAL OF VETERINARY MEDICINE can help it. We have searched this country from Maine to California and from Minnesota to Louisiana, for just the right man to instruct the whole profession on sheep diseases in the quickest, most practical way. Such a man must have the ability to write and write well to tell clearly that which he knows. He must have a scientific training and experience

in research work for his field is largely uncharted, and he must arrive at conclusions mainly from his own knowledge. He must have had an extensive and a varied sheep practice that he may know whereof he writes and further that he may appreciate the position of the practitioner and make the work practical.

Don't say "There ain't no sech animal," for we have found him, and we give you in this issue just a little bit—just a taste—from his pen. "Predatory Animals" has been selected for the first article because it is a simple and easy starting point and moreover contains the interest of a story of the chase. After this and a few more preliminaries are cleared away the real meat will come and come fast.

"DIGS AT DOC"

An enterprising publisher has recently compiled from lay and professional publications a large number of humorous "digs" at the medical profession and issued them in book form. The book is entertaining even though it contains not a few jokes with teeth and in passing it may be said, some that are hoary. The book is mentioned in the review column.

Unfortunately not all the "jokes" at the expense of the doctor are humorous or even intended to be jokes, as are those in the book referred to above. Some are all advised and some are malicious and most of the latter are unmerited; veterinarians come in for many of this kind.

We are in receipt of several clippings, sent by Dr. A. E. H. Fabian of Lake Geneva, Wisconsin. One is taken from a country newspaper and is an anti-tuberculin testing editorial. The others deal with the Harrison anti-narcotic law and proclaim the bad effects of dispensing by physicians.

Concerning tuberculin testing, fortunately, there is at present little opposition to this work and such opposition as there is does not emanate from well in-

formed journalists or appear in influential publications; in fact the necessity and practicability of the tuberculin test is recognized by every publication which is devoted to the live-stock industry in this country and it is only the man who is uninformed or hopelessly prejudiced who actively opposes tuberculin testing. Of course, not every reactor when slaughtered will show microscopic lesions, but does it follow that such subjects are not infected? Such animals are not necessarily healthy and the veterinarians who condemn reacting animals that pass for food when slaughtered and this without gross lesions of tuberculosis being demonstrated, should not be discouraged thereby.

It is to be borne in mind, however, that no small part of the practitioner's duty is that of an educator along lines pertaining to animal husbandry, sanitation, or disease prevention and humane education of his clients. As the practitioner is able to impress his clientele with the reasonableness of his motives, so he will be successful in all of his work, providing, of course, that he is competent.

Probably many publications which were ardent advocates of the Harrison anti-narcotic law made use of the worthy arguments which are to be presented in favor of this law in order to "sugar-coat" anti-dispensing propaganda. That many druggists and some pharmaceutical publications favor legal restrictions being made, that dispensing by physicians and veterinarians be prohibited, there is no doubt; and we veterinarians must be on the *qui vive* lest we be so handicapped that, because of enforced prescription writing the employment of veterinarians in treating sick animals be prohibitive because of the cost of filling prescriptions.

Unfortunately not all of the "digs at doc" whether the doctor be physician or veterinarian comes from outsiders. Some of the worst blows to the prosperity and prestige of both professions come from their own ranks.

We are in receipt of some advertising matter sent out by the Slater Serum Co., which has established Illinois headquarters at Charleston, and placarded the town and country around with cardboard bills 11 x 14 inches in size, bearing the following reading:

Learn to Vaccinate Your Own Hogs

• Your Own Hogs •

We manufacture Hog Cholera Serum and Virus under government supervision; sell it direct to the farmer and teach him to vaccinate free. Costs 25c to make 5 to 10 day old pigs permanently immune. Shipment of 100 pounds costs \$2 cents.

Syringes supplied at wholesale price. We will vaccinate your hog under a written guarantee to be immune for one year. Have your banker write Southwest National Bank of Commerce, of Kansas City, Mo., and ascertain if we are financially responsible. When not convenient to pay cash we will take your note at 8 per cent.

Listen to This Offer

We will vaccinate 15 hogs FREE if the owner will put three of them with sick hogs on various farms where cholera exists to sleep, eat and run with sick hogs, and if they die we will pay for them.

SLATER SERUM CO.

KANSAS CITY, KANSAS
U. S. Veterinary License No. 93

Write for free booklet, list of reliable vets and copy of guarantee.

Special Office Address
Dr. J. Harvey Slater, Lock Box 172, Telephone 639
Charleston, Illinois

These placards are 11 by 14 inches in size and designed for posting on barns and signboards.

They have circularized the farmers of the state widely with a mussy looking mimeographed circular reading as follows:



U. S. Veterinary License No. 93.
HOG CHOLERA ERADICATED.

THE SLATER SERUM COMPANY will guarantee your hogs to be immune against cholera. YOU get the serum YOU ordered and the results YOU expected when you buy direct from the factory.

It is the purpose of the U. S. Government to help every farmer save his hogs from cholera by showing him the use of Anti-Hog-Cholera serum. It is sheer folly to take chances when the farmer by means of "serum insurance" may rest easy while his porkers thrive.

Many farmers are paying veterinarians or some farmer who has taken up vaccinating one-half cent per C. C. to do their work for them. Vaccinate your own hogs, if you are remote from a veterinarian. Most any farmer who exercises caution and cleanliness can vaccinate hogs successfully with our serum and virus by following the directions laid down in our booklet.

We make only the highest potency 20 C. C. serum and 1 C. C. virus dose for 100 pound fat pig, 10 C. C. serum and 1 C. C. virus for three to ten day old pig. We make only one grade of serum, that is the

highest potency that can be obtained. We cannot afford to make anything else as we have a large reputation at stake; furthermore, the law makes us responsible for our serum. Did you ever stop to think that you cannot bring suit against any state and recover damages if they sell you bad serum.

Years steady growth and rapidly increasing demand for our serum is the test of our sincerity. Can furnish immune stock hogs at all times.

We give you 12 months guarantee. Could anything be fairer?

Don't buy from Agents, or Jobbers. Get your goods on our "Factory to Farm plan."

THE SECRET OF HOW TO BUY HOG CHOLERA SERUM.

Have your banker ascertain for you the responsibility of the serum company from whom you are expecting to buy serum, and if they are responsible buy your serum from that company. Don't look up the responsibility among people who are getting a rake off from a serum company for recommending their serum. We positively know that there are lots of paid solicitors for serum companies.

We offer to teach you how to immune your pigs from 3 to 10 days old, and we will gladly give you the benefit of our years experience at any time.

Serum companies can be made to pay for healthy hogs they kill. This case was recently tried out in the Sioux City, Ia., courts, and may cost the serum company around \$7,000.

Do you know of any other serum company saying that they can immune your pigs 3 to 10 days old?

NOTE.—Our price for vaccinating hogs without guarantee 2 cents per C. C. — with guarantee 2½ cents per C. C., F. O. B. Kansas City.

DR. SLATER is now in Illinois with headquarters at the **COMMERCIAL HOTEL, CHARLESTON.** Address Lock Box 172 or Phone 839 and he will call upon you.

Cordially yours,
SLATER SERUM CO.,
Per E. C. Yates.

U. S. Veterinary License No. 93. We recommend simultaneous method. Orders filled immediately upon receipt, day or night.

On the back of the mimeographed circular the following contract blank and appended instructions are given:

CONTRACT.

Kansas City, Mo., 191.....

This is to certify that the Slater Serum Company of Kansas has this day vaccinated for.....

..... of head of hogs and the said Slater Serum Company guarantees said hogs to be immune from cholera for twelve months from this date; and if any die with cholera the first thirty days, the Slater Serum Company agrees to refund the cost of vaccinating each hog that dies; if any die with cholera in sixty days to refund 10 cents per c. c. for the serum required to vaccinate the hogs that die; if any die with cholera in ninety days to refund 15 cents per c. c. for the serum required to vaccinate the hogs that die; if any die with cholera in one hundred and twenty days to refund 20 cents per c. c. for the serum required to vaccinate the hogs that die; and if any die in one hundred and fifty days or any time after that within the twelve months with cholera, to refund 25 cents per c. c. for the serum required to vaccinate the hogs that die. If any of them die, the owner is to have a graduate veterinarian autopsy them within six hours daylight after death, and if the veterinarian certifies under oath that the cause of the death was cholera, the Slater Serum Company is to refund to said the amount due as above stated within ten days after being notified. The veterinarian is to include in his findings the weight of the hog at the time of its death.

All hogs vaccinated under this contract must have a round hole punched in the right ear the size of a nickel. (A blacksmith can make this kind of a cutter, or we can supply it for \$1.50.)

This contract entered into this..... day of 191....., by and between the parties whose signatures are affixed hereto.

(Signed) **SLATER SERUM COMPANY,**
By Secretary-Treasurer and General Manager.
Witness (Signed).....

After hogs are vaccinated give them the same feed as before vaccination, but under no circumstances let them wallow in mudholes or lie in water for fifteen days after they are vaccinated.

Dose pigs 3 to 10 days old, 10 c. c. serum, 1 c. c. virus.

Dose pigs 10 to 30 days old, 15 c. c. serum, 1 c. c. virus.

Dose pigs 30 days old to 100 lbs., 20 c. c. serum, 1 c. c. virus.

Add 5 c. c. serum for each 25 lbs., or fractional part thereof over 100 lbs., in weight.

Thin hogs should have dose according to what they would weigh if fat.

In vaccinating suckling pigs put one-third serum dose under each of the three legs, 1 c. c. virus under the fourth.

Keep one year at temperature of 45 degrees. (Keep in cool cellar in winter and cold storage in summer, with temperature under 48 degrees.)

We are supplying the names and addresses of one hundred farmers for whom we have vaccinated and whom we have taught to vaccinate with our serum and virus:

Enclosed with the foregoing circular is another that further admonishes farmers to learn to vaccinate their own hogs and gives what purports to be the names and address of one hundred Illinois and Indiana farmers together with the number of hogs that each has had vaccinated by the Slater Serum Company.

It is unnecessary to comment on the foregoing advertising. This is a free country, and the Slater Serum Co. has a perfect legal right to dispose of its serum in any manner it sees fit not fraudulent; but one may note in passing that, while the Slater Serum Co. does not consider a veterinarian necessary for the protection of the farmer's interests (in fact, it assures the farmer that he is not), when it comes to the company's own interests, that is, in its guaranteeing the farmer against losses, it stipulates that the decision as to whether or not the hog has died of cholera must be left to a graduate veterinarian. In other words, Mr. Farmer knows cholera and knows how to vaccinate to prevent it as long as the hogs are his, but when the Slater Serum Co., has guaranteed them to be immune from cholera and they die, Mr. Farmer doesn't know cholera at all but must have the carcass examined by a veterinarian who does. The attitude is somewhat inconsistent, and we believe the farmers have intelligence enough to see it.

Another knock from within comes from Dr. E. F. Lowry of Ottumwa, Iowa, president of the Hawkeye Veteri-

nary Association, the association of non-graduate veterinarians of Iowa. Mr. Lowry has long opposed the use of anti-hog-cholera serum with all the eloquence and all the political influence he commands. His articles in various Iowa farm papers have been frequent and sensational if not convincing.

Of late a journal has become a necessity as an outlet for his opinions and *The Live Stock Truth* has been established for that purpose. His platform is pretty well stated in the following editorial in the first issue:

WHAT THIS JOURNAL WILL ADVERTISE

This Journal intends to advertise nothing in its columns except that which it believes to have merit, neither will it advertise Swine for sale that are advertised Cholera Immune. The advertisements that will be read in this Journal will be for those remedies that have made a reputation, and there are a great many of them that are reliable, and we expect to advertise such people and stand up for their remedies, and we also expect to advertise people and remedies that we think are fakes, as fakes. One thing especially we want the Swine Breeders and Farmers to make a note of that no man can sell Hogs Cholera Immune through any advertisement in this paper. We call this one of the biggest

The Dorby Hog Remedy



DR. JOHN DORBY
President

Positively cures so-called hog cholera, tuberculosis, cough, thumps, scours and hogs made sick by vaccination, and destroys worms. We guarantee the remedy to be 100 per cent better than the serum-virus treatment. Will give \$100.00

to any one if we fail to prove any of the above by actual test. We challenge the Federal Department of Agriculture or that Department of any state for a public test. Any statements that our remedy will not cure the above named diseases are absolutely false. Federal and State Veterinarians included.

Will ship remedy on sixty days' trial, without money, nothing to pay if it fails. Write for FREE valuable information today.

JOHN DORBY MFG. CO.

Cedar Rapids, Iowa, U. S. A.

fakes and frauds that any journal can advertise. We have no objection to advertising a man's hogs that states in his advertisement that they have been treated, but when a Breeder advertises his hogs as Cholera Immune, there has been proven in so many cases that hogs that had been sold as Cholera Immune, were not immune, and in a short time sickened and died of disease.

His performance may be judged by the fact that the issue contains the advertisement by the John Dorby Mfg. Co. as shown on the preceding page.

It also contains advertisements of 544 "The Proven Hog Cholera Remedy" and of "Noxine."

"A scientific discovery of drugs, which when compounded, undergo a chemical change. This compound acts specifically on the liver, increasing the secretion of bile, which is Nature's antiseptic fluid. It destroys bacteria, suppresses fever, furnishes Nature's laxative, assists the peristaltic action of the bowels, repairs and restores to health by Nature's ANTI-TOXIN, which corrects and wards off disease; also immunizes the system against disease-producing germs. Not being a biological product as Virus and Vaccines, does not bring disease germs on your premises, and will not endanger your stock by the spreading of such."

Among the editorials, we find "Why the Serum Treatment Has Failed to Produce Results," "Evil Results that Have Followed the Serum Treatment," and "The Ames Bunch Still Boosting for the Serum Graft."

In the second issue, Editor Lowry gets quite chummy and calls the veterinarians of the U. S. Bureau of Animal Industry, Dr. Dyson and all the others engaged in the work of eradicating foot-and-mouth disease a bunch of "pinheads." Still worse, Lowry has discovered that they are "political papsuckers" and "fat heads."

In this issue he presents his readers with a choice collection of letters from subscribers dissatisfied with their experience with anti-hog-cholera serum and who refer to veterinarians generally and particularly those connected with the state serum plant at Ames, Iowa, as incompetents, grafters, thieves, and like endearing terms.

Talking about pinheads though, Iowa has one of the original and genuine brand in the person of Representative Harry Hull. The Agricultural Appropriation bill contained an item of \$2,500,000 for reimbursing the states for money expended in fighting foot-and-mouth disease. Iowa would benefit largely from this appropriation and the Hon.

Hull wanted it, but he was not the author of the bill. Its passage wouldn't bring him any personal glory.

So he raised a point of order regarding the appropriation, and it was stricken. Then he offered another provision exactly similar to the one he had killed, hoping to get the credit back home for the appropriation. But, to his surprise, that was stricken also.

BOOK REVIEWS

American Public Health Protection is the title of a work by Henry Bixby Hemenway, A. M., M. D., author of "The Legal Principles of Public Health Administration," "Essentials of Veterinary Law," etc.

The author in his preface asks: "How can we arouse the people to a realization of their selfish interest in efficient public health administration?" He answers his question (which is the question asked by others also), in a very able manner. In the chapter on Medical and Sanitary Education Compared, he states that— "No doctor engaged in private practice has probably ever served honestly and faithfully as a health official and not thereby injured, or ruined his private practice." Quoting further from the same chapter: "To ask a medical practitioner to serve as a public officer of health and not pay him amply therefor, is to put a premium on dishonesty." * * * "One would be considered lacking in mentality if he undertook to bail out a boat without stopping up the hole through which the water entered. Is the man any less foolish who endows hospitals for the care of the sick, rather than to endow the work of preventing sickness? Hospitals are needed, but were disease production checked, it would soon be found that we have more hospitals than are necessary. The graduated engineer has before him plenty of opportunity for obtaining self-supporting employment, and he can therefore well afford to pay for his training. Why then should chairs in engineering schools be endowed, if to

furnish such professorships the teaching of public health must be neglected even to the point of forgetfulness?"

In his discussion of Organization of Health Departments we excerpt the following: "It is a very unfortunate thing that the medical profession should so frequently imagine that any competent bacteriologist is also a competent public health administrator. The contrary may be the fact. The expert laboratory specialist frequently takes too narrow a view of his position. The administrator in a large office has no time for laboratory work himself; and to no small degree the same is true of smaller offices. It is necessary that the executive head should have a good knowledge of the methods and results of bacteriologic investigation, just as he should know the general facts of sanitary engineering; but a thorough acquaintance with the subject of administrative law is more important for the chief than either engineering or bacteriology."

The work will materially benefit veterinarians who are engaged in food and dairy inspection and, also, it will be very helpful for general practitioners who wish to promote the organization of efficient health departments in cities where such do not exist.

The same clear, forceful and interesting style which characterizes his work on "Essentials of Veterinary Law," distinguishes this volume. The book contains 283 pages and is published by the Bobbs-Merrill Co., Indianapolis, Ind. Price, \$1.25.

1916 Tonic is the title of volume one of the class record of the Chicago Veterinary College. This handsomely bound volume is dedicated to the Chicago Veterinary College; is well illustrated; does credit to the college and the class of 1916, as well as to its editors.

Those who compose the editorial staff are:

C. M. Merriman.....Editor in chief.
L. N. Morin.....Asst. Editor in chief.

E. E. Grove.....Business Mgr.
Arthur J. Kinlans.....Asst. Bus. Mgr.
Carle B. Lenker.....Advertising Mgr.
J. J. Strandberg.....Art Editor
Walter A. Hahn.....Cartoonist.
Oscar Norman.....Personal Editor.
H. H. Barnett.....Roast Editor.
L. A. Eckert.....Athletic Editor.

Proceedings of the Ohio Veterinary Medical Association for the year 1916.

This is a neat, cloth bound volume of 164 pages; the *tout-ensemble* of the work bespeaks of painstaking care on the part of the secretary, Dr. F. A. Lambert, in editing this volume. It contains the constitution and by-laws of the organization, a list of Graduated and Legally Qualified Veterinarians of Ohio, by counties; Laws of Ohio Regulating the Practice of Veterinary Medicines and Surgery; Live Stock Sanitary Laws of Ohio; reports of officers and committees, and a reproduction of addresses given and papers read at this meeting.

No Ohio veterinarian can afford to do without this yearbook.

Western Grazing Grounds and Forest Ranges, by Will C. Barnes, Inspector of Grazing, U. S. Forest Service.

A history of the livestock industry as conducted on the open ranges of the arid west, with particular reference to the use now being made of the ranges in the National Forests. The work deals with matters of historical interest to all who are interested in the livestock industry in any way. It deals with the manner in which ranges were originally stocked; the introduction of different breeds of cattle on ranges, also of sheep, goats and hogs.

A chapter is devoted to Handling of Cattle on the Range and this, in itself, contains information that is valuable to those unacquainted with this industry. A similar discussion of practical methods of handling sheep and goats is contained in the volume. The policies of the government with regard to leasing Forest Range are discussed

and, also, a chapter on the subject of the care of the range and range-grass gives information concerning this phase of the cattle industry. Twenty-seven pages are devoted to poisonous plants, their toxic effects upon animals and a discussion of treatment of poisoned animals.

A few of the commoner diseases of animals are considered in a manner that will be found of practical benefit to stockmen, who are located in isolated sections of the country, too far from veterinarians to benefit by their services in emergencies. Predatory animals in the west are given consideration; modes of trapping, poisoning, etc., are discussed.

A rather unique and interesting feature of the book is a list of definitions of words and expressions commonly used by stockmen.

Many good illustrations are contained in the volume. Particularly good are the illustrations of poisonous plants, which are shown in natural colors—plant, flower and root. While the work is intended chiefly for those who are engaged in forestry, or interested in the economic side of the livestock industry on ranges, it will prove of great value to every veterinarian who is engaged in practice in the west and, as well, an interesting and instructive work for eastern practitioners. Published by the Breeders' Gazette, Chicago; 390 pages. Price, \$1.50.

Wayside Experiences, by C. Elton Blanchard, M. D., is a volume which deals with matters sociologic, psychologic and economic, in an entertaining style and from the viewpoint of a philosophical physician who has literary ability.

Dr. Jones' Farm for Down and Outs—a philanthropic institution conducted by Dr. Benjamin Jones is described in an interesting manner, in one of the fourteen separate stories contained. Dr. Jones, a retired physician who, though embittered by circumstances, had in later life become a tolerant and optimistic philosopher, is the principal character of this one short story; he

is the embodiment of usefulness and altruism—a character worthy of emulation.

The other stories, for the most part, deal directly or indirectly with the time-worn theme of the difficulties which beset us in life.

Published by Physicians Drug Co., Newark, N. J. Price, \$1.50.

Digs at Doc and Others is a collection of funny sayings taken from the current press. Forty-two cartoons add to the humor of this volume of witty material wherein the Doctor is frequently the victim of various jokes and gibes.

The book is handsomely bound and printed on good paper. Published by The Physicians Drug News, Newark, N. J. Price, \$1.00.

A Veterinary Handbook and Visiting List, by Thomas B. Rogers, D. V. S., Lecturer on contagious Diseases of Animals, in the Medical Department of Temple University, Philadelphia, Pa.

This work contains a chapter on the rudiments of bacteriology, wherein there is defined some of the more important terms employed in this subject. It also includes a tabulated list of the commoner infectious diseases with the approximate incubative period of each. A chapter on prescription writing contains a list of Latin phrases and abbreviations used in writing prescriptions.

Ninety-two pages are devoted to dose tables of drugs commonly used in veterinary medicine, calculated for the horse, cow, sheep, foal, calf, pig, dog and cat. This table is very well arranged and each drug is identified by its Latin and English names and chemical formulae are given where possible.

Poisons and their antidotes are tabulated and classified under the heads of gases, acids, alkalies and vegetable drugs and alkaloids. There follows then, tables of weights and measure,

(Continued on page 458)

Department of Surgery

By L. A. MERILLAT, Chicago,
Professor of Surgery in the McKillip Veterinary College,

Bull's Eye Shoulder

A loose, flabby, circular disc of hyperplastic skin four to six inches in diameter with a central denuded surface of the same shape hanging to the shoulder at the seat of traction is one of the common lesions of the hard worked draft horse, and as it has a uniform etiology, pathology and physiognomy it surely deserves a place in our surgical nosology. As no one has seemed inclined to christen it we have called it "bull's eye shoulder" because it resembles a target. This injury is decidedly chronic and develops very slowly. It is a superficial excoriation of the epiderm that is prevented from healing by the daily friction of the collar. At first the excoriation would heal with rest but under the continual friction the epithelial elements lose the property of regeneration and the dermis is left permanently denuded. Later under the constant pressure and friction of the collar the connective elements build up a protecting pad beneath and around it in the shape of a circular disc from one-half to one and a half inches thick. This pad and its central denuded face—the bull's eye—are not as highly sensitive as one would expect a traumatism of that physiognomy to be. In fact they seem to cause discomfort only when exposed to the extraordinary pressure of exceptionally hard work. Ordinarily, horses affected with them work along

very well without any evidence of pain.

Bull's eye shoulder has, however, been the subject of many a controversy between humane officers and veterinarians, the former judging the sore by its physiognomy, the latter by its sensitiveness. In nearly every case, however, the judgment of the humane officers is sustained and a fine for cruelty is imposed. I would advise practitioners to cautiously guard the honor of the profession in these controversies, for while the opinion of painlessness of bull's eye shoulder may be a sound enough one, the veterinarian's testimony is always interpreted as an effort to distort facts for the benefit of a client charged with cruelty. I have heard more than one veterinarian severely reprimanded by the judge for trying to show that such sores are not very painful. For policy's sake as well as to remove the blemish from animals thus afflicted the veterinarian should advise operative treatment forthwith, for after all to keep such animals at work is folly as well as gross cruelty because the lesion enlarges and later requires intervention of greater magnitude. Often they become so large that the shoulder can never be made perfectly smooth even by means of the most painstaking plastic operation, and a lumpy collar seat always predisposes

to subsequent galls. Bull's eye shoulder heals spontaneously. It disappears after a protracted rest and may seem entirely cured but will always promptly reoccur after a few weeks of hard work. Sometimes it will reoccur after only a few days of work in horses that have been at pasture a whole season. With these facts in mind the veterinarian is always justified in insisting upon the prudence of an early operation.

A simple operation attended with splendid results is resection of the entire disc-skin and all around its whole circumference. This leaves an enormous wound almost twice the diameter of the disc, but in spite of its great size healing is rapid and a perfectly smooth shoulder is assured. The best plan of operating is to pinch up the disc tightly in the ecraseur chain and then cut it off without further ceremony. There is less bleeding if the ecraseur is tightened as the cutting proceeds. The operation must be done with sterilized instruments and only after having shaved and thoroughly disinfected the whole surface of the disc and its immediate surroundings, and as the wound is one of large dimensions located in a place inconvenient to protect against contamination we paint the whole raw surface with tincture of iodine after the operation and then twice a day during the first four days. After that we apply white lotion until the healing is complete which is usually six weeks.

The other plan that has given us good results is the resection of the disc with an oblong island of skin large enough to include the denuded circle. When the resection is complete the redundant skin is trimmed along the wound edges until the flaps lay flat to the body without tension, then each edge is separately hem-stitched to the body with a continuous suture. Before suturing it is important to effect a perfect haemostasis because the cav-

ity formed by the blood clot under the edges invite complications, retards healing and tends to ridge the surface by filling up with connective tissue. Suturing the edges of the skin flaps together is never a good operation even when they heal by primary union because the cavity under them prevents the skin from fixing itself to the body, and when union does not take place there is an ugly gaping wound and cavity to fill up with granulations before healing actually begins. This usually disables a horse indefinitely. On the other hand by trimming off the redundant skin and then hem-stitching the edges down to the body there is no cavity to fill up and the wound never gaps even if it becomes infected.

BOOK REVIEWS

(Continued from page 456)

relative weights—metric and apothecary.

A very concise and understandable interpretation of the Harrison Anti-Narcotic Law is an important feature of the work.

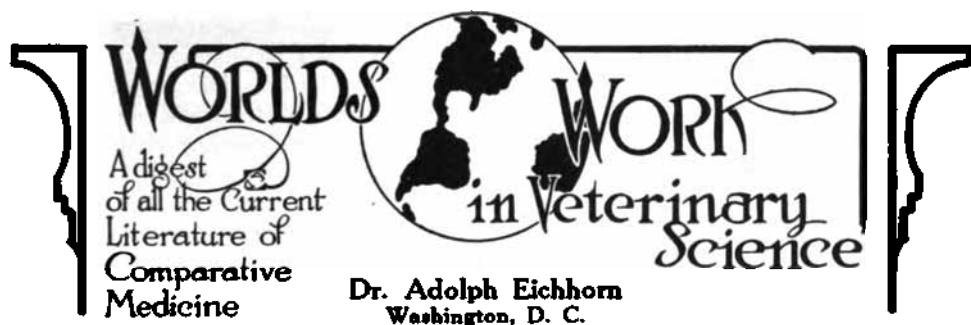
About ninety pages are given to a ruled visiting list. Estimation of this may not add to the value of a concise volume which is not too large for the pocket. The book contains much material which is of practical value to the practitioner and the student—possibly it is a little too handy for the student.

The author claims no credit for originality, yet he has exercised good judgment in selecting material for his work. Published by J. B. Lippincott Company, Philadelphia and London—price, \$1.50.

JOURNAL OF BACTERIOLOGY

The society of American Bacteriologists have established an official organ under the above name. It is published at Baltimore, Md., and is edited by C. E. A. Winslow and 54 advisory and abstract auditors, including V. A.

(Continued on page 471)



Methylene-Blue Silver

Kraemer (*Berl. Tierarz. Woch.* No. 4, 1916)

This preparation is a brownish powder, which is dissolved in two per cent of lukewarm water, forming an opaque deep blue solution. The powder is marketed in vials of 5 to 10 gms., by Merck.

The application of methylene-blue silver is indicated in septic general infections, especially those induced by streptococci. It is administered one part of methylene-blue silver to one hundred parts of water, intravenously, every second day. The author has employed this remedy in numerous cases of strangles with septic infections, and obtained remarkable results.

Strangles appeared among the horses of the army during the war in a very malignant form, and the author had a splendid opportunity for testing the effectiveness of the preparation in general infections by streptococci, not only in cases in which the purulent condition extended into the lung, resulting in broncho-pneumonia but also in cases in which the infection affected the spinal cord. In all cases the results were highly satisfactory.

Several horses (about 7) without previous signs of illness suddenly broke down in the hind quarters, and could be placed in slings only with assistance. The horses received daily one grain of methylene-blue silver solution in one hundred parts of water, intravenously, and could be discharged as cured after three to six days. In one fatal case,

which was not treated with the preparation, the autopsy revealed pus in the spinal cord.

Injection of Physiological Salt Solution in Azoturia of Horses.

Valesco (*Munch. tier.* 1915, page 165)

The author repeatedly obtained good results in azoturia of horses with intravenous or subcutaneous administration of physiological salt solution. At the same time, however, an early bleeding of the horse and an injection of eserinarecolin should not be omitted. Several hours following the injection of the salt solution the urine clears up, and after twenty-four hours it has a normal appearance.

The Treatment of Pariphimosis and Phimosis in the War

Naray (*Berl. Tierarz. Woch.* No. 2, 1916)

According to the author paraphimosis in the war usually results from the long, fatiguing marches, during which the horses frequently have a desire for urination, and thereby protrude the penis for a long time. This results in a local, veinous congestion and edema. The edematous folds developing in this manner appear in one to two fingers' thickness, thereby preventing the retraction of the penis into the sheath.

The affection cannot be relieved by the usual procedure (massage, blue ointment, suspensory, etc.). The author performs an operation of amputating the

affected part of the penis or the prepuce, whereupon he applies cotton saturated with iron sesquichlorate. The bandage is removed after four days, and the wound is treated with pyoctanin (20% alcohol solution). In nine cases treated in this manner recovery ensued in from ten to fourteen days. The penis was completely retracted into the sheath.

Experiences at the Front

Hartnack (*Berl. Tierarz. Woch.* No. 2, 191)

Among the great number of remedies the author found alum and formaldehyd with alcohol as most suitable for the control of persistent scratches in horses. Alum was applied in powder form under a cotton bandage, whereas a solution of 1 part of formaldehyd in 8 to 10 parts of 96 per cent alcohol was employed without a bandage, two to four times daily, painted on the affected part.

For permanent identification of horses the author recommends a tattooing of the inner surface of the upper lip, as he observed it on horses taken from the English.

A striking emaciation of two beautiful horses in splendid condition was the result of a heartless attendant who was assigned to care for the horses, having tied them up at nights for weeks so high that they could not lie down. He pleaded that on account of the insufficient amount of bedding when the horses laid down the cleaning necessitated a great deal of work.

Influence of Feeding Food Deficient in Lime on the Composition of the Developing Bone

Weiser (*Biochem. Zeitschr.* Vol. 65)

The feeding of food deficient in lime for a long period influences the growth and the body weight. The animals show even in a short time a smaller gain by about 20 per cent than the control animals fed with food containing a sufficient amount of lime. The appetite of the animals is also diminished. The bones

of the animals deficient in lime are thinner, deformed, flexible and may be easily cut with a knife. The growth and the weight of the skeleton did not prove less in deficient lime feeding than when the animals were fed sufficient lime. The bones deficient in lime show a greater content in water and lesser content in ash, and about the same amount of fat as those having sufficient lime. The bone ash of animals deficient in lime contains a greater amount of alcohol. The cranial bones show a slighter difference in the ash contents, quantitative as well as qualitative, than the ribs.

Veterinary Police Measures for the Eradication of Rabies, in Austria

On account of the great spread of rabies in dogs and cats in Austria the state authorities inaugurated severe measures for the eradication of the disease. According to the same, dogs can be taken out only when muzzled, and on a leash, and they must be chained in their kennel day and night, in such places as are not accessible to other dogs.

Work dogs, hunters, and sheep and herders' dogs must be muzzled immediately after their work.

In cases where these measures are not carried out dogs are caught and immediately destroyed. Every fourteen days searches must be made in every township for stray dogs, and those caught are immediately killed. Should a dog or cat run away from the owner it should be immediately reported to the authorities.

Animals in which rabies is suspected, and all dogs and cats in which even the slightest suspicion of rabies has been established should be immediately destroyed, likewise dogs and cats which have been bitten by rabid animals, or in which it is suspected that they have come in contact with rabid animals. Every dog over eight weeks old must be provided on the neck collar with a tag containing the name of the township, and a number assigned by the authorities.

Therapeutic Digest

By MART R. STEFFEN, Milwaukee, Wisconsin

The Correct Designation of Biologicals

WHILE, perhaps, it will make no difference in the final summing up of any case under treatment it does make a difference in the effect produced upon the readers of case reports, the writers of which repeatedly confuse bacterins with serums or vaccines.

While this confusion of terms is by no means confined to veterinary journals, veterinary practitioners are most frequently guilty of this offense. This is all the more exasperating when we consider the fact that veterinarians are using biological agents to a much greater extent than practitioners of human medicine, and for this reason they should have, and really do have, a much better understanding of the identity of the agents so used. It is only when they put this understanding on paper, in case reports for instance, that it becomes apparent that many of them are careless in the use of these terms.

A bacterin is, in plain words, an emulsion of dead bacteria and the products elaborated by them during growth on a culture media.

A serum is derived from blood which has been abstracted from an animal immunized against the disease for which the serum is to be used.

A vaccine consists either of bacteria quite alive, or of bacteria very much attenuated by heat or other means.

The difference between a bacterin and a vaccine is life and death; in the

former the germs are dead, while in the latter they are alive.

The serum differs from both of them in the fact that it contains neither dead nor live germs, its potency being contained in the form of anti-bodies or anti-toxins.

Vaccines and bacterins effect the production within the animal of such anti-bodies and anti-toxines as are contained in therapeutic serums

We frequently read in case reports that bacterins were given directly into the blood stream by intravenous injection. This proceeding is not permissible; no remedial effect is obtained. Bacterins must always be injected into the areolar tissues.

While the foregoing is all "fresh man's" stuff it does no harm to brush upon it now and then.

The War Price at which methylene blue is now selling is prohibitive for veterinary purposes. This is to be deplored, because this agent has given better results in contagious abortion of cows than anything else.

A practitioner in southern Wisconsin recently informed the writer that his drughouse had quoted the stuff at eighty-five dollars per pound.

Before the European war it sold for about two dollars.

A writer in a druggists medium claims that the variation of aconite tinctures is only apparent, not real.

He makes the statement that the fault lies in the present method of chemical standardization of this tincture, which method he says is very irregular in results, giving different results at times from the same sample. He recommends the abolition of the chemical method of assay.

The use of mineral oils is becoming greater in human practice for the treatment of intestinal stasis, constipation or obstipation.

The results are said to be better than those obtained from vegetable oils, and veterinarians might give mineral oils a trial.

Some interesting points taken from a paper on "The Proper Use of Drugs," by Daniel E. S. Coleman, New York.

Only those unfamiliar with the wonderful curative properties of drugs join the ranks of the therapeutic nihilists.

Chemical therapy has a limited application as a palliative measure, as the use of an alkali in acid dyspepsia. Such treatment is in no way curative. The direct action of an antidote in cases of acute poisoning is another example of chemical therapy.

The treatment of disease by the use of antiseptics has been to a large extent a failure. It has a place in parasitic disease of the skin and in certain infections. The use of strong and poisonous chemicals which lower the resistance of the tissues is fast falling into disrepute.

The use of internal secretions belongs to the field of palliative medicine. The use of remedies affecting the secretions of the ductless glands needs further clinical verification.

Serum therapy is of great value, but the field at present is limited to six more or less efficient serums.

By the proper use of drugs we simply aid nature in forming its autogen-

ous antitoxin; in serum therapy we add it directly. The philosophy is the same.

The *Medical Times* brings the report of anthrax in man through infection from a shaving brush. Suspicion fell upon a shaving brush in the first instance because at the postmortem examination it was noted that the small local lesion came well within the individual's shaving area, which covered a larger ground than usual. The clue was followed up and the brush bacteriologically examined, with the result that it could be definitely stated that it was infected with anthrax. Further inquiry showed that other shaving brushes were grossly infected.

A form of meningitis of frequent occurrence in colts in the springtime, is a low-grade form of meningitis. It occurs most commonly in colts over a year old up to three years of age. The affected animal is usually found down, without other noteworthy symptoms, except that the temperature is frequently subnormal. Colts at pasture or idle in the stable are practically the only ones affected, and the condition is sporadic in character in most cases.

We have obtained some fine results in these cases now and then with a single large dose of atropin sulphate; a yearling can take a quarter grain hypodermically, while a three-year-old should get three-quarters of a grain. This must, however, be given as the initial treatment before any thing else is done, and the colt should then be left alone for a couple of hours. In many cases the patient will get up and appear to be in almost normal condition at the end of a few hours.

Lack of co-ordination in the posterior members usually remains in evidence for some time in all cases. Iodides hasten the disappearance of this.

Queries and Answers

The editor will reply to queries appearing here, as he is able and as opportunity permits, but he does not want, nor cannot undertake to monopolize this portion of the department. Any reader who can furnish further and better information in reply to any query is urgently requested to do so. Where the treatments advised in these replies is adopted it is hoped that those employing them will report their results whether good or bad. In all cases give the number of the query when writing anything concerning it.

QUERY No. 228—One of my clients has a very good trotting mare six years old, standing about 15.3 and weighing about 1,000 pounds. This mare went lame the past season due to side bones, both inside and outside of both forefeet. She is sound except for this and has excellent legs. She was taken home in September, too lame to race. I began treatment by removing the shoes and applying poultices and allowing complete rest for three weeks. She was then shod with rubber pads with tar and oakum underneath them, lowering the toe as much as practicable. She was driven only a very little since then and only on soft roads and very slowly. Swabs and mild counter irritation around the coronets have been continued since. Her hoofs are growing splendidly, look healthy and in fact she has a good hoof. She has not shown any lameness for two months.

I want to add that this mare goes very high in front and very heavy, this no doubt causing the side-bones from the concussion. She folds so closely that it is difficult to give her any pad and still keep her away from her elbows. I should like to have Dr. M. H. McKillip, or some man who has had a wide experience with race horses advise me as to what the chances are for her to race sound next season; suggestions as to treatment would be greatly appreciated. If she goes lame again next season, would a winter's rest and median neurectomy be advisable after that?—A. D.

REPLY BY M. H. MCKILLIP, M. D., V.

S.—The disease mentioned in the majority of cases responds to treatment. In this case there is a predisposition because of high action and use for speed purposes, hence requiring a course of treatment and time to entirely eradicate or overcome the difficulty; otherwise, a recurrence may develop.

I would advise that the actual cautery in the form of line firing be applied over the region and followed by a period of long rest, either in paddock or to be turned out. To place the animal in service again this year might mean a recurrence and a fatal lameness.

In regard to neurectomies, the median would not likely relieve the lameness, therefore, it would be necessary to resort to the high plantar, which, from my experience, is not a success in race horses.

QUERY No. 229—Are there any microscopic lesions that are diagnostic of pernicious anemia?

REPLY BY DR. H. PRESTON HOSKINS— I take it that the disease referred to is what we usually call swamp fever or infectious anemia. In the light of present knowledge, there is no microscopic lesion which can be taken as conclusive proof of this disease. Both clinical symptoms and post mortem findings are fairly constant, yet at the same time it is a very difficult matter to make diagnosis from clinical symptoms without a post-mortem examination. Likewise, post-mortem examinations, both gross and microscopical, are unsatisfactory in the absence of his-

tory and clinical symptoms. Animal inoculations must be resorted to for a positive diagnosis. Even negative results of animal inoculations are not conclusive or indicative of the absence of the specific infection. The best and latest work that we have on this subject is that reported by Van Es and Schalk, of the North Dakota Experiment Station. These authorities state that there are no lesions, either gross or microscopic, that are in themselves significant.

QUERY No. 230—Referring to Dr. C. A. Zell's article, Rabies, Its Diagnosis and Treatment (page 835, November issue, 1915).

If I have not been misinformed, Negri-bodies are found where rabies does not exist. Now take a suspect with all the clinical symptoms, but non-rabid, as we find them from time to time; isolate this suspect until recovery takes place, then kill him and examine the brain; Negri-bodies are found to be present. How far can this Negri-body-diagnosis be trusted? And what does positive or negative findings demonstrate?—T. B. D., V. S., B. V. Sc.

REPLY BY DR. ZELL—Negri-bodies are never found where rabies does not exist. This is a fact corroborated by investigators in almost all parts of the scientific world.

In the Health Department, New York, where diagnosis by the presence of Negri-bodies has been used for the past ten years, about 4,500 cases have been examined. It was found that rabies never failed to develop in animals inoculated with material showing definitely-structured Negri-bodies. On the other hand, material in which they failed to demonstrate typically-structured bodies has produced rabies. All of this material however, showed suspicious small forms, similar to those found in rabies fixed virus, but any decomposing brain may also show (in smears) bodies very similar to these tiny forms. Therefore, it is difficult to rule out rabies in such cases.

Of course, animal tests will probably always have to be made with brains that

are too decomposed to show any form-elements except bacteria. Brains of animals dying from distemper may also show small non-structured forms like "fixed virus" bodies.

Drs. Park and Williams summarize their views in regard to the value of

1. Negri-bodies demonstrated. Diagnosis: Rabies.
2. Negri-bodies not demonstrated in fresh brain. Probably not rabies. (Animal inoculation.)
3. Negri-bodies not demonstrated in decomposing brains. Uncertain. (Animal inoculation.)
4. Suspicious bodies in fresh brains. Probably rabies. (Animal inoculation.)



"Colonel," a dog seriously bitten two years ago by a dog known to be rabid. He was given Dr. Zell's antirabic treatment by Dr. D. M. Campbell, of Evanston, and to date has shown no symptoms of rabies. The illustration shows "Colonel's" mistress and a window in that portion of the Editor's hospital devoted to small animal practice.

In regard to the blood reaction, I wish to state that a positive reaction means the presence of antibodies in the blood, and a negative reaction, the absence of antibodies; therefore, if an animal is infected, it will show the presence of specific antibodies in the blood, which, however, will disappear sometimes shortly before the death of the animal, but they are always present during the first stages of the disease.

Animals, not infected, have no antibodies, and therefore no reaction takes place with the blood test, i. e., a negative reaction results.

QUERY No. 231—What are the proper steps to take to stop empirics from advertising as graduates?

REPLY—In many states no legal steps can be taken, provided the empiric is registered. In states such as Nebraska, having laws prohibiting registered, non-graduates from advertising as graduates, the law, of course, should be invoked. Often it is not best for a competitor to appear as the principal in such prosecution. There should be little difficulty in acquainting some dissatisfied patron with the fact that he has been duped into employing a non-graduate man under the impression that he was a graduate and in encouraging him to start proceedings that will put a stop to violations of the law in that respect.

Where the man is not licensed and there is any sort of veterinary practice act, the problem is ordinarily not a difficult one. A letter from the state's attorney calling the offender's attention to the fact that he is violating the law and telling him that complaint has been made and prosecution will follow if he does not desist, is usually sufficient. In other cases, trial and conviction may be necessary.

In still other cases, and they are numerous, where a non-graduate violates none of the laws of the state or community by advertising himself to be a graduate, legal means for stopping such misrepresentation, of course, cannot be resorted to, but a quiet and systematic public education may be effective. In some such cases the veterinarian has run his card in the paper with wording "only graduate in _____ county." This is a questionable procedure, but it calls the attention of the public to the misrepresentation of the other man in the same location.

In still other cases, dissatisfied patrons of the tongue-wagging sort have been

furnished full information on the subject and have circulated it more thoroughly than would the weekly newspaper. People differ; some may prefer a veterinarian educated in the school of experience to a scientific man but there is no one who will not resent false pretenses in the matter.

QUERY No. 232—Did you ever know of a mare mule having a colt?

REPLY—Personally, no; but a number of such cases have been reported in VETERINARY MEDICINE in the past ten years. The editor of the *American Breeder* stated in a recent issue of that paper, that he did not believe a mule had ever given birth to a colt.

QUERY No. 233—Are automobiles too expensive for veterinarians to use in their practice?

REPLY—This depends, of course, on the locality, the condition of the roads, the practice and the veterinarian. Ordinarily a veterinarian cannot afford not to use an automobile in his practice. There are relatively few veterinarians who do not use automobiles in making calls. Certainly there is no other profession of whom so large a percentage use automobiles as veterinarians. This follows because of their necessity of travelling considerable distances and getting to their destination in the shortest possible time.

Under ordinary conditions, a veterinarian with an automobile can do two to four times the practice that one can do with horses—the average is probably three times as much. Where a veterinarian has not enough practice to keep him busy all the time, an automobile is still of advantage to him in permitting him to be at his office more of the time, and this, of course, enables him to miss fewer calls and to increase his practice; to say nothing of the added time it gives him for self-improvement; for making desirable acquaintances, for collecting accounts and for being with his family. Furthermore, in most localities, the patrons of veterinarians demand that they have au-

tomobiles. If one does not use a car, his competitor who does will in many instances get the business.

Ordinarily when a client calls his veterinarian, particularly if the client be a farmer, he wants him at once, and if he be, say ten miles away from the veterinarian's office, he is almost certain to give his preference to the one using a car.

QUERY No. 234—I have lost three cows where the placenta had been retained six or seven days. I pump three gallons of warm water with a cup of borax dissolved therein, into the uterus and then gently remove the adherent placental membranes. The operation requires an hour or more to do it thoroughly. I then inject ten gallons or more of warm water and siphon until the fluid is returned clear and free from detritus. One animal, after having been treated, walked a distance of a half-mile and was found dead two hours later. A second case was lost two days after treatment, but in this subject there was manifested symptoms of *malaise* inappetence, etc. The third case was lost after three days. In this instance a solution of potassium permanganate was employed for irrigation of the uterus. I always scrub my hands and arms with an antiseptic solution. Cows that are treated within a few hours (twenty-four hours after parturition) do nicely and show no inconvenience twelve hours later. Probably you can advise some other treatment in case mine is no good.

The owners learn a lesson after losing a few cows. Tying on horseshoes or other articles for weights will soon be a thing of the past, I believe. Stock-owners are learning to call the veterinarian. I think irrigation, two or three times daily, should be beneficial, but the owners never expect the veterinarian to make repeated visits to see the same case and they have no facilities for treating animals themselves. The cows probably die from shock or need of more attention. Any advice will be greatly appreciated.
—W. L., Calif

REPLY—You do not so state but one may infer from your brief description of the cases cited, that the subjects have absorbed toxic material, the result of the retained secundines and this for several days. In such cases, as you know, much depends upon the vitality of the subject—her ability to resist toxemia as well as the virulence of the pathogenic organisms affecting the uterus.


It is possible in cases where there is uterine atony as in septic metritis that the introduction of large quantities of antiseptic solutions will do serious injury to the uterine wall, even, in some cases, causing rents or a separation of its component parts and allowing subsequently, discharge of contents into the peritoneal cavity. Again, in many cases where there exists septic metritis of several days' standing with the usual peritonitis and resultant intoxication, death will result as you say, from shock, and this may occur immediately after the uterus has been irrigated. In all cases where one can positively determine existence of septic metro-peritonitis, it is well to appraise the client of the danger of death of the subject from shock, that unjust censure be not received as compensation for service rendered.

Where suitable solutions are employed in uterine irrigation and care is exercised in the removal of solution, no harm can result from such treatment if no rents or perforations of the uterus occur, if one is skillful in his manipulations.

Your treatment is rational and the only addition we suggest in this matter is the administration of a purgative and suitable stimulants. Good nursing is, of course, always in order.

In the dairy districts of some states veterinarians have made their price for the removal of non-putrid placental membranes very moderate, but have placed the price for the removal of putrid membranes so high that their clients do not neglect cases of retained secundines, but call the practitioner early and all concerned are better satisfied.

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary Medicine



It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

The Army Veterinary Bill

Excerpts from the Debate in the United States Senate

SENATOR HUGHES OF NEW JERSEY: Mr. President, I do not care to submit the matter to the Senate without argument, because there are many good arguments that could be made on this subject from my standpoint. I wish the Senate to know before it votes upon this question that at the present time the United States army have not seen fit to treat veterinarians as though they were entitled to the average consideration that one gentleman in this country accords to another. There is no reason for this attitude. Whatever reasons may have existed in the past for the treatment accorded to veterinary surgeons by the United States Government, no such reasons exist now; and I want the Senate to know that every civilized nation in the world, and also some of the uncivilized nations according to my information, have accorded these gentlemen the status which I am trying to have the Senate accord them by the adoption of the amendment I have proposed.

I wish to give Senators some idea of the disabilities under which veterinary surgeons now labor in attempting to perform the duties assigned

them. The official status of the veterinarian is as follows:

He has the pay and allowances of a second lieutenant, mounted, but has not the rank of a lieutenant. He has no promotion and throughout his service is carried on the returns below the youngest lieutenant. He can retire on disability or at the age of 64 years. He is not a responsible officer, and a commissioned officer must be held responsible for his professional instruments, supplies, and so forth. At posts without a veterinary hospital the medicines are supplied to the troops and not to the veterinarian. He can not sign a certificate, but must swear to an affidavit, as do enlisted men. A certificate of health for public horses for interstate transportation is not accepted by state authorities from him because he is not an officer. He is rated as a non-combatant yet goes to the front with the troops, but is not allowed to wear a saber, the only protective arm internationally authorized for non-combatants. The youngest lieutenant entering the army can rank him out of his quarters, although he may have many years of service and a family.

His prescribed service uniform resembles that of an officer, but his dress uniform is shorn of the shoulder straps, so that he looks similar to a private of the band of his regiment. He is forbidden to wear the insignia "U. S." as collar ornaments, although he is by law a part of a regiment of cavalry or field artillery, two distinctly fighting arms. These are a few of the inconsistencies and discriminations that bitterly offend the feelings of the young army veterinarian and insult his sense of manliness.

The veterinary schools of the United States, which for the year 1917 have all prescribed a four years' course, advise their graduates not to attempt to enter the United States army service, because that is the only field of activity where they are not accorded equal treatment with other professional men.

It has been stated that there is a tendency to bestow rank on men who are civilians and men who constitute no part of the fighting forces. Yet in the present war the Austro-German forces have lost by death 247 veterinary officers. The German army is not a social organization; and it has clothed these men with rank and authority higher than that sought to be bestowed under this amendment. They rank from colonel, lieutenant colonel, and major on down to second lieutenants. The British army has done the same thing, as has also the French army. The Australian and Canadian armies—in fact, every one of the armies fighting now on the battle fields of Europe—have recognized the important service that can be, and ought to be, discharged by men doing this work.

I want to call your attention to the personnel of the men who now constitute the veterinarian force of the United States army, so that there will be no hesitation in the mind of any Senator as to the qualifications of the men now engaged in this work.

One of our veterinarians is a graduate of the Royal College of Veterinary

Surgeons at London, another of the Royal Veterinary Academy at Berlin, one of the McGill University, one of the Harvard University, five are graduates of Cornell University, five of the University of Pennsylvania, four of the American Veterinary College, University of the City of New York, two of the Ohio State University, four of the veterinary department of the Iowa State Agricultural College, five of the Ontario Veterinary College, four of the Chicago Veterinary College, one of the Kansas City Veterinary College, and two of the San Francisco Veterinary College. This accounts for 36 graduates, and there are 6 vacancies. The vacancies exist, I presume, because of the reluctance of men to enter a service where the moment they don the uniform of Uncle Sam they are classified in a way that they have never theretofore been classified either at their schools or in private life.*

Before I close and submit this matter to the Senate, I desire to read a marginal note that was placed by the Kaiser on the bill reorganizing the German veterinary service, which sets out much better than I can do the regard in which these men are held in the countries where fighting is a profession:

NOTE—Upon the veterinary officer devolve high moral, physical and technical demands in peace and war. Only such young men are to be selected for the military veterinary career who possess a high mind, tact, mental versatility, physical activity, and pride in their profession.

It seems to me, under the circumstances, that it is as little as we can do at this time, when we are attempting to prepare an army and arrange legislation in such a way that we will have an army as efficient and as capable as any army in the world to give this belated recognition to these men. Of course up to the time of the outbreak of the European war it was said and

*There are inaccuracies in this paragraph.—Editor.

believed that the day of the cavalry as an arm of the military service was at an end, and yet one of the first manifestations that we saw of the serious nature of the war in Europe was the presence here of European officers engaged in a frantic effort to obtain cavalry horses. These men were not non-commissioned officers or private soldiers. These men were commissioned officers of high rank, veterinarians, who understood their business. What a situation their respective governments would have been in had they been unable to send men of that character to this country to purchase the horses needed by their respective governments.

Mr. President, I am willing to leave this matter to the good sense of the Senate of the United States, relying upon the showing that is made by these men and the showing they have made in the past; relying also upon the fact that the House in its bill accorded them the rank and the privilege that they asked, and the further fact that this body itself on other occasions has acted in a manner favorable to them, but for one reason or another, owing to the exercise of one influence or another, it has never been possible to have the two bodies act finally during any one Congress. In order that this tardy justice may be done these men, I ask that this amendment be adopted.

SENATOR CUMMINS OF IOWA: Mr. President, in addition to the reasons so well given by the Senator from New Jersey [Mr. Hughes] in favor of his amendment, it will not be forgotten that the veterinary surgeon is now a member of a skilled and scientific profession. The scope of his learning is hardly less than the learning of the ordinary surgeon. The course of instruction required at all schools is now almost equal, if not entirely equal, to the time required for graduation into other learned professions. Moreover, the veterinary surgeon in the army is

just as well qualified to command troops as are the members of the other medical branch of the army, and in some armies now performing great feats in arms the veterinary surgeons have commanded troops and are commanding them now.

There is one reason, however, which to me is conclusive. In view of the great advance in the profession and the increase in the remuneration of the profession in private life, I do not believe that the best of veterinary surgeons can be commanded without awarding them the rank which belongs to scientific and skillful men. Our army needs the very best of this profession. Human nature is so constituted that it will accept honor as a part of the inducement which leads us all into a chosen vocation. The rank given to officers in our army is absolutely necessary to secure that standard of ability and competency which every such organization must have.

In view of the fact that engineers have rank, in view of the fact that the other medical practitioners have rank, and in view of the fact that dental surgeons have rank, it seems to me illogical, almost unthinkable, that the members of this profession shall not be accorded equal honor.

This bill limits the rank to that of major. In the French army a member of this profession may, under certain circumstances, have the rank of general, as I am informed. The only objection to the amendment is that it does not provide for a higher rank, under some circumstances, than that of major; but I have no disposition to enlarge the scope of the amendment in that respect.

I very earnestly hope that the amendment offered will prevail.

SENATOR LODGE OF MASSACHUSETTS: Mr. President, the other day, when the amendment in regard to giving rank to the dental surgeons was before the Senate, I said that in

past years I had opposed the staff rank—that is, rank to what are called the staff departments—as a general proposition. Congress, however, has decided on an opposite policy. It has given rank to paymasters, to chaplains, to civil engineers in the navy, to the Medical Corps, to the chaplains, and to the dental surgeons. It seems to me impossible to deny it to one particular corps, especially where that corps is trained particularly for that work.

The modern veterinarian is very different from the farrier or blacksmith to whom was assigned the care of horses in cavalry regiments. He is a highly educated man. As the Senator from Iowa [Mr. Cummins] has pointed out, he has received a thorough scientific education. I think we shall not go wrong in following the example of the other great armies of the world. As has been already pointed out, they have rank in all the great armies of Europe. In the English army the rank is as high as general, and they are recognized as an extremely important part of the service. They have to be with the regiments. They are practically officers of cavalry, educated and trained for a particular purpose, and upon them rests a great weight of responsibility.

Two hundred and sixty-one veterinarians have been killed, and 260 wounded, and 66 have received the iron cross and various service medals in the German and Austrian armies alone. They have no Red Cross protection, and that shows that they are in active service in the field just as much as a line officer. It seems to me there can be no logical ground for giving rank to all the other specially trained corps in the army and refusing it to the veterinarians.

For that reason it seems to me that the amendment proposed by the Senator from New Jersey ought to be adopted.

The amendment to the amendment was agreed to.

INFECTIOUS ORCHITIS IN A BULL.

The accompanying illustration shows the testicles removed from a bull in March. The history of the case is as follows: A Holstein bull, six years old, had a swollen scrotum last summer. After treating it locally and giving internal medication the swelling disappeared and the bull was used again, serving quite a large number of cows. In January the swelling again appeared in the same side of



the scrotum and local treatment was again prescribed—liniments, poultices, bathing; also a suspensory to relieve the weight of the scrotum and this with internal treatment of different forms. And still the scrotum got larger. This animal had been Tuberculin tested twice since treatment was begun, but no reaction followed. At last the scrotum got black and I decided to remove one testicle.

The bull was thrown and given chloroform but when the scrotum was incised no testicle slipped out, it was attached to the skin and had to be dis-

sected out. Both testicles had become involved and were adherent, so that both had to be removed. One weighed 13 pounds and the other one-half a pound. On the inside of the large testicle I found some pus but no microscopic examination was made. The interior of the other testicle was apparently normal. Was this tuberculosis or was it a non-tubercular abscess?

F. C. AKIN.

Pewaukee, Wisconsin.

Comment: This case distinctly recalls an experience with a valuable pure-bred Hereford bull, where there was a history of no reaction to annual tuberculin testing for several years, and one testicle had been similarly involved but loss of function of the other did not occur. In fact this bull was a very prolific and desirable sire and remained so (although a monorchid in so far as function was concerned) until death resulted from other causes.

A post mortem examination revealed that the apparently benign induration of this affected testicle was due to a tuberculous infection.—Editor.

VETERINARY PRACTICE IN THE COLD BUSH COUNTRY

I have often thought of writing and giving some idea of what a veterinary surgeon finds to do, way up in this country. Thessalon is situated on the north shore of Lake Huron in Algoma District. We have a good belt of farming land here between the rocks. The principal industry is lumbering.

We have a disease here never found in old Ontario to any extent if at all. Throughout our western provinces the same trouble exists, also I think in some of the States. It is commonly referred to as "fever." This trouble is purely of a dietetic nature and affects the general health. The fever ranges in temperature from 103° to 107° and is very analogous to ty-

phoid fever in the human family. We find it in horses turned to grass in the spring, usually lumbermen's horses. The animals become weak and unable to rise and swollen in the hind legs and scrotum. I have found an eliminative treatment to be very effective, often reducing the temperature from 106° and 107° to normal in three and four days.

Treatment: I give a drench consisting of oleum lini. one quart; turpentine two ounces; creolin one dram, and carbolic acid one dram.

Last fall I went down into old Ontario where I used to practice. At Bracebridge I met a government judge at the fall fair. I was starting the horses in a little local race. After I got through, this high brow stepped up and said, "You are a veterinary surgeon, I understand. Where do you practice?" "In Algoma on the north shore of Lake Huron," I replied. "And what do you find to do up there, Doctor?" said the judge, "wild animals I suppose!"

We have fine hunting and fishing up here. I also have a good entire son of Direct Hal (204¼) out of a producing dam, Lady H. She has produced two with 206¾. I trained him this winter over a mile track on the ice; of course, in the summer we have no track, so I thought I had better develop him all I could this winter. There are plenty of readers of VETERINARY MEDICINE who will know Direct Hal, also Lady H. I had him on one-eighth in 15½; half in 1:07; and a mile in 2:18, with little preparation. I expect to take this fellow to Grand Circuit later on.

LAWRENCE BAILEY.

Thessalon, Ont.

JOURNAL OF BACTERIOLOGY

(Continued from page 458)

Moore of the State Veterinary College. The first issue (January, 1916) is a splendid magazine of 136 pages. It is published bi-monthly and the subscription price is \$5.00 a year. A sample copy may be had for the asking.

REPORTS ALL GONE; WITH- HOLD YOUR ORDERS TILL NEXT YEAR

Secretary Ferguson of the United States Live Stock Sanitary Association has asked us to announce that his stock of Reports of the nineteenth annual meeting of that society is exhausted. Many readers who intended to get this report will be unable to procure it. Your own fault, just the same. We told you to hurry.

NO RED TAPE IN THE PRO- POSED VETERINARY RESERVE CORPS.

Editor AMERICAN JOURNAL OF VETERINARY MEDICINE:

In your editorial* on "Questionable Preparedness," you certainly astonish me and I hope a great many other veterinarians. As I explained to the Missouri Valley Veterinary Association, and what most of the older veterinary surgeons know, was that in the Spanish-American and the Philippine wars, the War Department was much handicapped in getting capable, up-to-date veterinarians, and that for this reason the veterinarians as a whole did not make a good record in those wars.

To avoid this in the future, I proposed that the veterinarians of America should establish a Veterinary Reserve Corps and make a name for themselves in the next war. To any man who really thinks, there must be some system in arranging this.

In the first place, as the War Department is totally ignorant of the different

*It should be noted that the article referred to was not properly speaking an editorial. It was written by Dr. Steffen and appeared in his department, in which he has an absolutely free hand and for all of which he is solely responsible. Editorially, VETERINARY MEDICINE is in full accord with Dr. Agnew's plan.

In fairness it should be said that Dr. Agnew has strangely misunderstood Dr. Steffen. The latter did not say or imply that his "Veritable King" considered it beneath his dignity to join the A. V. M. A.; nor had he any thought of implying that said king held the A. V. M. A. in contempt. Dr. Agnew although he doesn't seem to realize it agrees fully with Dr. Steffen, that it would be a mistake to form the proposed Veterinary Reserve Corps solely from the ranks of the purely scientific, or from the practical branches of the profession to the exclusion of the other.—EDITOR.

local veterinary associations, it is only natural for the Department to consider that the national association—the A. V. M. A. would be the most useful one to look to for veterinarians, in that it would embrace many members of the local associations—possibly all of some of them. The main idea being to get men who were of some recognized and stable organization, who had to be vouched for before becoming members of it. It was not intended as a slight to any local association or to any "veritable king," though why a "veritable king" considers it beneath his dignity to join the A. V. M. A. is certainly a mystery to me. However, if he will re-read that paragraph in my pigeon-holed circular, he will see that it is only advised that members of the A. V. M. A. will be given first preference, and I assure him that if he is the wonder that you say he is and can prove it, the War Department will be delighted to obtain his valuable services in spite of his contempt for the A. V. M. A. Surely all can see that it is a question of business and that no successful business can run without some system.

If one employs a man for a specific purpose, he is required to show reference as to his ability; if he shows proper certificates, etc., he gets the job.

In war time we do not want to put a man in a responsible position without knowing that he can handle it. And so with the veterinarian; if he is a member of an accredited organization, we can go on the supposition that he can do the work required of him in war, and the War Department would probably accept him in an emergency on that evidence alone, without further question.

I entirely disagree with your claim that it would be a weak point to choose from men who are representatives of the purely scientific side of the veterinary profession in America. In this present European War, it is the scientific man and expert who has been chosen and who has come to the rescue of his country. Even in our country a

picked band of experts and scientific men were asked to assist America with their knowledge, in preparing the country against adverse contingencies. However, there are plenty of opportunities for the practical man as well as for the scientific, so it is folly to talk of "red tape" in this case where no red tape exists.

Many veterinarians have written me, have volunteered their services in case of war, have stated that they were not members of the A. V. M. A. and their letters are filed away and will receive careful consideration; it is simply a question of getting responsible, vouched-for veterinarians. I have been delighted to receive letters from veterinarians of renown in our profession who have joined the coming reserve corps and I do sincerely beseech these gentlemen who are suspicious of red tape to entirely dismiss that idea from their minds, no such conclusion is warranted.

Please don't kill this movement for alleviating the sufferings of war animals, and raising the status of the veterinarian in war by jealousies and arguments. This is a question of patriotism and good will; do not lower these two ideals with small thoughts and bickerings. It makes me truly sad to think that a movement that has started with such enthusiasm should die out because of a fancied restriction that has been damned by the name of "red tape."

So I say to all of you, be you kings, scientists, great veterinarians, large veterinarians, small veterinarians or just veterinarians, to send your names in for the Veterinary Reserve Corps and you can rest assured that each name will receive every consideration that can be given it.

Mr. Editor, in the near future I hope to have some very definite information in regard to army affairs to send you, and I ask that you will give this letter and the later information the same pub-

licity that you have so generously given my communications in the past.

R. VANS AGNEW,
Veterinarian, 5th U. S. Cavalry,
Ft. Leavenworth, Kans.

PARTLY DOUBLE

The accompanying illustration shows a freak calf; having two separate well formed heads, two tails and a double spinal column. The limbs were normal in shape, size and number, and the weight at birth was seventy-five pounds.



An examination of the internal parts showed that it had two esophaguses; one of them opening into the stomach. It had two hearts, two pairs of lungs but only one digestive tract. The calf has been mounted for the museum of the Kansas State Agricultural College.

L. FREDENBURG.
Council Grove, Kans.

RECTO-SCROTAL FISTULA

I was called to operate upon a 200-pound hog afflicted with scrotal hernia on the right side. Employing the usual aseptic precautions, I made an incision through the skin and dartos, performed the covered operation, ligated the tunica vaginalis and removed the testicle.

For two weeks the hog has apparently felt fine, eating and drinking as though normal, but no use is made of the anus. All fecal matter is discharged with ease by way of the scrotal incision.

What have I done? Have I attached some part of the rectum to the tunica vaginalis?

C. L. WHITTINGTON.
Luverne, Iowa.

Comment.—You have undoubtedly in some manner incorporated, either a portion of the rectum or of the colon within the ligature which was used to encircle the tunica vaginalis and spermatic cord and adhesions have taken place with the resultant fecal fistula, which provides for evacuation of feces. Because of its more dependent location and of possible adhesions situated between the artificial anus and the true one, the subject must make use of the scrotal route.—EDITOR.

AUTOTHERAPY—WHY?

Concerning the effect of the gastric juice upon ingested bacteria, Kirke says, "The normal acidity of the stomach usually destroys all of the bacteria taken in with the food, but when the amount of the acid is deficient (and sometimes when it is normal) some of the spores may escape into the intestine and there develop in its alkaline media."

From this statement, we may assume that only the spore-forming organisms have a chance to get past the pyloric sphincter, and inasmuch as the pyobacteria are not spore-forming, we may my the same token assume that they are killed by the gastric juice. Now granting that they are killed by this agency, what becomes of them, and what is the probability of their becoming of therapeutic value?

To answer this, we have first of all to consider the composition of bacteria as a whole. They are first and foremost composed of protoplasm, and protoplasm being a protein substance is subject to certain digestive changes which involve ultimately its production or cleavage into proteoses and peptones. Passing to the small intestine, peptones are converted by the pancreatic trypsin and erepsin into leucin, tyrosin and other amino-acids. Following this absorption and assimilation take place. It is apparent to me that protein, from whatever source it may have been derived, passes through these processes of digestion, and the effect on the animal economy will be the same. Concerning the metabolism of proteins Kirke states that

one portion of the protein molecule is built directly into the protoplasmic molecule of the tissues and the other portion being more directly oxidized goes toward the formation of urea.

We have seen now the destination of the ingested bacteria, and we have only to apply slight reasoning to the unanswered portion of the question to determine the therapeutic value of auto-therapy. McFarland states that staphylococci produce very little exotoxin (presumably endotoxin) while streptococci apparently produce only endotoxin. Now during the digestive changes mentioned above, these substances must of necessity be liberated into the stomach and passing along with the ingesta are finally eliminated from the body. If these conclusions be correct, wherein lies the chance of raising the opsonic index? And if this cannot be raised, wherein lies the value?

E. R. SPARKS, D. V. S.

Portland, Ore.

THE CROSS AND TRIANGLE

The accompanying illustration shows the design of an official emblem for the A. V. M. A. that I have submitted to



the committee. The triangle is red with blue borders and the cross in the center is blue, with the word "VETERINARIAN" also in blue.

G. S. GLOVER.

Winchester, Va.

A HORSESHOE EMBLEM

Regarding an official emblem for the A. V. M. A., I wish to suggest the accompanying design which I believe would be appropriate. It could be fastened on



with a pin or button as desired. The horseshoe should be of gold and the cross blue with gold edges, or the whole design colored in this manner could be mounted on a white enamel background.

DR. A. VON ROSENBERG.

Hudson, Mich.

FAVORS THE "SQUARE" CROSS.

In a recent issue of the A. J. V. M. I notice that you ask for suggestions



regarding an official emblem for the A. V. M. A. In this connection I wish to call your attention to the *blue cross* emblem which is now being used by a

great many veterinarians throughout the United States and Canada.

The design is a so-called "square" cross of dark blue outlined with an edging of gold. In some case, as an auto emblem for instance, a background of white is added.

At the last regular convention of the A. V. M. A. souvenir lapel buttons of this type, bearing the letters in gold "A. V. M. A." were given to visiting members by the California State Society. This so popularized the blue cross that there are now hundreds of veterinarians wearing these buttons and using auto emblems of similar design.

Several local veterinary medical associations have adopted the Blue Cross as their official emblem, while others have passed resolutions favoring its adoption by the A. V. M. A. The Illinois State Society was the first, I believe, to officially adopt it, while the Illinois V. M. A. did so very shortly after.

The blue cross seems to be the only design which has had such universal favor and I believe that the committee for the consideration of an official emblem for the A. V. M. A. should give it first choice.

L. R. MCKINLEY,
Sec. Illinois V. M. A.

SUPERFETATION IN A MARE

The history in this case was a little bit different from others that I have observed. The mare was served by a horse last spring and twenty days later by a jack. In December the owner telephoned me that the mare was dumpy with the udder swollen and milk running out of the teats. As about half of the mares in that part of the country had lost their colts, I told him she had or would lose hers. She got all right in a few days, so in February he put her to work in plowed ground, the first time she had been hitched since last fall. About the middle of the afternoon she took sick and he called me. When I got there the mare had given birth to two

colts both dead. The mare was sick but she recovered in about three days.

The horse colt looked as if it had died that same day and lacked about six weeks of foaling time. The mule was partly mummified, eyes all gone, and about half as large as the other colt. The strange part to me was that the mule and all that belonged to it were as black as ink, while the other colt and his part looked good. There was a similar case near there of a full term colt in good shape and a dead twin about the size of a cottontail rabbit, while the after-birth was not in bad condition.

ED. TURNER, V. S.

Breckenridge, Okla.

THE DETROIT MEETING OF THE A. V. M. A. TO BE CAREFULLY PLANNED

The local committee of arrangements for the Detroit meeting of the A. V. M. A. have planned the following schedule for the meeting:

Business Meetings

Monday, August 21st

10:30 A. M.—Assemble at Board of Commerce Auditorium.

State Address of Welcome—Gov. Woodbridge N. Ferris, of Michigan.

Detroit Address of Welcome—Mayor Oscar Marx.

Response—Dr. J. G. Rutherford, of Canada.

Regular business.

Evening, 8 P. M.—Reception.

Tuesday, August 22nd

Reading and discussion of papers.

Wednesday, August 23rd

Sectional meetings.

Reading and discussion of papers.

7 P. M.—Banquet, Hotel Statler.

Thursday, August 24th

7:30 P. M.—Election of officers.

Friday, August 25th

Clinic.

Installation of officers and adjournment.

Entertainment

Monday

Monday afternoon—Visit through the shopping district for the ladies.

8 P. M.—General reception.

Tuesday

2:30 P. M.—Automobile ride for the ladies—"Seeing Detroit."

Tuesday evening—Card party for the ladies.

Wednesday

2 P. M.—Matinee theater party for the ladies.

7:30 P. M.—Banquet.

Thursday

All day Thursday the members will be guests of Parke, Davis & Co. At 9 A. M., the Steamer Britannia will convey the members to the company plant. Following a visit through the Laboratories, the members and visitors will re-embark for a sail on Lake St. Clair through the famous Flats to River St. Clair.

Lunch will be served on board the steamer. The Britannia will return to Woodward Avenue by 6 P. M., allowing ample time for an evening session and election of officers.

BLEEDING BEST FOR KILLING HORSES

I have noted in VETERINARY MEDICINE a number of opinions on the best mode of killing a horse. I agree with the doctor who suggests section of the posterior aorta per rectum. I have tried strychnin with good results, but the fault with this is that dogs sometimes become poisoned by eating the carcasses of such animals. It causes also a very painful death. Another thing, it looks to the owner that you have not earned your fee; whereas if you take off your coat and ask him to bring soap and water for you to wash, it looks like more for the money to him. And another reason I prefer the bleeding is that the animal immediately becomes unconscious and dies in a fainting condition, suffering no pain whatever though there is some struggling. E. E. HOBSON, D. V. M.

Osage City, Kan.

"Essentials of Veterinary Law" has been received, and I have found it entirely satisfactory.

GEO. I. SMITH, D. V. S.
Cedarvale, Kans.

CARROLL'S HORSEBACK RIDING CHALLENGED

Dr. L. J. Faulhaber of New Holstein, Wisconsin, believes that one of his classmates is a better rider than Floyd Carroll of Wheatland, Wyoming, whose picture was shown in our April issue with the information that he is the world's champion saddle rider. Dr. Faulhaber asks us to publish the following announcement:

"My colleague, Victor Finck, D. V. M., who is a recent graduate of the Chicago Veterinary College, is ready to match himself with the world's champion in horsemanship both bareback and with the saddle. The accompanying picture shows Dr. Finck doing one of his feats. He is now located at Elizabeth City, N. C., and has given me permission to have this announcement inserted in your JOURNAL."

We think there is just one way of set-

ting this controversy and that is for Dr. Finck and Dr. Carroll to meet next Frontier Day at Cheyenne and ride it out. It is our understanding that con-



tests for the world's championship in riding are "pulled off" on Frontier Day at Cheyenne and the decision of that tribunal accepted without question.

Memories of Old Doc Stone

By His Assistant

Still Breakin' In

(Continued from Last Month)

The same two big ropes what they had on him in the show was on him yet and two men was leadin' him, and him rearin' up and actin' bad all around. And the next I knows old Doc Stone is callin' me to bring out the dental set. When I brings it Doc says to me whether I am scared to fix this nag's mouth. Excuse me, Doc, I says, I don't believe I got tooth fixin' down fine enough yet to fix 'em for a horse like this. Well, says Doc, you're goin' to fix 'em just the same! Oh me! Oh my! *Me put my hand in that man-eater's mouth?* Say, if a cobweb had dropped from the ceilin' on my head it would have knocked me down just then! So plumb scared out of wits was I.

But old Doc he talks to me nice and encouragin', sayin' as how I can never be eat up any younger and so on and I

begins to bristle up a little. Then, I begins to think as how Doc is a good old soul and likes me, and that he sure won't give me this job to do to get me hurt. I figures that old Doc knows I can do the job all right without danger and that if there was much chance of me gettin' hurt he wouldn't let me tackle the job at all.

So I starts in.

And say! That old man-eatin' faker was "dead easy"; he don't even try to shut down on my hand like all stallions always does when you fixes their teeth. And I does him a good job.

But to this day I fails to understand how come that horse to be so kind and gentle while I am fixin' his teeth. Doc says as how I've got a hypnotic eye for certain horses and this is one of 'em; but I don't think Doc is right because I remembers that as soon as that man-eater gets out of the dental halter he

tries to give me a swipe with a front foot, which I just misses by a inch or so.

I sees you wonderin' where that trouble comes in I started to tell about; it come a few days after this man-eatin' dentistry job, and it was somethin' like this: The hostler, or deck-hand as Doc calls him, what works for Doc in the hospital that time was a feller what we used to call a smart Alex; and we, that is me especially, didn't like him much. He was all the time speakin' about how Doc Smith who he used to cuff horses for, done things and how Doc Stone didn't do 'em. First, before I gets wise to the guy, I sometimes believes what he says but after I gets sort of broke in more I don't take much stock in his remarks.

A couple of days after this man-eatin' dentistry job this smart Alex feller talks to me somethin' like this: Well, well; I thought as how Doc Stone was more of a man than he is; the idea of him bein' afraid to fix that stud's teeth and turnin' the job over to a kid! Doc Smith wouldn't be as raw as that in forty years.—and a whole lot more such stuff he tells me. I didn't say a word until he finishes and then I calls him. I tells him as how I knows there ain't no darn horse in the world what Doc Stone is afraid of; that old Doc was only givin' me the chance to show up some of the other vets in town, and Doc Smith was one of 'em, who had made excuses to get out of fixin' the man-eater's teeth. This was the honest truth, too; because after I gets done fixin' the teeth the owner of the stallion tells Doc Stone this. And furthermore, I says to this smart Alex, if Doc Smith is such a all-fired good vet why is it he can get along with one drivin' horse when Doc Stone uses five of 'em? And, I asks him, if your Doc Smith is such a gosh-darned good vet also why don't he hire a assistant when Doc Stone mostly hires two of 'em and a darned smart Alex like you besides?

Oh, but I did soak it to him! And just when I was gettin' ready another good shot to send at him I hears Doc

Stone coughin' in the harness room which was the place we was chewin' the rag in front of; he must have been listenin' to the whole thing. That night before he goes to supper he calls me and the smart Alex into the office. Now, he says, I heard you two fellers this afternoon and I don't know whether to fire both of you or which one; and then he stops a long time and says nothin'. Finally he asks the smart Alex feller how much has he got comin'. A week exactly, says he. All right, says Doc; here is your money; and he was fired. But Doc don't let me off without a good lecture on chewin' the rag with a damp-hool and I feels pretty cheap. But then, I has my job yet, anyhow.

POPULAR INTEREST IN SANITARY SUBJECTS IN THE FAR WEST

Dr. Edward I. Cheely of Holtville, California, has an excellent article on "Pure Food for Babies," in a recent issue of the *Desert Farmer*. The discourse deals with the production, handling and keeping of milk for food; with meats and canned goods as media for the conveyance of disease to humans and with adulterants and their detection. It is the work of such able men as is Dr. Cheely which makes for the elevation of the veterinary profession and will help it to attain deserved recognition.

ALUMNI MEETING SMOKER

The twentieth annual meeting of The Alumni Association of The United States College of Veterinary Surgeons was held at The Raleigh Hotel, Washington, D. C., on Friday evening April 14th. Seventy-five members were present. Dr. H. S. Gamble '08 was elected President, Dr. C. F. Miller '16 Vice President, and Dr. C. M. Mansfield '07 Secretary and Treasurer. These officers were elected for a term of two years. A social program followed which consisted of music and talks. A buffet luncheon was served. The next meeting will be held April 14, 1917, at Washington, D. C.

VARYING PERIODS OF GESTATION IN THE MARE

On April 9, 1915, two mares were bred to a 1200-pound driving horse. One mare, eleven years old, gave birth to a living colt on March 5, 1916. The other mare, two years old when bred, gave birth to a living colt April 9, 1916. Note that the two-year-old mare carried her colt twelve months to the day. The eleven-year-old mare lacked four days of carrying hers eleven months.

Decker, Ind. FLOYD GILLIATT.

KANSAS VETERINARY ASSOCIATION MATTERS

The annual meeting of the Kansas State Veterinary Association of Kansas City, Kans., January 5th, 6th and 7th, is considered by many veterinarians to have been the best session held for many years, both from an educational and legislative



standpoint. In electing Dr. W. J. Guilfoil president, the association seated a capable and willing member in office. He has had an extensive experience in many lines of veterinary work, being a leading practitioner in Kansas City, president of the city veterinary association for six years, connected with the Bureau of Animal Industry for several years, and hav-

ing had charge of transportation of British cavalry horses during the Boer War. Later he became associated with the Sihler Serum Co. in the manufacture of anti-hog-cholera serum, and at present, in company with his brother, is conducting the Guilfoil Serum Co. Dr. Guilfoil is qualified to give the Kansas State Veterinary Association an efficient administration, and it is his ambition to have every veterinarian in the Sunflower State become a member and work to make the organization one of the strongest in the country.

LOG OF S. S. "FREMONA"

(Continued from page 448)

ship in the distance, which Morsed us to shut down our engines immediately, which we did; and all hands were wondering if we were going to be invited to go into our boats, but as she neared us, we could readily see the English Jack, which was a great relief to all on board. As she came up alongside, he asked where we were bound and our cargo, etc., and also what war news we could give him. We reported the ship on fire at the Orkneys and told him that the crew were in no danger, as they could get to shore in their boats, and the captain of the sea raider notified us to proceed on our voyage.

January 30th. Saturday. Southwest winds and occasional snow and sleet. We had a slight fire on board, as in some way the lantern room caught fire, and we had quite a little blaze, but it was soon put out. At 2:30 a heavy sea began to make up and once more the "Fremona" tried to commit suicide by burying her nose in the Atlantic.

Nothing more of any importance occurred until January 25th. Very cold, and a strong wind from the west, and the "Fremona" was once more quite ladylike. At 11 p. m. a seaman came to my stateroom and inquired for the captain, asking him to go on deck, and at the same time I could feel the

ship stop and then go ahead. Soon the captain came down and asked me to go on deck, and when I arrived there, I found that we were in one mass of ice; all you could see for miles was ice. The ship proceeded through the ice all night at slow speed, and in the morning we found ourselves among ice and icebergs of every size and description. The day was clear, and as we proceeded by one iceberg it was a beautiful sight to see the sea as it struck the berg and then trickled down the sides and looked like one great crystal. All that day and all that night we steamed through ice. And on Monday, February 8th, we saw our last ice.

February 11th. Seven a. m. we passed Sable Island and made into the Bay of Fundy for Portland, and came to anchor at 2:30 a. m. off Fort Gorges. A ship is like a little town all by itself. One gets the same gossip on board ship as on shore. Go forward, and you will hear things there that took place in the cabin that you never heard of before. I suppose, really, the wisest man aboard ship is the steward. He has all the complaints, serves as a doctor, makes out the lists of ship's stores, and I can assure you that he is some man.

It was amusing to see some poor unfortunate come aft for treatment for some ail, and that wise steward, Mr. Dutton, would look at his tongue, then look at his book, and prescribe some treatment, requesting him to return tomorrow. I never was fortunate enough to see any member of the crew return, so presume his treatment must have been a success. And those ground carrots were a stable article on Mr. Dutton's table, although I assure you I have no complaint to make on the table he gave us as a whole. For we lived on the fat of the land. Captain Melling, our commander, was an Englishman, and as fine a man as I ever met. And there was nothing that he wouldn't do for me while I was aboard his ship, and I

shall live in hopes that this war will some time come to an end so that I may take another voyage with him. Mr. Hall, the chief engineer, a native of Scotland, was a very nice man to meet; and many are the pleasant evenings I have spent with him in his stateroom, talking over the tales of the sea.

NOTED ARKANSAS VETERINARIAN DIES.

Dr. E. S. Rice, the oldest practicing veterinarian in this state died on April 24th, Little Rock, Ark., at the age of 77 years. During the past 47 years he was an active practicing veterinarian in the vicinity of Little Rock. Dr. Rice was born in Watton, England. He received his veterinary training at the Royal Veterinary College, London. He was always active in the upbuilding of veterinary practice in this state and for the past ten years he has worked hard in trying to pass the veterinary practice act in this state and in 1915 he was the father of the Arkansas Veterinary Practice Act which passed during the 1915 session of the legislature. He was also a charter member of the Arkansas Humane Society.

R. M. Gow,

State Veterinarian.

Little Rock, Ark.

HOSKINS—PARKE DAVIS

Dr. H. Preston Hoskins of the veterinary staff of the University of Minnesota, has accepted a position with Parke, Davis & Co. at Detroit, Mich., as veterinary pathologist and bacteriologist in the research and biological laboratories. He will probably take up his work with Parke, Davis & Co., August 1st.

No one in the profession has made a name and reputation for himself faster than Dr. Hoskins. Graduated from the University of Pennsylvania but half a decade ago, he was selected almost at once by Dr. Reynolds for the important post he has since held at the University farm. An unusual amount of high class constructive work has been the result of his four years in Minnesota.

JUNE AND JULY MEETINGS

June, Oregon Vet. Med. Society, Corvallis, Ore.; Washington Vet. Med. Assn., Seattle, Wash.

June 1, Colorado Vet. Med. Assn., Fort Collins, Colo.

June 6, York Co. Vet. Med. Society, York, Pa.

June 10, Alumni Assn., New York State Vet. College, New York, N. Y.

June 13, Keystone Vet. Med. Assn., Philadelphia, Pa.

June 14, Schuylkill Valley Vet. Med. Assn., Reading, Pa.

June 21-22, California State Vet. Med. Assn., Los Angeles, Cal.

June 21-22, Southern Aux. Cal. State Vet. Med. Assn., Los Angeles, Cal.

Last week in June, Central New York Vet. Med. Assn., Syracuse, N. Y.; Western New York Vet. Med. Assn., Buffalo, N. Y.

June 28, Massachusetts Vet. Assn., Boston, Mass.

July, Oklahoma Graduate Vet. Med. Assn., Oklahoma City, Okla.; Wisconsin Vet. Med. Assn., Menominee, Wis.

July 4, York Co. Vet. Med. Society, York, Pa.

July 7, Mississippi Valley Vet. Med. Assn., Galesburg, Ill.

July 10-11-12, Missouri Valley Vet. Assn., Omaha, Neb.

July 11, South Dakota Vet. Med. Assn., Lake Madison, S. D.

July 11, Keystone Vet. Med. Assn., Philadelphia, Pa.

July 12, Maine Vet. Med. Assn., Rockwood, Me.

July 12, Manitoba Vet. Assn., Winnipeg, Manitoba.

July 13-14, Virginia State Vet. Med. Assn., Ocean View, Va.

July 19, Illinois State Vet. Med. Assn., Peoria, Ill.

July 18-19-20, North Dakota Vet. Assn., Fargo, N. D.

July 26, Massachusetts Vet. Assn., Boston, Mass.

July 27, Ohio Valley Vet. Med. Assn., Oblong, Ill.

Last week in July, Missouri Vet. Med. Assn., Neosho, Mo.

WHO SHOULD VACCINATE?

The *Farmer's Guide* (Huntington, Indiana) for April 15 contains the following instructive article on the above subject by F. V. Hawkins of the Pitman-Moore Company of Indianapolis.

In The Guide of March 4 issue, Mr. W. Frank, of Ohio, discusses the question of who should administer anti-hog-cholera serum and

hog-cholera virus. I am glad to note that Mr. Frank qualifies his statement: "It is my opinion that any farmer is quite capable of treating his own swine" by adding "if the proper care is taken." In this proviso the whole case is clearly stated. Please understand that I do not for a moment want to question Mr. Frank's ability, personally, to use the serum treatment correctly and successfully. Yet even Mr. Frank describes in his article only a small part of what is necessary for really successful treatment.

The writer has spent the past five years in hog-cholera work, and his object, primarily, has been to establish confidence in serum treatment. He has been in pretty close touch with hog raisers over a good many states, and has found without exception, that serum treatment is being used most extensively and most successfully where the most restrictions are being thrown around its administration.

For example, let me compare conditions as they are today in Iowa and in Tennessee. In Iowa, no one can apply the treatment until he has received special instructions, has proved his fitness to handle the work correctly, and has received a permit from the director of the state biological laboratory. Until recently others than graduate veterinarians could secure permits to treat their own hogs only, if they took the special course of instruction at the state college. This plan was in effect for about two years and during that time less than 600 hog owners took advantage of the opportunity to secure one of these permits. Even after securing a permit, quite a large number of these owners employed veterinarians to treat their hogs. After trying this plan for two years, Iowa decided that she could still further improve her situation as regards hog-only by veterinarians who have secured permits. The Iowa plan is as follows:

A state biological laboratory was established with a director. A standard of potency for hog-cholera serum to be used in the state was established. No person is permitted to use virus without receiving satisfactory special instructions and a permit. No distributor is permitted to deliver virus to others than permit holders. Virus permits may be canceled for cause. Any serum or virus in the state deemed unsafe may be destroyed. The state now maintains such inspection as it deems desirable in serum plants and distributing agencies. All shipments of serum and virus and their destination must be reported.

Now, about results: In 1913, or the year the state took hold of the work, a census showed a loss of 2,709,876 hogs worth approximately \$27,098,760. During 1914 over 70,000,000 cubic centimeters of anti-hog-cholera serum were used on Iowa farms, about 90 per cent of it with virus. The result was that the

loss in 1914 dropped to about \$6,000,000, and on January 1, 1915, there were nearly 2,000,000 more hogs on Iowa farms than on January 1, 1914. During 1915, while complete figures are not yet available, the loss from cholera in Iowa is estimated at about \$3,000,000, with a decided increase in the hog population. The above statistics are from the director of the state biological laboratory, Dr. C. H. Stange.

Tennessee's story is different. The former state veterinarian of Tennessee evidently believed, as do a great many people and as I have even seen stated in some farm journals, that injecting serum and virus into a hog is a very simple matter. He was recently succeeded by the present official, Dr. M. Jacob.

The following is from a statement recently made by Dr. Jacob: "When I was appointed state veterinarian of Tennessee, I found the hog-cholera situation in a deplorable condition in so far that there existed an unrestricted distribution of hog-cholera virus. There were many instances where conditions indicated very strongly that hog-cholera was being spread instead of controlled by such an existing state of affairs. I found also that the state serum plant, which has been operated under the direction of my predecessor, was closed and in disrepute, for there were many sections of the state where the swine growers absolutely prohibited the use of serum and

virus on their hogs. When I took charge of this office, a state examination for virus permits was held in order that its use might be placed in the hands of qualified persons."

Under the "unrestricted distribution of serum and virus" mentioned by Dr. Jacob, the loss from cholera in Tennessee increased in 1914 and 1915 nearly \$1,000,000 over previous losses. In other words, Tennessee after a thorough trial, has seen the folly and danger of distributing such products indiscriminately, certainly the state wide experience of two such hog-raising states as Iowa and Tennessee ought to give a pretty clear view of the real situation.

Now, admitting for argument's sake that Mr. Frank is competent to use serum treatment safely and correctly, he must concede that if he has the right to use it, then every other man who owns a hog should have the same right. Suppose now that Mr. Frank and ten of his neighbors, each treat their own hogs, successfully, but Neighbor Jones does not understand the proper methods. He has seen his neighbors "getting by" and concludes he, too, will do his own administering. But an error creeps into his work, and he loses his hogs. Jones has not only had a personal financial loss, but of far greater importance, he has established a new center of hog-cholera infection in that neighborhood, to spread like

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wild-fire to the surrounding farms, and possibly to reach Mr. Frank's place before he is ready for it.

We recently heard a man condemning hog-cholera serum because "it had killed all his little pigs." Inquiry developed the fact that he was, as he said, "doing his own shooting," and when he treated a lot of suckling pigs, he thought "because they were so small, the virus ought to be enough for them." It was.

In another case a man who feeds a thousand head of hogs a year and does his down vaccinating believed he was getting protection sufficient to carry his hogs to market, from serum alone. When the temporary protection of serum alone expired, and he suffered a heavy loss from cholera, he, naturally, was ready to condemn all serum treatment as being worthless.

The proper production of anti-hog-cholera serum is a matter of biological science. The administration of serum treatment is a matter of veterinary science. It involves much more than the mere injection of serum, even under "proper care." It includes the making of correct diagnosis; the proper care of the swine before, during and after treatment; the determination of dosage for each individual, which should depend as much on physical condition as on size; the sterilization of all instruments; proper precaution in the handling of virus; and the knowledge when to vac-

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minate and when not to vaccinate, and above all, it involves a knowledge of the underlying laws of immunity to disease, which apply alike to the use and effect of hog-cholera serum, smallpox vaccine, diphtheria antitoxine or any other biological product.

This knowledge and the skill to apply it are highly technical, and are possessed by very few men who have not had a medical education and training. The more nearly this truth is realized the less doubt there will be in the minds of hog-raisers generally, as to the value of serum treatment; and the less we shall hear of the mistaken notion that the simultaneous treatment is a spreader of disease.

F. V. HAWKINS.

WE NOTE BY THE PAPERS THAT—

The Indiana and Ohio Live Stock Insurance has been merged with the Hartford Fire, Accident and Indemnity Insurance Company with offices at Chicago. The Indiana and Ohio concern has been in existence for 30 years and is the largest live stock insurance company in the United States, last year writing more than \$5,000,000 worth of business.

The following veterinarians passed the Illinois state civil service commission's examination for assistant state veterinarian, held February 5th:—Marion V. Burkett, Orland; Frederick R. Whipple, Peoria; Harry C. Caldwell,

Wheaton; O. N. Fleming, Vienna; Harry R. Hornbaker, Glasford; Lee B. Swingley, Dixon; Stephen S. Doherty, Murphysboro; Fred G. Patch, Roseville; F. C. Willett, Henry; Foster D. Russell, Hebron; Burl E. Wise, Greenville; Robert F. Curran, Buda; Henry W. Asche, Granville; Walter J. Williams, Plymouth; William J. Cant, Eric; Claude E. McKinney, Brocton; Louis E. Booth, Gardner; William G. Teckenbrock, Metropolis; Eugene W. Neudecker, Worden; Charles O. Summers, Tolono; William F. Dixon, Peoria; Frederick W. Seekamp, Greenfield; James M. Atterberry, Golden Gate; Josiah S. Stokes, Byron.

The Georgia Hereford Cattle Breeders' association was organized at Atlanta, May 3rd. The new association starts out with thirty-two members, representing a total of 1,014 head of registered Hereford cattle in the state of Georgia. Mr. W. S. Witham, president of a chain of 110 banks in the south made a brief address in which he said, "Cattle is to be the remedy for the boll weevil. Cattle will redeem Georgia from the one dark cloud which has hung over her, and for that matter, over the entire south—that is the weevil. I would rather loan money on any cow, more especially if she be a blooded cow, than upon any bale of cotton I ever saw or ever expect to see." Dr. E. M. Nighbert of the Bureau of Animal Industry stated, "This is a most commendable

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At the recent annual meeting of the Illinois Veterinary Medical Association, a resolution was passed providing for a committee to investigate the available works on animal husbandry topics and to select a list of those in its opinion adapted to the needs of veterinarians and present recommendations to the association at its next meeting.

The following are among the list selected:

Horses *Productive Horse Husbandry* by Carl W. Gay, D.V.M., B.S.A. This volume contains 331 pages and 175 illustrations. Price \$1.50. It has been widely adopted as a text in agricultural colleges and has the endorsement of experts everywhere. It is practical, progressive, scientific and will benefit every veterinarian who reads it, particularly those having no agricultural college training.

Swine *Productive Swine Husbandry* by Geo. E. Day, B.S.A. 363 pages; 95 illustrations. Price \$1.50. This work discusses in a clear, authoritative manner; Uses and Types of Swine; Breeding and Selection; the history and description of each of the breeds with illustrations and a score card for each; Feeding; Management of the Boar, Sow, young Pigs and fattening Hogs; Marketing; Curing pork; Buildings and Sanitation, etc., etc.

Feeding *Productive Feeding of Farm Animals* by F. W. Woll, Ph.D. 362 pages; 96 illustrations. Price \$1.50. This is not the most exhaustive work on this subject, but it is the newest and because of its brevity, best adapted to the needs of veterinarians. Dr. Woll is Professor of Animal Nutrition in the Univ. of Cal., formerly of the Univ. of Wisc., and ex-president of the Ass'n of Agri. Chemists of Amer. His name as writer is a guarantee of the authoritativeness of the work.

Poultry *Poultry Culture Sanitation and Hygiene* by B. F. Kaupp, M.S., D.V.S. 418 pages; 196 illustrations. Price \$2.00. Dr. Kaupp's writings on poultry topics are too well known to veterinarians to need particular mention. This work deals with the poultry industry in its broadest sense, separate chapters being given to the discussion of breeds of poultry, mating, breeding, hygiene and sanitation, poultry houses, diseases and parasites, feeding, marketing, incubating, etc.

Specialized Farming *Productive Vegetable Growing* by John W. Lloyd, M.S.A. 339 pages; 193 illustrations. Price \$1.50. This work comprises the information obtained from experience that has cost millions of dollars.

Productive Orcharding by Fred C. Sears, M.S. 315 pages; 156 illustrations. Price \$1.50. Describes up-to-date methods of selection, planting, protection, pruning, harvesting and marketing.

Productive Bee Keeping by Frank C. Pellet. 316 pages; 135 illustrations. Price \$1.50. Tells how to begin and how to see it through; the methods found to be the best money makers by extensive honey producers.

Productive Farm Crops by E. G. Montgomery, M.A. 501 pages; 204 illustrations. Price \$1.75. This work gives twentieth century, scientific information on the principles of fertilizing, planting and cultivating.

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move, and this organization is only a starter, for now that you have organized, there will be other cattle breeders' organizations formed throughout the state, and such organizations, together with a furtherance of the work of tick eradication is all that is needed to make of Georgia one of the leading cattle states of the union."

Dr. H. W. Kenneck, a recent graduate of the Chicago Veterinary College has located at Granite City, Ill.

Dr. P. S. Christman of Chicago has taken over the practice of Dr. E. L. Baker at Oneida, Ill., the latter having gone to Annawan, Ill.

Dr. Felix Lear, a veterinarian of Jasper, Mo., died suddenly from heart failure while on a professional call, April 20th. He was sixty years old and had lived at Jasper for ten years.

Dr. J. A. Jensen, a graduate of the Mc-Killip Veterinary College of Chicago, has opened his office and hospital at 119 East State St., Marshalltown, Ia.

Dr. S. F. Musselman, Kentucky State veterinarian, was indicted April 15th by the Mason county grand jury for permitting hogs having cholera to be driven into the county. Out of a drove of 640 hogs, 103 died with the disease.

Dr. J. W. Lucas, a recent graduate, has opened his office for practice at Beardstown, Ill.

According to the Jacksonville Courier, a new dye has been developed by a veterinarian which will make the horses used in the United States army invisible at a short distance.

Dr. Thomas Douglas, of Lake Forest, Ill., veterinarian, alderman, justice of the peace, precinct committeeman, former police magistrate, and man about town, landed in the calaboose April 18th, on a charge of disorderly conduct. Douglas complained to the Lake Forest police department because friends of his were arrested in a raid on a dice game. The men were fined and Douglas wanted the fine remitted. An argument followed which the police were able to stop only by placing the doctor in a cell.

Dr. F. L. Edenburn has opened an office for practice at Gifford, Ill.

The seventh semi-annual meeting of the Illmo Veterinary Medical Association was held at East St. Louis, Ill., April 17th. Dr. Joseph Hughes of Chicago delivered an illustrated lecture on lameness. Professional etiquette was discussed by Doctors H. L. Hawkins of East St. Louis, Louis Miller of Waterloo, and O. G. Faulbaum of Belleville. A

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question box was in charge of Dr. Walter Hoehner of Belleville.

Dr. L. J. Allen, chief inspector of the Bureau of Animal Industry in Texas, states that the Texas fever tick will be eradicated in sixteen counties of the state during the present year and the territory listed "above the line." Dr. George V. Adamson, Dr. Wm. R. Sander-son and Dr. Louis Tanteck were recently added to Dr. Allen's force.

MISSOURI VETERINARIANS PUBLISH PROCEEDINGS OF THEIR MEETING

The proceedings of the twenty-fourth annual meeting of the Missouri Veterinary Medical Association, is a well-arranged and neatly bound volume that does credit to the secretary, Dr. C. D. Folse. This meeting was held at St. Louis on July 28 and 29, 1915.

An interesting programme was carried out, this including a clinic at the Bremen stock yards. The number of new members taken in is evidence of a healthful growth of the society and indicates efficient work on the part of the secretary and the co-operation of its members.

Dr. J. T. Jennemann, of St. Louis, was elected president; Dr. D. B. Morgan, of Neosho, vice-president, and Dr. C. D. Folse, of Kansas City, was re-elected secretary-treasurer. The next meeting will be held at Neosho.

NORTH DAKOTA VETERINARIANS PUBLISH ANNUAL REPORT

The second volume of the proceedings of the North Dakota Veterinary Association, which was held at Fargo, August 4 and 5, 1915, contains the proceedings of their fourteenth annual convention. A photograph of their president, Dr. R. E. Shigley, appears as a frontispiece.

Their next meeting will be held at the Veterinary Building, Agricultural College, at Fargo, and is to last for three days, where morning sessions will be held, giving the veterinarians an opportunity to attend the state fair, which is to be held at the same time, on July 18, 19 and 20.

The secretary, Dr. A. F. Schalk, has in this volume published an interesting report, especially for the North Dakota veterinarians.

The British government which stopped buying war horses in the East St. Louis market three months ago, signed a contract with the sales company there recently for 1,000 head a week for an indefinite period. The contract calls for artillery horses only. The former contract included cavalry mounts. The com-

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mission firm will pay from \$185 to \$200 for the horses. Actual buying began May 15th.

Dr. J. D. Cooper, of Lufkin, Texas, was kicked in the head and instantly killed by a horse he was treating May 9th. Dr. Cooper had been living at Lufkin for two years.

In reply to the question of a druggist, "How much discount should I give our veterinarian?" the Detroit, Michigan *Pharmacy* has the following to say: "Perhaps the majority of druggists supply both physicians and veterinarians with what merchandise may be needed at about 10 per cent above cost. Others allow only a discount of 10 per cent from the retail price. And between these extremes are all kinds of variations. It cannot be said that there is a general rule; for that matter, it would be extremely unwise to advocate that there should be one."

From Minneapolis, Minnesota, comes the news that a Scotch collie belonging to a grocer there has adopted a motherless litter of four black kittens, and at Grainer, N. C., a cat is said to be taking care of a batch of young foxes. One of these days we expect to learn of a lion raising lambs.

Dr. O. E. Dyson, Illinois state veterinarian, addressed the McHenry County Holstein-

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No. 3.—Colics and Their Treatment. Contains articles by R. P. Lyman, D. O. Knisely, D. S. White, A. T. Gilyard, L. A. Merillat and E. L. Quitman, selected complete treatise on diseases of poultry, up-to-date, authoritative, satisfactory; cloth bound, 187 pages, price \$1.50 prepaid.

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No. 5.—Canine Medicine and Surgery, by Major Chas. G. Saunders, V. S., D. V. S. A complete treatise on diseases and surgery of the dog, superior to any other English work on the subject and admirably adapted to the needs of the general practitioner. Cloth bound, 250 pages; price \$2.25 prepaid.

No. 6.—Special Veterinary Therapy, by Mart R. Steffen, V. S., M. D. C. A discussion of thirty-one of the troublesome ailments with which veterinarians have to contend with full directions for new and original treatments that have been successful in the hands of the author. Cloth bound, 97 pages; price \$1.00 prepaid.

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original, eminently practical book; cloth bound, 158 pages; price \$1.50 prepaid.

No. 8.—Wound Treatment, by E. W. Hoare, L. A. Merillat and others. A concise, comprehensive work on anti-septics, disinfectants, control of hemorrhage, cleansing, suturing and treatment of wounds, written by men who know. The articles have been selected by D. M. Campbell. Cloth bound, 187 pages; price \$1.50 prepaid.

No. 9.—Animal Castration, by J. V. Lacroix, D. V. S. A carefully prepared, excellently illustrated work covering the whole subject of castration and spaying in all the domestic animals, including poultry. The operations described are those that have been most successful in the practice of the author and differ in many respects from those described by others. Cloth bound, 144 pages; price \$1.50 prepaid.

No. 10—Essentials of Veterinary Law, by Henry B. Hemenway, A. M., M. D. A work that lays down plainly and authoritatively just what the legal rights, duties and responsibilities of veterinarians are. The book contains 243 sections covering every phase of veterinary jurisprudence; more than 700 cases are cited; it also contains an appendix on the subject of collections for veterinarians. Cloth bound, 340 pages; price \$3.00 prepaid.

No. 11—The Itinerant Horse Physician, by Mart R. Steffen, V. S., M. D. C. An entertaining and instructive account of the author's adventures as a veterinarian in the Southwest and the Northwest. Besides being a narration of unusual and humorous experiences, the book is a contribution to the history of veterinary medicine in America and the first strictly veterinary addition to that literature aptly termed "human documents." Cloth bound, illustrated by 21 drawings, 192 pages; price \$1.50.

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Friesian Breeders' association at its annual meeting at Woodstock, Ill., May 6th.

Dr. Lewis Morin, a recent graduate of the Chicago Veterinary College, has located for practice at McLean, Ill.

Congress has appropriated \$75,000 for the control of rabies among coyotes of the West, and the Department of Agriculture has put five inspectors and 190 hunters in the field.

Dr. Ralph Graham, inspector in charge of the United States hog cholera station at Sedalia, Mo., reports that cocklebur poisoning is the cause of the death of a number of hogs in that vicinity recently. The first two oblong leaves of the cocklebur are poisonous during the spring. Usually death occurs in a very short time.

Dr. L. Brown of Milford, Ia., recently sold his residence and practice to Dr. Place, a graduate of the Chicago Veterinary College. Dr. Brown will go to Colorado to take charge of a stock farm.

Dr. Floyd Gilliatt of Decker, Ind., recently met with a serious accident while exercising a stallion hitched to a light buggy. While making a turn around a corner, he came upon an

approaching automobile. The horse became frightened, ran against the corner post and threw the doctor out of the buggy, fracturing his left leg in several places.

A horse at Chambersburg, Pennsylvania, suddenly taken ill with colic is said to have made its way unaided and unguided to the office of Dr. Burke, a local veterinarian, who gave it prompt treatment, after which the animal returned to its customary abode.

Dr. A. H. Davison of Springfield, Illinois, was married to Miss Bernice Jeanette Rhoads at the home of her parents at Rensselaer, Ind., April 15th.

Increased growth of the loco weed has caused ranchmen of the plains section in Texas to take steps to exterminate it. Large crews of laborers are being used to root up the weed.

Dr. W. A. Davis of the Texas state board of health recently conferred with the Texas Livestock Sanitary Commission at Ft. Worth over arranging a plan for handling the anthrax situation in Texas. Dr. Davis said that there is a certain district in Southeast Texas from which most of the anthrax emanates and spreads over the state. He stated that if cat-

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FIFTH YEAR

tiemen would use more care as to the place from which they get their cattle, the anthrax situation would never cause much worry.

Chris Mossrud, a Vernon county, Wisconsin, farmer by a supreme court decision May 2nd, obtained judgment for \$450 in payment for eight cows killed by a poison bought from Ludwig Lee under the name "Quack Grass Destroyer."

Dr. C. R. Sandberg has opened his office for practice at Mazeppa, Minn.

Dr. W. L. Trawner of Kansas City has located at Corning, Iowa.

Sixty-eight applicants for state licenses to practice veterinary medicine were passed April 25th by the Indiana State Veterinary Medical Board. Seventy-six took the examination, April 14th and 15th, and eight of them were refused licenses.

Dr. N. E. Gruenewald, formerly of Random Lake, Wisconsin, has moved to Hazelton, N. D.

William Beandry of Chicago was recently fined \$10.00 and costs for pulling hair out of horses' tails. John Wallace, stable foreman for the Union Stockyards made the complaint and introduced eight pounds of hair as evidence. He said it made the horses nervous and hard to sell. Beandry stated he expected to sell the hair for 55 cents a pound.

A Spalding, Idaho, butcher was fined \$25.00 and ordered to close his establishment because he sold meat cut from a calf killed by a train. Dr. A. H. Wilson, deputy state sanitary inspector, brought up the charges. It was said that several of those who had bought the meat were made sick by eating it.

Dr. M. A. Brothers, a veterinarian of Camp Point, Ill., attempted to commit suicide with a hypodermic injection of strychnin on April 29th. He was in a critical condition for some time but finally recovered. Despondency over domestic and financial troubles are attributed as the cause of Dr. Brothers' attempt to end his life.

In line with a nation-wide campaign to prevent further spread of rabies, which has assumed serious proportions in the western states, the railroads have co-operated with the states of Nevada and Montana and issued instructions to their agents relative to the conditions under which dogs may be permitted to enter those states. Before a dog can be shipped into Nevada, a permit must be obtained from the State University at Reno, specifying that it is not afflicted with a contagious or infectious disease and has not at any

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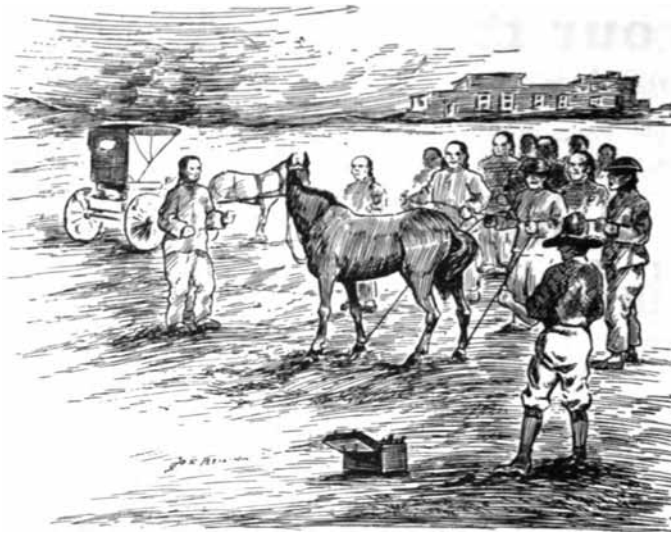
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Chinese Practice

"Knowing the Chinese are for 'hocus-pocus stuff,' I thought I would have a little fun out of this job. (Mind you, my charge for this eight-mile trip was eight dollars; you may be sure they tried hard to get him up before calling me.)

"Taking my sideline, I first laid it over him in such a manner that it formed a circle over his side, mumbling at the same time a few words like 'foramen lacorum basis cranii,' and allowing the rope to remain in the coiled position for a minute, by the watch. Taking it off now, I fastened one end to a hind and a front leg and told the Chinese boys, 'Now, alright,' and with all of them pulling on the rope 'we flopped him over,' and up he jumped.

"The clash of Chinese tongues that followed immediately was something great. The boss Chinaman wanted me to tell him those words I had to say to make it work and to show him just how to coil the rope."—The Itinerant Horse Physician.



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An Unusual "Shingle"

"Dr. Asa claimed that the skull was that of a running horse by the name of Major Dangerfield that had died while in his care. Whenever any one remarked about the peculiar method of advertising, Asa would say, 'Yep; proud to say that's old Major Dangerfield's cranium. I had to do some heavy surgery on him, but he couldn't live.'

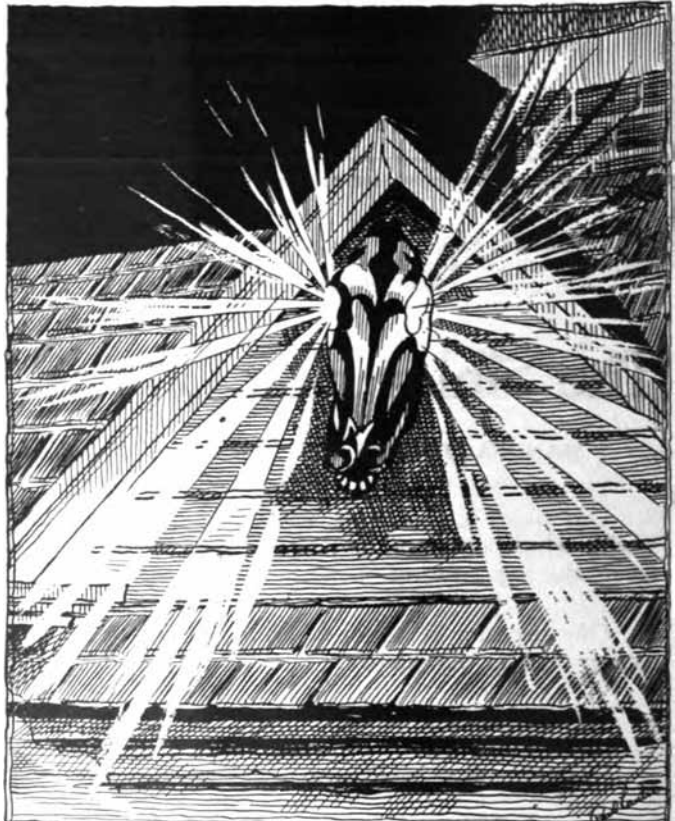
"As I sat in the office one night reading, I was nearly scared out of my wits by what seemed to be a loud explosion on our roof. I jumped out through the front door and, looking up, I failed to see the lights in the eye-sockets of 'Major Dangerfield's cranium;' neither could I distinguish the skull itself. When I investigated early the next morning, I found that only a few pieces of the skull remained on the roof, the greater portion being scattered about on the ground; near the edge of the gable the shingles had been bored through by a high-power rifle ball. Asa blamed Dr. Neek for this trick, without hesitation. To me it made no difference who had done the shooting; it was getting altogether too warlike for my comfort, and I told Asa that I was going to leave for more peaceful fields. He begged me to remain; he even cried, but I went."—The Itinerant Horse Physician.

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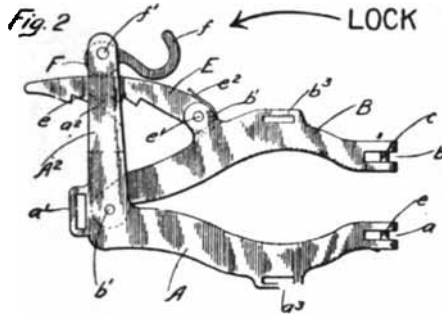
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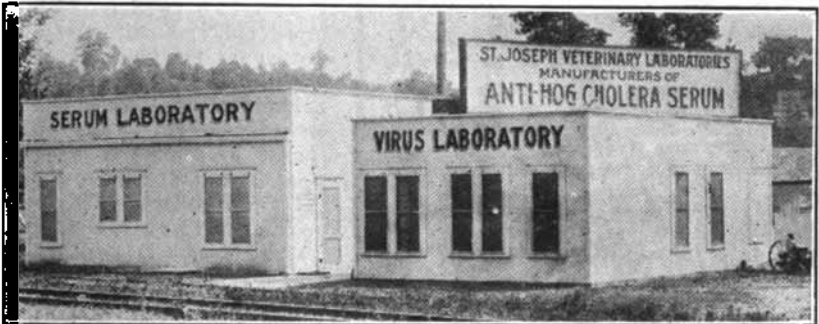
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time been in an area where rabies prevails. There are no restrictions respecting the shipment of dogs through the state. On shipment of dogs into Montana, the authorities require the owner to furnish proof that the origin of the shipment comprises an area within a radius of 100 miles that has not developed a single case of rabies contagion in man or beast.

Dr. Daniel Nicholas, a recent graduate of the Chicago Veterinary College, has located at Wyconda, Mo.

Five head of hogs infected with foot-and-mouth disease were discovered May 3rd, on the Alva Houck farm, six miles west of Taylorville, Ill., by Dr. A. D. Bullock, of the United States Bureau of Animal Industry.

According to an opinion rendered by Attorney General Owen on April 19th, the Wisconsin veterinary practice law does not protect the licensed veterinarian from the unlicensed practitioner in districts not included, under the law, within the meaning of "place of business." In other words, any person may treat domestic animals for compensation in any place which is ten miles or more distant from the office or place of business of a duly licensed veterinarian. In Marathon county the law had been invoked to protect a veterinarian who comes there once a week from a place more than ten miles away.

The Federation of American Veterinary Colleges held a meeting at St. Joseph, Missouri, April 14th and 15th. Arrangements were discussed for the four-year schedule to supplant the three-year course, and higher entrance requirements were decided upon. Diplomas from accredited high schools will be accepted, although by passing examinations covering the same sort of work, any student will be admitted to the colleges. This puts the scholarship requirements on the same basis as any college offering academic work. The following college representatives were in attendance: Dr. R. V. Ramsey, Terre Haute, Ind.; Dr. H. L. Schuh, Grand Rapids, Mich.; C. L. Fleming, Terre Haute; Dr. George B. McKillip, Chicago; Dr. Charles Frazier, Chicago; Dr. E. L. Quitman, Chicago; Dr. SESCO Stewart, Kansas City; Dr. R. F. Bourne, Kansas City; Dr. S. L. Stewart, Kansas City; Dr. C. D. Folse, Kansas City; Dr. F. F. Brown, Kansas City; Dr. L. P. Cook, Cincinnati; Dr. George H. Roberts, Indianapolis; Dr. R. C. Moore, St. Joseph; Dr. Burton Rogers, St. Joseph; Dr. Frank M. Cahill, St. Joseph; Dr. T. A. Logan, St. Joseph; Dr. W. H. Bailey, St. Joseph; Dr. A. H. Holkenbrink, St. Joseph, and Dr. W. F. Holkenbrink, St. Joseph.

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ASSOCIATION MEETINGS

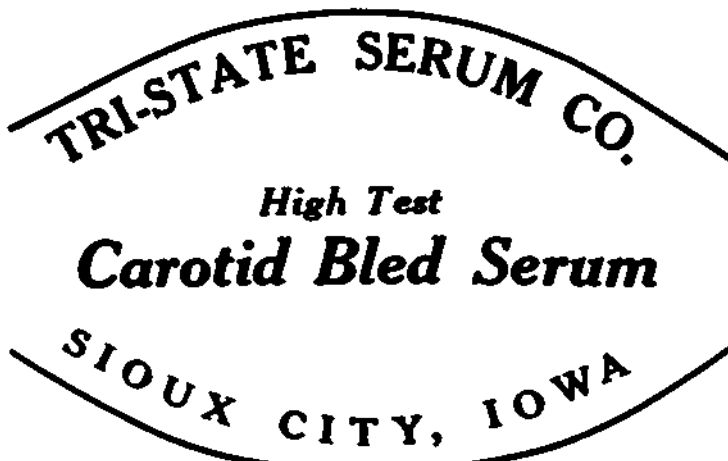
The information given below is up-to-date and has been furnished by the secretaries of the various associations listed. Secretaries are requested to supply us with data regarding their associations after each meeting; otherwise, the association will possibly be dropped from the list. We ask secretaries to kindly co-operate with us in keeping before the members of their associations the date and place of the next meeting.

Name of Association	Date of Meeting	Place of Meeting	Secretary
Alabama Vet. Med. Assn.		C. A. Cary, Auburn, Ala.	
Alumni Assn., Col. of Vet. Med., O. S. U.	Jan. 10, 1917.	Columbus, O.	W. B. Hobbs, O. S. U., Columbus, O.
Alumni Assn., N. Y. State Vet. College	June 19, 1916.	New York	P. E. Nichols, Fort Richmond, N. Y.
Alumni Assn., U. S. Col. Vet. Surg.		Washington, D. C.	Chas. M. Mansfield, 1244 Newton St., Washington, D. C.
American Vet. Med. Assn.	Aug. 21, 25	Detroit, Mich.	C. M. Haring, Berkeley, Cal.
Arkansas Vet. Med. Assn.	January, 1917.	Little Rock	R. M. Gow, Little Rock
B. A. I. Vet. Assn. of So. Omaha	3rd Monday of month.	So. Omaha, Neb.	J. W. Gilfee, c/o R. A. L. So. Omaha
California State Vet. Med. Assn.	2nd Wed. in Mch., June, Sept., Dec.	Univ. Farm, Davis, Cal.	City of Cal., Berkeley
Central Canada Vet. Assn.	Jan. 19.	Ottawa, Ont.	H. D. Sparks, 448 Wellington St., Ottawa
Central N. Y. Vet. Med. Assn.	Last week in June and Nov.	Syracuse, N. Y.	E. H. Yunker, 2344 N. 18th, Philadelphia
Chicago Vet. Society	2nd Tues. of month.	Chicago, Ill.	W. B. Switzer, Oswego, N. Y.
Colorado Vet. Med. Assn.	June 1.	St. Collins, Colo.	Oleann Brown, 3205 Lowell Ave., Chicago
Connecticut Vet. Med. Assn.	January 27.	Greenwich, Conn.	A. T. Girard, Waterbury, Conn.
Genesee Valley Vet. Med. Assn.	January 27.	Greenwich, Conn.	G. E. Webber, 154 Andrews, Rochester
Georgia State Vet. Assn.	Aug. 23, 24, 1916.	Rochester, N. Y.	Peter F. Bahnsen, Capitol Bldg., Atlanta
Hudson Co. Vet. Practitioners' Club	Monthly	Savannah, Ga.	B. D. Blair, 782 Montgomery St., Jersey City, N. J.
Idaho Assn. of Vet. Graduates	Feb. 4, 1917.	Boise, Idaho	C. V. Williams, Blackfoot, Idaho
Illinois State Vet. Med. Assn.	July 19, 1916.	Peoria, Ill.	L. A. Merrill, 1827 Wabash Ave., Chicago
Illino Vet. Med. Assn.		St. Louis, Ill.	L. B. McKinley, Freeburg, Ill.
Indiana Vet. Med. Assn.		Indianapolis, Ind.	A. F. Nelson, Indianapolis, Ind.
Iowa Vet. Med. Assn.		Wichita, Kan.	H. B. Treman, Rockwell City, Ia.
Kansas Vet. Med. Assn.	Jan. 3, 4, 1917.	Louisville, Ky.	J. E. Burt, Manhattan, Kan.
Kentucky Vet. Med. Assn.	April	Philadelphia	Edw. Graham, Lexington, Ky.
Keystone Vet. Med. Assn.	2nd Tuesday of month.	Los Angeles	L. E. Davis, 857 E. Girard, Philadelphia
Los Angeles Vet. Med. Assn.	3rd Wed. of month.	Rockwood, Mo.	J. A. Dell, 16th & Pacific, Los Angeles
Maine Vet. Med. Assn.	July 12.	Winnipeg, Man.	M. E. Maddocks, Augusta, Me.
Manitoba Vet. Assn.	Feb. 15.	Worcester in Sept.; Boston rest of year.	W. Hilton, 275 James St., Winnipeg
Massachusetts Vet. Assn.	4th Wed. each month.		E. A. Cahill, Boston, Mass.
Michigan State Vet. Med. Assn.	1st Tues. & Wed. after 1st Mon. in February.	Lansing, Mich.	W. Austin Ewalt, Mt. Clemens, Mich.
Minnesota State V. M. Assn.	Jan. 10, 11, 1917.	St. Paul	C. Ed. Leach, Winona, Minn.
Mississippi State Vet. Med. Assn.	2nd Tues. & Wed. Jan.	Clarksdale, Miss.	R. S. Norton, Greenville, Miss.
Mississippi Valley Vet. Med. Assn.	July 7, 1916.	Galesburg, Ill.	W. Lester Hollister, Aron, Ill.
Missouri Valley Vet. Assn.	July 10, 11, 12.	Omaha, Neb.	H. F. Bourne, 1536 E. 19th St., Kansas City
Missouri Vet. Med. Assn.	Last week in July.	Omaha, Neb.	C. D. Foles, 1334 E. 19th St., Kansas City
Montana Vet. Med. Assn.	Jan. 28, 29.	Bonanza, Neb.	A. D. Knowlton, 305 E. 4th St., West
Natl. Assn. B. A. I. Employees	2nd Mon. in Aug., 1916.	New York City	Missouri, Mont.
Nebraska Vet. Med. Assn.	1st Tues. & Wed. in Dec.	Lincoln, Neb.	S. J. Walker, 188 N. W. Ave., Missoula
New York State Vet. Med. Society	Aug. 2, 3, 4.	Ithaca, N. Y.	S. W. Alford, Lincoln, Neb. C. P. Fitch, Ithaca, N. Y.

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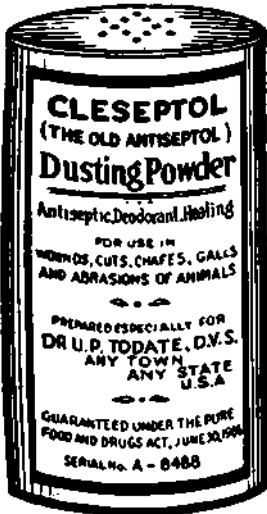
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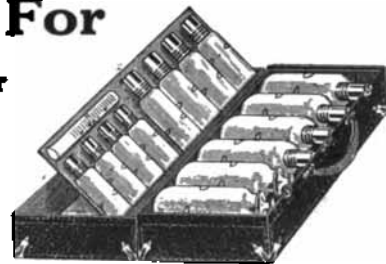
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Name of Association	Date of Meeting	Place of Meeting	Secretary
North Carolina Vet. Med. Assn.	June 21, 22, 1918.	Wrightsville Beach, N. C.	J. P. Spoon, Burlington, N. C.
North Dakota Vet. Assn.	July 18, 19, 20.	Fargo, N. D.	W. J. Mulroony, Havana, N. D.
Northeastern Indiana Vet. Assn.	Sept. 12.		C. H. Baumgartner, Arcola, Ind.
Northwestern Ohio Vet. Med. Assn.	Feb. 18.	Toledo, O.	Paul R. Wood, Ottawa, Ohio
Ohio State Vet. Med. Assn.	Jan. 11, 12, 1917.	O. S. U. Columbus, O.	F. A. Lambert, care O. S. U., Columbus
Ohio Valley Vet. Med. Assn.	July, 1918.	Ohio, Ill.	G. J. Behrens, Evansville, Ind.
Oklahoma Graduate Vet. Med. Assn.	March 7, 8.	Oklahoma City	R. C. Smith, Enid.
Oklahoma Vet. Med. Assn.	June, 1918.	Oklahoma City	S. H. Gillier, Norman, Okla.
Oregon Vet. Med. Society		Probably Corvallis, Ore.	B. T. Blum, Corvallis, Ore.
Pennsylvania State Vet. Med. Assn.	2nd Tues. Jan.	Pittsburgh, Pa.	E. H. Yunker, 2344 N. 18th, Philadelphia
Rhode Island Vet. Med. Assn.	June 14, 1916.	W. Wayne, Ind.	U. S. Richards, Woonsocket, R. I.
Schuykill Valley Vet. Med. Assn.	July 11, 1916.	Reading, Pa.	C. B. Fottelger, Reading, Pa.
South Dakota Vet. Med. Assn.	June 21, 22.	Lake Madison.	S. W. Allen, Watertown, S. D.
Southern Aux. Cal. State Vet. Med. Assn.	Nov. 8, 9, 1918.	Los Angeles.	J. W. Dell, 16th & Pacific, Los Angeles
Tenn. Vet. Med. Assn.		Humboldt, Tenn.	F. W. Moran, Chattanooga, Tenn.
Texas Vet. Med. Assn.		Not decided.	Allen A. Foster, Marshall, Tex.
Twin City Vet. Med. Society	Once a month.	St. Paul.	C. C. Palmer, St. Paul, Minn.
U. S. Live Stock Sanitary Assn.	Dec., 1918.	Chicago	J. J. Ferguson, U. S. Yards, Chicago.
Utah Vet. Med. Assn.	Feb. 8.	Loway, Utah.	B. P. Coburn, Brighton City, Utah
Veterinary Assn. of Saskatchewan	2nd Thurs. in Jan.	Regina, Sask.	R. G. Cassmar, Hankay, Sask.
Vet. Med. Assn. of New Jersey	1st Wed. ea. mo. except July, Aug., Sept.	Trenton, N. J.	E. L. Lohlein, New Brunswick, N. J.
Vet. Med. Assn. of Geo. Washington Univ.	1st Sat. each month.	New York City	R. S. MacKellar, 381 W. 11th St., N. Y.
Vet. Med. Society Wash. State College	1st and 2nd Tues. ea. mo.	Washington, D. C.	C. W. Rippon, 1175 14th St., N. W. Washington, D. C.
Virginia State Vet. Med. Assn.	July 15, 14.	Pullman, Wash.	Claude Holden
Washington Vet. Med. Assn.	June, 1918.	Ocean View, Va.	W. G. Christian, Blacksburg, Va.
Western N. Y. Vet. Med. Assn.	Last week in June.	Seneca, Wash.	Carl Coefer, Bellingham, Wash.
Wisconsin Vet. Med. Assn.	July	Buffalo, N. Y.	F. P. Fahr, 26 Prospect Ave., Buffalo
York Co. Vet. Med. Society	1st Tues. after 1st Mon. of each month.	Menominee, Wis.	W. A. Wolcott, Madison, Wis.
		York, Pa.	E. S. Bausticker, 326 Newberry, York, Pa.

A farmer near Houstonia, Mo., is reported to have a horse that when struck with a whip will exclaim "Oh!" in almost human tones. Negro stablemen are said to regard the animal with awe. The owner is trying to teach the horse to say other words.

Dr. J. R. Fickle, a recent graduate of the Indiana Veterinary College, has opened an office at Michigantown, Ind.

An order has been entered by the Illinois state live stock commission providing that all diseased and suspected cattle, sheep and hogs and all cripples and downers received at the National stockyards, East St. Louis, Illinois, shall be segregated by state inspectors and killed at an official slaughtering house under state and federal inspection. Such meat as is passed for food shall be sold at public auction and the proceeds returned to the shippers.



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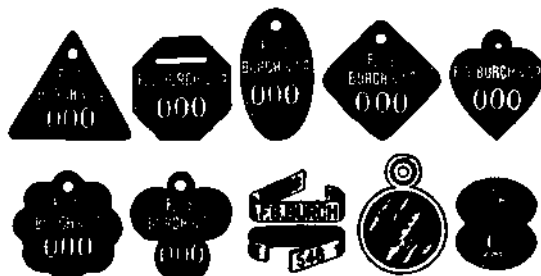
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I received the little book "Colics and Their Treatment" and am more than pleased with it. It should be in the hands of every practitioner. It contains six articles on colics of the horse, each a gem within itself, written by the first men in the profession. It is something that has never before been equaled, to my knowledge. I am especially pleased with Dr. E. L. Quitman's article, as its application is best suited to the country practitioner.

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The little volume on "Colics and Their Treatment" came to hand. I am greatly pleased with it. It should be in the hands of every practicing veterinarian who has any equine practice.

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Would Have Added to His Reputation.

"Colics and Their Treatment" came to hand a few days ago. Each chapter is a revelation of the different ways in which the so-called colic may affect horses or cattle.

The treatments indicated are of the most up-to-date methods, and if the knowledge imparted by this little work had been within my reach twenty-five or thirty years ago it would have added greatly to my reputation.

If a chapter on intestinal disorders of colts and calves had been included it would have made it complete. Wm. Drinkwater, V. S.

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"Colics and Their Treatment" at hand some time since and I have put into use some of the methods advocated in the treatment of

colics and find it very useful. I must say that this book will be of much help to each and every veterinarian who will make use of its principles and follow them diligently.

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- Gastric tympany (acute indigestion)..... 6
- Volvulus of small bowels due to gastric tympany 5
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- Obstruction of small colon..... 1
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As seventeen out of these twenty cases were of gastric origin it looks like the proper use of a proper stomach tube at the proper time should have saved at least fifty per cent of these animals. I have not felt like a howling success with the single tube, yet I have saved enough to have a lot of faith in "stomach lavage." Your chapter on this subject is most able and the technic described for this operation is fine. You should call your Veterinary Medicine Series "The Rational Series."

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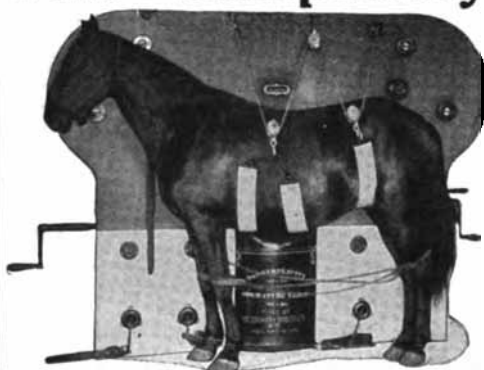
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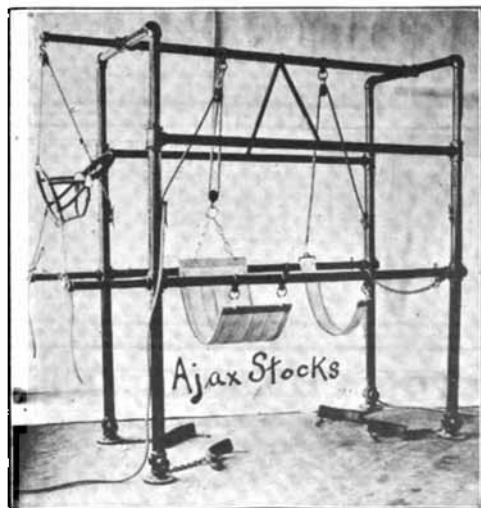
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Diseases of the Ewe

By E. T. BAKER, Moscow, Idaho.

Care of the Ewe

THE period of estrum continues from two to four days, and the ewe will come in heat again in about sixteen days if not pregnant.

The average period of gestation is about one hundred and forty-five days, or four and one-half months. Male lambs are carried a little longer. If a ewe goes over a week after her time, the chances are the lamb is dead. Before lambing, the ewes should be "tagged" by removing any filthy locks of wool.

Separating the pregnant ewes for the winter season is the best system, for then the danger of abortion from crowding and bruising is lessened. Only the brightest and cleanest of food should be fed to pregnant ewes.

Turnips and cabbage make a good green food ration, while mangels and sugar beets are not recommended before lambing. In parts of the west, along the coast, where green food grows the year around, these problems are solved by Nature. Before lambing the food should be abundant and laxative, a pound of equal parts of bran and oats being a fine addition to the hay.

When the weather is not too stormy or wet, the animals should have plenty

of exercise. This will prevent many cases of difficult parturition. The old English method of hauling a load of hay a mile from the sheep corral; compelling the sheep to follow it for their food, and then driving them back in the evening, was an excellent one.

In the early spring, after a hard, snowy winter, when the band is turned out to pick over the rough parts of the ranch, many abortions and deaths occur among the ewes from eating brush, moss, or any green forage that may be full of turpentine or other toxic ingredients. Frozen roots, spoiled silage, mouldy hay, and an exclusive diet of timothy have caused the death of many a pregnant ewe.

When the lambing season arrives, the busiest time of the year on a sheep ranch is at hand. The ewes expected to lamb early should be given a roomy pen, dry, clean and quiet. As ewes seldom lamb between midnight and early in the morning, one should watch them at all hours, except this time.

When a lamb gets away from its mother and she later refuses to claim it, they should be put in a pen together. If the mother butts it away, she should be tied up and the lamb allowed to suck. This usually causes a family reunion.

Diseases of the Ewe

IN the western sheep-raising sections it is remarkable how small the loss is among breeding ewes. This is largely due to constant culling out the ewes that prove to be poor milkers, or that have difficult parturition; those subject to mammary troubles, and those that lose their lambs. It is a "survival of the fittest" with breeders aiding nature in the selection. Coupled with this is the active life that the ewes lead during pregnancy.

The small bands of sheep, kept under artificial conditions, are the commonest victims of this class of disorders. Lack of exercise, with rich, concentrated foods, play an important part in predisposing to this as to other diseases. These factors, combined with exposure and spoiled forage, are by far the greatest hindrances to success with pregnant ewes. The man who cannot, or will not, recognize these should retire from the sheep business, or, better still, never embark in it.

1. Disorders of Gestation

Eliminating spoiled forage or bruises that cause abortion, very little trouble is met with in the pregnant ewe.

2. Abortion

Three types are recognized, the first one being the most common:

Sporadic or accidental, due to some injury or the ingestion of mouldy food. Upon a careful examination of the food for evidences of mould, ergot, pitch or other toxic ingredients, the cause will usually be found. The treatment is removal of exciting cause. Large doses of intestinal antiseptics or *viburnum prunifolium* are indicated in those threatened with abortion, together with clean, laxative food and absolute quiet.

Enzootic abortion, due to some infectious disease, such as blackleg, scab, pneumonia or rabies.

Contagious abortion. This is so rare among sheep as to merit but little attention. When this does occur, quarantine measures constitute the only successful means of prevention. The symptoms are similar to those of contagions in the bovine.

3. Dystocia

Difficult lambing; Difficult parturition.

Usually seen in young ewes lambing for the first time, and is due in the majority of cases to a pair of lambs entering the pelvic channel at the same time. They become tangled up in such a way that the most painstaking skill is required to "unravel" them.

First, restrain the ewe in such a manner that she will be powerless to strain. This may be accomplished by two assistants elevating the animal by holding the hands under the flanks. Have the animal face a corner so she cannot creep away on her front feet.

With the fingers cleansed and disinfected, form them into a cone. For a lubricant as well as a deodorant, one part of oil of eucalyptus in sixteen parts of raw linseed oil, is very good. If the lambs are dead, injecting a lysol solution into the vaginal cavity will mask the odor. Repel the lambs, and lubricate the vaginal canal thoroughly. Now rotate one lamb until as near a normal presentation as possible can be obtained. A small piece of twine or rope can be attached to the feet, and with traction exerted slowly and carefully, the lamb may be pulled out.

When the lambs are taken away, the uterus may be flushed with a good antiseptic solution, and the ewe let down. If she is very weak, a stimulant should be given, and a warm blanket thrown over her. Many a valuable ewe can thus be saved. Unfortunately the veterinarian's fee for services in cases like this is ordinarily more than the animal is worth. This low value of the ewe is the greatest hindrance to the handling of parturi-

ent cases in sheep. Under certain circumstances it might be well for veterinarians to make some special arrangements, as to charges for this work, with the owners of bands where a large number of ewes are to lamb at about the same time.

4. Decomposition of the Fetus

In many cases a veterinarian is called upon to pass judgment as to whether or not a ewe is pregnant, and, if so, if the fetus is alive or dead. In some instances this is a very puzzling question.

In situations where the soil is highly impregnated with limestone or other mineral salts, one should always guard against the mistake of looking for a vaginal or fetid discharge in case of a dead fetus. Mummifications are often present under such conditions, with not a single external symptom visible.

When a ewe has a fetus die within her, and barely pulls through the ordeal with her life, it is a good plan to advise fattening for the market. Adhesions often prevent future normal parturition.

In cases of putrid fetuses in the uterus, flushing out with strong antiseptics and deodorants, and a small capsule containing twenty grains of potassium permanganate and several drams of boric acid may be introduced into the uterus with advantage.

The udder should be attended to, for a violent mammitis, commonly known as "blue bag," may take place. Milk out the udder and apply belladonna ointment.

5. Displacement of the Uterus

The common term for this ailment is "downfall of the lamb-bed," which includes all the ailments of the womb from the layman's standpoint.

Three serious conditions may affect the uterus:

- (a) Hernia or rupture of the prepubian tendon.
- (b) Torsion or twist of the uterus

when pregnant. Fairly common in the ewe.

(c) Deviation of the uterus or complete eversion.

Very little can be done to alleviate these conditions. As a rule, they are too far advanced to be treated when expert assistance is called.

6. Eclampsia

Milk disease; Milk sickness.

Under this heading is considered parturient paresis, corresponding to the condition of the same name in the cow—the well-known "milk fever."

Symptoms: After a normal parturition, and suckling the lamb, the latter dies or is taken away. Within a day or two the first symptoms appear. There is loss of appetite and rumination. The ewe ceases to mourn the loss of her young, and the eyes grow glassy. Coma takes place, and the characteristic symptoms of milk fever in the cow are present.

Treatment: This must be given promptly, and no medicine must be administered by the mouth. One dram of chloral hydrate well dissolved in lukewarm water may be given as a rectal injection, or one-eighth to one-fourth grain morphin given hypodermically. Atropin, in one-tenth grain doses, may be tried. Inflating the udder, if at all possible, should be tried.

g. Metritis

Inflation of the womb or uterus.

When this condition occurs, uterine injections of antiseptics, stimulants and blood tonics should be given. There is very little satisfaction in treating this condition, since, due to previous neglect, the case is usually hopeless at the time the veterinarian first sees it.

8. Mammitis

Inflammation of the udder; Blue bag; Caked bag; Mastitis.

A rather common ailment in the spring among a band of ewes.

The common treatment is to slash the udder open with a knife, and, if

the poor ewe lives through this, to fatten her for the market. By humane methods and a little missionary work, much suffering among ewes may be averted by the veterinarian.

Dissolve a half-pound epsom salt in a quart of hot water, add an ounce fluid extract phytolacca to this solution; place the animal on her back, and with flannel or cotton, dipped in the solution, apply to the udder. In a few minutes the change will be remarkable. Bathing the udder with the warm solution seems to relieve the intense inflammation. If the lamb is alive, allow it to suckle, as the bunting seems to massage the udder and aid in its restoration to normal. A tablespoonful of the phytolacca may be administered twice daily for several days with benefit. If the lamb is dead and the ewe is to be dried up, belladonna ointment or camphor and lard should be applied.

9. Abnormalities of the Milk

This is not a common condition among ewes. It is not so important as with the dairy cow. Still, one is often asked about these questions, and the following is given for information:

Agalactia or absence of milk. One of the first symptoms of disease in a milking ewe. A form of infectious agalactia has been observed among ewes and goats. It is of unknown origin.

Watery milk. This is due to an absence of fats and casein, the milk in color resembling the deep, blue sea. By changing the food and administering tonics, the condition may be improved.

Fatty milk. This is found among ewes that have been fed on rich, con-

centrated foods, such as oil cake, and in ewes suffering from lack of exercise. Diarrhea ensues among the lambs. The treatment is less food, more exercise and an abundant supply of water.

Curdling milk. A symptom of indigestion, mammitis, poisoning, overheating, and advanced pregnancy. To alleviate this condition, a tablespoonful of sodium hyposulphite may be given once daily.

Fermenting milk. Cause and treatment same as above.

Putrescent milk. Caused by an invasion of bacteria in the udder. Treatment is the same as for curdling milk, or fattening for slaughter.

Slimy, stringy and soapy milk. Caused by fungi and bacilli. Rather rare. Treatment similar to that for curdling milk.

Blue milk, due to the *Bacillus cyanogaeus*.

Red milk, caused by the *Bacillus prodigiosus*.

Yellow milk, caused by the *Bacillus synxanthus*.

Foreign matter, such as dirt; abnormal taste, arising from certain foods, as carrots; drugs, as turpentine and asafetida; germs, such as found in gangrenous mammitis, and blood, may all exist in milk.

10. Sterility

A long scientific treatise on sterility in the ewe would prove not only impractical but tiresome. The common and best method is to fatten all ewes that prove to be non-breeders. Due to the small vaginal canal of ewes, manual examinations are difficult to make, and even when made often nothing abnormal can be noted in non-breeders.

Veterinary medicine and surgery is a branch of the general practice of medicine and surgery, and in point of legal principles involved it in no wise differs from those pertaining to the practice of those arts among human beings. Both

involve the same general lines of study. While the diseases of human beings differ in many instances from those afflicting animals, and while the appropriate treatment may vary, essentially the two sciences are the same.—Hemenway.

Open Fetlock Joint

By J. V. LACROIX

THIS condition, because of the frequency with which it occurs, may be taken as typical from the standpoint of treatment and results obtained thereby. While it serves to constitute a basis from which other joints when open are to be considered, due allowance must be made for the fact that some articulations when open constitute cause for grave consequences; while with others an open capsule, even when infected, does not cause disturbance enough to be classed as difficult to handle. Moreover, the fetlock joint is admirably suited anatomically to bandaging; and when wounded, is easily kept protected by means of surgical dressings. This fact is of great importance in influencing the course and termination in any given case of open fetlock joint and should not be forgotten.

There is no logical reason for comparing the pedal joint with the fetlock on the basis that it, too, may be completely and securely bandaged. Open navicular joint does not occur as a rule except by way of the solar surface and of the foot and the introduction of active and virulent contagium is certain to happen; consequently, an acute synovitis quickly resulting in an intensely septic and progressively destructive arthritis soon follows in perforation of the capsule of the distal interphalangeal articulation.

Wounds of the fetlock region resulting in perforation or destruction of a part of the capsular ligament are caused by all sorts of accidents, such as wire cuts and incised wounds occasioned by plowshares, disc harrows, stalk cutters and other farming implements. In run-aways the joint capsule is sometimes punctured by sharp pieces of wood or other objects. In horses driven on unpaved country roads, the fetlock is

not infrequently wounded by being struck against the sharp end of some object, the other end of which is firmly embedded in the ground. In one instance, the writer treated a case wherein the fetlock joint was perforated by the sickle-guard of a self-binder. In this instance there occurred complete perforation causing two openings through the *cul-de-sac* of the joint. Such wounds, while they are produced by implements which are to say the least, non-sterile, and perforating the uncleansed skin some infectious material must be conveyed into the joint capsule, yet in many instances in country practice, no infectious arthritis results where cases are promptly cared for.

A difference in the character of symptoms is evidenced when dissimilar causes exist. Small penetrant wounds which infect the synovial membrane cause infectious arthritis in some cases, whereas a wound of sufficient size to produce evacuation of all synovia, will in many instances cause no serious distress to the subject, even when not treated for several days. If it is not evident that an open joint exists and the articular cavity is not exposed to view, by carefully probing the wound, a positive diagnosis may be early established. In some cases where a small wound has perforated the joint capsule, swelling and slight change of relation of the overlying tissues may preclude all successful exploratory probing. In such instances it is necessary to await development of symptoms. Twenty-four hours after injury has been inflicted, there is noticeable discharge of synovia which coagulates about the margin of the orifice, where synovial discharge is possible. Particularly evident is this accumulation of coagulated synovia where wounds

have been bandaged—there is no mistaking the characteristic straw colored coagulum, which in such cases is quite tenacious.

No difference exists between other symptoms in infectious arthritis caused by punctures and non-infectious arthritis, except as to the intensity of the pain occasioned, the rise in temperature, circulatory disturbances, etc.

Probing or other instrumentation is to be avoided until the exterior of the wound and a liberal area surrounding, have been thoroughly cleansed—too much importance cannot be placed on this preliminary measure. In cases of open joint where ragged wound margins exist and the interior of the joint capsule is contaminated, much time is required to thoroughly cleanse all soiled parts. In some instances an hour is required for this cleansing process after the subject has been restrained and prepared. In order to thoroughly cleanse these delicate structures without doing them serious injury, one needs be skillful and careful in all manipulations of the exposed parts of the joint capsule.

The surface of the skin surrounding the wound is first freed of all hair and filth. The wound proper is cleared of all foreign material either by clipping with scissors, curetting or mopping with cotton or gauze pledgets. The whole exposed wound surface is moistened with tincture of iodine. If the interior of the joint capsule is evidently contaminated, a few ounces of peroxid of hydrogen is slowly injected into the joint cavity and subsequently one or two ounces of tincture of iodine is carefully introduced into the capsule of the articulation.

The injection of undiluted tincture of iodine in ounce quantities, it must be remembered, is not to be done unless there is provision for its free exit. Where good drainage from the joint cavity exists, all infected wounds should be thus treated, and this treatment may be re-

peated as conditions seem to require, until infection is checked.

If daily injections are necessary, dilution of the tincture of iodine with an equal amount of alcohol is advisable in order to avoid doing irreparable damage to the articular cartilages and synovial membranes.

An antiseptic powder composed of equal parts of boric acid and desiccated alum is employed to protect the wound surfaces and the margins, and the parts are then bandaged. In bandaging wounds of this kind, a liberal amount of cotton should be employed, and after a large surface surrounding the wound has been thoroughly cleansed, it must be kept so thereafter. This is impossible, if one uses a small amount of cotton and if such meager quantity of dressing material is carelessly wrapped in position with an insufficient amount of bandage material. Mention without description of the elemental problem of applying cotton and bandages to a wound would be sufficient were it not that this is a very important part of the handling of such cases, and also many practitioners are not only thoughtless in this particular, but apparently careless. What does it profit to prepare a part and cleanse a wound with painstaking care and then neglect to take every possible precaution to prevent its subsequent contamination?

In the handling of open joint capsules where the perforation of the capsular ligament is small and discharge of synovia does not immediately follow, there is presented a problem which is difficult to decide upon, that is, the manner in which such wounds are to be handled. One hesitates to enlarge such openings to drain or irrigate the capsule when there is no proof that serious trouble will follow because of infectious material which has probably been introduced at the time the wound was inflicted. It is especially difficult to decide upon the manner of handling such

(Continued on page 567)

Serotherapy of Bacterial Anthrax

By V. FRASEY, Pasteur Institute, Paris, France.

ICERTAINLY felt honored more than I can tell you when, through my friend Lucien Rossignol, I was requested by the Bureau of the "Society of Practical Veterinary Medicine" to deliver a lecture before you on the present state of Serotherapy in veterinary medicine. This was investing me with talents I do not possess, and I must ask you, therefore, before I proceed further, to show me all the leniency you possibly can. If I accepted to speak before you, it is merely because it seemed to me it would be interesting to bring to your attention, not a summary of our present knowledge of veterinary serotherapy (for in that case I would have to touch on the following serums: antitetanic, antivenomous, antistreptococcic, antiglanders, anti-measles, anti-symptomatic-anthrax, and this would oblige me to exceed the time limit of a lecturer whose aim is to avoid boring you) but all that relates more particularly to antianthrax serum, which has not yet made its way into France in the current practice of veterinary medicine.

You are aware of all the advantage to be derived at the present time by using the serum of measles and Vallee's and Leclanche's serum against blackleg. I have every reason to believe that we can now avail ourselves of the same advantages as regards anthrax.

We are indebted to Dr. Marchoux (of the Pasteur Institute) in France, and Sclavo, in Italy, for the first investigations bearing on the possibility of obtaining a serum having antibacterial properties.

*A lecture delivered before the Society of Practical Veterinary Medicine.

In 1895, in a work published in the Annals of the Pasteur Institute, Dr. Marchoux demonstrated that rabbits and sheep immunized against anthrax, were capable of standing comparatively large doses of virulent culture, and that the serum of these animals could, in certain cases, protect a rabbit weighing a little over four pounds.

On the other hand Sclavo, in 1896, reached the same result, and all his research work was verified and confirmed by Sobernheim.

Other experimenters, such as Cuica and San Felice, established identical facts by using the serum of animals belonging to different species; ass, dog, ox, horse.

Unfortunately, as we shall see later on, the difficulty of obtaining such a serum consisted not only in immunizing, more or less completely, an animal, but also in the way in which it would be possible to measure, with any accuracy, the anti-microbial force of the serum so obtained. On the other hand, if positive experiments were undeniably established, yet it seemed that the serum could not be of essential benefit, inasmuch as animals were already protected from anthrax by the use of Pasteurian vaccination, and fatal cases of malignant pustule in man considered as being comparatively rare. In spite of the slight action of antianthrax serum as obtained by these various scientists, they do not hesitate to use it in cases of malignant pustule in man, and perceived that it was not only perfectly innocuous, but that it could be used with benefit in the treatment of this affection.

It was at this point that Doctor Roux requested me to ascertain whether it would be possible to obtain in a

horse, taken as the only experimental animal, a serum of sufficient efficacy and determine its technic. As I did not wish to be influenced by any outside considerations, I was careful not to inquire into what had been done abroad in this connection. This was easy enough, as of all the authorities who had obtained or tried to obtain antianthrax serum, both in Europe and in America (and there are a certain number of them) none had published—or has up to the present time—any technic on the subject.

I therefore proceeded to immunize a horse in accordance with the standard process. Knowing beforehand that horses seem to be more sensitive to the virus of anthrax than cattle and sheep, I began immunizing a horse by inoculating the first antianthrax vaccine, the quantity being $1/20$ c. c., and 12 days later, $1/4$ c. c.; I increased the dose perceptibly up to 5 c. c.'s before starting with the second vaccine, which I applied in the same manner; after three injections of the second vaccine I considered that the animal had acquired sufficient immunity to enable me to at once inoculate several cc's of virulent, twenty-four-hour culture, in a Martin bouillon. By progressively increasing the doses and shortening the time between injections every eight days I succeeded at the end of a relatively short time in making the animal stand without ill consequence, in one dose, the inoculation of 300 c. c.'s of virulent culture in its neck, an amount which I considered a large one at the time. The horse had then received more than 1,500 c. c.'s of virulent culture obtained from different specimens of cattle anthrax, without any manifestation at each injection other than a temporary increase in temperature, varying from $39^{\circ}5$ to 40° C., and a somewhat voluminous edema at the neck, which would disappear at the end of a few days.

I then tried, twelve days later, the serum of this horse comparatively with

the Italian serum of Sclavo, and according to the latter's method.

Three guinea pigs were inoculated preventively with a dose of 2 c. c.'s of Sclavo's serum, subcutaneously; three other guinea pigs were given under the same conditions 2 c. c.'s of the serum obtained from my horse; three others were injected with serum from a normal horse, and they were all tested the next day with $1/25$ c. c. of a bacterial culture of slight virulence, together with three other controls. The guinea pigs injected with normal serum, and also the controls, died in from 36 to 40 hours, showing the ordinary lesions in anthrax. One of the guinea pigs treated with my serum died at the end of 32 hours, and the remaining five guinea pigs survived the others by 18 to 26 hours.

This result, although unsatisfactory, showed nevertheless that there was some beneficial action and that there was reason to pursue immunity still further, as it was probably insufficient. Not without some hesitation I began intravenous inoculation on this extremely resistant animal, and I was pleased to see that it easily stood the injections. In spite of this, upon reverting to the dosage just referred to, I realized that the preventive value of the serum did not increase in very noticeable proportions; however, I considered sufficiently efficacious a serum which gave me a survival of three or four days on guinea pigs tested in the same manner. I then resorted to a far more rigorous process. As the 24-hour bouillon culture only gave very few bacteria, I did not hesitate in inoculating, subcutaneously or intravenously, 48-hour cultures on tubes of scraped gelose, diluted in a minute quantity of sterile physiological water, and began by inoculating $1/10$ of a tube of gelose into an animal that had first been rendered immune; in this way I succeeded in making the animal stand intravenously, in successive doses, 1, 2, 5, 10,

15, 20 and even the equivalent of 40 of these cultures, or about two boxes of Roux's culture, making about two or three grams of microbial bodies.

After these injections I never perceived anything more than a slight prostration, and an increase of temperature to 40°C., but this disappeared 48 hours later. We have never observed anaphylactic reactions, whatever the process employed.

Moreover, in a horse, phagocytosis of this enormous mass of bacilli seems to take place with surprising rapidity; numerous cultures made with blood taken fifteen minutes after injection have always remained sterile. The preventive properties of the serum so obtained were considerably increased, since guinea pigs, after being injected with 2 c. c.'s thereof, and then inoculated with a mortal virus, survived the controls from four to eight days, and some times indefinitely.

The serum obtained in this way, and supplied by the Pasteur Institute to Dr. Villieres' department at the St. Denis Hospital, enabled him to lower mortality resulting from malignant pustule, which had reached 15% before the use of this serum to 3.6% until 1908, and from 1908 to 1912 to 0%; whereas Sclavo, whose statistics had seemed the most encouraging of all, showed a minimum mortality of from 6 to 7% with his serum.

All the St. Denis patients were systematically treated with the serum; a few of them, however, who had gone to the hospital for a case of anthrax of a seemingly mild character, and who had not derived any immediate benefit from serotherapeutic treatment, grew worse. The inoculation, even at a late day, of a dose of from 30 to 50 c. c.'s of serum, enabled them to leave the hospital at the end of three or four days completely cured.

You will find in a very complete work, published by Dr. Perrin and Dr. Modot, of St. Denis, this year, a report

of all these cases that were cured by the action of antianthrax serum.

I believe it of interest to report here two very serious cases of malignant pustule, treated at the Pasteur Hospital, with antianthrax serum alone, and which have the value of a laboratory experiment, for in both cases the bacterium of anthrax was shown in the general blood stream.

CASE I. Leonard D., 46 years of age, a tanner, entered Pasteur Hospital January 2, 1911; pricked himself on the morning of December 21st, when handling hides; same evening, experienced discomfort and chills; tumefaction appeared on the same level as traumatised site, increasing on the following days.

On January 2nd, there was visible on the left cheek, in front of the lobe of the ear, a small yellowish eschar surrounded by a ring of vesicles; also considerable edema around lesion affecting the neck and the upper part of thorax. Patient extremely asthenic; extreme lassitude and pain in the head; complete anorexia. Temperature 39° C.; pulse between 100 and 120. The pustule was merely touched with tincture of iodine.

January 3rd; 39°8; pain in head; slight epistaxis; restlessness. Was given, in two subcutaneous injections, 20 c. c.'s of antianthrax serum.

January 4th; temperature suddenly goes down in evening to 36°8. Edema diminishes.

January 5th; patient begins to take nourishment; edema still diminishing.

January 6th; Edema now limited to parotid and sub-maxillary regions.

January 9th; general condition excellent; gets up. Left hospital January 26th; pustule had not quite healed yet.

On January 2nd; 20 c. c.'s of blood were placed in a bouillon balloon of 200 c. c.'s; at the end of 24 hours, anthrax culture killing a guinea pig in 36 hours with the characteristic lesions

CASE II. Jacob B., 59 years old, day laborer, entered Pasteur Hospital on April 24, 1911, for a malignant pustule, having its seat on the outer part of left fore-arm; was contaminated on April 16th when making autopsy of a charbonous horse; first local symptoms appeared April 19th. On April 23rd, before going to hospital, the pustule was cauterized with thermocautery.

April 24th; eschar of the size of three centimeters by two centimeters; surrounded with blisters; painless edema of forearm and arm up to middle part; ganglions on armpit, painful when pressure is brought to bear. Pulse 60; temperature 39°4 C. Sub-cutaneous injection of 20 c. c.'s antianthrax serum.

April 25th: 30 c. c.'s antianthrax serum; 39°8. Eschar is surrounded by a purplish ring; insomnia; pain in head.

April 26th: Temperature remains high, diarrhea; 20 c. c.'s serum subcutaneously.

April 27th: Sudden effervescence; edema in forearm and hand completely gone; eschar still surrounded by purplish ring.

April 29th: Patient takes nourishment; sleeps well. Edema in arm almost entirely gone. Eschar still there with inflammatory ring. Did not begin to come loose until May 16th; patient left hospital on the 24th.

The serous culture, taken on April 24th, gave an anthrax culture; 20 c. c.'s of the blood were portioned out on the same day into two balloons containing 200 c. c. of bouillon; *both balloons* gave at the end of 48 hours, an anthrax culture, which was a typical flaky culture, killing a guinea-pig with the characteristic lesions.

These various favorable results obtained with the serum induced me to try and bring it into general use in veterinary practice; but I wanted first to establish a more exact technic for its

inoculation, enabling one to obtain in practically every case, an even more active serum.

Starting from the principle that the horse should digest the greatest possible quantity of hypervirulent bacteria, I had to discover what method of inoculation would give me the best results.

Three fresh horses placed at my disposal were first rendered immune by the process above referred to (injection in increased doses of the 1st and then of the 2nd vaccine); one of these horses was inoculated subcutaneously only, another, intravenously only, and the third alternately intravenously and subcutaneously. At each injection, given at 15-day intervals, they received exactly the same quantity of microbial cultures from anthrax of different species; ox, sheep, man, selected from among the most virulent in my collection, that is, able to kill a guinea pig in 3 days with a dose of 1/500,000 c. c. I began with 1/5 of a tube of gelose for each horse, then 1/3, 1/2, 1 tube, 2, 3, 5, 10, 15 and 20 tubes, equal to 1 box of Roux's. It seemed unnecessary to us to increase this dose, as the serum did not afterwards increase in power, in spite of the injection of larger doses.

The horses were bled about twelve days after last injection. Which of these three animals supplied the most active serum?

In our experiments, we found the serum of the horse inoculated intravenously decidedly superior to the serum of the horse inoculated subcutaneously; and the serum of the horse inoculated alternately subcutaneously and intravenously about equal to the serum of the two other horses mixed together.

The results of the numerous experiments made by us were as follows:

In order to reach results that could be compared, we only used guinea-

pigs, and all these experiments were made with series of at least eight or ten guinea pigs, either control guinea pigs, or guinea pigs treated preventively.

We used for our test virus a culture slightly more virulent than the second vaccine. Guinea pigs weighing from 400 to 500 grammes were first injected subcutaneously with 2 c. c.'s of serum; twenty-four hours later they were inoculated with half a cubic centimeter of anthrax culture.

The horse treated intravenously gave us, out of ten guinea pigs inoculated preventively, a total survival of five animals, and with regard to mortality, death occurred for the five others from two to five days later than for the controls. Horse treated subcutaneously: only one survival out of the ten; death occurred from three to eight days later for the nine others; the third horse gave three survivals out of ten animals treated, and death occurred from three to eight days for the seven others. In another experiment, where the serums from horses inoculated one way only, either intravenously or subcutaneously, were mixed together, we obtained a total survival of five guinea pigs out of eight inoculated; the survival of the three others varied from two to five days.

The mixture of serum and culture gave us, all other things being equal, almost identical results. Total survival of from three to six animals treated out of ten, death occurring for the remainder from two to six days later.

From all this we have come to the conclusion that the best technic to use in obtaining a really active antianthrax serum consists in only taking, to render the horse immune, cultures on a solid media, making it possible to saturate the organism with bacteria under a very small volume, following the progression given above as regards the quantities to be injected.

Intravenous inoculations are always to be preferred to subcutaneous inoculations.

All these experiments while they demonstrated sufficiently the preventive action of antianthrax serum, did not justify the conclusive results obtained with man; but we must say that resistance to anthrax is extremely variable in the different species of animals. It remained to be seen, however, whether additional injections might not diminish the number of deaths among guinea-pigs that succumbed in spite of the serum.

For this purpose, forty guinea pigs were divided into four series; three series of ten guinea pigs were rendered immune preventively with 2 c. c.'s of serum and were injected subcutaneously together with ten other controls, twenty-four hours later, with $\frac{1}{2}$ c. c. of a twenty-four-hour culture, of hardly any virulence, in Martin bouillon. The controls all died within four or five days; in the first series of ten guinea pigs treated, six died out of ten; the guinea pigs of the second and third series received after the injection of serum, an additional dose of 1 c. c. of this serum; survival increased up to the 13th day, and only four died out of ten; the third series received a second additional dose of the serum subcutaneously, and four days after the second injection, there were only two deaths out of ten in this series. It appears from this, therefore, that after the serum has been eliminated, if the animal does not find a new quantity of antibody, it will die from the injection. It is important to note that one injection administered preventively is not sufficient to prevent the death of the animal, and it is necessary to furnish the organism with a further quantity to enable it to fight the bacteria.

We also tried to discover what action the serum might have when inoculated preventively into sheep and horses.

(To be continued)

The Technic of Passing the Stomach Tube in the Horse

By D. O. KNISELY, D. V. S., Topeka, Kansas.

INOTE an article written by E. Wallis Hoare, F. R. C. V. S., in the *Veterinary News*, on a case of acute gastritis, with remarks on the use of the stomach tube, both the single and the Knisely double tube (my own) and with poor results in both instances. I should like at least to try to explain in my way a few things that may have caused some of the difficulties that Mr. Hoare met.

First, the doctor says that it was his first attempt to pass the tube. This alone should account for some of the trouble. Second, he unfortunately got a very nervous subject for his first, since he states in the report of the case that in trying to give the animal a dose of chloral, oil and turpentine the attendant was struck by the horse and knocked away. If this horse resisted the administration of a dose of medicine to this extent, one may rest assured that he would also resist the passing of the tube. So I say that Mr. Hoare's first attempt was made on a poor subject for one not familiar with the use of a tube. Had he been a little more fortunate in getting a horse that would not have resisted either method of treatment, I am sure that results would have been better. Although we come in contact with subjects of this kind from time to time, it does not seem nearly so difficult to pass the tube in these intractable cases after one has mastered the technic of this operation.

Let us take, for example, this same case of Mr. Hoare's and see whether or not our method of handling it would not have been better. First, after giving a dose of medicine and finding that the horse resisted it to the

extent of fighting, I would then have secured the subject in a chute made especially for this work in my operating room. I use the wall in one corner of the room for one side of the chute; the other side I make of two-by-eight planks, making it four feet and one-half high. This is in reality a large gate swinging on two heavy hinges, fastened so that it cannot be lifted off by pulling up on it. In restraining this horse, I should have had a heavy halter or head-stall made especially for this work—one that will not be torn the first time it is used. With this I should use three-quarter-inch rope to make the tie, tying the horse's head securely to each side of the chute. This chute is twenty-four inches wide and fastened shut with a hood made of three-quarter-inch iron. Then I would have another rope that would run across the back about where the collar fits. This I would also tie so that the animal could neither rear up nor strike to any great extent. A horse so confined is ready to receive the mouth speculum and one may then proceed to pass the tube.

Personally, I no more fear entering the trachea with the tube by mistake than I fear putting the tube in the nostril when I am trying to get it into the mouth. I pass the tube by holding it in the right hand, using the left as a guide, placing the hand into the mouth with its dorsal surface on the tongue, using the fingers and palm as a guide for the tube as it is passed over the tongue and to the back of the mouth. When the tube reaches this point, it is quite essential to make no quick move towards passing it into the esophagus, for, if this is done, the

tube will enter the trachea, whereas if the tube is slowly passed at this stage it is rare that it will not go directly into the esophagus on into the stomach with no trouble.

If the horse holds its head a little high, the tube will be too short to properly syphon the contents of the stomach as the outer end of the tube would not be as low as the end in the stomach. This I have found occurs sometimes, and as a remedy I have added two feet to the end of the outlet tube. In all large horses, if the head is held high, it will bother the operator to make a success of intubation. In all horses weighing 1,800 pounds or more, when I pass the tube I do not stop pushing it in until I have at least seven and one-half feet of the tube into the esophagus; I then introduce about two quarts of water into the large tube. If this does not start syphoning I withdraw the tube a couple of inches and try again. This is repeated till the tube is withdrawn and six and one-half feet of it is retained in the esophagus. If at this point no results are gotten, I replace the stilette into the tube and proceed to pass the tube to about eight feet.

The amount of water that I inject into the stomach in one of these cases is the smallest quantity required to produce a return flow from the tube. In these cases the stomach is full; then why should we keep on introducing water and adding to its distention?

As to preparing the tube, Mr. Hoare states that it, as well as the stilette, must be well lubricated. This is correct, and anyone attempting to pass the tube without observing this precaution will soon learn that the stilette cannot be readily removed unless it is well lubricated. In this we surely agree. He further states that the stilette should come to within one-half inch of the end of the tube. In this I cannot agree with him, for this reason: It is then possible for the soft rubber in some tubes to telescope so

that the stilette may protrude beyond the tube and wound the pharynx just as it is rounding into the esophagus. This is one of the first things I had to learn by experience, and it was my misfortune to wound a horse's throat, causing much soreness which lasted several days. I should say the stilette should be pushed to within *one and one-half inches* of the end of the tube.

In this case the doctor does not say how he was sure that the tube had entered the stomach, but that nothing but some gas was removed, and this only at intervals. It seems strange to me that more ingesta could not have been gotten than this. Now, I take it that his was a good sized horse, weighing 1,800 pounds or more, and possibly the ordinary stomach tube was too short. In such cases, it would require a tube which is at least seven and one-half feet in length to reach the stomach, and in the tube of the ordinary length this would leave only two and one-half feet protruding—a condition unfavorable for easy syphoning.

The subject no doubt needed just this kind of treatment but happened to be oversensitive to pain and difficult to handle. It is unfortunate that Mr. Hoare happened to meet with such an unsuitable subject in his first trial of the tube. I hope soon to read of another article by him, to see the successful use of the tube described and to see it lauded in the inimitable style of this well known writer. This is the one sure way of success in the treatment of gastritis with flatulence or overloading. Medical treatment, we admit, in many cases will do the work, but the time required for handling these cases is often prohibitive. Don't give up the tube in these cases for any medicine. Use the tube at once and if unsuccessful the first time, pass it again. Medicine does not always relieve with the first dose, but it is repeated time after time and then often without success.

The Control of Bovine Tuberculosis*

By S. H. WARD, St. Paul, Minn., State Veterinarian.

I AM of the opinion that it is utterly impossible for this country to entirely eradicate tuberculosis from its herds of cattle. Those of you who are familiar with the disease realize that there are very few herds that are not more or less infected. The control of the disease, however, lies primarily in the eradication of tuberculosis from the pure-bred herds. We must also realize the fact that the pure-bred herds have been the disseminators of the disease in the past.

In Minnesota, during the past three years we have issued 3,500 certificates of health, covering cattle that have been sold in the state. The law requires the seller to give the purchaser a certificate showing that the animals are free from disease. The state feels that the buyer should have this protection.

We have applied the tuberculin test to about three hundred and sixty herds in the state of Minnesota, comprising 8,300 head of cattle and ten per cent reacted. But for stopping the sale of these reactors, we should have had at least four hundred new centers of infection, so that it appears to us that the disseminators of disease in the past have been in the pure-bred cattle. It is very rare that grade cattle are sold for breeding purposes. Good milk cows are sold and go into the dairy, so the possibilities of the grade cows scattering the disease are relatively small.

One great trouble with the previous attempts to control tuberculosis is that we have gone into grade herds and begun the work there, while the owners of pure-bred herds have usu-

ally been the last to submit their animals to the test.

There are many difficulties in the way of introducing or applying the tuberculin test. The fact that the breeders have large amounts of money tied up in their herds really frightens them when asking for the test, because they have good reason to believe that the disease is present in many cases and they fear it will cost them a lot of money. For this reason a great many of the breeders are opposed to having the test made.

North Dakota is employing the same methods for the control of tuberculosis that we are using in Minnesota. North Dakota is demanding the tuberculin test on imports and believe that if they keep tuberculosis out it is just as easy for them to control the disease in their own state also.

The advantages to the breeders in having their herds tested are many and the breeders do not realize that most of the states in the union demand the tuberculin test before permitting the cattle to be imported.

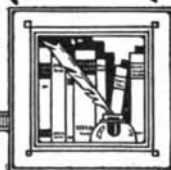
There is considerable delay in applying the test and waiting for certificates and the buyer, knowing about this, seldom approaches the same herd for other cattle. If the breeder has no fear about his cattle passing the necessary test there will be no delay and it will not be necessary to ask for any increased price to take care of the charges that are necessary in that line of work.

We find that the greatest difficulty in keeping our herds free from disease is from importation. Many times the animals are accompanied by certificates of health, but when the cattle

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A NEW AID TO DIAGNOSIS

THE Edison Monthly published by the New York Edison Co. of New York City, contains an illustrated article in the March issue, describing the use of the X-ray in vet-

erinary hospitals. The work of Dr. Louis Griessman of New York City in the diagnosis of fractures and other ailments of animals by means of the X-ray is favorably commented upon.

A PUBLICATION WORTHY OF THE DAIRY INDUSTRY

AMONG all of the publications devoted to the various branches of livestock interests, none is more progressive or of greater value to its clientele than Hoard's Dairyman. Recognizing the value of accurate scientific knowledge, Hoard's Dairyman has ever been the champion of sane measures for the regulation and eradication of animal disease. The staunch stand that Hoard's Dairyman early took in favor of the tuberculin test has been of incalculable value to the livestock interests of this country, and has had more to do with reconciling dairy interests to this test than all the preachments from officials or others outside of the dairy industry. It is a publication that every veterinarian practicing in dairy districts should read. Send now for a sample copy. Address Hoard's Dairyman, Ft. Atkinson, Wis.

The following which appeared in its editorial columns some months ago, is indicative of this publication's attitude on livestock sanitary questions.

FOOLING THE FARMERS.

There seem to be enough farmers all the time who are ignorant and prejudiced enough to furnish plenty of opportunity to designing men to work them to their own hurt. We say "hurt" because when farmers are persuaded to unite in societies that oppose sound, scientific knowledge, or persuaded to subscribe to silly and foolish statements that are false in theory and practice, it must result in the end to the hurt of those farmers and they will finally feel ashamed of the stand they have taken.

The following letter to Wallaces' Farmer is a good example of such efforts to marshal the farmers togeth-

er in the interest of dishonest, demagogic leaders who will take their money and return them lies for their pay:

"I want to ask you some questions. The farmers in our neighborhood have formed a co-operative union. There is a national union, with headquarters at Chicago. At the meeting it was stated that the so-called foot and mouth disease plague was a premeditatedly arranged affair; that a scab was brought in from some foreign country, probably Japan, with two objects in view: first, to create new offices such as might be filled by veterinarians; and, second, to control the price of live stock. It was also stated that the so-called tuberculin test, instead of being

an advantage, is a great disadvantage. It was stated that if a healthy herd of cattle is given the test twice, the second time they will have tuberculosis."

No intelligent, well posted farmer believes any of the foregoing stuff. It is simply an appeal to ignorant men and ignorant prejudice. As the editor of Wallaces' Farmer very properly says, it is "absurd." The cry about the tuberculin test is a silly one. Hoard's Dairyman herd has been tested regularly with tuberculin since 1898. Since the year 1900 not a case of tuberculosis has been found in the herd. But you can raise a howl in favor of a lie that will go among men who do not read and keep intelligent.

A HOSPITAL FOR ARMY DOGS

FROM time to time press dispatches have contained mention of the rescue work accomplished by dogs in the German army. Because war correspondents look upon descriptions of artillery bombardments, infantry charges, mining and sapping operations and life in the trenches as of greater news value than the work of rescue when the carnage ceases, the part that dogs have played in discovering and carrying aid to wounded soldiers has probably received much

less attention than its importance deserves.

A wireless report from Berlin states that so far during the war, dogs of the service have rescued more than 3,000 wounded soldiers who would otherwise have perished, and the people of Jena out of their gratitude have erected an army hospital for dogs, to which a large number of patients have already been sent for treatment of wounds and ailments.

FEDERAL MEAT INSPECTION APPROVED

IN July 1913 the Secretary of Agriculture, wishing to obtain the opinions and recommendations of experts outside of the department with regard to meat inspection service carried on by the Bureau of Animal Industry, requested J. W. Connaway of the University of Missouri, Veranus A. Moore of the New York State Veterinary College, Mayzek P. Ravenel of the University of Wisconsin and

Wm. T. Sedgwick of the Massachusetts Institute of Technology, to investigate the meat inspection service and report to him on their findings.

The report of these gentlemen has been published as United States Department of Agriculture circular No. 58. It constitutes a very interesting discussion of the meat inspection service and should be read by every veterinarian.

On the whole the report is highly commendatory of the inspection as conducted by the Bureau of Animal Industry and of the slaughtering methods of the packers. However,

numerous places where improvement is needed are pointed out. Among other things, they recommend better pay for inspectors, whose salaries are at present incommensurate.

GOVERNMENT ENCOURAGEMENT OF HORSE BREEDING

SENATOR KEY PITTMAN of Nevada is responsible for a bill recently introduced into the United States Senate, calling for an appropriation of \$200,000 for the purchase and maintenance of stallions to be used in the production of horses for agricultural and military purposes. In discussing the measure, Senator Pittman said:

"I was actuated in the introduction of the bill by a knowledge of conditions in my own state, where we once had an abundance of horses of an enduring type. Within the last eighteen months buyers, both local and foreign, have taken many thousands of head of the very sort of animal we require for such campaigns as we are now prosecuting in Mexico, and where, with only a small force of cavalry in operation, the remount situation is acute.

"This belief was strengthened upon investigation," continued Senator Pittman. "Gen. Aleshire, the quartermaster general of

the United States army, testified before the committee on military affairs recently that not more than 250,000 horses of the cavalry remount and light artillery types are available for the uses of our government at the present time, and that of this number only 30,000 are in that condition where they could be pressed into immediate service.

"These figures were obtained by a special census taken in districts where the government remount stations are situated and they furnish every American a grave subject of consideration. With purchasing campaigns still being prosecuted, the supply must be lower today. Statistics at hand indicate that we have lost since the commencement of the continental war approximately 1,500,000 horses and mules, and it is high time that we set about replenishing these.

"We have failed hitherto to give this animal the important position accorded him by the old world nations, but it is all the more reason for a prompt and satisfying adjustment of this problem which carries a powerful economic appeal to the country at large."

RABIES SPREAD BY INGESTION OF THE VIRUS

EDWIN R. SANS, expert of the United States Biological Survey, says that in his opinion where cattle are infected and have reached pronounced stages of rabies, they spread the virus in the froth that drops from their mouths upon the grass and foliage and that this virus later eaten by other animals is the cause of the disease.

Mr. Sans comes to this conclusion after spending two months in a rabies infected district in the Northwest.

A pamphlet entitled "The Campaign Against Rabies" recently issued by the California State Board of Health contains the following:

"In a small town in Nevada, a coyote ran into a bunkhouse, jumped on a man's bed, tearing and biting at the covers. The man saved himself by pulling the covers over his head and calling for help. Before the coyote was killed, four dogs, three hogs and one horse were bitten, and later died of rabies.

"Hundreds of cattle have died of rabies in Nevada and California during the past few months. Hunters and trappers in the employ of the state and federal government are waging a successful warfare against coyotes, which are becoming more scarce every day in California. When the same active

measures are adopted throughout adjoining states, there is no doubt but that the outbreak will be quickly controlled. The program for concerted

action is well under way and by the time that this Bulletin is distributed active operations shall have been started in all adjoining states."

A NATIONAL CONFERENCE OF DAIRY INTERESTS

THE efforts of local dairymen in three states, near Washington, D. C., to induce the Federal government to issue regulations governing the production and transportation of milk entering interstate commerce, and, of course, relieve themselves of the annoyance of various state regulations governing milk shipments from one state to another led to a conference of representatives of all the allied dairy interests in Washington last month. Ninety organizations directly connected with dairy interests responded to the call for this conference and sent representatives.

Mr. W. T. Creasy, Secretary of the National Dairy Union, was made chairman of the conference and declared that its objects were "to outline a constructive program for legislation and procure uniform regulations for the dairy and allied industries."

Assistant Secretary of Agriculture Carl Vrooman welcomed the conference to Washington, stating it as his belief that government regulation of business is inevitable. He insisted that all interested in the matter get together for constructive work, asserting that the Department of Agriculture is anxious to get all the facts and expects to serve, not dictate.

Mr. N. T. Hull, President of the National Dairy Union, spoke of the handicaps under which milk producers are laboring. He declared himself in favor of municipal distribution, citing instances where as many as twelve different milk wagons served the same district of a city, the result being that the farmer gets three cents a quart for his milk and the consumer pays nine cents.

In Dr. Devine's report of the May meeting of the New York City Veterinary Association, it will be noted that Dean Cook of the St. Lawrence School of Agriculture, Canton, New York, discusses this same problem. It is receiving the attention of the health commissioner in Chicago and of milk inspectors everywhere, the probabilities being that some sort of system may be worked out to eliminate waste in the distribution of milk and cream in the cities. This will probably result in additional municipal regulations and additional work for municipal milk inspectors, many of whom are veterinarians.

Dr. H. A. Harding of the University of Illinois came out boldly in an attack upon the means adopted at present to obtain milk of a high grade, insisting that the score card system of rating dairies is a failure and that conditions imposed upon farmers by health board regulations are unnecessarily costly.

The conference passed resolutions strongly condemning the report of an investigation of 144 creameries and dairies, published in the yearbook of the Department of Agriculture for 1912, stating that the dairy industry had been damaged immeasurably by this report, which is declared to be "woefully incomplete in its survey and wholly false in its conclusions."

The conference recommended the general pasteurization of all creamery butter. They also passed a number of resolutions carefully worded, but on the whole intended to endorse the plan to take from the Bureau of Animal Industry all authority over the interstate shipment of livestock, breeding, feeding, inspection, etc., placing such au-

thority in a Federal livestock board which would be responsible to an assistant secretary of agriculture to be provided by act of Congress. This represents the dairy interests' gratitude to the Bureau for eradicating the 1914-15 outbreaks of foot-and-mouth disease.

In the same set of resolutions, however, the conference came to the Bureau of Animal Industry on its knees, as follows:

Contagious abortion among the dairy herds of this country is a very serious menace to the profitable production of milk, exceeding in its economic destructive character any of the other diseases to which dairy cattle are subject; therefore be it

Resolved, That the Department of Agriculture is hereby urged to give attention, in the most persistent and comprehensive fashion possible, independently and in co-operation with the state experiment stations, to this disease with a view toward controlling it and lessening its ravages. We request that the best qualified investigators be assigned to this exclusive task. In view of the tremendous economic importance of this problem we request that it be ap-

proached at once from every possible hopeful angle.

Whereas, The presence of tuberculosis in cattle is a menace to the profit of the breeder and the dairy farmer; and

Whereas, Its presence in the herd can as a rule be detected by the application of the tuberculin test by men skilled in its use and when administered under proper conditions; therefore be it

Resolved, That this convention urges breeders and handlers of all classes of dairy cattle to weed out reactors from their herds as a matter of protection to their own financial interests, either consigning them to the butcher or segregating them in the herd, when they are of sufficient value to warrant such manner of handling.

Resolved, That this convention heartily endorses the state-accredited herd plan of inducing breeders voluntarily to offer their herds for official tests and secure a certificate which will accredit their cattle to any state without re-test;

Resolved, That reasonable compensation should be allowed by federal and state authorities for all animals slaughtered in the eradication of tuberculosis. This compensation should not be arbitrarily limited by statute, but should be fixed by appraisal in each case, or by court decision on proof of the value of the slaughtered animals.

THE VALUE OF ANTI-ANTHRAX SERUM

ELSEWHERE in this issue, we publish an article showing what has been done up to the present time in the production and use of anti-anthrax serum in France. Some months ago, we published an article by Dr. Adolph Eichhorn of the Bureau of Animal Industry, Washington, D. C., in which was recorded the progress made in this country in the development and perfection of serum for the treatment of anthrax. The matter has hardly received the attention that it should from veterinarians.

It must not be forgotten that anthrax is enzootic from time to time over a considerable area of our country and that since the spores of this germ may live for many years, perhaps as much as twenty years, in the ground, there is not much prospect of

the ultimate eradication of this disease. An outbreak of anthrax ordinarily results in much loss before the immunizing effects from anthrax vaccine can be obtained; hence, the value of the serum for the production of immediate immunity in the animals not yet attacked by the disease and for the treatment of those already afflicted.

Further, it must be remembered that anthrax is by no means a rare disease in humans but that it ordinarily runs a less acute course in man than in the lower animals, giving an opportunity for the use of serum in the treatment. As veterinarians are not infrequently infected by anthrax, and since one state veterinarian died of this disease last year, the great importance of this serum is brought home to us.

We can best appreciate the really wonderful thing that has been accomplished by the scientific investigation of anthrax when we remember that although it was once one of the most dreaded of diseases, it is no longer considered a menace to humans, and loss of livestock from its ravages are

easily and certainly preventable.

An epidemic of anthrax in the vicinity of Naples in 1617 killed 60,000 people and as recently as 1770 an epidemic of anthrax in Santo Domingo took a toll of 15,000 lives. There is scarcely a country in Europe but what has records of anthrax scourges.

GOVERNMENT AID TO THE FARMER AND STOCK RAISER IN SUPPRESSING FOOT-AND-MOUTH DISEASE

ONE of the sanest pronouncements on the floor of the House of Representatives in a long time on any matter pertaining to the livestock industry, was made in a speech by Hon. T. J. Steele of Iowa, May 2nd.

In this speech Congressman Steele takes up in detail the criticism that has been levied at the Bureau of Animal Industry for its manner of handling the 1914-15 outbreaks of foot-and-mouth disease. These criticisms are answered in a way most commendatory to the Bureau of Animal Industry by contrasting the brilliant final results in this country with what other countries have been able to do in the control and eradication of foot-and-mouth disease.

The speech further contained a considerable amount of statistical matter pertaining to the recent out-

break of foot-and-mouth disease and a brief history of this and preceding outbreaks in this country. The whole speech is interesting to veterinarians, and readers who procure a copy of the speech from Representative Steele will be well repaid for their trouble.

The speech closes with this sentence: "Instead of knocking the men who worked day and night, Sundays and holidays, to accomplish these results, let us show them our appreciation of their efforts, even though they, like others, have made a few mistakes; and, gentlemen, I can assure you that if this herculean task had been accomplished in one of the European countries, these men, whom some of you have so severely criticized, would be wearing badges of honor or of merit for the results obtained."

B. A. I. EMPLOYEES MERIT AN INCREASE IN PAY

THE National Association of Bureau of Animal Industry Employees is making encouraging progress under the leadership of its efficient President, Dr. J. E. Gibson and its energetic Secretary, Dr. S. J. Walkley, in furthering the progress of the "Lobeck bill" for the classification of employees in the Bureau of Animal Industry.

The bill provides for the following classifications and salaries:

Veterinary inspectors, entrance salary, \$1,400 per annum.

Promotions to \$2,400 per annum.

Lay inspectors, grade No. 2, entrance salary \$1,000 per annum.

Promotions to \$1,800 per annum.

Lay inspectors, grade No. 1, entrance salary \$840 per annum.

Promotions to \$1,600 per annum.

This bill in different forms has been before Congress for a number of sessions. In the beginning it did not

have the united support of the Bureau of Animal Industry employees, but the whole force is behind it now; it has already received favorable attention in the House, and there is prospect that it may be enacted into law during the present Congress, or the next.

The number of employees in the Bureau of Animal Industry on June 1,

1916, who will be affected by this bill, were as follows: veterinary inspectors 1,250; lay inspectors, grade No. 2, 1,100; lay inspectors, grade No. 1, 800; total, 3,150.

It is estimated that the increase in pay of the employees in the Bureau of Animal Industry provided by the Lobeck bill would amount to \$300,000 a year.

A CLEAR STERILIZED ANTI-HOG-CHOLERA SERUM

DRS. MARION DORSET and R. R. Henley of the Biochemic Division of the Bureau of Animal Industry describe in a recent issue of the *Journal of Agricultural Research*, a new method for preparing anti-hog-cholera serum, which admits of the economic production of a clear sterilized product.

This serum may be heated to a temperature of sixty degrees Centigrade and held at this temperature for thirty minutes. This will certainly kill any virus of foot-and-mouth disease and other vegetative organisms—an immense advantage when the great difficulty in detecting contamination from foot-and-mouth disease is recalled and the heavy loss that has

heretofore resulted from the spread of this disease through the use of anti-hog-cholera serum.

Drs. Dorset and Henley found that the addition of a small quantity of bean extract causes the red cells of blood to agglutinate and pack together when the mixture is centrifuged. It is then possible to pour off the clear serum, leaving behind the red cells, which play no part in preventing hog cholera but which simply dilute the serum and render sterilization by heat impracticable.

It is probable that the Department of Agriculture regulations will soon prohibit the interstate shipment of any but the clear serum that has been sterilized by heating.

VETERINARY EMBLEMS

The emblem shown in the accompanying cut is not strictly a veterinary emblem, but is the emblem adopt-



Actual size

ed by the National Association of the Bureau of Animal Industry Employees, an association which includes both vet-

erinary and lay inspectors. It is of a special cut-out shape, with upper panels of the shield in blue enamel and the circular animal head designs depressed, with the details nicely modeled. The lower portion shows the alternating stripe of red and white enamel, with white cross panels and streamers at the bottom. The wording on the panels and the monogram letters in the center appear in gold. The enameled parts of the emblem are made flat, well stoned and polished.

DESIRABILITY OF CO-OPERATION BETWEEN THE B. A. I. AND VETERINARY PRACTITIONERS

IN a publication recently issued by the Department of Agriculture, it was stated that nearly 770,000 persons, largely successful farmers, are now aiding the Department of Agriculture by "furnishing information, demonstrating the local usefulness of new methods, testing out theories, experimenting and reporting on conditions in their districts—by helping, in short, in almost every conceivable way to increase the knowledge of the Department and to place that knowledge at the service of the people."

This great army of 770,000 includes about one out of every twenty farmers. The publication goes on to recount the immense benefit that this co-operation has been to the Department and to the country as a whole in many and varied lines of activity.

We wonder why the Bureau of Animal Industry, a division of this same Department of Agriculture, has never seen the advantages of co-operation with practicing veterinarians. The Bureau has carried on a few co-operative

experiments with certain of the state experiment stations, has co-operated in some instances with the livestock sanitary authorities, and in emergencies like the outbreak of foot-and-mouth disease, with pretty much anybody that could help them; but as a general proposition, the Bureau seems not to be aware of the existence of the veterinary practitioner. It expects no help from him and gives him none, except as, of course, he profits in a general way from the splendid research work that the Bureau is doing and has done for many years.

Notwithstanding the statement of the Department of Agriculture that their co-operation with successful farmers has been of incalculable benefit, we believe that a co-operation between the general veterinary practitioner and the Bureau of Animal Industry would be of even greater benefit to the former, and that it would benefit the latter goes without saying.

Who will point out any disadvantages that such co-operation entails?

PROGRAM FOR DETROIT MEETING NEARING COMPLETION

The work of preparing for the Detroit meeting of the A. V. M. A. is progressing splendidly, and there is every indication that the meeting will be of a character that will disappoint no one who attends.

Dr. L. A. Merillat, director of the section on surgery and practice, has already completed his part of the program and submits it as follows:

Monday Session, August 21st.

1. Teaching Pharmacology, by H. Jensen, Kansas City, Mo.

2. Business Methods in a Veterinary Practice, by D. M. Campbell, Editor, AMERICAN JOURNAL OF VETERINARY MEDICINE, Chicago.

3. Shipping Fever of Horses, by John R. Mohler, Assistant Chief, Bureau of Animal Industry, Washington, D. C.

4. Shipping Fever of Horses from the Army Standpoint, by J. C. Willgans, Inspector of Animals, Quartermaster Corps, United States Army, Kansas City, Mo.

5. The Influence of Shipping Fever on the Horse Industry, by Prof. Geo. B. McKillip, McKillip Veterinary College, Chicago.

Tuesday Session, August 22nd.

Joint Meeting for the Discussion of Contagious Abortion.

Wednesday Session, August 23rd.

1. Nymphomania of Mares, by H. Fulstow, Norwalk, Ohio.

2. Recommendations for the Control of White Scours, by A. T. Kinsley, Pathologist, Kansas City Veterinary College, Kansas City, Mo.

3. Local Anesthesia and Animal Dentistry, by Prof. H. E. Bemis, Veterinary Department, Iowa State College of Agriculture, Ames, Iowa.

4. Paraphimosis of Domestic Animals, by J. V. Lacroix, Editorial Staff, AMERICAN JOURNAL OF VETERINARY MEDICINE, Chicago.

5. Operations for Paraphimosis, by John Adams, Professor of Surgery, Veterinary Department, University of Pennsylvania, Philadelphia.

Dr. Chas. Higgins, director of the section on bacteriology and sanitary police will have the program for his

section completed soon. It is not yet ready for announcement.

It is planned to have the clinic limited in the number of subjects offered to what can actually be given the attention they merit. It is purposeful to have an animal operated on for sterility; to have a new hog cholera demonstration; to demonstrate the radical operation for an exceedingly bad case of fistulous withers; to have a roarer operated on by the cauterization method; operation for the eradication of thoroughpin; teat operation for the removal of an obstruction to the milk duct; and, of course, the neverfailing cryptorchid operation.

A number of Chicago veterinarians and their wives are planning to motor to Detroit. It is probable that some Indiana, Ohio and New York veterinarians will travel in the same way.

BULLETINS EVERY VETERINARIAN SHOULD HAVE

Milk and Cream Contests, by Ernest Kelly, L. B. Cook and J. A. Gamble, Bulletin No. 356, U. S. Department of Agriculture, Washington, D. C.

Laws Relating to Fur-Bearing Animals, by D. E. Lantz, U. S. Department of Agriculture, Washington, D. C.

Suggestions for the Repression of Sterility, Abortion and Mammitis in Cows and of White Scours in Calves by W. L. Williams, Cornell University, Ithaca, N. Y.

It is now known that the germs of tuberculosis and typhoid fever may remain viable for a time in butter and cheese. The aging of cheese before sale tends to lessen the danger in that article from those bacteria, but it is liable to another infection with a highly poisonous germ—tyrotoxin. These dairy products are frequent and extensive subjects of interstate commerce, and to a smaller degree they enter foreign commerce. It is prac-

A Study of the Manufacture of Dairy Butter, by E. L. Anthony, Bulletin No. 135, Pennsylvania State College, Agricultural Experiment Station, Centre County, Pa.

The Pineal Gland, by Carey Pratt McCord, M. D., Research Laboratory, Parke, Davis & Co., Detroit, Mich.

The Filterability of Bacillus Bronchisepticus: with an Argument for a Uniform Method of Filtration, by N. S. Ferry, Ph. B., M. D., Research Laboratory, Parke, Davis & Co., Detroit, Mich.

tically impossible to efficiently supervise the commerce without attention to the manufacture. It is entirely within the authority of Congress to enact reasonable statutes which would safeguard the manufacture and interstate or foreign sale of the products. A state whose product is largely shipped out of its limits is not likely to put efficient restrictions upon the business.—Hemenway, "Essentials of Veterinary Law."

THE CONTROL OF BOVINE TUBERCULOSIS

(Continued from page 526)

are later re-tested they are found to be diseased. We do not blame the veterinarians for this in all cases and realize that the breeders are sometimes dishonest and that when the test is made its purpose is defeated in many instances. Sometimes diseased animals are submitted for ones that are healthy and there are various other ways of circumventing the test.

Veterinarians will find it is to their own advantage to let the state take charge of the pure-bred herds as the state officials will find other ways to make up for this to the practitioners.

It is always necessary that entire herds be tested so that unsuspected but diseased animals may not spread the disease. It is imperative that we have the confidence of the breeders, and the most important part of the work is that all reacting animals be removed from the herd. They should be killed outright.

It is a physical impossibility, in my opinion, to adopt the Bang System on ordinary farms and even on the farms of those who can well afford it. This system is exceedingly irksome and it is often found that after a young animal is taken away from its mother that it, too, is diseased. I do not believe for one moment that the disease is hereditary, but there are many ways in which it may be acquired. When the owner is told by the herdsman that calves have been taken away from their mothers it may be true, and it is possible also, that the young have stayed with them for twenty-four hours. Or before calves are a year old they may come in contact with other animals.

An important point is disinfection. It is absolutely necessary that the premises be thoroughly disinfected. This may be done by removing all accumulated filth and spraying the

barns with a reliable disinfectant and whitewashing them.

There are, of course, many unfavorable conditions in applying the test to pure-bred herds. First, of course, is the antagonism of the owner, especially when he knows the disease exists. It is hard, then, to get into the herds unless you have some law which will compel the owner to have his animals tested. Dishonesty of breeders, lack of disinfection and sometimes incompetent or even dishonest veterinarians, all have to be contended with.

We have tested 7,900 head of cattle; that is, we have given them the first test, and 712 have reacted. We have applied the second test to 3,620 head, finding 81 reactors. The third test was on 1,663 cattle and 35 reacted and the fourth test was on 990 cattle and we found 16 reactors. The reason the fourth test was so high is owing to the fact that in one herd a number of supposedly healthy cattle purchased from an eastern breeder had been introduced on this test. Every one of these animals reacted. At the fifth test we tested 449 head, of which two reacted. The sixth time we tested 59 and found no reactors.

It seems to me incredible that breeders will continue to buy and sell diseased animals as they have done in the past. I do not believe any merchant would continue to buy merchandise that did not give his customers satisfaction, although we find breeders persisting in an equally unwise practice.

I believe if it is possible for Illinois to induce the breeders to submit their herds to the test or to obtain an act of legislature which will require all sellers to give to the purchaser a certificate of health, it would be a great thing for the state. As you are well aware, some states are rapidly eradicating the fever ticks, but tuberculosis is an even greater menace. Why

(Continued on page 542)

Department of Surgery

By L. A. MERILLAT, Chicago,
Professor of Surgery in the McKillip Veterinary College,

Pitfall No. 17

A Streptococcic Infection Simulating Cutaneous Glanders.

That a hasty diagnosis of glanders from clinical symptoms alone is an unwise practice is shown in the following case of a work horse, ten years old, presented at the writer's hospital for treatment dur-

less and the size of a hazel nut and were five inches apart. There was a slight edema of the region, a fever of 102 degrees F., but no lameness. The hair around the pustules was trimmed off with scissors, the skin wiped with alcohol and the contents evacuated—a sanguin-

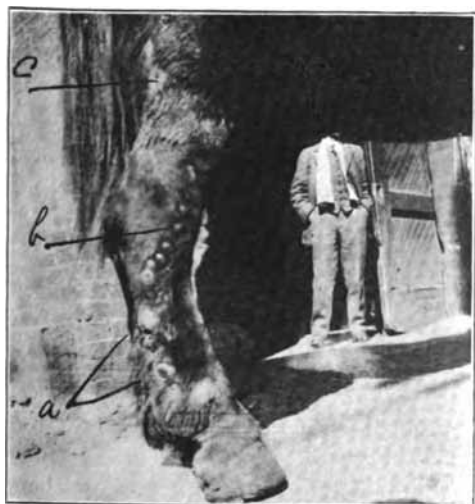


Fig. 1

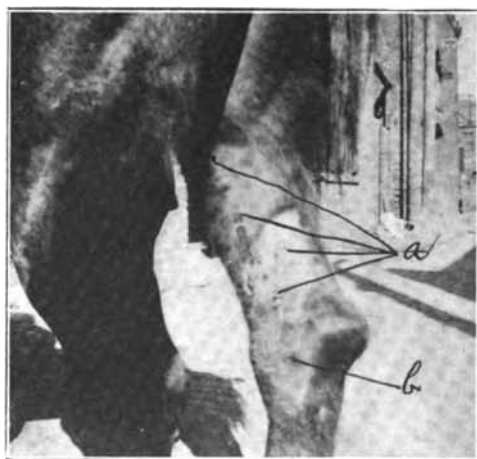


Fig. 2

ing the month of February last. The patient was submitted for the treatment of two angry looking pustules on the external face of the metatarsus of the right leg (a & b Fig. 1). At first these were less conspicuous than shown in the illustration. They were soft, hair-

ous liquid streaked with whitish pus. Two days later a chain of pustules smaller than the first two appeared along the external face of the hock (b Fig. 1) and the temperature rose to 103 degrees F. with the patient showing some systemic indisposition—loss of appetite and

injected mucous membranes. Towards the end of the first week similar pustules began to appear on the internal face of the hock (b Fig. 2) whence they traveled up the leg in two chains (a Fig. 2). Glanders now being suspected the patient was submitted first to the ophthalmic test, and then to the subcutaneous test. Both being negative pus was obtained from newly lanced pustules. Smears made from the pus showed uniformly long (20) chains of streptococci, in pure cultures. A guinea pig, inoculated, died in ten days showing hepatitis and hemorrhagic mesenteric glands and from cultures made from



Fig. 3

these organs pure micrococci and diplococci were found. When these were again transplanted to bouillon the cocci again arranged themselves in chains. Similar results were obtained with blood serum but in agar they would not form chains, appearing in this media in the form of pairs and in clusters. The pig showed no signs of orchitis. Smears made on potato grew poorly and showed no signs of the bacillus mallei either from original pus taken directly from new pustules or from sub-cultures made from the guinea pig. Search was made for saccharomyces but no micro-organism of that species could be found. Dur-

ing these researches the temperature of the patient fluctuated between 102 degrees F. and 103 degrees F., and the animals lost much weight.

Having found the same streptococci in each of the pustules examined it was decided to prepare a vaccine. Six tubes of 21-hour cultures were used and from these ten ampules of autogenous vaccine were made. The first dose contained 1,500,000,000, the second, 3,000,000,000 and the others 4,500,000,000.

The first dose brought no apparent results but twenty-four hours after the second dose three days later, the temperature dropped to normal, the appetite and spirits returned and the pustules, new and old, which had remained angry and ulcer-like began to cicatrize like magic. No new pustules developed and the patient was ready to work in two weeks after the date of the first dose. Fig. 3 shows the patient after all the spots, still denuded of hair, had healed. At this writing three months later there is no evidence of trouble except two rounded keloids at the seat of the first two pustules which will remain as lasting evidence of the seriousness of the infection.

This case is of more than ordinary importance to all veterinary practitioners and official veterinarians because there was a time in the progress of this case when almost any one who has had experience with farcy legs might have hastily condemned the case as one of glanders. The clinical picture was perfect with the possible exception of the symmetry of the first chain of pustules that developed above the initial lesion. The pustules of glanders on a farcy leg are not arranged so regularly as shown in b Fig. 1. They have a more promiscuous distribution. It is this feature that aroused the doubt and led to the close investigation that saved this patient. During the second week of the illness the pustules were no longer characteristic of glanders; they were too large and deep and very unlike the

cutaneous lesion produced by the *Bacillus mallei*. The one located in the popliteal region, (c Fig. 1 and b Fig. 3) was a deep abscess that discharged a cupfull

of pus when lanced. At this stage no experienced diagnostician would have made a mistake. The pitfall lay in the earlier developments of the disease.

Does Aseptic Wound Treatment Reward the Veterinarian for the Time and Trouble

The excuses advanced for not practicing absolutely clean methods of wound treatment are fewer than formerly among veterinarians. A few years ago the exponents of asepsis were few and the opponents legion. Today this order of things is rapidly being reversed because enough evidence in its favor is piling up to bring even the most skeptical into the fold. However, slipshod methods practiced by those who know better are still too common, and the one remaining excuse given is the time and trouble entailed in practicing asepsis on a large scale. It is of course easier at the time to wade right through, with the treatment of a large wound without taking any precautions against infections but the reckless practices always exact their toll in complications and delayed healing that are unknown to the careful painstaking operator who studiously controls his every move with the opposite end in view.

The following case is presented to the readers of the JOURNAL as an example of rapid wound healing through the performance of a carefully executed operation.

The patient, a ten-year-old work horse, weighing thirteen hundred pounds, was struck a heavy glancing blow with an auto truck. The fender of the truck struck the horse about the hocks and tripped its body over against the front corner of the radiator. The truck—a Packard—was traveling with such speed that the radiator gouged its way deeply into the buttock

tearing transversely through the semimembranosus down to the level of the femur and upward between the semitendinosus and the semimembranosus as far up as the ischium. Forward the radiator glanced superficially through the skin and fascia as far forward as the external angle of the ilium. The dimensions are shown in the accompanying illustrations. To make matters as bad as possible the horse fell to the



Fig. 1 (8th day)

street and soiled almost every part of the raw surfaces with street mud. When first examined the flap of skin and muscle hung down in a great mass, making a cavity large enough to bury a man's head. In addition there was an ugly wound at the flank (d) and numerous excoriations of the skin all along the leg both externally and internally. The excoriations and bruises

along the internal surface of the tibial region were especially grave looking.

The patient was given a narcotic of chloral per os, showered well with the hose to rid the whole quarter and leg of the street dirt with which it was badly soiled and then placed upon the



Fig. 2 (11th day)

operating table. The hair was clipped and shaved from the whole buttocks and the shaved field treated with an ablation of mercuric chloride solution 1 to 500 and then painted with ethereal iodine 5 per cent. The whole traumatic cavity was "uncarpeted" with tissue forceps and scissors while a stream of sterilized water from a pitcher was poured on to wash off the dissected particles of soiled tissues thus removed. Bleeding was controlled patiently with small hemostats and crushing hemostats until the traumatic cavity was blood-free. The heavy flap was then fastened up by means of two deep Mayo running loops, one at (1) and (2) and one at (1) and (3). The skin flaps were then brought together with a number of crucial sutures and the edges neatly approximated with interrupted sutures as far forward as (a) and as far upward as (b). The surface was then varnished with several layers of collod-

ion. The patient was tied up to prevent decumbency and the tail tied against the stall post to control switching, for eight days. During this time no treatment was given except wiping off of discharges that flowed down the leg and dusting with iodoform.

On the eighth day all of the sutures except the Mayo loops were removed. The skin was firmly united but fearing the weight of the several muscles might tear the wound open the loops were retained until the 11th day. The loops do not show in Fig. one and two because they are covered with collodion.

The excoriations of the legs were



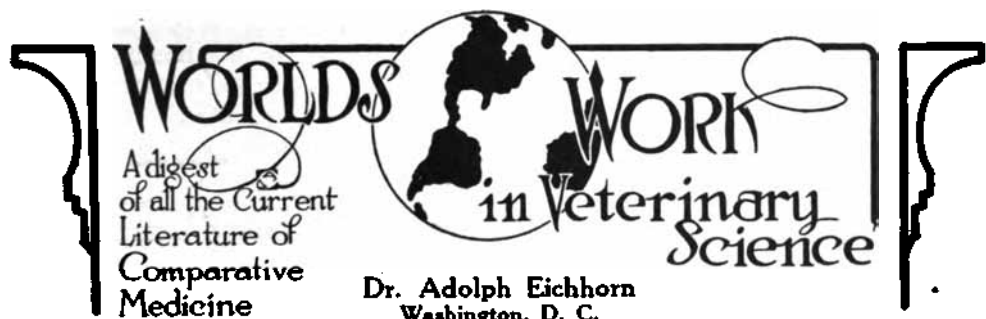
Fig. 3 (16th day)

washed with mercuric chloride solution and then painted with tincture of iodine. A single treatment prevented the development of any complications from these ugly sores.

On the sixteenth day the horse left the hospital entirely healed except a narrow granulating surface (a) Fig. 3. Examined on the twentieth day it was plain that there would be no conspicuous blemish to mar the buttocks. On the twenty-fifth day the horse was in the harness.

L. A. MERRILLAT.

Chicago.



The Therapeutical Value of Collargol in Sepsis and in Some Other Febrile Affections

By Dr. Reichmann (Munch. Med. Wochen. No. 50, 1915)

The author employed Collargol in a series of septic affections, and also in some cases of chronic articular rheumatism, in which the treatment with salicylates failed, and finally in a case of gonorrhoeal endocarditis in all of 11 patients. He invariably applied it in a 2 per cent solution, intravenously, and children received 5 to 6 c.c., adults 6 to 10 c.c. Solutions containing a higher percentage of the remedy showed no advantage over the 2 per cent solution. The results obtained were highly satisfactory.

At first following the injection the temperature fell about 1°C ., then until the following day it diminished gradually, and soon reached normal, where it remained continuously. In most instances a repetition of the injection was unnecessary.

Production of Clear and Sterilized Anti-Hog-Cholera Serum

By Dorset and Henley.

Dorset and Henley have recently described a new process for producing anti-hog-cholera serum. The process is based upon the fact that extracts of the common garden bean are powerful agglutinants of the red cells of hog's blood.

The authors describe the process as follows:

Take 100 grams of coarsely ground white navy beans (*Phaseolus Vulgaris*) and allow to soak, with occasional stirring, for one hour, in 500 c.c. of distilled water. Filter, mix the filtrate with kieselguhr, filter through paper, and finally pass through a filter of infusorial earth. The clear filtrate is the agglutinant. In practice, 1 c.c. of the sterile bean extract is added to each 100 c.c. of the cool defibrinated blood from which the serum is to be derived. As soon as agglutination is clearly evident, add one gram of finely powdered sodium chloride for each 100 c.c. of blood, and stir the blood until the salt is dissolved. This is accomplished in about 15 minutes. The treated defibrinated blood is now rotated in a centrifuge for 15 minutes at a speed sufficient to produce in the cups a precipitating force equal approximately to 1700 times gravity.

As a result of this treatment the cells of the blood will be found firmly packed in the bottom of the cups and the serum may easily be poured off completely.

In order to remove any possibility of foot-and-mouth infection in the serum, it is heated by being placed in a container surrounded by a jacket of water. The temperature of the water in the outer jacket at the beginning should not exceed 63°C . and, during the heating process, should not be allowed to rise above 62°C . A standardized thermom-

eter should be kept constantly in the serum and care should be taken to prevent the temperature of the serum rising materially above 60° C. Continuous heating for 30 minutes at 60° C. is recommended. When the heating is completed the serum is cooled and one part of a 5-per-cent solution of phenol is added to each 9 parts of serum. The product may now be set aside for some days and later filtered through ordinary filters and through bacteria-proof filters for purposes of sterilization. Tests on animals indicate that the completed serum is potent, and it has also been noted in experiments that little, if any, of the protective principles of the serum remain behind in the clot of red cells.

The advantages of the process are that there is produced a clear sterile product, which is readily absorbed, which will probably keep longer than the ordinary serum, and which, as a result of heating, is safeguarded against the possibility of infection with the virus of foot-and-mouth disease.

Effective Treatment for Tapeworms

By Stefanowicz (Wien. Kl. Woch. 41)

According to the author pumpkin seeds are a reliable, harmless remedy for tapeworms. The dose for the *Taenia solium* is 150 gms., and for the *Taenia saginata* 170-180 gms. of the shelled seed. Before its administration morning and evening, only tea, and at noon a light lunch is given, besides castor oil and Hunyadi water, which is also repeated two or three hours after taking of the seeds. It is noteworthy that decoctions and macerations, the same as the oil from the pumpkin seed, have no effect on the tapeworms.

Organ Extracts as Ecbolics

Kohler (*Med. Klin.* No. 1, 1916)

The author employed Enteroglandol (Roche), Extractum mammae (Richter), Splenoglandol (Roche), Extractum testiculi Richter), Luteoglandol (Roche), Extract. thyroideae (Rich-

ter), Extractum thymi (Richter). The administration of all of these organic extracts gradually increased labor pains, after a period of one hour. In some cases the subcutaneous or intravenous injection had to be repeated. In attempts to induce an artificial abortion these remedies failed, whereas they proved beneficial for hastening the conclusion of a commencing abortion.

No ill effects whatsoever were observed following injections, the galactogenic action of the mammary gland was noteworthy in all cases, and with all extracts.

THE CONTROL OF BOVINE TUBERCULOSIS

(Continued from page 536)

should not intelligent methods be employed to eradicate it, or, at the very least, limit its spread?

It is probably unnecessary for me to call to your attention that a number of states have placed certain restrictions upon the state of Illinois, on account of the sins of one or two disreputable dealers. I am satisfied that just as soon as it can be shown that Illinois is taking steps to prevent being the dumping ground for diseased cattle from other states and is guarding against the action of disreputable persons, discrimination against Illinois will be at once removed. I feel certain that with the coöperation of all your state officials that these things can be brought about.

The next meeting of the Montana Veterinary Medical Association will be held in the Capital Building, Helena, September 27th and 28th.

At the regular meeting of the Montana state board of veterinary medical examiners, at Helena, May 15th and 16th, nine veterinarians took the examinations for state license and the following made satisfactory grades and have been granted permanent licenses: Drs. N. T. Gunn, Butte; L. G. Helterline, Plaines; E. S. Mohr, Plentywood; I. W. Vinsel, Plevna; Chas. H. Wight, White Sulphur Springs, and H. F. Wilkins, Laurel.

Therapeutic Digest

By MART R. STEFFEN, Milwaukee, Wisconsin

Medical Council Items

BOTANIC REMEDIES: Viewing medicine at large, not purely from the American point of view, there are nineteen countries with well-based pharmacopeias, and they recognize 550 botanic drugs. There are 78 botanic drugs recognized in 16 of these pharmacopeias, which pretty well covers the important list of world-wide commerce. There are 230 drugs recognized in but one or two pharmacopeias, 29 of them being found only in the U. S. P. Among the latter are blood root, cottonseed oil, malt, oil of pimento, oil of chenopodium, sabal, slippery elm, stillingia, yerba santa, crampbark, leptandra, calendula, berberis, pereira, sassafras, and sumach berries.

Each country has its own plant remedies; they are, often, especially adapted to the people, are readily procured at moderate cost, and sometimes suddenly assume importance, as is instanced in our own oil of chenopodium as an anthelmintic.

Doctor, don't get on a high horse and denounce the botanics; you may have to take back after a while some of your present denunciation. There's an awful lot we don't know yet.

Hypochlorous acid is said to be the most powerful disinfectant and anti-septic. It is used as a gas and solutions of the gas.

Cole and Querens report a case of purpura hemorrhagica (human) treated successfully with emetin.

The hydrochlorid was given in half grain doses once daily by the intravenous route until ten doses were given, by which time the case had fully cleared up.

Japanese chemical houses are actively engaged in the manufacture of dyes, synthetic chemicals, phenol, salicylic acid, bromine, chloral hydrate, alkaloids, etc., aided therein by a government subsidy guaranteeing the stockholders an eight per cent investment. Recently one of the new companies was capitalized at \$4,000,000 and the investors over-subscribed this stock many times over.

The *Medical Review of Reviews* "takes a rap" at the druggist in an editorial. The editor says: " * * * the apothecary's trade is the most polyglot in the world; in the modern drug store the stock of drugs may be low, but everything else will be found there, from rubber dolls to fishing tackle. The pharmacist is the rag-picker of our industrial system; he picks up a penny here and a dime there; he pays more attention to his numerous side lines than to his legitimate business. Modern pharmacy is not a profession, but a hodge-podge

trade, and under present conditions all the degrees of Columbia cannot wash out the stain."

According to the *Medical Times*, seventy-six out of eighty-seven cases of typhoid fever in a recent outbreak have been traced by the United States Public Health Service to infected milk.

A wholesale druggist recently informed us that one could not lose by stocking up now on fluid extracts. He made the prediction that they will soon "go up" without exception. Take it for what it is worth.

According to the *Medical Times*, Berlin has treated all wounds with the application of powdered potassium permanganate. Wounds quickly cicatrized under this treatment. In the very worst wounds of warfare this occurred within fifteen days. He finds that the permanganate soon ceases to be a very powerful antiseptic, and becomes a cicatrizing agent.

This treatment is easy to apply; the powdered permanganate is non-toxic and antiseptic; its action is durable; it adheres to the wound, favors its cicatrization, destroys bacteria, and protects the patient from infection by anaerobic microbes, such as those of tetanus, gaseous gangrene and hemorrhagic septicemia.

Sakagami says the following microbes grow in normal serum: Staphylococcus pyogenes, pneumococcus, pseudo-tuberculosis, streptococcus pyogenes and micrococcus catarrhalis.

Osler says the long study of Flexner and others have made possible the production of a serum which has a specific influence on the meningococci in the spinal canal, partly by a direct bactericidal action, partly by bringing about phagocytosis; and there may be an antitoxic action.

In a paper on the Pharmacology of Alcohol, Dr. H. W. Wiley says in the *Medical Times*: "Generally the stomach absorbs very little of its contents into the blood stream. Even water is absorbed to a very slight degree by the coats of the stomach. On the other hand, alcohol is freely absorbed from the stomach. For this reason alcohol introduced into the stomach speedily finds its way into the blood, and through the circulation to the various organs of the body.

"As summarized by Fisk and Fisher, some of the less evident pharmacological effects of alcohol are as follows: First, small doses of alcoholic beverages impair memory, and Vogt has found, by experimenting on his own person that as little a quantity as 15cc of whiskey on an empty stomach, or 25cc with food, effected a distinct lowering of the power to memorize. Second, alcohol is not a real brain stimulant, but apparently permits a flow of ideas by diminishing the power of control. Muscular activity at first is slightly increased under the influence of alcoholic stimulation, but eventually its efficiency is impaired.

"Experiments have shown that alcohol restricts the formation of antibodies, and thus renders the person under its influence more sensitive to infection. Alcohol injected under the skin renders animals more sensitive to blood poison and pneumonia. Also, it decreases the resistance to the ravages of tuberculosis."

The Maine Board of Veterinary Examiners met for the purpose of organization in Augusta on June 14th. Dr. I. L. Salley of Skowhegan was elected president; Dr. W. H. Lynch of Portland was elected secretary; and Dr. W. H. Robinson, Woodfords, treasurer. A meeting of this board for the reception of candidates will be held in the last week of July at Augusta.

The 1916 summer meeting of the Connecticut Veterinary Medical Association will be held at the office of Dr. E. F. Schofield in Bruce Park, Greenwich, Connecticut, at 10:00 a. m. on July 25th.

Queries and Answers

The editor will reply to queries appearing here, as he is able and as opportunity permits, but he does not want, nor cannot undertake to monopolize this portion of the department. Any reader who can furnish further and better information in reply to any query is urgently requested to do so. Where the treatments advised in these replies is adopted it is hoped that those employing them will report their results whether good or bad. In all cases give the number of the query when writing anything concerning it.

QUERY NO. 235—What is being done to stop unregistered men from practicing?

REPLY—In some states much; in some little; in others nothing at all.

A census of the illegal practitioners was taken in Illinois recently, and it was found that something more than two hundred such practitioners existed. The state association appointed a committee for the prosecution of these men and set aside \$500.00 a year for that purpose. An attorney in sympathy with the work was selected by this committee and the matter was taken up directly with the illegal practitioners.

About eighty of this number stated that they were doing very little practice and were not anxious to do that, and voluntarily quit. On their promise to do this, the cases against them were dropped. About fifty others asked that they be permitted to practice until the examination by the state board of veterinary examiners. This was granted. Almost none of them passed. The remainder promised to quit practice in the state, and the cases against them were postponed pending their fulfillment of this promise. A further number claimed that they were not practicing, and in most of these cases the committee was not able to obtain definite proof that they were practicing other than in a neighborly way for which they were making no charges.

Complaints against the remaining number were placed in the hands of the state's attorneys in the counties in which

the illegal practice was being done, and the committee is gathering further evidence for these attorneys as fast as possible. The committee entertains little doubt about convictions where it has been able to get the co-operation of local veterinarians in getting evidence against the violators of the Veterinary Practice Act: where co-operation has not been given, the committee has deemed the work too expensive to undertake without a greater appropriation from the state association. In no case has a qualified local practitioner's name been used in connection with the matter, nor has he been given any publicity in the proceedings whatsoever.

QUERY NO. 236—I have under observation a big black mare four years old, weighing 1,300 pounds. About one year ago an enlargement started just over the atlanto-occipital articulation, on one side; it began swelling slowly and has continued in this way, until the present time and it is now a large, hard, fibrous swelling and is pushing out on the opposite side. It has been blistered repeatedly and severely, but never has softened one bit or gone down in size; it is swelled now to the extent that the head is extended on the neck. The swelling seems to be on one side of the ligamentum nuchae. I think it must be a bursitis, but want your advice in the matter of diagnosis and treatment. Can it be cured?—
J. L. W., D. V. M.

REPLY—As I interpret your description of symptoms there undoubtedly ex-

ists a bursitis. Whether or not there is at this time an active suppurative condition involving the structures of this vicinity is to be determined by palpation and noting the amount of heat and pain manifested, location and extent of the swelling as well as its character with respect to density. However, it is quite probable that there exists a necrotic condition of the ligamentum nuchae, and the radical operation for poll-evil, probably should be done. The fact that the swelling is hard and fibrous does not indicate the non-existence of a suppurative focus and the dense, non-yielding wall, together with its proximity to the atlanto-occipital articulation accounts for the manner in which the head is held.

With the history of one year's standing one should not be too optimistic concerning the results in some of these cases, because of the permanent injury suffered by the atlanto-occipital articulation. This should be explained to your client that he may not expect restoration of function in case ankylosis of the articulation exists—this, of course, is not relieved by surgical intervention.

In this particular instance I should suggest a careful examination of the parts, and if you can decide that there exists no active suppurative center and if there is unmistakable evidence of ankylosis of the joint, that no operation be performed. If such is the case, the application of hot packs until the painful condition has subsided and later the employment of vesicants will constitute a good line of treatment. If on the other hand, you decide that an outlet is necessary for pus, Williams' radical operation should be done, even though ankylosis of the atlanto-occipital articulation exists or is likely to follow.

QUERY No. 237—While at a ranch one of the cow-punchers came in and reported finding two cows dead on the range. The owner of the ranch told me that this made four cows they had found dead in the last week. He asked me if I would go out and look them over. We

hitched a team and drove to where the herd was ranging, finding the two dead one in a recumbent posture as though sunning themselves and looking as if they had died without a struggle. Their heads, necks and shoulders were greatly swollen; decomposition was greatly advanced and a black bloody froth was coming from the nostrils and anus. The two that had died previously were in the same condition. A neighbor rancher came over and reported the loss of two. We drove over and examined them and found them with all fours doubled under them as though they had just sunk down dead without a struggle. These two had not been dead eight hours, but decomposition had already set in, and the bloody froth was passing from nose and anus. On inquiry I found that several head of cattle had died in that immediate vicinity in the last three weeks apparently from the same cause. The cattle in the two herds that I saw were in fine condition, having been well fed and cared for through the winter. The dead ones' ages ran from three to six years. Could it be blackleg? I cautioned them about anthrax and advised them to call the state veterinarian. I did not understand the quick decomposition, the weather being very cool here, unless it should be anthrax.

REPLY—Your second thought—that this was an outbreak of anthrax is, in our opinion, correct. The sudden death of the animals without evidence of struggle is to be seen in the fulminant type of anthrax. The early post-mortem bloating and decomposition of carcasses; the affection of several animals on or about the same time, and the bloody discharges all are characteristic of anthrax.

Query No. 238: What is the cause of water seed, and what is the technic of operation for its removal?

ANSWER: Hydrocele or "water seed" is a condition which in most instances is due to faulty technic in castration. However, mules, as it is generally known, are very susceptible to this condition, and in

some instances hydrocele occurs where every reasonable precaution has been taken to prevent this complication. The usual fault in the execution of the technic where hydrocele results is lack of proper provision for drainage from the vaginal tunics, or in other words, in every case where a suitably located free incision in the vaginal tunics has not been made, hydrocele is quite likely to occur. Any inflammatory condition which is apt to cause early adhesion of the cord and its vaginal covering may also terminate in the formation of this cystlike enlargement—"water seed."

The condition may be prevented in practically every case by doing a modification of the covered operation in castration, that is, at the time ablation of the testicle with the emasculator is done. By exercising a little care, one may include within the grasp of the emasculator the entire lowermost portion of the vaginal tunics, thus obliterating the pouch or cul-de-sac which so frequently remains. This method of castration is probably the most practical one which can be employed in castrating mules. It is fully described and illustrated in "Animal Castration," by Lacroix or White.

The technic of the operation for removal of hydrocele is not difficult. The subject should be cast and tied with hocks flexed in the same manner that is commonly employed in cryptorchid castration—this for the convenience of the operator, although not absolutely necessary. After having prepared the surgical area in the usual manner employed in castration, an elliptical incision is made, including in such area all of the cicatrix which remains as the result of castration. In some instances, because of tardy granulation, considerable scar tissue results, and by including such tissue within the elliptical incision, much time is saved in operating, and unnecessary infliction of pain is obviated. By carefully dissecting around the cyst, cutting through the scrotal fascia with a few light strokes of the knife, one can expose about one-half of the cyst and its

contents, and the remaining portion of the hydrocele is separated from the contiguous structures by blunt dissection. By blunt dissection by means of the finger tips, exerting a moderate degree of traction upon the mass, it is possible to free the remaining portion of the enlargement from the adjacent tissue. This dissection is carried as high up the inguinal region as the stump of the cord, and then the entire mass is removed with the emasculator or ecraseur. Care is exercised in the performance of the operation to avoid perforation of the cyst wall before it has been completely separated from the adjacent tissues.

No special after care is necessary following this operation even where a bilateral involvement has existed. Subjects are given the same attention that the average normal colt receives after having been castrated.

QUERY No. 239—I am a young veterinarian just beginning practice and am often in doubt as to just what fees I should charge for my services. What are the usual fees charged by veterinarians for the services they are ordinarily called upon to render?

REPLY—No hard and fast rule can be made as to what fees ought to be charged. No agreement among veterinarians as to fees they will charge is lawful. The size of the fee should depend upon many things—the quality of the service rendered, the value of the animal or animals treated, the ability of the client to pay, the custom in the locality, and other matters, all must be taken into consideration in making the charge.

Obviously the fees should never be so low that the veterinarian does not make something more than a living from his practice, and it is equally obvious that they should not be "all that the traffic will bear," unless the traffic will not bear more than a minimum just amount. A veterinarian's service must in the long run be profitable to his clients, or obviously his clients will cease to employ him and his practice will become unprofitable to himself.

At a recent meeting of the Illinois Veterinary Medical Association, the members adopted the following schedule of fees as the minimum professional charge under any circumstances:

	Minimum Charge
Poll Evil Operations.....	\$10.00
Fistula of the Withers.....	10.00
Minor Operations.....	5.00
Roaring Operations.....	15.00
Extracting Molars.....	5.00
Trephining Skull.....	10.00
Castration, Colts.....	2.00
Castration, Stallions.....	5.00
Castration, Ridglings.....	10.00
Double Ridglings.....	15.00
Parturition, Mare, Regular.....	10.00
Parturition, Mare, Difficult.....	15.00
Parturition, Cow, Regular.....	5.00
Parturition, Cow, Difficult.....	10.00
Removing Placenta.....	5.00
Firing Spavin.....	5.00
Floating Teeth.....	2.00
Mileage, First Mile.....	1.50
Additional Mileage.....	.50
City Calls.....	2.00
Colic and Similar Calls (mileage extra) per hour.....	1.00
Administering 500 units Tetanus Antitoxin.....	2.00
Administering Hog Cholera Serum.....	.25
Administering Black Leg Vaccine.....	1.00
Administering Anthrax Vaccine.....	1.00
Extra Charge for Night Call.....	2.00
Hospital Fee.....	Optional
Consultation Fee.....	5.00
Office Consultation.....	1.00
Writing Prescription.....	1.00
Examination for Soundness (mileage extra).....	2.00
Examination of Stallions for License.....	5.00
Ophthalmic Mallein Test (mileage extra).....	5.00
Tuberculin Test, less than 20 head (mileage extra).....	10.00
Tuberculin Test, more than 20 head (mileage extra) per head.....	1.00

QUERY No. 240—Now that veterinarians have been granted rank up to major in the army, please inform me what their pay is and if it is equivalent to or better than the pay of veterinarians in the Bureau of Animal Industry and in State livestock sanitary employ.

REPLY—It is difficult to say what salaries in civil life are equivalent to in the pay of army officers, for the reason that the latter in active service live at army posts where quarters are usually furn-

ished them. Rent of equally well appointed quarters in large cities would amount to \$50.00 and upward per month. Whether these quarters at army posts are "equivalent" to residences in the cities is a question for the individual to decide.

Army officers are enabled to buy their clothing and some provisions at an average discount of probably 20 per cent from the price at which they are obtained by civilians. However, officer's uniforms full dress and dress and appurtenances costs \$200 to \$400.

The pay of army officers for the rank that veterinarians may hold, is as follows:

Second Lieutenant, \$1,700 per year with an increase after five years when he becomes a first lieutenant.

First Lieutenant, \$2,000 per year with an increase every five years for 15 years when he becomes a captain.

Captain, \$2,400 per year up to 20 years when he becomes a major.

Major, \$3,000 per year up to \$4,000.

A tax of one per cent is imposed on bachelors, however, and there is also the income tax as with civilians.

In addition veterinarians holding commission as captain, or first or second lieutenant are allowed \$150 per year additional if they own their own mounts, which, of course, the Government feeds, and an additional \$50 per year if they provide themselves with a second horse. Majors receive no allowance except feed for owning their own horses.

Unmarried lieutenants are provided with bachelor quarters worth in a city about \$35 a month. A veterinary major with a family, for example, would be provided with a residence, which located in the city would probably rent for \$60 to \$75 a month.

Improved Methods From Its Reading.

"Colics and Their Treatment" is a whole library on the intestinal ailments in one volume. I know I can do better from having read it.

Rochelle, Ill.

F. E. Jones.

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary — — Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

Two Post-Partum Complications

In my search for a topic on some practical subject, my attention centered on a recent case of bovine obstetrics developing two common complications.

During the past November in answer to a hurry call to a nearby farm, I found an eight-year-old grade short-horn cow with a complete eversion of the uterus. As is usually the case, the cow was lying on a dirty floor with the uterus covered with filthy litter. The uterus was swollen, very dark red in color, partly dried on account of exposure and had several superficial lacerations.

The birth, which took place three hours before my arrival, was about six weeks premature. The eversion followed almost immediately.

The replacement of the everted organ was undertaken as quickly as possible. The hind parts were elevated so that the rump was at least eighteen inches above the floor.

In this position the cow can least resist the operator's efforts and the uterus, by its own weight, will more readily fall into the normal position as soon as returned within the vulva.

For my own convenience in raising the hind parts, I carry a heavy two-inch ring, a broad strap, such as is used in

some casting outfits to take up a fore-leg and a light set of triple, self-locking, roller-bearing blocks supplied with three-eighths-inch rope.

The strap is passed once around each cannon and the legs are drawn together with several turns around both legs and buckled. At least two turns of the strap are passed through the ring for convenience in attaching to the hook of one block. The other block is attached overhead to a chain passed over a beam or joist or some other improvised stay.

When the hind parts were raised, the uterus was supported on a clean feed-sack held by an assistant at either end.

The uterus was washed with a warm antiseptic solution and the reduction started by replacing first the part just outside of the vulva and taking care to reduce the eversion uniformly all around. On account of the vulva not being dilated as is usual in a normal full-time birth, the work of reduction was extremely slow and difficult. This was finally accomplished, however, with more or less serious bruising of the uterus. Great care was taken that the uterus should resume its normal position inside because any portion of the horn incompletely reversed will act as a continual source of irritation, causing

violent straining and a possible relapse as late as a week after the primary trouble, when the means which were employed to close the vulva are weakening or have been removed.

The vulva was closed by means of six heavy tape sutures, no part of which passed through the edge of the vulva. A liberal fold of skin was taken up on one side and the suture needle pushed through the thick, hairy portion of the skin and brought out at least an inch and a half from the edge of the vulva. On the opposite side, the same procedure was repeated but in reverse order. With the sutures thus firmly anchored in the thick skin, they were tied so that the tension should be uniform.

Before lowering, a sufficient quantity of straw was placed under the hind parts to keep the same somewhat elevated. A few doses of nux vomica were prescribed and the owner instructed to administer a saline purgative the same day and to remove the sutures on the fourth day. Within a half hour the cow struggled to her feet and was apparently doing well for several days.

On the fourth day, however, the owner called me again when the cow presented the following symptoms: a general haggard expression, eyes sunken, ears drooping, no appetite and rumination absent. The cow stood with her back slightly arched and had an ill smelling discharge from the vulva. Respirations were accelerated; the pulse rapid; and the temperature 106° F. My diagnosis was septic metritis, so I proceeded to irrigate the uterus. Warm water was used freely and a large quantity of a thick, flaky, yellow discharge was washed out. When the water was returned clear, several gallons of a warm two per cent solution of Therapogen were used. In addition fluid extract of echinacea was prescribed in one ounce doses three times daily.

On the fifth day general improvement was noted. The temperature

dropped to 104.5° F. Irrigation was carried out as on the previous day and treatment continued. On the sixth day the temperature was 103° F. On the seventh day it had dropped to normal. There was very little discharge and no odor and a return of appetite and rumination. The uterus was irrigated as on the previous day and a general tonic prescribed. At the end of another week the cow had fully recovered.

In this connection I want to say that, whenever an antiseptic is necessary in obstetrical work, whether it be to counteract the odor of a dead fetus or a foul afterbirth or in the treatment of septic metritis, Therapogen has given me most satisfactory results. The straining which follows the use of most antiseptics in irrigating the uterus is eliminated when this preparation is used.

Too much stress cannot be laid upon the necessity of a careful and thorough irrigation of the uterus in these cases.

Many a grave prognosis may be changed to a favorable one by this simple, though effective means.

FRANK U. FERNSLER.

Lebanon, Pa.

A COMPLICATED CASE OF DYSTOCIA

On May 10, 1915, I was called to see a 22-months-old Guernsey heifer that the owner had found in labor in his pasture. Upon examination, I found the head, both hind feet and one fore foot presented. The owner said he and three neighbors had tried to pull the calf. Further they had tried to repel the fetus and turn it, but couldn't. They even hitched a horse to it and tried to pull the calf out, but didn't. The vagina had begun to swell considerably on account of so much pulling against it.

I gave the cow a hypodermic of H-M-C (Abbott's); then, I pushed the calf back and injected two gallons of warm water; waited thirty minutes and then proceeded to try to effect delivery.

I thought it would be very easy to turn the calf and get the other fore leg and delivery would then be comparatively easy; but I was mistaken. I reached in with my arm and tried to locate the fore leg, but it couldn't be found. I then reached as far back as I could and I felt a mass of something like intestines. Upon further examination, I found the entire abdominal viscera of the calf. I also discovered the calf was not in the uterus but lay in the abdominal cavity. There was a rupture in the uterus about 12 inches long. I told the owner that we had an unusual case and delivery was not practical, and, as the cow was nearly exhausted, she would die anyhow,



even if we cut the calf out, a piece at a time. He consented to kill her.

I opened the cow and found the calf lying among the intestines in the position as shown by the cut. The fetal membrane was attached to the broad ligament and left ovary, which was as large as a good sized orange. The rupture in the uterus appeared to have been there some time as the edges were healed. The cow had been bred to a large Holstein bull. The fore leg that I couldn't find was doubled back under the hips of the calf, which, I found were turned back on its head, making it a case of schistocormus re-

flexus with complications of an unusual nature.

S. E. DOUGLAS, D. V. S.
Mesa, Arizona.

IN SPAIN*

For professional reasons and because of the immense affection that veterinary science has always inspired in us we have for more than twenty-five years consecrated all of our activities and all of our energies to the study of this important branch of medical science.

The assiduous labor has enlightened us much and has convinced us more and enlightened us much and has convinced us more and more of the importance of more of the importance of veterinary science in the development and prosperity of the life of nations. We shall not burden ourselves nor our readers by pretending to prove the transcendental importance of veterinary science in the economic and scientific world.

Thanks to veterinary science, man is able to utilize animals as food transforming machines; through the medium of veterinary science the human race has found ponderous weapons with which to war against the infinite microbial invasions; and thanks to veterinary science, there is a firm and rational base for the development and progress of the animal industry upon which depends the prosperity and welfare of the people.

Veterinary science, that in other nations is considered both by the public powers and the people with the respectful interest that it deserves, does not attain in our unfortunate country the consideration that is undoubtedly due it for the benefits it will bring. In Spain we travel in this, as in other affairs equally important, behind other civilized nations. What are the causes of this fault? In the first place it is due to the erratic appropriations, and the little interest taken by those who govern. They regard the

*An introduction by Prof. D. Dalmacio Garcia Y Izcarra, Veterinary School of Madrid, to his translation from the French of Qagny and Gobert's Veterinary Dictionary. Translated from the Spanish by Dr. N. S. Mayo.

question of public instruction as of secondary importance. For these reasons and also because they do not care to appropriate funds for these things, the state has not organized, as it should, a good veterinary sanitary service, nor attended to veterinary education, using the methods of investigation and analysis that modern advances and the general culture demand. On account of this the government, as well as the people, do not perceive in veterinary medicine a science, but only an art or calling. This is the state of our profession today in Spain about the same condition as it was left by the famous veterinary teachers, Risueño, Casas, and Llorente, years ago.

Of these unfortunate conditions of ours, that do not permit us to advance, is born the chronic disease from which Spanish veterinary science suffers; a disease that will be difficult to cure if we do not quickly realize the danger and organize to overcome it in the way that the actual conditions and social tendencies indicate.

It is not strange then, that the veterinary schools are not properly attended and that the instruction in some of the different subjects that the career embraces, especially in bacteriology and comparative pathology, is incomplete. The graduates of these veterinary schools are not considered nor respected as scientific men even though they have an honorable title acquired under many difficulties. The different branches in the veterinary schools are taught by a small number of professors and the material for illustration is ridiculous. It is not strange, we repeat, that Spanish veterinary science and Spanish veterinarians do not lead; neither by the merit of our publications, which are few, because we cannot produce them, nor because of our researches which we cannot undertake for lack of pecuniary means.

For these reasons when we wish to publish a book, we are forced to pay

tribute to a foreign land where are encountered conditions diametrically opposed to ours; a land where those who teach or practice their profession can embody in their publications the results of their own observations or their own experiences in the laboratory or the clinic.

For some years there have been published in Spain some veterinary books that show the authors to be real students, dedicated to their work, but in general little has been produced. Spanish veterinary literature is very limited; this is unfortunate because the learned observers and research workers should not rest until they have brought to the knowledge of all the results of their labors. He who does not follow the true scientific road to bring to humanity the results of his labors for the improvement of mankind, will remain behind and those who lag will not attain, nor have they the right to attain the consideration and respect of society.

In virtue of these considerations and our profound love for veterinary science, we have believed it convenient and even necessary to translate this work which we now offer to the public.

EXPERIENCES SIMILAR TO THOSE OF THE ITINERANT HORSE PHYSICIAN

In looking over the March issue of the Journal I have read the very caustic comment of H. T. D.-D. V. S., Arizona, in which he characterizes the writer of "The Itinerant Horse Physician" as a raving lunatic. As this criticism is as unjust as it is severe, I take the liberty to make a statement in behalf of the publication and its author, (though personally unknown to me), and without any desire to see my name in print, or draw unfavorable attention to the community in which I am practicing.

Our critic says he read two of the articles which seemed to him like silly nonsense, and that they are a disgrace



Reid; Parmeter; McFee; Capt. Campbell, P. V. O.; Childs; Gibson; Neeley.

Ontario Veterinary College Seniors passed as fit for service. They will receive lieutenant rank and pay in the British Army.

to a medical journal. This would undoubtedly be true, were it not for the fact that some of the treatments given are facts, and should be a benefit to the young graduate who is looking for a location, especially in a neighborhood where only quackery has been practiced and such treatment is accepted by the laity as the last word in the treatment of animals. If a veterinarian knows beforehand what he has to contend with he will start in to educate his clients without being likely to become discouraged. So my contention is that these articles are a benefit.

The following are some examples of my own experiences, though not all of them by any means—if all my experiences were published our friend would place me in the lunatic class too.

CASE NO. I. I was called over the long distance phone by a practicing physician who at the time was several miles away from home and had been for a couple of days attending a very sick patient.

In speaking to me over the phone the doctor told me that his wife had just got word to him that her saddle horse was in a bad condition; in fact, was down and could not get up, and had

been down two days but she had not been able to notify him earlier. We arrived at his home after a fifteen-mile drive over a mountain road and found a very bad case of impaction. Upon close questioning I found that the condition had been coming on for some time. We began treatment at once, but without any apparent success, and about midnight we despaired of all hope. At this juncture one of the assembled friendly neighbors spoke up and offered the following: "Well, Doc, you have given up hope, have you?" "Yes," said my doctor friend, "and I hate it on my wife's account for it is her riding horse you know."

"Well," he said, "if you and the horse, Doc, have both given up, I will tell you of a sure cure for your horse, and I will guarantee he will get up from there in twenty minutes and will be as well as ever." At this statement the doctor looked at me and said: "Doctor, you will have no objection to hear of this sure cure, will you?" "Certainly not," was my reply. "I am as anxious as you to do all in my power to save this patient but have gone my limit."

So my friend pulled us aside, so no other could learn this wonderful treat-

ment, and told us to get a quart bottle and almost fill it with fresh cow dung and the balance with warm water, shake it well and drench the horse with the same, and no matter how bad the bowels were locked they would open in ten minutes and be entirely empty in fifteen or twenty minutes. The horse died in about half an hour after this advice was given, just because "them doctors think they are so smart and that they cannot learn anything from a farmer" even if it never failed any time it was used by the spokesman's grandfather who was a "horse jockey before they were born."

(I will furnish name and addresses to editor if this statement is questioned.)

CASE NO. II: Mule nine years old suffering from acute indigestion, suffering greatly at time of my arrival. Owner: "Say, Doc, I thought you would never get here so I treated him myself; I knowed he has got the bots and my neighbor told me what to do for him."

"Well, what did you do for him?"

"Why, I cut some of the hair from his tail, about a handful, and mixed *hit* with some sorgum *'lasses* and poured *hit* down his *gozzel* and I think he will be all right directly the hair gets to scratching them bots out of his *pouch*. But you had better wait awhile an see if it works as Jim says *hit* will."

But it did not, altho Jim says I would not wait long enough.

Among numerous other sure cures I have encountered are green chicken guts, lye soap and buttermilk, filling the ear with coal oil and setting fire to it for blind stagers, etc.

I will ask you to withhold my name and address from publication as you may know that people so ignorant are very sensitive, and as I am making a living here and these people are beginning to learn better, I do not wish to offend them.

However, if any of your subscribers doubt these statements you are at lib-

erty to give them my name and address and I will furnish ample proof. So to anyone like myself who encounters these sure cures it is a pleasure to read in an entertaining article a similar experience by the other fellow. I enjoy reading the JOURNAL very much and find it very instructive and do not wish to be without it.

G. B.—Ala.

A CYCLOPS

This photograph shows the head of a calf born alive on June 16th, on the farm of Adam Hunt, near Sunbury, Pa. The upper jaw was four inches shorter than the lower jaw; there were no nostrils and only one eye, and it



situated directly in the center of the head. Both eyeballs were fused together and there was a white line in the center. The eye as well as the socket seemed perfect. I presented the specimen to the veterinary school of the Uni-

versity of Pennsylvania to be placed in their museum.

E. P. ALTHOUSE, D. V. M.
Sunbury, Pa.

JOINT ILL IN NORTHERN ONTARIO

Navel ill, pyemia, umbilical infection, pyemic arthritis, specific synovitis, etc., are the names applied to this disease. As every veterinarian located in a breeding section knows, it is a very serious and usually fatal disease. A few years ago while practising in northern Ontario, where this disease is very prevalent, I treated about two hundred colts one spring and it is safe to say that ninety-five per cent of the cases proved fatal; and, needless to say, it helped to lower me and the veterinary profession as well, in the eyes of the public. Thanks to the modern bacterin treatment the mortality of this disease has been greatly lowered.

The cause of this disease is recognized by authorities to be a germ that enters the system by way of the umbilicus.

I think it would be a waste of valuable space to dwell at great length on the symptoms of joint ill as they are well known and after seeing a case, it is readily diagnosed. Generally the first symptom is lameness, (the owner generally states that the colt slipped or was stepped on by other animals). This is soon followed by a hot and painful swelling of the affected articulation, which in my experience is more often a stifle but it may affect any joint of the limbs. The colt is noticed to be languid and it prefers to lie down most of the time; the appetite becomes impaired and the colt weakens rapidly and is soon unable to rise without assistance. There may be a large amount of pus in the affected joint. The symptoms rapidly increase in severity and the colt soon dies. I have noticed that the older the colt is, when the disease develops, the better chance it has of re-

covering, and if it is possible to begin treatment before the appetite is completely gone and before the subject is completely exhausted and unable to get up without help, the prognosis is quite favorable. The temperature rises to 104° to 106° F. The respirations are accelerated fast and weak. Constipation and diarrhea and the colt pants and the pulse is very rhea alternate.

Treatment: The umbilicus should first be thoroughly disinfected with a good strong antiseptic which should be left for the owner to use every two hours. I sometimes inject tincture of iodine into the navel. The affected joint should be bathed with hot or cold water after which a soothing liniment, such as belladonna liniment, should be applied. This should be done at least three times a day. If the swelling is very large I usually draw off the pus, and irrigate with a mild antiseptic as hydrogen peroxide. Sometimes it is a good plan to inject a solution of tincture of iodine into the joint. In regard to the internal treatment, I like the action of biniodid of mercury with iodid of potassium, from one to two grains of the former with five grains of the latter being administered once daily. I also give a good intestinal antiseptic such as the sulphocarbolates of calcium, sodium, zinc and copper tablets. Dissolve one tablet in mares milk and two a day may be given.

Next comes what I consider one of the most important things in the treatment of this troublesome disease and that is bacterins. I have used polyvalent bacterins with very good success, but let me state for the benefit of Canadian veterinarians that by writing Frank W. Schofield, Number 5, Queens Park, Toronto, member of the Provincial Board of Health, you will get a supply of joint-ill vaccine free, under the conditions that you make a report of each case on blanks furnished you by Mr. Schofield.

Prophylactic Bacterin: The only

hope of eliminating this disease is by the use of suitable preventive bacterins. Use the bacterins on as many healthy colts as possible. They should be given within thirty-six hours after birth. I would urge you to make such injections even though no extra charge for the bacterins can always be made at present. If the bacterin is valuable, this condition will soon alter and a demand will arise for its use. Two injections should be given. First injection of one cc. as soon after birth as possible. Second injection of two ccs. from five to ten days later. If both cannot be given, give one and record the fact. *Always shake well before using.*

Curative Bacterin: Bacterin treatment has given better results than any other treatment. Your best judgment is needed in administering the curative bacterin, but after the first injection or two you can more easily estimate how much should be given. The age, size and general condition of the colt must be taken into account in estimating dosage. Tell the farmer to watch the point of injection and report to you. In this way information as to a local or general reaction is obtained and the second injection is given in accordance with this knowledge.

I would suggest the following:

First dose, one-half cc.

Second dose, one cc., five days later.

Third dose, two ccs., five days after the second dose.

Fourth dose, three ccs., five days after the third dose.

Two injections are preferable for each dose, giving one in each shoulder or other suitable part of the body. These doses may be increased for a foal a few weeks old.

During this year in one heavily infested district we have given the preventive vaccine to over 150 foals, only four of which have later developed the disease. One treatment of 1cc. was given.

C. R. ROBERTS, V. S.

Warton, Ontario.

IMPACTION IN THE HORSE EASILY RELIEVED WITH THE STOMACH TUBE

Some months ago I wrote a short article for one of our trade journals upon the above subject and was swamped with inquiries regarding the particulars of my treatment. It is evident I judge that there is a goodly percentage of our profession who are unacquainted with the stomach tube as well as the pathology of the trouble known as impaction. With all due respect for all who have written upon this subject heretofore, I must say right here that we haven't very much tangible material to go on. Of course, as one has said, we who have been in the field for years often when writing overlook the minor considerations and seem to take for granted that all are familiar with such; but not so! It is surprising to have doctors from this college or that college or from this state or that state write to ask about the *modus operandi* of gastric lavage in fine.

Now by impaction I mean the obstructive condition with dry food as it were, or dry fecal accumulations in the larger intestines. Hepatic functions are slow; there is a dry, sticky mouth; no thirst for water exists; mucous membranes are livid; dull pains are present; there are sighing respirations and peristalsis is in abeyance. Rectal exploration reveals a huge mass within arm's reach. This is what I mean by impaction, and here follows my mode of treatment.

Introduce a single stomach tube through the nostril and pump into the stomach from two to three gallons of warm water to which is added a little salt. Repeat every two hours until the mouth becomes moist and the skin naturally damp. In the meantime administer one-half to three-fourths grain strychnin or one or two drams of fluid-extract of *nux. vomica* to stimulate the nervous system. Add a handful of hypsulphate of soda to the first water pumped into the stomach, to keep down fermentation and absorption of toxins from the accumulated fecal matter.

When the mouth becomes moist, give one-half ounce fluid extract of jaborandi every few hours to stimulate salivation; or pilocarpin may be used instead. Keep up the nux vomica also every four to six hours. At this stage give a grain of eserin every hour or so to effect. Keep up the administration of the saline solution with the stomach tube every two or three hours and also give a high enema equally as often and no patients will be lost that are so treated within the first twenty-four hours.

It aids also to knead the mass often by the rectal passage with the closed fist in order to somewhat break it up so the succusentericus may moisten the ingesta. In the course of a few hours you will be delighted to see your patient urinating nicely, bowels rumbling naturally and the subject acting brighter generally. But do not give eserin, arecolin or barium until you establish fluidity within the bowel with the saline solution by way of the stomach and jaborandi and nux vomica to assist in this function.

As for equipment I may state that I use any kind of tube that can be readily passed from a half-inch garden hose to a three-quarter inch Philips' stomach tube. I use Lloyd's specific medicines on account of their cheapness and strength as they are a little stronger than our official fluid extracts. I formerly used linseed oil and turpentine drenches, nux vomica and carbonate of ammonia pills, eserin and strychnin hypodermatically, and all that dope; my patients would die and I would bemoan my plight; but to treat symptoms is my slogan now. Supply the needed fluids; aid a fagged nervous system, and then and not until then, stimulate muscular contractions of the bowel with eserin, or arecolin.

What is better than plenty of water? And if anything balks a layman, it is certainly that stomach tube stunt. They will use oil and turpentine; they will buy and use your tablets after some one "puts them wise;" but they will never tackle the tube, and they can't underbid the aqua fountains and the sodium

chlorid quarries. You can do more real good with the judicial use of a good stomach tube than any other one article in your armamentarium.

J. W. HARBAUGH, V. S., D. V. M.
Corydon, Ind.



Calf delivered Sept. 30, 1915, by C. C. Neidig, M. D. V., Luck, Wis. Weight, 89 lbs. Cow 36 hours in labor; made good recovery.

A NORMAL AND AN EXTRA UTERINE PREGNANCY SIMULTANEOUSLY

I recently performed a caesarian operation on a sow. The sow was in labor and had been for twelve hours. She was a valuable animal. I delivered two pigs with the use of forceps but could not reach any more, so prepared her for the operation and made an incision. After cutting through the abdominal wall, I picked up a pig in what I thought at first was the uterus. I made an incision through which I removed two pigs. I

thought this membrane was very thin and somewhat dark, and upon closer examination, discovered it to be a case of extra uterine pregnancy.

I afterwards made incision through the uterus proper and delivered seven pigs. The sow withstood the operation but died three hours later on account of weakness and the condition of the uterus, which was badly inflamed and contracted, making it difficult to remove the pigs from within.

I find that in order to be successful in this operation on sows, it should be done rapidly, since if one is too long in doing it, the results are usually poor. Or if the hog is in labor prior to the time of operation too long and becomes weak the outcome is unsatisfactory. I thought this might be of interest to some of the readers of *VETERINARY MEDICINE* as extra uterine pregnancy in a hog is of rather unusual occurrence.

Kenesaw, Neb. W. C. HINES.

A FOREIGN BODY IN COW'S RETICULUM

I have a peculiar cow case I wish to report. In April 1st I was called to see a cow that wasn't eating and was getting thin, although a few weeks before she had been one of the finest looking in a herd of thirty cows.

On examination, I found the rumen very full but not distended, the bowel contents ill-smelling and not properly digested. She had no fever, however, and I gave her salts and left some nux vomica. The next day, the bowels hadn't moved very much and were very foul, so I administered more salts. She was treated in this manner for several days, and then she ate some for a day. Afterwards she refused food again for four or five days, and after trying everything else we could think of to tempt her, we gave her some beets, which she seemed to relish; but the next day she refused to eat again and didn't for nearly a week. All this time, her bowels were being moved, and all her manure was ill smelling and dark.

I noticed that if she tried to regurgitate to bring her cud that she seemed to quickly swallow it back or stop it as if she had pain. The cow lived for about six weeks, eating for a day with apparent pleasure, then not anything for four or five days or may be a week. She drank plenty of water all this time.

On post mortem, we found a safety-pin in the wall of the reticulum, in and out, ready to be clasped—a person could not intentionally have inserted it better. We also found an ordinary pin imbedded in a fibrous capsule. No doubt, when the cow tried to ruminate, the pin in some way caused her pain and that caused her cessation of rumination, with the inappetence as a result. In other cases where foreign objects were present, I have always found them affecting or in the rumen then into the heart; but I never before found them in the reticulum. There was no edema of the dewlap of other symptoms of the foreign body, except the expression of pain as stated before.

W. B. MORGAN.

Philadelphia, Pa.

EMBRYOTOMY WITH MOLAR CUTTERS

I was called to attend a gray mare on May 19th. The owner said he noticed her trying to foal early that morning. I arrived at the farm about 10 a. m., and found three feet presented. On further examination, I found the other, a hind one, about sixteen inches back from the external opening, but I could not find the head.

I gave the mare a hypodermic of H-M-C, also chloral hydrate per rectum and secured the hind legs with ropes. I then slipped the tackle on the forefeet, bringing one at a time. I incised the limb as close to the shoulder as possible. Not having an embryotomy shear, I used Mead's molar cutter; it worked like a charm. This done, I then pushed on the fore part of the fetus, while the owner worked the tackle on the hind limbs.

In this manner we made a successful delivery.

I also gave the mare a pretty stiff dose of cannabis indica. I called the next day and the mare was doing well, although a little sore and stiff. I heard from the owner later and everything was O. K. Of course, I used a douche also.

HUGH N. WHYTE.

Maquoketa, Ia.

A SCHISTOCORMUS REFLEXUS DELIVERED WITH DIFFICULTY

I submit herewith a couple of photographs of a calf, a case of schistocormus



This part presented in this position.

reflexus, which I delivered from a Durham cow recently, but not without some difficulty. The calf was fully de-

veloped and haired out everywhere except the cavity, which it will be noticed



is the thoracic cavity almost inverted. The abdominal contents were developed



outside the abdominal wall. The calf's intestines were protruding from the

cow's vulva, with the open cavity presented.

Upon first examination, I came in contact with the open cavity, but was unable to locate any portion of the legs, head or feet for some time on account of the labor pains, which would not permit of my making a deep exploration with my hand. Later they let up and I could retract the fetus and located the hocks. I finally located the fore limbs and managed to turn the fetus and applied ropes to the fore limbs and head, in which position I thought I could deliver the fetus easily, but soon found that I could not. Then, I proceeded to retract the fetus a second time and located the posterior limbs, applied ropes and finally succeeded in making the delivery with lots of good help. The mother cow was a large one, weighing about 1,200 lbs. She died the following day.

W. C. HINES.

Kenesaw, Neb.

AN EXPERIENCE WITH THE BANG SYSTEM, IN TUBERCULAR CATTLE

I have had charge for four years of a herd of reacting tubercular cattle that were all pure-bred and heavy producers of milk. The calves were removed at birth and sold for a good price. Their milk was all sterilized and the manure from these herds was put on land where other cattle did not have access. After four years' experiment it proved a losing proposition, and this did not take into account the buildings necessary for taking care of these herds. I believe it will prove unprofitable in every case for a man to segregate part of his herd—the reactors—and keep them for breeding purposes. But perhaps this is not an objection to the plan as a whole, because, when a man fully realizes that these diseased animals are a losing proposition for him, he will be more willing to slaughter them or to turn them over to the state. State control has proved very successful in Virginia, where the cattle become the property of the state

immediately after the test. The state also provides that in the case of pregnant animals they may be held until they give birth to their calves. They are held entirely under the control of the state.

Chicago, Ill.

N. S. MAYO.

SUCCESSFUL USE OF BACTERIAL VACCINE IN NAVEL ILL

Last spring I decided to experiment with bacterial vaccine in the treatment of navel ill. I selected eight mares that had previously given birth to colts that were affected with this disease. One of these mares had had seven colts and all of them developed this disease.

The vaccine that I used on these animals was Beebe mixed vaccine, No. 21. All of the mares were given one injection before parturition and some of them two. The results that were obtained were most satisfactory, inasmuch, as only one of the eight had a colt that became affected with joint ill and this colt recovered.

These results appeared to me as phenomenal as there was an increase in healthy colts of 87½ per cent over the previous year.

P. G. Dutton, D. V. S.

Cresco, Ia.

ESSENTIALS OF VETERINARY LAW

This book, which may be used as a text-book in veterinary schools and agricultural colleges, should prove of great value to practising veterinarians. It contains useful information as to their duties and responsibilities. The best insurance against claims for damages is found in a knowledge of the requirements of the law. Part I deals with general principles, police power and nuisances; Part II treats of regulation of the practice of veterinary surgery, liabilities, and compensation. Part III describes government services, government inspection, and executive organiza-

tion. Part IV deals with the ownership of animals, and the liability of persons in temporary possession of animals. *Review in Bulletin of Foreign Agricultural Intelligence of the Canadian Department of Agriculture.*



The above shows a monstrosity delivered by Dr. G. V. Woolsoncroft, Cissna Park, Ill.

NEW YORK VETERINARIANS DISCUSS THE MILK QUESTION

The regular monthly meeting of the Veterinary Medical Association of New York City was called to order by the president, Dr. Geo. Goubeaud, in the lecture room of Carnegie Laboratory, at 8:30, Wednesday evening, May 3.

The first subject discussed was "The Production and Handling of Clean Milk," by Dr. Cassius Way.

Dr. Way's subject was illustrated with slides showing methods and technic of handling Grade A, Grade B and Certified milks. The lantern slides were very good ones and served a useful purpose in picturing the different farm, factory and city conditions.

The doctor spoke of the prominence of the clean milk question at this time and what an important place milk and milk products hold in the diet of the average individual, it being estimated that it constituted sixteen per cent of the human food. He also stated that milk is the only nitrogenous animal food that is consumed in the raw state and that approximately one-quarter of all milk is consumed in the raw state and three-quarters in the form of derivatives. He argued that while it is common knowledge that milk spoils very

quickly and is subject to chemical and bacteriological changes, still its great value as a natural food makes it worthy of careful production and handling.

To emphasize its cheapness as a natural food he pointed out that a quart of milk is equivalent in food value to any one of the following: three-quarters pound sirloin steak, two pounds chicken, eight eggs, 1 pound halibut or a pint of oysters.

In discussing the dirty milk question he stated that negligence and indifference on the part of the producer are the principal factors; such as dirty cows, unclean milkers and improper cooling, and that these problems of course could only be solved at the producer's end. It is his opinion that the veterinarian has an important place in the production of and handling of clean milk, believing that he is equipped by education and temperament for dairy inspection work and that healthy herds are a most important factor; that the veterinarian should be a capable adviser in raising healthy calves, proper feeding, preventing and controlling venereal diseases of cattle and particularly acute diseases, especially those that are milk borne and involve the possibility of transmission to the human family.

Following Dr. Way, Dean H. E. Cook, of the St. Lawrence School of Agriculture, Canton, N. Y., spoke on "The Veterinarian, the Clean Milk Producer, and Some Physiological Suggestions."

In the Dean's opinion the milk business is one of the most complicated businesses we have. Its perishable character and oftentimes the long distance from the producer to the consumer create complex conditions. In reminiscence he told us what he had stated several years ago when the milk business on a large scale was in its infancy—that milk was at one time a by-product, the cow was kept simply as a fertility producer to save our farms, but that milk has now become a necessity and that we have learned how to grow crops with chemical fertilizers without the aid of the cow.

As is the case always when the Dean speaks on the milk question, he showed his intimate knowledge of detail and made plain how the present prices of milk forbids the proper compensation for the producer, who however apparently succeeds, since in such cases the labor of the entire family enters into the production and they are not placed upon the monthly pay roll as they should be. He is likewise of the opinion that dealers are working on a very small margin notwithstanding that there is a feeling otherwise and confessed that the only solution he could see in sight is that the consumers must pay more or cheaper methods of production must be discovered. He believes it possible that cheaper methods of distribution may be evolved but doubts if cheaper methods of production are possible.

No one can gainsay but that it requires a higher grade man to produce a higher grade milk and men of such calibre must live under different conditions from the careless indifferent slovenly fellow and to live differently they must receive compensation sufficient to enable them so to live or they will launch into other industries.

In commenting on the methods of distribution he ridiculed the present method of a number of milk wagons running all over the city and all to the same points. He advocates a central head with systematic distribution to prevent duplication in travel.

It would seem to us that this is a bit of logic that carries with it an important point and we will probably hear more of it.

The speaker emphasized the necessity of healthy cattle and the difficulty of getting a healthy herd together and predicted that the physiological and pathological condition of the cow will be as prominent a question in the next decade as the bacteriological count is today. His belief that the veterinarian is to become the competent agent in directing the development of better and cleaner milk in many ways, such as spreading

the knowledge of the value of fresh air and sunlight and their action upon disease producing organisms and at the same time pointing out that *dirty* methods can produce these organisms faster than remedial agents can destroy them.

He believes that the great bulk of milk today is better pasteurized on account of the loose way it is produced and that we should bend every effort to improve its production and encourage the raising of healthy young calves which he believes should have their liberty and not be confined to a stall.

In addition to all these conditions affecting the producer, methods of making known to the consumer the great labor in handling milk should be instituted.

Dr. Harris Moak, of the Brooklyn Certified Milk Commission was the next speaker and discussed the remarks of Dean Cook and Dr. Way. He agreed in general with the other speakers and recited his experience and the advantage in controlling bacterial count, spider in the teat and other udder troubles by dipping the ends of the teat in a mild antiseptic after each milking and the simple method of detecting gargety quarter early by milking a few streams from each quarter into a close mesh strainer and then examining it for any thickened milk.

Others who took part in the discussion were Drs. James McDonough, H. D. Gill, E. B. Ackerman, and the writer.
J. F. DEVINE.

Goshen, N. Y.

THORACIC CHOKE AND COMPLICATIONS IN THE COW

With the hope that it may help some one, I submit the following report of a case of thoracic choke in a cow:

I was called up by a client who reported that he had a cow that had been choked on a potato, and that although he had succeeded in relieving her by using a broom stick, she was now bloating very badly. I told him that without a doubt the animal was not relieved, but was still

choked, and that was the cause of her bloating. He asked me to call and see her. I found the cow with her throat somewhat swollen and with marked tympany of the rumen.

probang but could not start the potato.

We hurriedly yet carefully passed the I inserted the trocar and relieved the bloat, after which I gave the cow one grain of arecolin hypodermically and waited one-half hour and again used the probang, this time relieving the choke quite easily.

I thought my work well done and went home. Two days later I was called again to find the cow was again bloating due to the fact that her esophagus was swollen so that it was entirely closed. She could not drink water nor swallow anything at all. My prognosis was unfavorable. I again relieved the bloat with the trocar and introduced through the canula some antiferments. I gave her a liberal injection of cold water into the rectum as she was suffering from thirst and left some medicine for the owner to give her by the mouth to relieve the throat; but she died a few days later. No autopsy was held but doubtless the broomstick which the farmer used before calling me had torn through the walls of the esophagus into the thorax and fatally injured the animal.

D. K. BUZZARD, D. V. S.

Nappanee, Ind.

ADVISES AGAINST UTERINE IRRIGATION

Referring to query No. 234, and answer in the June issue, will say from my own experience that I have found that irrigating some uteri with gallons of water, i. e., antiseptic solutions, nearly always proves fatal. The theory is O. K., but it just don't give results other than fatal when I have done it. Even in removing a dead fetus, a handful at a time, about a quart of a two per cent to five per cent solution of Kreso, Septico, or Eucamphol and another quart afterward, is all I use, and I make certain that but little of the solution re-

mains in the uterus. With this treatment plus a stimulant and laxative, I have had good results.

In regard to loosening the adherent placental membranes, a quart of five per cent peroxid of hydrogen is more satisfactory than anything else I know of. However, it is necessary to use the other antiseptic solutions after the removal of the placenta. In mares the thorough irrigation or washing of the uterus does not seem to matter so much, but in cows, it does produce weakness, disability and shock, whereas a small amount of fluid, such as a pint or quart of weak antiseptic solution, does not produce fatal results, provided none of the solution is left in the uterus.

J. M. KERR, D. V. M.

New Kensington, Pa.

FLESH DOES AND DOESN'T PUTREFY WHEN INGESTED BY THE BOVINE.

I was much interested in the report of the mono-ventriculated cardium of a heifer (May issue, page 400.) I was sorry that a more minute description was not given of the vessels emanating from the ventricle to the lungs and aorta, and also of the exact age of the animal.

I was more than interested in the item on page 402 of the same issue, entitled, "Will Ruminants Digest Flesh?" I see the author surmises that queer objects passed in the excreta were from portions of the placenta ingested from two or three months prior to that time, and he inquires whether or not flesh or various animal membranes may remain in the digestive tube without putrefaction.

Succeeding this, I presume the editor comments, saying that it is not improbable that digestive fluids in the cow may prevent putrefaction of flesh in the digestive tract, and I am wondering if the commentator ever held an autopsy on a cow that died six weeks or two months after having consumed the expelled placenta membranes. If

so, I do not believe that he would be of the opinion that putrefaction is prohibited in the digestive tract of the cow.

I have seen masses of placenta membranes not only in the rumen, but in various portions of the intestines, in an advanced stage of decomposition, and why would not the putrefying organism, ever present in the intestines of the cow, be active? I wonder if it ever occurred to the commentator that these expelled round objects voided by cattle might be a croupous exudate that had been detached and expelled. In the museum of the Kansas City Veterinary College there is some 40 feet of croupous exudate that was voided by a Wyoming cow. The owner found it and thought it was the longest snake he had ever found.

I also was interested in the iron consuming shoat. In our museum I find on the board the following:

"List of hardware found in stomach of hog. Contributed by Dr. C. M. McFarland."

"40 nails, 15 staples, 8 screws, 6 nuts, 5 pieces of iron, 1 small metal frame, 1 metal end of 1 No. 10 shotgun cartridge, 2 buggy top tacks, 6 pieces zinc, 8 pieces wire, 9 pebbles, 2 snaps, 2 bolts, 1 brass pin, 1 piece brass, 1 piece glass, 1 porcelain."

A total of 109, so the Indiana hog has to eat some more to come up with the Missouri type.

A. T. KINSLEY.

Kansas City, Mo.

Comment: That putrefaction of placental membranes and other flesh ingested by the bovine sometimes occurs there is ample evidence in the alarming, often fatal disturbances noted from just such happenings. Sometimes this disturbance occurs promptly after the ingestion of flesh, at other times it is delayed far beyond the period at which we should expect flesh to be entirely decomposed in a warm moist place; sometimes this putrefac-

tion is delayed, as Dr. Kinsley points out, for a period of two months after the ingestion of the flesh by the bovine. How is its preservation in these cases during these months to be explained, except upon the supposition that the digestive process in the cow, although unable to digest meat still was able to prevent its putrefaction until some untoward influence brought this about after a period of weeks or months.

Again ingestion of the after birth is fairly common in cows, particularly in family cows, kept in town, and fed on a diet not well suited to cattle. It rarely causes any disturbance, what occurs in the majority of cases—those where it causes no disturbances of digestion? Dr. Kinsley's evidence seems to show that digestion does not occur; the observation of others seem to show that these membranes may be voided after weeks or months in about the same state as ingested.

Most of those reporting cases such as cited in the May issue have excluded the possibility of the voided material being a croupous exudate from the intestine or a piece of intestine invaginated and sloughed.

Contrary to the impression of Dr. Kinsley the editor did not express an opinion in the matter. He merely stated conditions and suggested further investigation before accepting a theory that does not seem to fit the case in all instances.

THE APPENDIX WORTH THE PRICE OF THE BOOK

I received the copy of Lacroix's "Animal Castration" a few weeks ago and am pleased to say I appreciate it very highly. It is a most excellent work. The matter is all practical. The sections on equine umbilical hernia and cesarean operation in the sow, are very good pointers and of great value to the practicing veterinarian, especially every one with a country practice.

Gettysburg, Pa. E. D. Hudson, V. S.

A Crude Operation

By REMBRANDT MORGAN, Student in Veterinary Medicine.

About two o'clock in the afternoon, in the latter part of a day in November, a big husky fellow rode up to my office on a black horse and said that



The Author

the boss of a sawmill outfit had sent him for me and that he wanted me to go at once; one of their team horses, as he expressed it, had his "guts cut out." I told him that I would be with him in a very few minutes, so I threw my big saddle on my

little bay stallion and, after tying on my casting ropes and some other articles (too few to mention), I was ready for the road.

We had not gone far out on the main road until I noticed that my companion was in a great hurry. Presently he looked down at me from his big black steed as we rode along side by side and said: "If you could only keep up it would not take us long to get there." Whereupon I informed him that if it was going he was looking for, the time and place were appropriate. Suiting the action to the word, I let the rein fall on old Fox's neck and shook one of my heels a little so as to rattle the rowel of one of the big spurs that I always wore. This was all that was required, for the horse understood at once that he was

expected to outstrip my companion; accordingly, he broke into a long, easy gallop which soon left my friend in the rear. As I knew the lay of the land perfectly, I now turned my horse from the main road and took through the woods. This was just to my horse's liking, for he had gained his name by the way he had of keeping up with the hounds when fox hunting. He sailed over the fallen trees and undergrowth with perfect ease, carrying me with him. After I had ridden at this rate for a couple of miles, I drew rein in a little low gap in the mountains to see what had become of my companion. Presently, I heard the labored breathing of his big horse as he came up the slope, foaming with perspiration. When my friend came up with me his face and hands were bleeding from violent contact with the underbrush, and he was decidedly out of humor and wanted to swear, but I told him that he had started it all and he soon regained his usual good spirits. We now proceeded at a more leisurely pace along a big ridge and in about another hour we arrived at the sawmill camp.

At the camp I found a small black gelding of the tough mountain stock with about one-half bushel of small intestines hanging down to his hocks. Eventration took place because of a puncture wound just a little posterior to the scrotum. The crew of sixteen men, including the boss, were gathered around the animal in sympathetic but helpless attention. Some advised immediate destruction; but after a short consultation with the boss I decided to attempt returning the bowels.

I therefore proceeded to cast the animal and turned him in the dorsal po-

sition, but he proved to be very hard to hold in this manner as it required the strength of the entire crew to keep him from walking with his back. By placing some big slabs of wood across his neck we finally subdued him. I then washed the bowels with water carried from the creek in an old tomato can and tried to replace them, but found that, owing to their distended and edematous condition, they could not be returned through the rent in the abdominal wall. So I inserted one finger through the opening and by means of a scalpel, with the back of the knife pressed against my finger, I enlarged the opening until the intestinal mass could be replaced. I then took two interrupted sutures through the integument and underlying tissues and allowed the animal to



"Red Fox"

get up. As soon as he was turned loose he laid down and rolled over, got up and began eating grass as though nothing unusual had happened.

The sun had now sunk behind the mountains and the chill of a frosty night was already noticeable. As I was about to depart, one of the fellows came out with a brown jug—which had for a stopper a friendly looking corncob—and asked me if I would care for a sip before leaving. I told him

that I never refused to drink with a friend. Whereupon he produced a tin cup and poured out nearly a pint. I asked him no questions about where he got the jug or its contents.

I then turned old Fox's head into the woods and this was the last thing I remembered until some three hours later when I was awakened by having my leg rubbed against the corner of the hewed log stable at home. This was Fox's way of letting me know that we had gotten home. I had slept soundly on his back while he brought me through the mountain trails that he knew so well—but it was now nearing the midnight hour and I went to the house and to bed.

The next morning just as the sun was peeping over the eastern hills one of the mill hands rode up and told me that there was a large swelling under the abdomen of my patient and the boss wanted me to come and see about it. I told him that as soon as I had fed the horses, hogs, sheep and cattle and milked the cows I would be there; whereupon he departed.

In about an hour I again saddled old Fox and started for the mountains. As I jogged along watching the columns of steam come from his nostrils to mix with the frosty air, and listening to the click of the horse's steel shoes as he carried me merrily over the frozen ground, I pondered over what could be the cause of the enlargement which affected my patient. My first thought was that the intestines had passed through the rent in the oblique muscles and worked their way forward between the tissues. In this event I knew that it would only be a question of a very short time until there would be strangulation of the bowel and death would follow.

But on arriving and making an examination I found, very much to my satisfaction, that hernia had not occurred but the enlargement (which extended along under the abdomen about eighteen

inches anterior to the sheath) was filled with serum. I proceeded to put in a drainage tube at the most dependent part, and this allowed the serum to escape. The animal was then placed in a narrow stall so arranged that the subject stood with its forefeet lower than hind ones. It was kept in this position for forty-eight hours and fed only lightly during this period. At the end of that time the horse was turned out and no further attention given it for five days.

I made another visit later and as drainage was no longer necessary I removed the tube and ten days after the injury was inflicted, the horse was put back to work, pulling logs out of the woods as though nothing had happened.

OPEN FETLOCK JOINT

(Continued from page 518)

cases where the tarsal joint is wounded, although one hesitates to invade any joint to the extent of incising its capsule, unless there is urgent need of so doing.

Frost¹ offers the following suggestion in such instances: "The treatment recommended by us for open joints, in which we wish to prevent ankylosis, is first, to shave all hair from the area surrounding the wound, following with a thorough cleansing of the skin and disinfection of the wound, and then to inject a twenty percent Lugol's solution in glycerin into the wound. This should be repeated two or three times a day, each time enough of the solution being injected to fill the joint capsule, thereby securing the flushing effect. As this solution does not cause irritation to the tissue and yet is a strong antiseptic, it serves to shorten the period of congestion and inflammation and to overcome the infection without causing a destruction of the secreting membrane until the external wound has had time to heal. The injection of this solution seems to retard the excessive secretion of synovia."

¹J. N. Frost, Professor of Surgery, Veterinary Dept., Cornell University, in "Wound Treatment," page 169.

Neither peritonitis nor any of the other "itises" developed. I received a fee of ten dollars for my services and was very proud of both the recovery and the fee.

All of this has not been so very many years ago, and while his joints are a little sore and he does not go with quite the spring he once did, old Fox is still standing in his big box stall, eating the best hay that the fertile valleys along the great Kanawha River produce, dreaming of the races he used to run before he or his owner had become intimately acquainted with gray hairs—waiting for an opportunity to take his master to some of his equine friends or relatives that may be sick or in distress.

The following is abstracted from an article² wherein twelve cases of open joint were reported:

"In cases in which it is necessary to keep the dressing on for a week, or in cases where the patient is through necessity kept in quarters that are wet or unclean, the first bandage is covered with a layer of oakum which has been saturated in oil of tar and this in turn is held in place by means of several layers of bandages. The bandages are also saturated with oil of tar.

"In from one to two months, wounds so treated, unless they are foot wounds, will be ready to dress without being bandaged. It is ordinarily unnecessary to dress foot wounds oftener than every second week after the discharge of synovia has ceased. When the wound has filled with granulation, a protective dressing is applied which is rendered waterproof by the use of bandages covered with oil of tar. The patient can now be turned out for a month or six weeks without disturbing the dressing. After the removal of the bandages, the only treatment necessary is an occasional application of some mildly antiseptic ointment."

²"Open Joints and Their Treatment in My Practice," by J. V. Lacroix, D. V. S., American Journal of Veterinary Medicine, Vol. 5, page 203.

ARMY VETERINARIANS APPRECIATE THE SUPPORT OF VETERINARIANS IN CIVIL LIFE

I am writing to see if you will be kind enough to give a little space in your valuable Journal to one of the army veterinarians who wishes to express the appreciation of the veterinarians of the military service, (for I know that I am speaking the sentiments of all), toward

Nearly every veterinarian in the land our colleagues in civil life for the loyal manner in which they labored to bring the recognition of our profession in the army to such a glorious and successful issue.

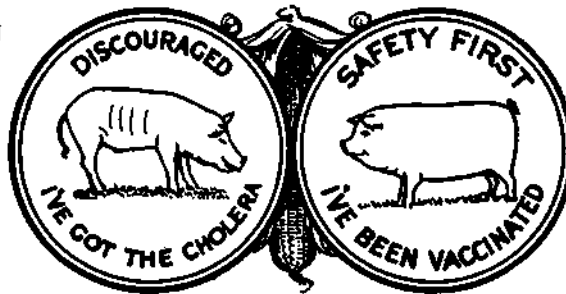
has helped to bring this about, and to these men great credit is due. To the man who steered the helm of the good ship that weathered the storm, we all bow in reverence to his name and trust that it may be a living memorial to the generations to follow in our footsteps. Although denied membership in the leg-

islative committee of the A. V. M. A. for the year 1916, he worked loyally with the committee, never letting petty jealousy swerve him from the path of duty as he saw it. We all feel that Dr. Hoskins was the one man in the profession today who could have accomplished this good work.

We do not fail to appreciate the good work done by the committee of the A. V. M. A. and greatly admire the way that they did the logical thing and cooperated with the man who had laid all plans for the opportune time, and that time was the 17th day of April. As to the glory, there is enough for all, as was said by one of our naval commanders during the Spanish-American war.

The veterinary profession should hold in deep reverence the names of such men as Chairman Hay, Senators Oliver, Hughes, Cummins, Lodge and Kern and scores of others, who stood loyally by us in this great fight. The profession certainly owes such men a debt of gratitude. I wish that every veterinarian of this

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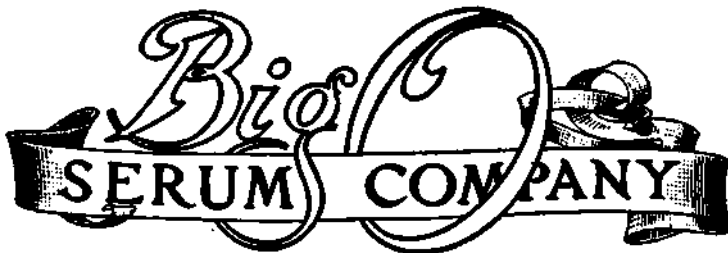
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land could read the discussion that took place on the floor of the Senate chamber on April 17, 1916. [Published last month Page 467.—Ed.] It would make them feel prouder of being veterinarians than they have been at any other time of their lives.

And to you, Mr. Editor, I wish to express my own and other army veterinarians' gratitude for the loyal manner in which you gave us support and the many strong appeals your pages gave to the public from the pen of our late friend and colleague, Dr. D. Arthur Hughes, all of which ultimately aided so greatly in the passing of the veterinary bill.

I should like to have you publish the foregoing in *VETERINARY MEDICINE* to show our friends and colleagues in civil life the feeling of gratitude of the army veterinarians, for I know that these views are concurred in by all, but I fear many will be too modest to write anything for print.

CHAS. H. JEWELL.

Schofield Barracks, Honolulu, H. T.



This is a case of hydrocephalus in a foal. The mare carried this foal ten months and required considerable assistance in delivering it. The head weighs 18½ lbs.
New Carlisle, Ind. J. A. McLellan, V. S.

AZOTURIA FORE AND AFT

I have had seven cases of azoturia within the last thirty days, and the last patient suffered a mild attack in the gluteal muscles and a severe attack of the both groups of caput muscles, which were swelled up and enlarged like medium sized hams. The patient had suffered a similar attack in one shoulder about ten days before, after being driven half a mile, and the owner treated it with

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rest and a strong liniment over the swollen muscles. The second attack followed ten days rest allowed for recovery from the first attack, and was so alarming that the owner sought professional services. Whoever saw a fatal case affecting the horse anteriorly and posteriorly at the same time?

JAMES A. WAUGH.

Pittsburgh, Pa.

MEETING OF ILLINOIS VETERINARIANS.

The Illinois State Veterinary Medical Association will meet in Peoria on July 19th. Headquarters will be at the Jefferson hotel, and a feature of the meeting will be a session on a boat on the Illinois River.

The following program is to be carried out:

Plaster CastsGeo. B. McKillip
Tetanus A. H. Baker
SterilityW. H. Welch
Retention of the Placenta.....S. Kempf
Commercialism in the Sale and Administration of Anti-Hog-Cholera

Serum A. G. Alverson
Bog Spavin J. V. Lacroix
Periodic Ophthalmia (a symposium)
W. J. Martin, O. E. Dyson, L. C. Tiffany, N. S. Mayo, J. H. Crawford, L. A. Merillat.

MICHIGAN VETERINARIANS HOLD SOCIAL EVENING

The Veterinary Practitioners' Club, Detroit, held another of its delightful little get-together meetings recently.

Following the usual custom, the veterinarians had a dinner at the Griswold Hotel and a social evening followed. Two of their number, Drs. A. McKercher and J. Joy, were designated "guests of honor." Those present were: Drs. G. D. Gibson, T. F. Krey, R. Armstrong, E. T. Hallman, S. Brenton, J. Hawkins, J. W. Brody, H. F. Carpenter, J. Joy, A. McKercher, W. A. Ewalt, L. A. Wileden, J. S. McDaniel, R. P. Lyman, J. P. Hutton, L. A. Maze, Spreunk, B. D. Ewalt, G. W. Dunphy, R. H. Wilson, D. Cummings, A. B. Curtis, L. A. Mosher, L. F. Bol-

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Practical, Up-To-Date Works On Animal Husbandry

Selected for the Busy Veterinarian

At the recent annual meeting of the Illinois Veterinary Medical Association, a resolution was passed providing for a committee to investigate the available works on animal husbandry topics and to select a list of those in its opinion adapted to the needs of veterinarians and present recommendations to the association at its next meeting.

The following are among the list selected:

Horses *Productive Horse Husbandry* by Carl W. Gay, D.V.M., B.S.A. This volume contains 331 pages and 175 illustrations. Price \$1.50. It has been widely adopted as a text in agricultural colleges and has the endorsement of experts everywhere. It is practical, progressive, scientific and will benefit every veterinarian who reads it, particularly those having no agricultural college training.

Swine *Productive Swine Husbandry* by Geo. E. Day, B.S.A. 363 pages; 95 illustrations. Price \$1.50. This work discusses in a clear, authoritative manner; Uses and Types of Swine; Breeding and Selection; the history and description of each of the breeds with illustrations and a score card for each; Feeding; Management of the Boar, Sow, young Pigs and fattening Hogs; Marketing; Curing pork; Buildings and Sanitation, etc., etc.

Feeding *Productive Feeding of Farm Animals* by F. W. Woll, Ph.D. 362 pages; 96 illustrations. Price \$1.50. This is not the most exhaustive work on this subject, but it is the newest and because of its brevity, best adapted to the needs of veterinarians. Dr. Woll is Professor of Animal Nutrition in the Univ. of Cal., formerly of the Univ. of Wisc., and ex-president of the Ass'n of Agri. Chemists of Amer. His name as writer is a guarantee of the authoritativeness of the work.

Poultry *Poultry Culture Sanitation and Hygiene* by B. F. Kaupp, M.S., D.V.S. 418 pages; 196 illustrations. Price \$2.00. Dr. Kaupp's writings on poultry topics are too well known to veterinarians to need particular mention. This work deals with the poultry industry in its broadest sense, separate chapters being given to the discussion of breeds of poultry, mating, breeding, hygiene and sanitation, poultry houses, diseases and parasites, feeding, marketing, incubating, etc.

Specialized Farming *Productive Vegetable Growing* by John W. Lloyd, M.S.A. 339 pages; 193 illustrations. Price \$1.50. This work comprises the information obtained from experience that has cost millions of dollars.

Productive Orcharding by Fred C. Sears, M.S. 315 pages; 156 illustrations. Price \$1.50. Describes up-to-date methods of selection, planting, protection, pruning, harvesting and marketing.

Productive Bee Keeping by Frank C. Pellet. 316 pages; 135 illustrations. Price \$1.50. Tells how to begin and how to see it through; the methods found to be the best money makers by extensive honey producers.

Productive Farm Crops by E. G. Montgomery, M.A. 501 pages; 204 illustrations. Price \$1.75. This work gives twentieth century, scientific information on the principles of fertilizing, planting and cultivating.

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dock, E. B. Covell, D. M. Campbell, of Chicago, and Messrs. H. H. Halladay and Mart Stapleton, members of the board of livestock commissioners, and Mr. G. N. Anderson, of Parke, Davis & Co.

NEW REGULATION, DEPARTMENT OF HEALTH, NEW YORK CITY

Sec. 13. Tuberculin tests of cows; certificate.—No milch cow or cows intended for any purpose other than slaughter shall be admitted to the city of New York unless accompanied by a certificate stating that the said cow is free from tuberculosis, so far as may be ascertained by physical examination and the application of the tuberculin test. Said certificate shall contain a physical description of the cow sufficiently accurate for the purpose of identification and must be signed by a legally licensed veterinarian, who shall state the date and place of his registration. The certificate shall also bear a number, which must correspond with a tag that shall have been securely attached to and be on the ear of the cow. The certificate shall also contain date of the examination, which examination shall have been made not more than 60 days prior to the time the cow indicated therein is brought into

the city; it must also contain the place of examination, the temperature of the cow for 10 hours prior to the injection of tuberculin, the name, quality, and character of the preparation of tuberculin used, the location of the injection, the quantity injected, and the temperature from the sixth to the twenty-fourth hours after the injection, or until the reaction is completed.

CONE TRAP FOR FLIES

Flies are a nuisance around pretty much every veterinary hospital, not because the institution itself supplies the filth in which these insects breed, since in most cases it does not, but because veterinary hospitals like hospitals for human kind seem to supply something in odors that is very attractive to flies.

The Bureau of Entomology of the United States Department of Agriculture has just issued a bulletin in which it describes devices for getting rid of flies.

The bulletin (Farmers' Bulletin No. 734) describes how to make a trap of the cone type with only four second-hand barrel hoops, a barrel head, a few strips of lumber, and 45 cents worth of screening and tacks.

The two barrel hoops are bent into a circle and nailed together, the ends being

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trimmed to give a close fit. These form the bottom of the frame and the other two hoops, nailed together in a similar way, the top. The top of the trap is fitted with an ordinary barrel head with the beveled edge sawed off, causing the head to fit closely in the hoops to which it is securely nailed. A square is cut out of the center of the top to form a door, and the portions of the top are held together by inch strips. The door consists of a narrow frame covered with screening well fitted into the trap and held in place by buttons. When nailed together the trap is cylindrical in shape and the frame is covered with closely tacked screen wire on the outside of the hoops. Four laths (or light strips) are nailed to the hoops on the outside of the trap to act as supports between the hoops, and the ends are allowed to project one inch at the bottom to form legs. A cone is cut from the screen and sewed with fine wire or soldered where the edges meet. The top of the cone is then cut off to give an opening an inch in diameter. This is then inserted in the bottom of the trap and closely tacked to the hoop around the base.

Care is necessary in choosing a location for the trap if it is to attract the greatest number of flies. Traps may be baited with stale beer, milk or molasses and water contained in a shallow bucket cover placed be-

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- Mr. W. A. McNeill, Rives, Tenn.
- Dr. A. G. Wadleigh, La Junta, Colo.
- Dr. B. H. Vance, Concordia, Kans.
- Dr. O. M. Norton, Greenville, Miss.
- Dr. J. S. Cook, Union Springs, Ala.
- Dr. C. A. Thomas, Ada, Okla.
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neath the trap. Experiments have shown that stale beer is one of the best baits for use in fly traps. The trap should be located where flies naturally congregate. Fresh bait should be put in frequently and the caught flies killed and emptied out. The destruction of the flies is best accomplished by immersing the trap in hot water, or still better by placing a few live coals in a pan on the ground and scattering sulphur over them. The trap should be placed over the coals and a barrel turned over to confine the sulphur fumes. The flies will be rendered motionless in about five minutes and may then be killed with hot water or thrown into the fire.

BRITISH COLUMBIA VETERINARIANS HOLD PUBLIC MEETING

A public meeting on matters relating to the public health was held under the auspices of the British Columbia Veterinary Association in the Board of Trade Rooms, Victoria, B. C., on Friday, May 19, 1916, and was well attended both by the general public and the aldermen, councillors and health officials of the city and surrounding districts.

The programme consisted of an address of welcome by the president, Dr. S. F. Tormie, explaining the objects of these public meetings. The first address was by Dr. Knight on Dairy Inspection in Its Relation to

Public Health. The second address was by Dr. Jagger entitled The Relation of the Veterinarian to the Public and to the Stockman. This was followed by an address by Dr. Jervis, illustrated by lantern slides made by himself, on Meat Inspection and Its Value to the Public Health, pointing out the limitations of the present system as far as inspection of locally consumed meat is concerned, and advocating civic inspection of all meat sold for food. Prof. McDonald, Provincial Live Stock Commissioner, then gave a short account of what occurred at the recent convention of the Pacific Northwest Association of Dairy and Milk Inspectors, which he attended, being retiring president of that association. Various questions were asked the different speakers and interesting discussion and information followed, bringing a very successful meeting to a close.

KENNETH CHESTER,

White Rock, B. C. Secretary-Treasurer.

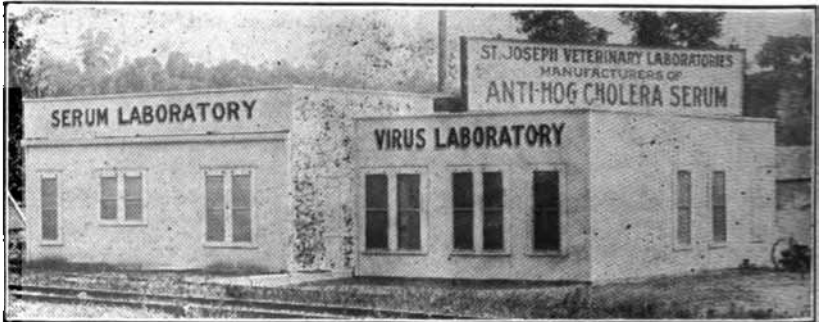
WAR MEDICAL LESSONS

Surgeon Fauntleroy, of the United States navy, in a recent report records his observations on methods employed by the medical corps of the French army operating on the west front. Some of the methods employed will be found useful in this country.

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is a scientific mixture following the same general lines as an old, inaccurately made, useful French antiseptic—Javelle water. It is also akin to another well known French antiseptic—Labarraque's solution.

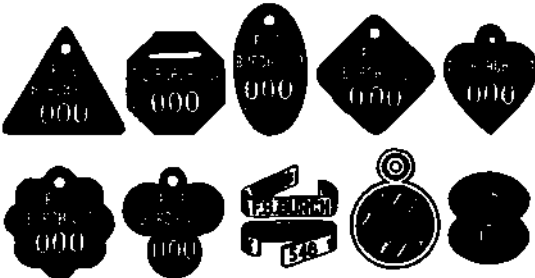
To make Dakin's fluid, dissolve in a large bottle 140 grams (2,156 grains, about) of sodium hypochlorite in ten liters (about ten quarts) of sterile water. Add to this 200 grams (about 3,080 grains) of chlorid of lime (bleaching powder). After half an hour siphon off the clear fluid into another bottle through a cotton plug or filter paper, and then add forty grams (616 grains, about) of boric acid to the clear filtrate. This solution is neutral to litmus. Lavender suggests that

a solution made by this formula is alkaline. A druggist making this solution, therefore, had better test for alkalinity, and, if necessary, add enough boric acid to neutralize it.

This solution is ready for use. It does not keep longer than four days. Made under wholesale conditions, ten liters of solution costs 5 cents.

A drainage tube is carried to the bottom of the suppurating wound. The wound is constantly washed with this solution, either by a continuous drip or by injection of a third of an ounce into the wound every two hours, or by keeping gauze saturated with the solution constantly in the wound.

In forty-eight hours suppurating wounds



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I was sent to Colorado City, Texas, to inspect cattle for interstate shipment

"In this position I traveled along the Mexican border from Sanderson, Texas, to Nogales, Arizona. It was interesting work, although at times hazardous and connected with much hardship. In a short time I could speak Spanish enough to make my dealings with the Mexican cattlemen more agreeable, and this knowledge of Spanish came to be quite useful in other lines.

"After I became proficient in the art of inspecting stock on the hoof, I found the work very interesting. The constant traveling about, from one town to

A "Government Inspector"

another and from the towns to the various ranches and ranges, was exactly to my liking. Besides, there was plenty of chance for excitement; in some spots the territory which I had in charge was quite "wild and woolly." Almost every day there was

need for considerable "backbone," and now and then for more than considerable. A few of my experiences will suffice to give the reader an idea of what the veterinary inspector does in the quarantine division for a hundred dollars per month. (Today he gets \$116.67 per month.)"
 —From *The Itinerant Horse Physician*.

"Dead Broke" in Idaho

"Just when we had about found a solution to our predicament, the hardware man came out and chased us off the stoop for spitting tobacco juice all over it. 'What do you think this is—a cow stable?' he asked us.

"We sat down on some farm implements that were piled to one side of the stoop, and my brother said to me, 'Hell of a guy; won't even let a feller spit. Let's walk out of their darn old town; it's only twelve miles to the next burg.'

"Not me," says I. 'I'm going to ride out of this place first-class if I have to swipe a dog to do it.'"
 —From *The Itinerant Horse Physician*.

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"WHAT DO YOU THINK THIS IS; A COW STABLE?"

are made sterile, whereupon they heal rapidly. In some cases suppurating wounds were washed with this antiseptic for forty-eight hours and then sewed up, as in the case with clean wounds. The antiseptic must penetrate all parts of the wound. It is non-irritating. Alcohol must not be brought into contact with the wound while the antiseptic is being used.

When there is infection with the gas bacillus the tissues are to be lanced thoroughly and drainage tubes inserted. The antiseptic fluid must be kept washing through the tubes for forty-eight hours. Sir Almaroth Wright treats gas bacillus infections by lancing. Into the incisions strips of gauze moistened in salt water are laid.

In the earlier months of the war a great many of the wounded developed lockjaw. Dr. Fauntleroy reports that there have been no cases of lockjaw in the base hospitals during the last six months "or since the time that the anti-tetanic serum has been in use as a prophylactic."

The outbreak of the war found the armies not vaccinated against typhoid and vaccine hard to get. It is estimated that not over 70 per cent are now vaccinated against typhoid. In consequence of this lack there has been some typhoid, but less than in any other war in history.

At the first aid stations wounds are dis-

infected with tincture of iodine. The French first aid packet contains an ampoule of tincture of iodine. In most cases the wounded soldier applies iodine to his wound and covers it with gauze and a bandage. Under the conditions of warfare in the trenches wounded soldiers are unable to reach a first aid station for several hours after being wounded.—Dr. W. A. Evans in *The Chicago Tribune*.

JULY ASSOCIATION MEETINGS

July, Oklahoma Graduate Vet. Med. Assn., Oklahoma City, Okla.

July 4, York Co. Vet. Med. Society, York, Pa.

July 7, Mississippi Valley Vet. Med. Assn., Galesburg, Ill.

July 10-11-12, Missouri Valley Vet. Assn., Omaha, Neb.

July 11, South Dakota Vet. Med. Assn., Lake Madison, S. D.

July 11, Keystone Vet. Med. Assn., Philadelphia, Pa.

July 12, Maine Vet. Med. Assn., Rockwood, Me.

July 12, Manitoba Vet. Assn., Winnipeg, Manitoba.

July 13-14, Virginia State Vet. Med. Assn., Ocean View, Va.

July 19, Illinois State Vet. Med. Assn., Peoria, Ill.

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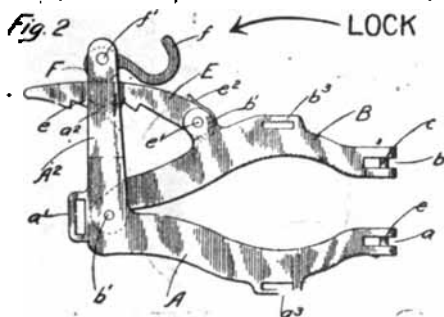
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July 18-19-20, North Dakota Vet. Assn., Fargo, N. D.

July 26, Massachusetts Vet. Assn., Boston, Mass.

July 26-27, Wisconsin Vet. Med. Assn., Menominee, Wis.

July 27, Ohio Valley Vet. Med. Assn., Ob-long, Ill.

Last week in July, Missouri Vet. Med. Assn., Neosho, Mo.

THE PAPERS SAY—

Dr. C. G. Deenis, of Ottawa, Ill., has filed a suit against that city for \$15,000 damages for injuries sustained when a taxicab in which he was riding struck a ditch. Dr. Deenis claims his spinal column was severely injured by the hard jolt.

A. Rexcoat, a farmer in northern Marion county, Iowa, has a cow that has given birth to four pairs of twins in four years.

Mrs. Mary Barnes, of Kalamazoo, Mich., was awarded a judgment of \$10 and costs of \$9 against Jesse Harding for the death of her cat. The cat killed some of Harding's chickens, and he killed the cat.

Eleven proprietors of abattoirs in New York City were arrested on charges of hav-

H. H. DOWD, President

H. E. NEWLIN, Vice-President

A. A. REIFF, Sec. and Treas.

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The work contains 242 sections covering every phase of veterinary jurisprudence; more than 700 cases are cited; cloth bound, 340 pages. Price, \$3.00 prepaid.

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ing bribed veterinarians of the health department to permit the slaughter of cattle infected with tuberculosis and other diseases. A certain clique of abattoir owners slaughtered diseased cattle and sold the meat to retail butchers in the tenement district. Certain veterinarians on the city payroll are alleged to have received \$200 a week in bribes. The following municipal veterinary inspectors have been suspended by the Health Department pending an investigation of the charges: Drs. Alfred E. Luks, John Kent, August Johnson, Peter I. Amscher, Morris Millan, William F. Braisted, Charles E. Caulfield and Alex. Slawson.

A horse belonging to a fruit peddler at Newton, N. J., recently ate thirty-six feet of clothesline. It seems that sugar had been put in the starch used for washing and a considerable amount of this had gotten on the clothesline, which made it taste good to the horse.

Senator Broussard introduced an amendment to the agricultural appropriation bill in the Senate, proposing to permit the importation of tick-infested cattle. The amendment would authorize the Secretary of Agriculture to permit the admission of such cattle from Mexico, South and Central America, the islands of the Gulf of Mexico and the Caribbean Sea into those parts of the United States below the southern quarantine line.

Examinations for deputy state veterinarians with salaries of \$1,500 a year, were held June 17 at San Francisco, Sacramento and Los Angeles, Cal. The test was open to all Americans residing in California who were graduates of recognized colleges of veterinary medicine.

Dr. James C. McDaniels, a veterinarian of Elwood, Ind., was made the defendant in a suit for \$5,000 damages, brought by the father of Glenn Fisher, a twelve-year-old boy, May 22. The charge was malicious prosecution and false imprisonment, Dr. McDaniels having had young Fisher arrested in March charged with attempting criminal assault upon the doctor's nine-year-old daughter. The boy was later released by the court.

Dr. W. G. Garrett, Assistant State Veterinarian, Puyallup, Wash., states that the number of tubercular cows in the state has decreased in numbers within a year. Between July 1, 1914, and June 1, 1915, there were 1,244 reactions out of 12,661 tested, while from June 1, 1915, to May 1, 1916, there were only 1,212 reactions out of 21,866 tested.

The fifth annual show of the Nassau County Kennel Club was held at New York City.

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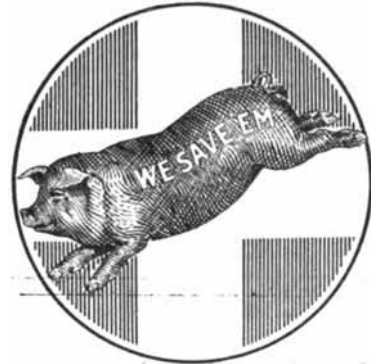
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ASSOCIATION MEETINGS

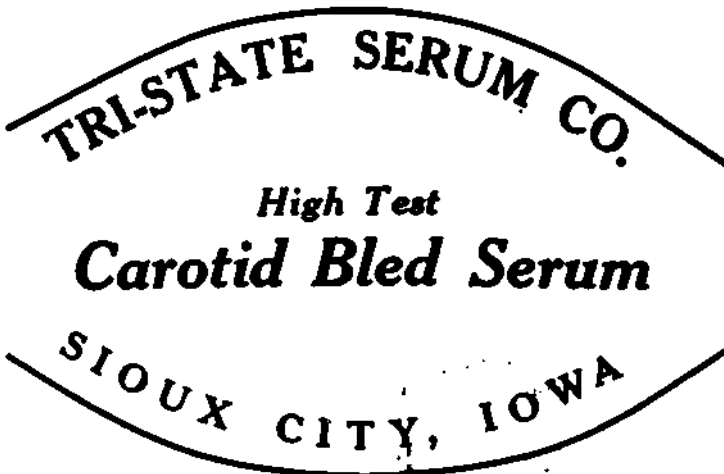
The information given below is up-to-date and has been furnished by the secretaries of the various associations listed. Secretaries are requested to supply us data regarding their associations after each meeting; otherwise, the associations will naturally be dropped from the list. We ask secretaries to kindly co-operate with us in keeping before the members of their societies the date and place of the next meeting.

Name of Association	Date of Meeting	Place of Meeting	Secretary
Alabama Vet. Med. Assn.	Jan. 10, 1917.	Columbus, O.	C. A. Cary, Auburn, Ala.
Alumni Assn., Col. of Vet. Med., O. R. U.	June 10, 1916.	New York	W. E. Hobbs, O. R. U., Columbus, O.
Alumni Assn., N. Y. State Vet. College		Washington, D. C.	P. K. Nichols, Fort Richmond, N. Y.
Alumni Assn., U. S. Col. Vet. Surg.			Chas. M. Mansfield, 1344 Heron St., Washington, D. C.
American Vet. Med. Assn.	Aug. 21, 25.	Detroit, Mich.	C. M. Haring, Berkeley, Cal.
Arkansas Vet. Med. Assn.	January, 1917.	Little Rock	R. M. Govt., Little Rock.
B. A. I. Vet. Assn. of Bo. Omaha.	2nd Monday of month.	Bo. Omaha, Neb.	J. W. Gilman, c/o B. A. I. Bo. Omaha
California State Vet. Med. Assn.	2nd Wed. in Mch., June, Sept., Dec.	Univ. Farm, Davis, Cal.	F. M. Hayes, Univ. of Cal., Berkeley.
Central Canada Vet. Assn.	1st week in June and Nov.	Ottawa, Ont.	H. D. Sparta, 405 Wellington St., Ottawa.
Central N. Y. Vet. Med. Assn.	2nd Tues. of month.	Syracuse, N. Y.	E. H. Tombs, 2244 N. 15th, Philadelphia.
Chicago Vet. Society	1st Tues. of month.	Chicago, Ill.	W. E. Switzer, Oswego, N. Y.
Colorado Vet. Med. Assn.	June 1.	St. Collins, Colo.	Glenn Brown, 3036 Lowell Ave., Chicago.
Connecticut Vet. Med. Assn.	January 17.	Greenwich, Conn.	I. E. Newman, Ft. Collins, Colo.
Genesee Valley Vet. Med. Assn.	Aug. 23, 24, 1916.	Rochester, N. Y.	A. T. Gilyard, Waterbury, Conn.
Georgia State Vet. Assn.	Monthly	Savannah, Ga.	O. B. Walker, 154 Andrew, Rochester.
Hudson Co. Vet. Practitioners' Club		Jersey City, N. J.	Frederic F. Babson, Capital Bldg., Albany.
Idaho Assn. of Vet. Graduates	Feb. 4, 1917.	Boise, Idaho.	H. D. Blair, 723 Montgomery St., New York City, N. Y.
Illinois State Vet. Med. Assn.	July 19, 1916.	Peoria, Ill.	C. V. Williams, Blackfoot, Idaho.
Illmo Vet. Med. Assn.		St. Louis, Ill.	L. A. McMillan, 1527 Washburn Ave., Chicago.
Indiana Vet. Med. Assn.		Indianapolis, Ind.	A. F. Nelson, Indianapolis, Ind.
Iowa Vet. Med. Assn.	Jan. 2, 4, 1917.	Ames and Des Moines.	H. B. Truman, Rockwell City, Ia.
Kansas Vet. Med. Assn.	April	Wichita, Kan.	J. H. Burt, Manhattan, Kan.
Kentucky Vet. Med. Assn.	2nd Tuesday of month.	Louisville, Ky.	Robt. Graham, Lexington, Ky.
Keystone Vet. Med. Assn.	2nd Wed. of month.	Philadelphia	L. B. Davis, 657 B. Girard, Philadelphia.
Los Angeles Vet. Med. Assn.	July 12.	Los Angeles, Cal.	J. A. Dell, 12th & Pacific, Los Angeles.
Maine Vet. Med. Assn.	Feb. 15.	Rockwood, Me.	M. E. Madocks, Augusta, Me.
Manitoba Vet. Assn.	4th Wed. each month.	Windsor, Man.	W. Elliott, 175 James St., Windsor.
Massachusetts Vet. Assn.		Worcester in Sept.; Boston rest of year.	B. A. Cahill, Boston, Mass.
Michigan State Vet. Med. Assn.	1st Tues. & Wed. after 1st Mon. in February.	Lansing, Mich.	W. Austin Evans, Mt. Clemens, Mich.
Minnesota State V. M. Assn.	2nd Tues. & Wed. Jan. Feb. 10, 11, 1917.	St. Paul.	G. Ed. Leach, Waukegan, Ill.
Mississippi State Vet. Med. Assn.	July 7, 1916.	Clarksdale, Miss.	R. S. Norton, Greenville, Miss.
Mississippi Valley Vet. Med. Assn.	July 10, 11, 12.	Galesburg, Ill.	W. Lester Hollister, Avon, Ill.
Missouri Vet. Med. Assn.	Jan. 28, 29.	Omaha, Neb.	R. F. Bourne, 1226 E. 12th, Kansas City.
Montana Vet. Med. Assn.		Neosho, Mo.	C. D. Fales, 1224 E. 15th St., Kansas City.
NAFL Assn. B. A. I. Employees.	2nd Mon. in Aug., 1916.	New York City	A. D. Knowles, 302 G. 6th St., West Missoula, Mont.
Nebraska Vet. Med. Assn.	1st Tues. & Wed. in Dec.	Lincoln, Neb.	S. J. Walker, 185 N. W. Ave., Milwaukee.
New York State Vet. Med. Society	Aug. 1, 2, 4.	Ithaca, N. Y.	S. W. Alford, Lincoln, Neb. C. F. Fitch, Ithaca, N. Y.

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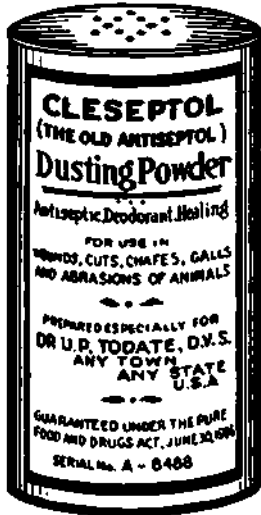
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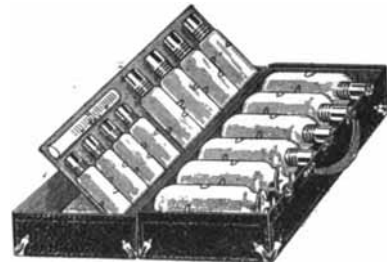
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Name of Association	Date of Meeting	Place of Meeting	Secretary
North Carolina Vet. Med. Assn.	June 21, 22, 1916.	Wrightsville Beach, N. C.	J. F. Spoon, Burlington, N. C.
North Dakota Vet. Assn.	July 18, 19, 20.	Fargo, N. D.	W. J. Mulroony, Havana, N. D.
Northeastern Indiana Vet. Assn.	Sept. 13.	C. R. Baumgartner, Arcata, Ind.	C. R. Baumgartner, Arcata, Ind.
Northwestern Ohio Vet. Med. Assn.	Feb. 18.	Toledo, O.	Paul E. Wood, Ottawa, Ohio.
Ohio State Vet. Med. Assn.	Jan. 11, 12, 1917.	O. S. U. Columbus, O.	F. A. Lambert, care O. S. U., Columbus.
Ohio Valley Vet. Med. Assn.	July 27, 1916.	Sblon, Ill.	G. J. Bohrens, Evansville, Ind.
Oklahoma Graduate Vet. Med. Assn.	July, 1916.	Oklahoma City	R. C. Smith, Enid.
Oklahoma Vet. Med. Assn.	March 7, 8.	Oklahoma City	S. H. Gillier, Norman, Okla.
Oregon Vet. Med. Society	June, 1916.	Probably Corvallis, Ore.	E. T. Sizms, Corvallis, Ore.
Pennsylvania State Vet. Med. Assn.		Pittsburgh, Pa.	E. H. Yunker, 2344 N. 18th, Philadelphia.
Rhode Island Vet. Med. Assn.	2nd Tues. Jan.	St. Wayne, Ind.	U. S. Richards, Woonsocket, R. I.
Schuylkill Valley Vet. Med. Assn.	June 14, 1916.	Reading, Pa.	C. B. Fetzler, Reading, Pa.
South Dakota Vet. Med. Assn.	July 11, 1916.	Lake Madison.	S. W. Allen, Watertown, S. D.
Southern Aux. Cal. State Vet. Med. Assn.	June 21, 22.	Los Angeles.	J. A. Dail, 16th & Pacific, Los Angeles.
Tenn. Vet. Med. Assn.	Nov. 8, 9, 1916.	Humboldt, Tenn.	F. W. Morgan, Chattanooga, Tenn.
Texas Vet. Med. Assn.		Not decided.	Allen A. Foster, Marshall, Tex.
Twin City Vet. Med. Society	Once a month.	St. Paul.	C. C. Palmer, St. Paul, Minn.
U. S. Live Stock Sanitary Assn.	Dec., 1916.	Chicago.	J. J. Ferguson, U. S. Yards, Chicago.
Utah Vet. Med. Assn.	Feb. 6.	Lozan, Utah.	B. P. Coburn, Brighton City, Utah.
Veterinary Assn. of Saskatchewan.		Regina, Sask.	B. G. Chasnar, Hankley, Sask.
Vet. Med. Assn. of New Jersey		Trenton, N. J.	E. L. Lobien, New Brunswick, N. J.
Vet. Med. Assn. of Geo. Washington Univ.	1st Wed. ea. mo. except July, Aug., Sept.	New York City.	E. S. MacKellar, 351 W. 11th St., N. Y.
	1st Sat. each month.	Washington, D. C.	C. W. Rippon, 2115 14th St., N. W., Washington, D. C.
		Pullman, Wash.	Claude Holden.
Vet. Med. Society Wash. State College.	1st and 2nd Tues. ea. mo. July 13, 14.	Ocean View, Va.	W. G. Chisman, Blacksburg, Va.
Virginia State Vet. Med. Assn.	July 13, 14.	Seattle, Wash.	Carl Owsen, Edinboro, Wash.
Washington Vet. Med. Assn.	June, 1916.	Buffalo, N. Y.	F. P. Fahr, 25 Prospect Ave., Buffalo.
Western N. Y. Vet. Med. Assn.	Last week in June.	Manominee, Wis.	W. A. Wolcott, Madison, Wis.
Wisconsin Vet. Med. Assn.	July 25, 27.		
York Co. Vet. Med. Society	1st Tues. after 1st Mon. of each month.	York, Pa.	E. S. Baughlar, 325 Newberry, York, Pa.

May 20, with entries of 1,500 dogs. The bench show was for the benefit of the Blue Cross Fund, for the care of the horses of all nations injured in the war.

Burt Arnold, of Kalamazoo, Mich., was arrested recently charged with performing veterinary surgery without a license. When arraigned before the judge, Arnold pleaded that he confined his activities to goats.

A prize cow belonging to Charles Dawson, Warren, Ill., died from eating too much hardware. An autopsy revealed a coil of wire eight inches long, several large nails and a piece of tin.

Dr. and Mrs. L. O. Henrich, of Vacaville, Cal., announced an addition to the coming generation of veterinarians on May 13 in the person of Jean Leo Henrich, 9¼ lbs.

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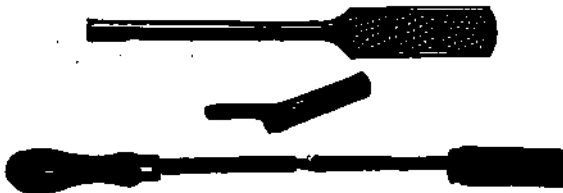
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The county agent has vaccinated 2,000 hogs in Desha county, Arkansas, since January 1. During 1915 only 442 hogs were vaccinated.

The Nebraska state veterinarian's office reports that from May 1, 1915, to May 1, 1916, 11,573 cattle in the state were tested for tuberculosis. Of this number, 839 were reactors and 808 of these have been killed. The proportion of reactors was 7¼ per cent.

Compulsory tick eradication in Louisiana is contemplated in a measure prepared for introduction in the senate. The Mississippi legislature recently passed a law compelling all counties to take steps for tick eradication before January 1, 1917.

Members of the faculty and the graduates of the St. Joseph Veterinary College were the guests of honor, April 11, at the luncheon of the Rotary Club. Dr. Burton R. Rogers made a short address. He said that the college has students from as far away as Pennsylvania, Texas, Wyoming and Minnesota, and he suggested that each member of the Rotary Club might form a friendship with one of the students and "father" the young men while they were in St. Joseph, or become their "big brothers." The issue of the *Rotary Bulletin* was given over to work of the college, its teachers and students.

The New York Women's League for Animals instituted May 20 as national horse day, and attempts were made to tag all automobiles for the benefit of the fund for maintaining free drinking fountains for horses during the summer. Each tag cost 25 cents.

The elimination of foot-and-mouth disease has given an impetus to the purchase of cattle by Iowa farmers according to the state board of agriculture. During the first three months of 1916, Iowa buyers purchased 432 carloads of stock cattle as against 259 carloads for the corresponding period of 1915, and sales for the month of March, this year, were 203 carloads as against 71 carloads last year, according to Kansas City market reports. Buying at Omaha, Sioux City, Chicago and other points has been in the same liberal proportion.

A feature of the annual work horse parade at Boston, May 30, was the presence of horses owned by the United States government, sent from the Charleston navy yard and the Naval Hospital in Chelsea.

Dr. Nathan Feldman, of Philadelphia, has established himself in practice at Greenwood, S. C. He recently spent some time on the Mexican border.

IMPORTANT ANNOUNCEMENT**In Preparation****Ready Sometime in August****A New Revised Edition of****HUTYRA and MAREK'S****Special Pathology and Therapeutics**

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In order to treat all those who purchased the old edition fairly, I have decided to make the following proposition: Send me \$1.00 on account, any time between now and the 20th of July, and \$6.00 as well as your old set of Hutyra & Marek, as soon as I notify you that the new edition is ready for delivery. I will then send you the new set in exchange. In other words, you will get the new edition for \$7.00 and your old set. It does not matter in what condition the latter is in. Your old set has to be sent to me prepaid, and I will send you the new set in exchange, all charges prepaid, to wherever you advise me to.

My intention is to issue as many **extra** new sets as there are old ones to be exchanged, so that I will not be out much; hence I request this advance arrangement, as I will have to know exactly how many additional ones to print before the new edition goes to press. After July 20th, old sets will not be returnable.

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The present edition of this work has been entirely rewritten, a large amount of new material added, and every endeavor has been made to bring the work up to the standard of the present day.

One portion of this work that differs materially from the German is that of therapeutics. In the practice of canine medicine, where administration of medicine is necessarily by force, concentration of the dose is very essential; the writer impresses strongly on the practitioner and student that the constant aim must be to administer all drugs in doses as small and compact as possible, for frequently the excitement caused by the repeated administration of large amounts of decoctions and infusions in nervous or highly bred animals does more harm than the original disease.

In particular, the chapters on Rabies and Tuberculosis have been entirely rewritten in view of the results of the investigations in these subjects during recent years. Diagnosis has been given the most prominent place, and the authors have paid particular attention to the establishment of the relations of symptoms to a disease in a way that makes possible accurate knowledge and a clear definition of the disease.

In the field of serum therapy, particular care has been given to the work of recent investigators to discover a prophylactic serum for canine distemper that would lessen the great mortality among the very valuable animals that are now being bred in such great numbers. The author has based the deductions he now presents not only on these investigations but also on his own observation and research. The subject of serum therapy is carefully and thoroughly analyzed.

Among other chapters in which important changes have been made are those on Infectious Hemorrhagic Gastro-enteritis, commonly called "Black Tongue," and on the internal parasites, both of which have been rewritten, the latter with special reference to what in America is termed the "Hookworm."

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- Chapter 3. Fever, Pyrexia.
- Chapter 4. Gangrene, Oedema—Thrombosis and Bolism—Atrophy.
- Chapter 5. Bacteria.
- Chapter 6. Immunity—Various Types, Ehrlich's and Metchnikoff's Theories, Serums and Toxins in Diagnosis, Serum Therapy, Opsonins.
- Chapter 7. Surgical Shock.
- Chapter 8. Hemorrhage, Hæmostasis.
- Chapter 9. Restraint.
- Chapter 10. Anæsthesia and Anæsthetics, Local Anæsthesia and Local Anæsthetics.
- Chapter 11. Asepsis and Antiseptics—The Routine of Wound Treatment—Practical Asepsis—Recommendations for an Aseptic Operation.

PART II (is translation proper.)

- Chapter 12. Traumatism—Wounds by Sharp Instruments—Wounds by Penetrating Instruments—Wounds by Tearing—Wounds by Teeth Bite—Poisoned Wounds—Virulent Wounds—Contused Wounds—Gunshot Wounds—Contusions—Burns, Chills and Frostbites—Traumatic Hemorrhage and Anæmia—Traumatic Emphysema, Cicatrices of the Skin—Cutaneous Scars, Keloids, Foreign Bodies.
- Chapter 13. Abscess, Hot or Acute Abscess, Cold Abscess, Ulcers, Fistula, Erysipelas—Surgical Septicæmia—Malignant Oedema—Gangrenous Septicæmia—Purulent Infection—Pyæmia, Tetanus, Actinomycosis, botryomycosis.
- Chapter 14. Melanosis.
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Dr. M. E. Brothers was arrested at Coatsburg, Ill., May 10, by Missouri officials, charged with taking mortgaged property out of the state without the consent of the mortgagee. He had purchased an automobile at Hannibal, Mo., mortgaged it there, and then brought it to Illinois and mortgaged it again. Dr. Brothers is the young veterinarian who eloped with the daughter of a Golden, Ill., banker and who was given a year by his father-in-law in which to make good before he would be permitted to claim his bride.

A farmer near Grand Rapids, Wis., has a calf born without a tail, and from it he expects to be able to develop a strain of tailless cows, the advantage of such cows being that they can't slap their tails in the faces of those who milk them.

Dr. J. B. Hiers, a veterinarian of Savannah, Ga., while being confined in the county jail awaiting trial for murder, gained seventy pounds during his four months of jail life.

A new law in Oklahoma, effective May 20, provides that persons who administer vaccine for hog cholera in that state must have a state license to practice this form of veterinary medicine.

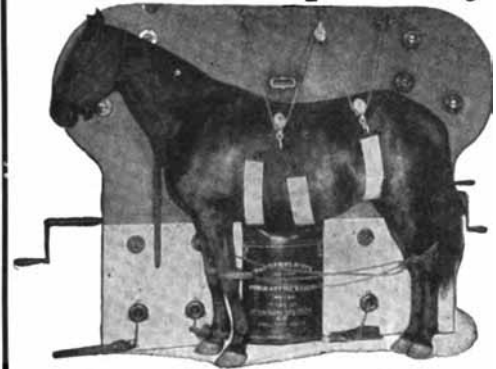
Dr. M. L. Crans, of Kansas City, Mo., is now with the New State Serum Co., of Oklahoma City, Okla.

Tests to demonstrate the effects of arsenic poisoning on dogs are being made at Atlanta, Ga., by Dr. Edgar Everhart and Dr. W. Jay Bell. The theory of Dr. Bell is that dogs thrive on the poison, while Dr. Everhart expects to prove that it is fatal.

Congressman McArthur of Oregon is preparing a bill providing that all cattle carried in interstate commerce, except those intended for immediate slaughter, must be accompanied by a certificate from the Bureau of Animal Industry showing that they have successfully passed the tuberculin test within twelve months prior to shipment. Congressman McArthur believes that interstate shipments should be under the domain of the Bureau of Animal Industry and that health certificates from other sources should not be recognized.

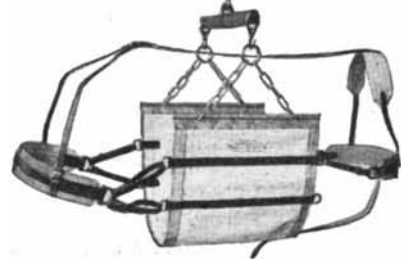
Dr. C. C. Reidel of Elkader, Ia., had a narrow escape when his automobile turned over, May 6, and pinned the doctor under the machine with the back of the seat resting on his head. The driver of another automobile happened along and released the doctor, who sustained no injuries as a result of the accident.

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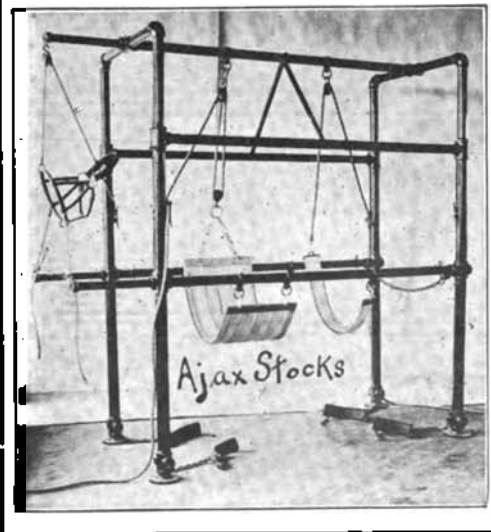
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Dr. W. B. Henneburger, federal stock inspector, and State Veterinarian Lytle are working to clean up sheep scabies in Grant and Malheur counties, Oregon. After having spent four months inspecting sheep in eastern Oregon, Dr. Henneburger says that the flocks of that section are almost free from scabies.

A. E. Joseph, 3514 Rokeby street, Chicago, a veterinarian, quarreled with his wife on May 29, after which he decided to become a bandit. He held up a man and took 30 cents, but was immediately arrested. At the police station, the victim recognized Joseph as an old friend and refused to prosecute. Joseph returned the 30 cents and has again resumed veterinary practice.

Thirty directors of the Illinois State Live Stock association met at Peoria, Ill., June 2, and perfected plans for benefiting the live-stock interests of the state. Railroads are to be urged to suspend their practice of charging full fare for attendants accompanying shipments of breeding stock in less than carload lots. They will also be asked to reduce freight charges on pure bred animals. It is expected that such a change would in-

duce small farmers and breeders to buy these animals.

More than 5,000 stray dogs have been captured and taken to the pound in New York City since April 10. The number of persons bitten by dogs is said to have decreased about 50 per cent.

Dr. J. A. Anderson of Lake Park, Minn., had both legs fractured while working on a horse May 6, when the casting harness broke, releasing the hind legs of the horse.

Dr. Charles T. Smith of Chicago has bought out the practice of Dr. C. F. McKinney of Brocton, Ill. Dr. McKinney has located at Vermilion, Ill.

Dr. Wm. P. Bossenberger of Williams, Iowa, has obtained a patent on sleigh runners for buggies. The runners are said to absorb all shocks of traveling over uneven ground and keep a buggy from turning over when passing through deep snow.

A new milk ordinance enacted in St. Joseph, Mo., requires that all cattle be given the tuberculin test and that any registered veter-

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inarian may make the test and report his findings. Dr. D. F. Luckey, state veterinarian, has made the following list of accredited examiners:—Dr. F. M. Cahill, Dr. S. H. Adams, Dr. Fred W. Holkenbrinck, Dr. A. H. Holkenbrinck, Dr. B. P. Rainey, Dr. H. W. Schirmer, all of St. Joseph; Dr. D. W. Criswell of Savannah; Dr. C. N. Scott of Mound City; and Dr. F. W. Rutherford of Maysville.

Suit to enjoin the state board of live stock commissioners from disposing of slaughtered cattle detained by them was filed May 10, in the Circuit Court at Chicago by the National Live Stock Commission Co. It was alleged the board has made improper charges for inspecting cattle suspected of being diseased and which are later found fit for food. These charges, the bill alleges, include such items as taxicab hire and meals for clerks, while in one instance, it is said, a charge of \$3 for a hat was made.

The Burgess Stock Company of Wenona, Ill., brought suit in the circuit court at Bloomington against the Percheron Society of America, because the Society refused to register a filly the sire and dam of which were recorded. It was said the refusal was due to things that Robert Burgess, president of

the stock company, is alleged to have done in the past.

Dr. J. W. Oltmanns, a graduate of the Chicago Veterinary College, has opened a veterinary hospital at Watseka, Ill.

By an order effective July 1, seven Texas counties and a portion of another one are released from Federal quarantine for cattle scabies. The fight against this disease commenced in 1905, when 1,269,884 square miles in Texas were quarantined. After July 1, only 3,817 square miles of this area will remain in quarantine.

The proposed cattle tick quarantine in Travis County, Texas, was defeated at an election held June 3 by a majority of five to one.

Dr. Dyson, state veterinarian, addressed the meeting of the Illinois Valley Advanced Registry Testing Association at Ottawa, Ill., June 3, explaining the methods used in eradicating tuberculosis among cattle.

The following technic is reported to have been used for extracting an elephant's tooth in Mexico City. Cocain was applied to the tooth, a hole bored through it and an iron

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bar inserted. A rope was twisted around the bar and four horses attached

Two calf buyers were arrested at Capron, Ill., by state inspectors. They pleaded guilty to charges of buying immature veal and paid fines of \$25 and costs each.

By a Federal order of June 5, the foot-and-mouth disease quarantine and all restrictions were removed from Christian County, Ill. The United States is now entirely free from quarantine against this disease.

Dr. W. A. Moeller of Pocahontas, Iowa, mourns the loss of his father, W. Moeller, one of the pioneers of Calhoun County, Ia., who died at the age of 85 at Somers, Iowa, June 6. Mr. Moeller came to America from Germany in 1846 and located in Iowa. He served throughout the entire civil war and was with Sherman in his march to the sea. The deceased and his wife celebrated their golden wedding last November. They had a family of twelve children, eleven of whom are still living.

A number of dipping vats installed for tick eradication near Decatur, Alabama, were recently blown up by dynamite. The farmers in that vicinity are strenuously opposed to tick eradication, and several of them have been sent to jail for refusing to dip their cattle.

Dr. J. H. Creamer of Portland, Ore., has been appointed member of the Oregon state veterinary medical examining board to succeed Dr. Sam B. Foster, who resigned to become associated with the U. S. Bureau of Animal Industry.

Dr. William J. Hennessey of Worcester, Massachusetts, exhibited his trained horse, Miss Primrose, at the June carnival at Worcester, June 10, and proved himself to be a trainer of unusual skill and perseverance. Dr. Hennessey acquired the horse when she was seven years old, the owner disposing of her because she was unmanageable. She had few good habits and many bad ones which horsemen considered as being too well settled at her age to permit of eradication. By patience and a thorough knowledge of horsemanship, however, Dr. Hennessey has accomplished wonders with the animal. He has taught her to canter either right or left lead, to change lead with facility, also to canter falsely on both leads, as well as to do a standstill canter. She will do a spanish walk, hesitation trot, tango and turkey trot in time to music. She has been taught to smile and bow to an audience, shake hands either right or left, lift any one of her four feet at command,

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mount a pedestal, kneel either single or double poise, sit up on her hind legs, lie down, play dead horse, act as a vicious horse, kiss her master, and a number of other tricks. Dr. Hennessey has trained this horse without the use of a whip and without assistants, all of the animal's many accomplishments being due to the doctor's own patience, kindness and horsemanship.

Dr. Mark Francis of the veterinary department of the A. & M. College; Dr. L. J. Allen of the Bureau of Animal Industry; Dr. W. A. Wallace, Fort Worth; and Prof. J. W. Ridgeway of the dairy department of the A. & M. College, were among the speakers at the tick eradication conference held at Houston, Texas, June 2. The financial loss due to ticks were said to average more than \$250,000 annually for each county.

Dr. W. L. Hiatt, field director of the Bureau of Animal Industry, commenced his summer "drive" against the cattle tick in Oklahoma early in June. Circulars and posters were sent to all the towns in the affected parts of the state at the rate of two thousand a day. "Eradication of the tick is essential to the development of a sound agricultural system in the south," says Dr. Hiatt.



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AUGUST, 1916

No. 8

Poisonous Plants Affecting Sheep

By E. T. BAKER, Moscow, Idaho

EVERY experienced person is familiar with the losses incurred among sheep from eating poisonous plants. Sometimes only a few are poisoned and die, while in other cases whole bands of several thousand have been wiped out in a few hours to a couple of days.

It is a well known fact that most of the losses occur in the early spring when the sheep are hungry for green stuff, or after shipment when the animals are so nearly starved they will eat greedily any plant they chance to come upon.

The two most efficient methods of prevention, therefore, are: First, keep off the range before the grass is abundant; and, second, keep the animals supplied with sufficient food.

In the early spring certain poisonous plants, such as death camas, begin to grow before the grass. The green, succulent shoots are eagerly nibbled and soon trouble ensues. If the animal's rumen is full, and it eats but a few shoots of this plant, usually no symptoms of poisoning follow. That is due to a lack of absorption or the very slow absorption of such minute quantities as to cause nothing more than a slight discomfort.

Old stockmen regard plant poisoning as preventable diseases. Their young herders often grow impatient to be off

for the range, but the older heads look wise and say nothing, and remain in winter quarters. When first starting out in the spring, the "old man" will ride ahead and carefully peer over the grazing ground on the lookout for "pizen."

As Glover of Colorado has well said, "Throughout the vegetable kingdom, from bacteria to the mighty oak, we find species of plants poisonous under certain conditions, but few of them poisonous under all conditions." This is further illustrated by the following statements:

1. Some plants are poisonous only at certain stages of growth; for example, the lupine is poisonous at the time of going to seed; larkspur loses its toxic properties at flowering time; death camas is very deadly in the early spring, but later dries up.

2. Unusual conditions and ecological factors may affect the quantity of poison in plants. The wilted leaves of the wild cherry or choke cherry are poisonous.

3. Poison is found in different parts of the plant, such as in the roots of wild parsnips, the seeds of lupine, the leaves of the wild or choke cherry, and the entire plant of death camas and aconite.

4. Variations according to season and climate. This depends on cultivation, location or season.

5. Some animals are more susceptible to poison than others. Three sheep of the same age, size and degree of health may eat a few leaves of death camas. One may become violently sick and die in a couple of hours; the second may show signs of slight discomfort and soon recover, and the third one may exhibit no ill effects whatever.

Loss from plants may be due to two causes:

1. The actual toxic material contained in the plant itself, such as in the death camas, or

2. The mechanical irritation arising from the sharp points or awns of the plant, such as foxtail or bearded barley.

Lambs succumb in either case more quickly than adult sheep, due to the absorbing powers of the abomasum, or fourth stomach, and the greater danger from inflammation of the bowels.

Emergency Treatment

Every sheep man should be advised to have in his medicine chest one hundred or more powders consisting of ten grains each of potassium permanganate and aluminum sulphate. Several long neck pint bottles should be included, and when any sheep gets poisoned, fill the bottle with water and pour the powder into it; shake well, and give very slowly. Do not set the animal up on its rump to drench it; to do so is to insure traumatic pneumonia, and death. This dose should be repeated in twenty minutes.

Tannic acid in sixty-grain powders should also be carried along, as this is an antidote for many vegetable poisons.

Laudanum, in teaspoonful doses, may be given to quiet the animal and relieve spasms, but treatment at the best is a poor substitute for prevention.

Such measures as slashing the ears and cutting off the tail to bleed the animal, of course, can do no good and are even harmful. There are times when these procedures are useful, but not often in poisons. Pouring melted lard and other concoctions into the animals usually does more harm than good. This

has a tendency to dilute the poison and render it easier of absorption.

Morphin, glonoin, H-M-C and atropin all may be given hypodermically by the veterinarian.

But in all cases of plant poisoning, remember to have on hand the potassium permanganate and aluminum sulphate, the tannic acid, and opium in some form as a hypnotic. Stimulants are often valuable, but when the victim is so far gone as to be unable to swallow, little hope can be entertained for its recovery.

In all cases of vegetable poisoning, the usual treatment given by sheepmen is to administer a large quantity of stimulant, such as several ounces of alcohol or whiskey. In a short time the animal becomes sleepy, lies still for several hours, apparently dead, and then, if recovery takes place, gets up, shakes itself, and trots off, rather weakly, to be sure, but otherwise as if nothing had happened. In many cases, where the exact cause of the poisoning is not known, this treatment may be given with as good results as any.

1. Death Camas

Botanical name—*Zygadenus venenosus*.

Common names—*Wild onion; lobelia; poison camas, and poison sego to distinguish it from the blue or edible camas.*

The leaves are lance-shaped, with a simple stem, and bulb-like root, greatly resembling a tough onion. The flowers are greenish-yellow in color. Its toxic principle is an unknown alkaloid.

It is found in all kinds of locations, such as valleys, mountain sides and timber lands. Its habitat seems to be South Dakota, Montana, Idaho, Washington, and parts of Utah, Oregon, Wyoming and California.

One must see this plant growing in its native haunts to get a vivid mind-picture of it.

It has caused the loss of thousands of sheep. Instances have been known where over two thousand have died in one day from the effects of this poison!



Original water color by N. Brenizer

ALLEN BALTMORE

PURPLE LARKSPUR (*Delphinium bicolor*)

"Permission W. C. Ropes 'Western Grassing Grounds and Forest Kings'"

Symptoms: These greatly resemble strychnin-poisoning in general. The animal becomes very restless from the severe pain. Trembling and frothing at the mouth are next seen. Death usually takes place in one to three hours, and from one-half to two-thirds of those exhibiting symptoms die.

Treatment: Give a drench of ten grains each of potassium permanganate and aluminum sulphate dissolved in a pint of cold water, or water with the chill taken off it. This dose should be mixed up just before using, as it soon loses its strength.

2. Loco

Botanical name—*Astragalus molissimus* [purple loco]; and *Aragallus lamberti* [white loco].

Common names—*Rattle weed; loco.*

It may be said that when the loco grows in large patches it resembles a field of alfalfa. It is a stemless herb, with numerous leaves, the whole plant being about a foot high.

Its habitat is in the Rocky Mountain region, extending from Montana south to the Mexican line.

Horses are its commonest victims, but occasionally a bunch of sheep become "locoed" to the profane disgust of the owner.

Symptoms: Are characteristic and are not seen from eating any other weed. The animal steps high and seems to lose control of its legs. It develops an insatiate desire for the weed. Other animals imitate the victim out of curiosity and also become victims of the weed.

Treatment: This is largely preventive. When an animal is seen eating loco with apparent relish, remove it from the band at once. If worth saving it may be given teaspoonful doses of Fowler's solution of arsenic once daily.

Do not turn the animals out on pasture when they are very hungry or in the early spring.

3. Larkspur

Botanical name—*Delphinium.*

This does not cause so much loss among sheep as among cattle. There are

many varieties, all more or less poisonous. The tall larkspur grows to a height of nearly four feet, with very smooth leaves and blue flowers. Purple larkspur grows nearly a foot high, bearing very beautiful purple flowers.

Its habitat is in the western range country, but it is not thickly distributed.

Symptoms: The animal walks with a stiff, trembling gait. Frothing at the mouth is noticed, and the victim makes a start for the nearest watering place, but often dies before reaching it. The fact that many animals have been found dead around a water hole has set up the mistaken cry that the water was poisoned.

Treatment: Largely preventive. When the animal is found poisoned, place its head higher than the body. Carefully give the potassium permanganate and aluminum sulphate drench. One-twentieth of a grain of atropin may be given hypodermically. For lambs, reduce this dosage accordingly.

4. Lupine

Botanical name—*Lupinus.*

Common names—*Wild pea; wild bean; blue bean.*

There are several dozen varieties of lupine, all legumes or members of the clover family. None seem to be poisonous until reaching maturity.

The most common lupines are rather tall, with branching forms. The leaves are green above and silver-gray beneath. The flowers vary from blue to white. Its habitat is pretty well distributed over the United States, but it assumes a more poisonous form out in the western range sections.

Symptoms: The sheep becomes excited; walks in a circle, and butts its head against any intervening obstruction. Paralysis then comes on, and death ends the struggle within a few hours to several days. The general symptoms resemble strychnin poisoning greatly.

Treatment: The potassium permanganate and aluminum sulphate drench may be given. In cases of convulsions, laudanum in teaspoonful doses, or chloral

hydrate in two dram dosage, or one-quarter grain morphin hypodermically, may be administered.

This is not a very common ailment among sheep, except in small localities. In Germany it often assumes the gravity of an enzootic under the name of "lupinosis."

5. Aconite

Botanical name—*Aconitum*.

Common names—*Monkshood; wolfsbane*.

This plant greatly resembles larkspur in that it has a blue flower, but this is "hood shaped." Much confusion exists between this plant and larkspur, and the chances are that owing to its pungent taste aconite does very little actual damage. Several species of aconite occur in the United States, the commonest being the *Aconitum Columbianum*; it grows in very high altitudes, up to ten thousand feet, and occasionally a band of sheep, very hungry for green stuff, may eat enough to cause serious results.

Symptoms: Muscular weakness, with labored breathing, and a very weak, wiry pulse. Bloating, frothing at the mouth, and, as death draws near, the eye is greatly dilated.

Treatment: One dram (sixty grains) tannic acid dissolved in an ounce of glycerin and a pint of water is the chemical antidote; atropin given hypodermically in one-tenth grain dosage is the physiological antidote.

6. Water Hemlock

Botanical name—*Cicuta occidentalis*.

Common names—*Cowbane; sometimes called wild parsnip, but differing greatly from the real wild parsnip*.

It grows from three to six feet high. Its stem is hollow, green and smooth. The roots are bunched together, and are spindle-shaped, with cross partitions in them. The real wild parsnip has only one thick, fleshy root, which is an easy way to tell the two apart.

The flowers are a dull greenish-white. The plant grows along banks of rivers the marshes, and is pretty well distributed over the West.

It is one of the most deadly of poisonous plants, the toxic matter being found in the root, stem and leaves.

Symptoms: Great abdominal pain, which grows more intense in a few minutes, is the first symptom noticed. Sweating, frothing at the mouth, convulsions, and within half an hour to several hours death takes place in terrible agony.

Treatment: Relief in the great majority of cases is absolutely hopeless. Raw linseed oil, lard, raw eggs, or any agent to soothe the irritated mucous membranes may be given. The potassium permanganate and aluminum sulphate drench may also be administered. Stimulants, such as spirits of camphor, whiskey, ether, aromatic spirit of ammonia or brandy, are indicated.

7. Choke Cherry

Botanical name—*Prunus demissa*.

Common names—*Choke cherry; choke berry*.

This is a shrub with glistening green leaves, not ordinarily harmful, except when famished sheep are driven through thickets of it. It is found usually in gulches. The poison contained in the leaves is hydrocyanic or prussic acid.

Symptoms: The first symptom noticed after passing through one of these cherry thickets is extreme giddiness; labored breathing, with spasmodic contractions of the bowels and bladder. Spasms continue until death ends the struggle. The attack is speedily fatal if the animals eat of these leaves when their stomachs are empty.

Treatment: Largely preventive; the wise sheep man does not allow his sheep access to the leaves while they are very hungry.

Throwing cold water on the head, with inhalations of ammonia, and the hypodermic injection of one-tenth or one-twentieth grain of atropin is about all that can be done. Even this must be done immediately, and therefore by the herder, to be of any avail.

8. Laurel

Botanical name—*Kalmia augustifolia; kalmia latifolia*.

Common names—*Laurel; sheep laurel; lambkill, and, in the southern states, ivy.*

It is a common plant in the eastern part of our country, growing in the woods in great profusion. It is a shrub with a pink flower. It is eaten only when the animals are famished for food or green forage.

Symptoms: Frothing at the mouth; labored breathing; loss of sight; paralysis; coma and death.

Treatment: The potassium permanganate and aluminum sulphate drench may be given at once, and one-twentieth of a grain of atropin hypodermically. Usually the animal is beyond recall when discovered.

9. Veratrum

Botanical name—*Veratrum viride or speciosum.*

Common name—*Hellebore, Indian poke root.*

A stout, coarse plant growing about three feet tall. The leaves are broad, with greenish-white flowers. It is found in moist land. Very little attention need be paid this plant, as sheep will not touch it; a lamb, though, may nibble at it out of mere curiosity, and later regret it.

Symptoms: Frothing at the mouth; diarrhea; labored breathing; bloat; great abdominal pain, and death within a short time.

Treatment: One dram (sixty grains) of tannic acid dissolved in an ounce of glycerin and a pint of cold water may be given to form an insoluble precipitate, or raw linseed oil, lard, or raw eggs to soothe the mucous membrane.

10. Ergot

Botanical name—*Claviceps purpurea.*

Common name—*Smut.*

Ergot is a black parasitic growth found on various grasses, being very prevalent on both wild and tame rye. The dust-like, powdery pod is familiar to all.

Its greatest danger is to pregnant ewes, a very small quantity being capable of producing abortion. Sometimes it causes serious losses to a band of sheep by being thickly distributed through the hay.

Symptoms: The animal exhibits symptoms of painful swallowing, gulping as though it were choked. The pulse is slow, breathing shallow, and in gangrenous cases the ears become swollen and purple. Paralysis comes on gradually, death taking place quietly, as though the animal were tired of life.

Treatment: Immediate change of food. One dram of tannic acid (sixty grains) dissolved in a pint of water, to which is added a teaspoonful sweet spirit of nitre. The latter will neutralize the action of the poison in the blood to some extent, while the tannic acid renders the ergot in the stomach inert. Cutting off the ears or tail is sometimes indicated. Painting the necrosed areas with balsam of Peru will help these to heal, in case of recovery.

11. Deadly Nightshade

Botanical name—*Solanum nigrum.*

Common name—*Deadly nightshade.*

A smooth, wide-branching weed, growing one or two feet high, with clusters of white flowers. The berries, which ripen along in the late summer, are black, almost round, and very juicy. It is common to all sections of the United States.

Symptoms: Giddiness; dilated pupils; great abdominal pain; convulsions, followed by paralysis and death.

Treatment: As this very rarely causes death in sheep, treatment is a secondary consideration. A teaspoonful of soda dissolved in a pint of water may be given, and stimulants, such as whiskey, sweet spirit of nitre or ether, are indicated.

12. Woody Aster

Botanical name—*Xylorrhiza Parryi* [Gray].

This plant, found in Wyoming, and growing on gumbo-clay soil, has killed many sheep in the past. It is infected with a fungus, and whether this contains the toxic ingredients or the plant itself is poisonous, has not yet been determined.

It is a medium-sized plant, blossoming about the first of May, and grows less

poisonous with age, being entirely inactive when withered.

The poison is very fatal to sheep, from ninety to one hundred per cent of the affected animals dying in spite of all treatment.

Symptoms: From one to several hours after eating the plant, depending on the fullness of the first stomach, the animal begins to grow weak; labored breathing is noticed; then bloating, with frequent urinating. Later, a diarrhea sets in, the eyes become dilated, and the animal dies in from several hours to three or four days.

Treatment: No successful line of treatment has yet been worked out. Stimulants, such as one-half ounce aromatic spirits of ammonia in a cup of warm water; dram doses of oil of peppermint in a half-pint raw linseed oil; dram doses of laudanum in oil, have all been tried with varying success.

The best line of treatment is prevention, and avoiding aster patches when the sheep are hungry, especially in the early spring.

13. Sneez Weed

Botanical names—*Helenium montanum*; *H. autumnale*; *H. Hoopesii*, etc.

This belongs to the sunflower family, growing from one to three feet high. It has long, lance-shaped leaves, with bright yellow flowers.

It is a very bitter weed, and sheep will not touch it unless almost starved. Sometimes, however, a young animal will develop a taste for it.

Symptoms: Spasms; rapid pulse; labored breathing and extreme sensitiveness of the skin. There is sneezing and coughing, and death ends the clinical picture.

Treatment: If observed before convulsions take place, a pint of melted lard may be given. Removal from infected pastures is the only logical procedure. The weed is very abundant on old, worn-out ranges, and is mute testimony to over-grazing.

14. Rubber Weed

Botanical name—*Hymenoxys floribunda*.

Also known as "pingue," the Spanish name of the weed.

This is a small weed, bearing a yellow flower, and is found in the semi-arid ranges of southern Colorado and northern New Mexico. It does not contain any poisonous principle, so far as is known, but causes death by forming a rubber-like obstruction in the intestinal tract.

Symptoms: The animal appears drowsy, and loses its appetite. It lies down and refuses to get up. Death takes place in from one to several hours after the first symptoms are noted.

Treatment: As this is a very obscure disorder, treatment is still in the experimental stage. It has been found through practical experience that a pint of warm brine given every hour will do as much or more good than anything yet tried. This may have a tendency to dissolve the mass.

15. Strychnin

This is an accidental poisoning, the plant not growing in this country. The trouble usually follows attempts to poison noxious animals, and the sheep may get enough to kill them.

Symptoms: The signs of strychnin are too familiar to need particular mention. First is noticed a restlessness, labored breathing, rapid, wiry pulse, and the animal walks as though it were on stilts. The muscles twitch, the eyes become bloodshot, and there is frothing at the mouth. Convulsions set in and the animal dies with spasmodic twitching of the limbs.

Treatment: One dram (sixty grains) tannic acid dissolved in glycerin and water, an ounce of the former to a pint of the latter, followed by two drams chloral hydrate dissolved in a half-pint of water or given per rectum. Morphin in one-fourth grain doses may be given hypodermically. Raw eggs are excellent, while raw linseed oil or melted lard seems



Original water color by N. Bonzer

WOOLLY OR PURPLE LOCO (*Astragalus mollissimus*)

A. N. S. C. 111-112

"Permission Will C. Barnes 'Western Grazing Grounds and Forest Ranges'"

to assist in keeping the poison from being absorbed.

16. Cotton Seed Meal

Poison by this valuable food is usually seen where there is too heavy feeding of oil cake.

Symptoms: Bloody diarrhea and urine; cramps; bloat, with great abdominal pain.

Treatment: Immediate change of food. Lambs may be given an ounce of castor oil and several raw eggs.

17. Tobacco

Botanical name—Nicotiana.

Sometimes seen after the use of tobacco or nicotine dips.

Symptoms: Great abdominal pain; frothing at the mouth; diarrhea; bloat; convulsions, followed by paralysis, and death within an hour or so after the first symptoms are noticed.

Treatment: One dram (sixty grains) tannic acid dissolved in a pint of water, to which has been added an ounce of glycerin. Black coffee may also be given.

18. Digitalis

Foxglove.

Digitalis poisoning very rarely occurs in sheep, as the digitalis plant, commonly known as foxglove, is a cultivated drug plant.

The symptoms are variable and one must know the complete history of the case in order to make a definite diagnosis.

No cure or antidote is known, although the tannic acid drench may be given a trial.

19. Turpentine

In the western range sections sometimes when the sheep are almost famished and food is scarce they will eat enough shoots of young evergreen trees to cause turpentine poisoning.

Symptoms: Acute gastro-enteritis; colic; constipation, the pellets voided being covered with a bloody, slimy mucus. The urine becomes bloody and general weakness follows. The course is a gradual one, sometimes lasting from several days to a couple of weeks.

Treatment: Removal from the offending pasture. Tannic acid in dram doses, together with whole flaxseed jelly to soothe the irritated urinary membranes. Small doses of lead acetate (from five to ten grains) may be given daily.

20. Rape Seed

This causes inflammation of the bowels, bloody diarrhea, convulsions and death.

The treatment is wholly symptomatic, and when the malady has reached an advanced stage, treatment is hopeless.

21. Croton Oil

When administered to cure constipation, sometimes an overdose is given. Violent cramps with a watery dysentery follows. Raw eggs, containing teaspoonful doses of laudanum may be given, but death is the usual sequel.

22. Hemlock

Botanical name—Conium maculatum.

Poisoning by this is very rare, the acrid taste of the hemlock keeping the sheep from eating it, even though they be almost starved. The usual victims are lambs, and the end is death.

Symptoms: Convulsions, followed by complete paralysis.

Treatment: While almost always fatal, one may administer one dram tannic acid dissolved in an ounce of glycerin and a pint of water. Spirit of camphor in tablespoonful doses may be given as a stimulant.

23. Flax

Botanical name—Linum usitatissimum.

In sections where flax is extensively raised occasional cases of poisoning among sheep have been known.

Symptoms: Colic; diarrhea; convulsions and death.

Treatment: Give the tannic acid drench.

24. Horse Radish

Botanical name—Cochlearia armoracia.

Sometimes in the early spring, sheep eat too much of this common garden plant, and a violent colic and diarrhea takes place.

The treatment consists in giving a dram of tannic acid dissolved in a pint of water. Several raw eggs beaten up can be next given to soothe the irritated mucous membranes.

If the horseradish is old and strong the animal will not need to be blanketed to keep it warm, and if it should die the flesh will not need seasoning.

25. Toadstools

These are never eaten by sheep, but if a lamb nibbles at one, the symptoms following are almost maniacal in form. Not much can be done, but a teaspoonful tannic acid dissolved in a cup of water may be given with advantage in some cases.

26. Potato Tops

The symptoms greatly resemble foot-and-mouth disease. The tannic acid drench should be tried.

27. Poison Oak

Botanical name—*Rhus diversiloba*.

Common names—*Poison ivy; Poison sumac*.

There are a number of varieties in this group, and poisoning rarely occurs in sheep from any of them. In case it does, drenches of raw linseed oil in pint doses seem to do more good than anything else yet tried. The course of the ailment is a lingering one, sometimes lasting over a week.

28. Kafir Corn and Sorghum

Losses sometimes occur in sheep in the autumn from turning in fields from which kafir corn and sorghum have been harvested. The young stubble contains hydrocyanic (prussic) acid, or substances that may be changed into this acid when ingested by herbivora. It is very deadly to cattle and sheep. Hogs seem to be immune.

The only beneficial treatment known is to give a drench of the potassium permanganate and aluminum sulphate, twenty-grain doses of each, dissolved in a pint of water. However, as death often occurs within a very few minutes after the first symptoms of poisoning are shown, treatment is frequently impossi-

ble. As kafir and sorghum stubble is not uniformly poisonous it may be worth while to "try" it with only a few sheep, otherwise it is unsafe to turn a band onto such forage. The danger is greater in dry seasons than in normal seasons.

29. Foxtail

A number of grasses, such as foxtail, bearded barley or wheat, cheat, needlegrass and sandburrs all cause trouble to sheep by mechanical irritation. A violent gastro-enteritis is often induced by eating them. Sometimes a bunch of the spikes or awns lodge in the mouth under the tongue and the animal starves to death from inability to eat.

When once affected, absolutely no treatment is known that is successful if the irritation occurs in the stomach or bowels. A careful post mortem examination will reveal the cause, and an extensive repetition of the trouble can be avoided by changing pastures.

30. Ensilage

Cases have been known where a large number of sheep have been killed by feeding on mouldy silage, or silage that apparently was in good condition, but contained the fungus, "Penicillium."

The symptoms are the same as from mouldy feed of any kind: A violent colic, constipation, followed by fetid diarrhea, convulsions and death.

Treatment is very unsuccessful, since, when the animals begin to exhibit typical symptoms, fatal quantities of the toxic principles have already been absorbed.

Large doses of potassium permanganate—one dram or sixty grains dissolved in a pint of water, may be given. The triple sulphocarbolates, in sixty-grain doses, combined with a dram of tincture of ginger and an equal quantity of dioscorea, may also be tried.

If only camp remedies are at hand, give a teaspoonful of powdered ginger, and one-fourth teaspoonful each of salt and pepper dissolved in a pint of lukewarm water. Teaspoonful doses turpentine in raw linseed oil may be tried, but

(Continued on page 632)

Chinese Animal Hides, Skins and Bristles

By J. R. SHAND, M. D. C., Tientsin China.

Veterinarian with the United States Military Expedition to China.

THIS report is written at the request of Mr. Fred D. Fisher, American Consul General, Tientsin, China, and is intended for the express purpose of putting before the proper authorities in the United States the conditions to be contended with when hides and skins are imported into the United States from China.

As the writer has had no opportunity to visit the grazing grounds of the animals concerned in this report, he has obtained his information in Tientsin as best he could from "old timers," both foreign and Chinese, and from a naturalist who has traveled through the country referred to, and has every reason to believe that conditions exist as reported.

Where Hides Are Obtained

Hides are received at Tientsin from the following provinces: Mongolia, Southern Manchuria, Shansi, Shantung and Chihli. A glance at the map will immediately convey to the mind an appreciation of the vast extent of this part of China. Needless to say, it is seldom visited by the foreigners and veterinarians to my knowledge have never traveled through the district. It is, therefore, practically impossible to obtain any definite, dependable information concerning the ravages of contagious diseases among the animals. I have learned that anthrax, foot and mouth disease, rinderpest, mange and glanders are enzootic in the district, and the logical conclusion is that all these diseases exist sporadically at all times, and all shipments of hides must be considered infected, as will soon be seen.

Cow hides have two classifications, i. e., Mongolian and Shantung. The

former come from Mongolia, Manchuria and Northern Chihli, and are the small hides. These animals' live weight averages 700 pounds, and the hides are of inferior quality, being thin and woolly. The Shantung hides come from Shantung, Shansi and Southern Chihli. They are large, and of superior quality, being thick and short-haired. The average weight of these animals is 1,000 pounds.

Contagious Diseases

It must be borne in mind that in China a hide is never lost. It makes not the slightest difference to the Chinaman from what disease an animal has died—the hide is always obtained and sold.

Mongolian cattle roam the sparsely settled country in large herds, and are known to be attacked by rinderpest, anthrax and foot-and-mouth disease at frequent intervals. I am informed by the naturalist that in his travels through Mongolia, Shansi and Manchuria he has seen hundreds of dead animals. It was impossible for him to state from what disease these cattle had died, as they were all skinned and in a state of decomposition, but he saw hundreds of hides being carted to the larger towns for sale. The hides were all sun dried. Many of the carcasses were disposed of in the streams and rivers, disseminating the disease far and wide.

Rinderpest is apparently the disease which causes the greatest losses, prevailing at all times of the year. In the Japanese leased territory of Manchuria (the extreme southern end), the veterinary corps of the Japanese army reported during the year 1914, 128 cases of rinderpest, of which 30 died and 87

were destroyed. I venture to say that ten times the number of cases were never reported by the Chinese farmers. The Chinese consume the carcasses of cattle that have died of this disease without any injurious effects. Rinderpest being epizootic in so small a country as the Japanese leased territory of Manchuria, where veterinarians are stationed, one can readily imagine the conditions in a large country like Mongolia and Northern Manchuria, where veterinarians are never stationed.

Anthrax is a curse of the summer season, and attacks cattle horses and human beings being transmitted through the medium of a fly resembling the tsetse fly. These flies appear in the early summer by the millions, and I have it on excellent authority that whole herds of cattle and horses (Chinese ponies) have succumbed to anthrax, after being attacked by these flies. The Russian medical authorities have confirmed this diagnosis of anthrax. The Chinese do not eat these carcasses, since it would be fatal to do so.

Texas fever is another disease which is quite prevalent, but it is not responsible for any great losses, as the cattle are fairly immune because of the ticks which are ever present.

Foot-and-mouth disease is always present. The northern cattle are so hardy that they contract the disease and soon recover. About the only time they succumb is during the winter, when the snow covers the ground; they are then unable to paw away the snow to obtain sufficient food, and starve to death.

With the Shantung cattle we have conditions reversed. As stated before, these hides come from the provinces of Shantung, Shansi and Southern Chihli, and are the large hides of superior quality. These animals are used principally as beasts of burden. There are no herds of any size. The individual holdings are small, on account of the poverty of the owners, who are all

small farmers—a man having ten or a dozen working steers is considered "well off." On this account there is a natural quarantine established, as the cattle never come together. Notwithstanding this isolation, rinderpest, anthrax and foot-and-mouth disease are ever present in some parts of the country in a sporadic form. The farmer generally loses half of his cattle when they are attacked by these diseases, which would amount, on an average, to three or four head, but the disease cannot spread. In Tsingtau I saw 5,000 head of cattle collected from Shantung province, all fine, healthy looking animals. But, as stated before, and I desire to impress it on the reader's mind, no hides are lost. It makes no difference from what disease the animal died, its hide is worth money, and a few diseased hides in a shipment would naturally infect the whole shipment. As in Mongolia and Manchuria, veterinarians are as scarce in these southern provinces as the proverbial "hen's teeth," and there is no way of getting a line on contagious diseases. The winters in the southern provinces are not severe, zero and snow are seldom seen, and it is not, therefore, necessary for the cattle to be as hardy as those in the north, where snow three feet deep and temperature 40 degrees below zero are the rule, and natural shelters only, exist.

Horse (Chinese Pony) Hides

The Chinese horse is a pony, averaging thirteen hands, of blocky build, very hardy and with the instinct of the devil. He is raised in Manchuria and Mongolia, and the herds are large (from three to five hundred). The ponies are not used for food, so naturally the question arises when I see shipments arriving of 8,000 to 10,000 pony hides: "Of what did these animals die?" Anthrax, glanders and starvation kills them. The tsetse fly is responsible for thousands of deaths from anthrax. The *B. mallei* has made

its home among the large herds, and takes its toll. In addition every winter hundreds of ponies starve to death on account of deep snow, blizzards, etc. Mares suffer terribly during the winter when they foal; mother and foal are invariably lost if parturition occurs in bad weather. A dealer arrived in Tientsin in April, 1916, with 8,000 "unborn cold skins." These skins are obtained when the mares abort or foal in the winter.

Sheep skins come from Mongolia and Manchuria. These Chinese sheep are of the Algerian race. The only disease that I can find they suffer from is foot-rot. I have repeatedly inquired: "Do these sheep discharge from the nose?" The answer is invariably "No." Thousands of sheep starve to death during the winters.

Pig Bristles

Pigs wild and tame are periodically "wiped out" by some mysterious disease every four or five years. This is probably hog cholera. The natives then have a great harvest of pig bristles.

Methods of Curing Hides

In the provinces of Shantung, Chihli and Shansi, whenever an animal dies or is butchered, the hide is immediately taken off and salt dried. During the process of salting, a thin layer of mud is added. This mud is added because the hide is sold by weight, and the Chinaman thinks that he gets more money for the hide. To combat this little "squeeze" the buyers knock off 20 per cent for mud. The hides are bought by small dealers, who in turn, sell them to larger dealers in larger villages; they in turn cart them to the large towns, where the foreign buyers purchase them, and finally the hides reach Tientsin in shipments of from 5,000 to 10,000 hides.

The hides from Mongolia and Manchuria are invariably sun dried. It is then very easy to pick out the "died

hides," meaning the hides from animals that have died natural deaths. The capillaries of the skin are engorged with dried blood. These hides are considered as third rate. A large percentage of Mongolia hides are "died hides." Pony or horse hides have the appearance of being *all* "died hides." In fact, they are, since horses are never killed for food.

Sheep skins are all sun dried, and only a small percentage have the appearance of being "died hides." The Chinese eat more mutton than beef, hence the greater number of sheep skins shipped than cow hides. An arsenic-cured hide is a misnomer and misleading. There is, in my opinion, no such thing as an "arsenic-cured" hide in North China. The term "arsenic-cured" came about as follows: Grubs and worms attack hides and cause a great deal of damage during shipment. It was, therefore, necessary for shippers to "cure" the hide against the ravages of these pests. A firm in England invented a soft soap heavily charged with arsenic. A solution is made from this substance by the addition of water, and the hides are simply passed through the tank. A better name for this process would be "arsenic solution dipped hides," because the hides are either sun or salt cured before they come to the arsenic bath.

Wet salted hides are first washed and scrubbed clean. They are then laid on the ground and a layer of salt is applied. Another hide is laid on top of this and salted, and so on, until the stack contains five or six hides. They are then rolled into a bundle, roped and made ready for shipment.

Methods of Disinfection

Under date of March 7, 1916, the American Consulate General issued instructions, which are still in force, governing the disinfection of hides for shipment to the United States, as follows:

"Until further notice, shippers of Dry Hides to the United States of America are hereby informed that, under a new regulation, such hides require disinfection prior to packing for shipment.

One of the following methods of disinfecting may be employed:

1. "By immersion, for not less than thirty minutes, in a solution of formic acid in water, to which there has been added one part of bichloride of mercury to each 1,000 parts of solution. In case formic acid is not obtainable, the michloride of mercury alone will suffice."

2. "By immersion in a 5% solution of carbolic acid, for not less than thirty minutes."

3. "By exposure of the fumes of sulphur dioxide in a room tightly closed, in which the hides shall be suspended separately in such manner that there may be a free circulation of the sulphur fumes, and that all parts of the surface of the hides may be acted upon; provided that there be at least four pounds of sulphur burned for every 1,000 cubic feet of air space, and the room shall be kept closed and the hides subjected to the sulphur fumes for at least six hours."

The immersion of dry hides in a solution of arsenic is *not* considered to be an effective method of disinfection.

Whenever disinfection is to take place, this Consulate-General must be notified in advance, so that a representative of this office may call and be present during the disinfection. After disinfection, the hides must be immediately and permanently packed, and must not be exposed to contamination.

Proper disinfection certificates will then be certified by this office, and no shipment requiring disinfection will be passed that is not covered by such certificates of disinfection by one of the prescribed methods.

In this connection I am also quoting a letter from Dr. Ransom, of the United States Public Health Service, at Shanghai, addressed to the American Consul General, embodying a new regulation in relation to "arsenic cured" hides under date of March 25, 1916:

"Referring to Treasury Department Decision No. 31688, it is respectfully suggested that when requested by shippers, certificate for dry hides be granted along the following lines:

"Dry arsenic cured hides, passed without disinfection subject to enforcement of provision of Treasury Department Decision No. 31688."

This suggestion is made in view of the difficulty experienced by shippers in securing the necessary disinfections to comply with the re-

cently made rules concerning this class of cargo.

Respectfully,

S. A. Ransom."

On account of the hundreds of thousands of hides awaiting shipment when these regulations came in force, it was impossible for a member of the Consulate General's office to be present at the time of disinfection, as the Consulate is only composed of the Consul General, the Vice Consul and Marshall, and these three gentlemen had all the work they could handle in the office. Mr. Fisher requested me to superintend the carrying out of the regulations during my spare time, to which I consented.

When I had read over the regulations, I informed Mr. Fisher that these regulations, in my opinion, would not disinfect a shipment of hides. However, the question was: "Would I superintend the carrying out of the regulations?" I have been doing this for two months.

Taking up the methods of disinfection separately, we start with the bichloride of mercury solution 1 to 1,000. The formic acid is not obtainable. The tanks used by shippers are all the way from 3 x 5 x 2½ feet to 20 x 20 x 2½ feet. The tank mostly used is about 8 x 6 x 2½ feet. The tanks are half filled with the solution, and the dirty hides are placed into the tank to its fullest capacity and immersed for one-half hour. The solution in the tank is added to as the hides absorb the water, and about every other day the tank is cleaned out and new solution put in. We will take, for instance, one tank 8 x 6 x 2½ feet, containing 350 gallons of solution of bichloride of mercury 1 to 1,000. Fifty dried horse hides are placed therein and immersed for a half hour. When the time limit has expired the hides are taken out and placed on a ramp and allowed to drain into the tank. The water or solution in the tank has now turned to a muddy-reddish color, caused by dirt and dissolved blood, the hides have not

become thoroughly saturated, they are almost as stiff when they are taken out as when put in. Therefore, I claim that the hides are not disinfected. While the hides are "draining" into the tank (because the solution must not be lost, as that tank of solution cost \$18) another batch of filthy hides are placed in the tank and immersed, while the coolies take the "disinfected" hides and lay them out in the sun to dry. This process goes on for ten hours per day, and a thousand hides are "disinfected," the solution has not been changed only added to, but the tank will be cleaned out tomorrow night. Now if the first batch of hides are not disinfected, how about the last batch? At the close of the day the solution resembles dirty blood. If a clean, sterile hide were placed in this bath, I'll guarantee it would come out infected with anthrax, because the bichloride is rendered useless by the first batch of hides immersed. The regulations say nothing about changing the solution or keeping it clean, and the shippers sail as close to the wind as is possible. Most of the disinfection is placed in the hands of the No. 1 coolie, and he is ignorant and cares not. A foreigner generally starts him off by showing him what is necessary, and Mr. Chinaman continues mechanically.

The same procedure goes on with the Shantung hides, which are dry salted, with a coat of mud. The mud is partly scraped off, but just imagine a batch of these muddy hides going into a clean bichloride solution. How long will the drug keep up its action in mud? In regard to the wet-salted cow hides it is different. Only the good Shantung hides are wet-salted. First, they are scraped free from mud, then they are washed and scrubbed thoroughly, drained and placed in the solution, which is kept comparatively clean. Even at that I do not believe a half hour in the solution will kill all the germs in the hide, but as the hides

are then shipped out wet, the hide is being disinfected until it dries out, which takes some weeks.

In my opinion this is the ideal way to disinfect a hide properly, but then the cost is too great, and would eat up the profits on Mongolian cow hides and horse hides.

Carbolic Acid

Crude carbolic acid is not used, as a rule, because the shippers do not know how to dissolve it in water. Carbolic acid crystals are not used on account of the high price. The regulations do not specify which preparation of the acid should be used, the crude or the crystals.

Fumigation by Fumes of Sulphur Dioxide

This method is the most simple, but it is not used to any great extent, on account of the high price of sulphur. Nevertheless, it is being used by some of the shippers. In my opinion, it is impossible to disinfect a hide with the fumes of sulphur. You can certainly disinfect the exterior of the hide, I grant, but how about the germs within the capillaries in the integument of a "died hide?" The question is: "Are these germs dead or alive, and how long will it take them to make themselves evident after the fumes of sulphur have left?" Take a Shantung hide that has the layer of mud. Some of the mud is scraped or beaten off. Can the sulphur fumes penetrate through the mud that is left on? Can sulphur fumes penetrate through the integument and enter the capillaries and kill the germs there? Decidedly no.

Conditions in Compounds

A compound is an enclosure between four walls. All business houses in China are located within a compound. The compound are of various sizes, and contain offices, living quarters, store-houses and what not. Wool, cotton, hair (human and horse) and bristle factories, hide and skin yards are often

found within the same compound, and naturally the whole premises are infected with every known animal disease peculiar to North China. I have never seen any attempt made to disinfect a compound, but they are kept comparatively clean by the application of brooms.

Prior to the disinfection regulations, hides were shipped in to be cleaned and pressed for reshipment. The Shantung hides, which contain the layer of mud, were opened out and the mud scraped off. They were then beaten, redried, press-packed and shipped out. Sheep skins were sorted and dried during the same period. Coolies tramped over cow hides and sheep skins, winds spread dust over everything. When large shipments arrived at the same time, every available foot of ground, in fact, any place, even to the roof, was used for drying damp hides. Now, wet "disinfected" hides are dried within these same compounds. Tientsin is a very windy city. It takes sometimes two or three days to dry a hide. I leave the rest to the imagination of the reader, and ask the question: "Is it possible to have a shipment of dry hides leave Tientsin or any other port in China free from contamination?"

Pig bristles and horse hair (tails and manes) are packed so tightly that it is impossible for the fumes of formalin to circulate freely. Human hair (Chinese pig tails or queues) is a filthy abomination, and should undergo the boiling or steaming process.

To ascertain whether hides and skins originated in a district where foot-and-mouth disease and rinderpest are *non-existent* and anthrax *non-prevalent* would require a force of 500 veterinarians in the field. As so many firms have been disinfecting at the same time, and as I have only the afternoon to devote to this work, it has been impossible for me to superintend the work properly. I have just had to drop in on my regular rounds, from one to an-

other, relying on the honor of shippers to do the right thing. An assistant is necessary to be at each tank continually during disinfection.

Suggested Remedies

A. England solved this question at one stroke of the pen. She would take no chances, and claimed that, granted hides were disinfected properly in China, there was no reason to believe that the shipments could not be contaminated in the dirty hold of a ship. The hold of the ordinary commercial liner, especially the freighter is as filthy as Chinese commercial human hair. England now demands and enforces that all hides must be disinfected upon arrival in Great Britain under government supervision. She then *knows* that the hides are disinfected in the true sense of the word. This method, to my way of thinking, is the only possible and safe solution.

B. If hides must be disinfected in China the present mode of disinfection should be modified. Cow and pony hides should not be brought into compounds containing sheep skins and wool factories. A separate location should be used for disinfection. My idea is a location away from wool factories, and sheep and goat skins, because as far as I am able to find out, sheep and goats do not suffer from contagious diseases, except foot-rot in sheep, and I see no sense in exposing them to contamination from cow and pony hides.

A compound should be procured large enough to disinfect all the hides that are exported from Tientsin, and close to an abundance of clear water. In the center of the compound there should be three large cement tanks, so placed that a dividing wall in the compound would leave two tanks on one side and one on the other. The side containing the two tanks should be used for depositing infected hides, and the side with one tank for drying and packing disinfected hides. These

tanks would necessarily be at least thirty feet square and perhaps larger, depending on the number of hides to be disinfected. Now we have two compounds within the one, with three tanks. As the hides enter I would have all the mud scraped off and the hides thrown into tank No. 1, to be washed and scrubbed. The next step would be rinsing them in tank No. 2. Then, when they are clean, I would throw them over the wall into tank No. 3, which contains the disinfecting fluid. From the third tank the hides would be hung on racks to dry, and when dry, packed for shipment and dispatched. The infected yard should be "policed up" and disinfected daily. Every hide would then have to be opened out for the cleaning process, which would make the hide perfectly pliable, and when it got to the disinfecting tank, it would be comparatively clean and the disinfecting fluid could

then get in its work. The disinfecting fluid could be kept comparatively clean and in good working order.

C. Owing to the fact that most of the shippers are using mercuric chloride for disinfection, the price of this drug has soared to \$8.00 a pound, with the possibility of its cost still increasing, because of the difficulty chemists have in procuring it. Therefore, as carbolic acid is allowed to be used by regulations, I see no reason why some of the commercial coal tar disinfectants cannot be allowed as a substitute for carbolic acid, provided that the disinfectant used be guaranteed of a certain coefficient standard by laboratory test of either the Rideal-Walker or Anderson & McClintic methods. Depending on the coefficient agreed upon, a solution superior to that of carbolic acid can be figured out that will be stronger and cheaper than the methods now used.

Serotherapy of Bacterial Anthrax

By V. FRASEY, Pasteur Institute, Paris, France.

(Continued from July number)

PROFESSOR Vallee kindly consented, in 1912, to place six sheep at our disposal, and we were able to carry out the following experiment: Two sheep received subcutaneously 20 c. c.'s of serum, two others, 10 c. c.'s of serum, the following day these four sheep each received together with two controls a drop of blood taken from a guinea pig killed by the bacteria with which the serum was obtained. The two controls died from anthrax within thirty-six hours; one of the sheep injected with 20 c. c.'s died in sixty hours, one of the sheep injected with 10 c. c.'s died in four and one-half days, the other in six and one-half days; the fourth sheep injected with 20 c. c.'s survived.

At the same time, three horses were inoculated subcutaneously with 1 c. c. of the second anthrax vaccine, and simultaneously two of these horses received, on the other side of the neck, 10 c. c.'s of antianthrax serum; the control horse, without any noticeable general condition, had on the site of inoculation a thick, hard and voluminous edema, extending as far down as the extremity of the shoulder; the two other horses had no reaction whatever, either local or general.

Availing themselves of the advantages to be derived from the properties of antianthrax serum, foreign scientists were not long in trying to substitute them for those obtained with anthrax vaccine according to the Pasteurian method.

For several years, especially in Ger-

*A lecture delivered before the Society of Practical Veterinary Medicine.

many and Austria, veterinarians, have to some extent given up the use of the two vaccines and simply inoculate in one dose on the same day several cubic centimeters of serum concurrently with a dose of the second vaccine. Practice has shown them, it would seem, that this one operation is enough to obtain sufficient immunization against anthrax bacteria; however, they still admit a death rate of about four per cent. I cannot at the present time give you any statistics on the subject, but the method is still the object of controversy and does not offer, in my opinion, the certainty of the old Pasteurian method; moreover, the price of the serum must be considerably higher than that of the vaccine; its sole advantage is that one inoculation is sufficient, but until further investigation we cannot recommend it to the prejudice of a method which has given proofs of its excellence for over thirty years.

The only instance where antianthrax sero-vaccination might be preferred is in the case of vaccination of horses, as they are more sensitive to the Pasteur vaccine than are oxen. By inoculating them with 10 c. c.'s of serum and at the same time with a dose of the second vaccine, they are given sufficient immunity, and accidents will be avoided.

Antianthrax serum is far more to be recommended in case of an outbreak of the disease in flocks and herds that have not been vaccinated. You are all aware that anthrax epizootics are quite exceptional in those countries where vaccination is regularly resorted to, and for several years a number of cattle breeders or owners have forgotten the tremendous death rate which anthrax formerly gave rise to. In a spirit of foolish economy, they hesitate to go to the expense of vaccination, which seems unnecessary to them; and as for quite a long time they have not come across a single case of anthrax, they prefer to keep

their money. This may be all very well for a number of years—then one fine day the veterinarian is called in for several cases of sudden death, and he is confronted once more with anthrax. Vaccine is quickly telegraphed for, but in the meantime several oxen and a number of sheep die, and although dispatch is used, during the twelve or fifteen following days, more animals may very well die.

Perhaps the farmer who is confronted with the same situation in a country that is practically free from anthrax is not so much to blame, but he has to suffer quite as much. In a case of this kind, antianthrax serum may be of great service. Of course its application is more expensive than simple vaccination in a region free from the disease, but it can check an outbreak to a very considerable extent.

Every veterinarian is aware that there is a certain risk in vaccinating in a contaminated region; the introduction of a small quantity of the first vaccine subcutaneously may quicken in some animals in which there is a condition of latent infection or microbial anaphylaxy, the growth of virulent bacteria, and death may occur. What should be done in such a case? The animals should be protected against this danger for about eight days by injecting them preventively with a fixed dose of the serum subcutaneously; as this serum acts immediately, it confers upon the animal temporary immunity, quite sufficient to enable the organism to fight latent infection, and then it is possible, six or eight days later, to proceed with the first vaccination without danger. Moreover, if the disease is already developing in some of the animals, the serum acts as a curative agent, and after that it is only a question of administering judicious doses.

I cannot too highly recommend my colleagues to read Mr. Chone's interesting report, which was submitted to the Central Society of Veterinary

Medicine. His procedure enabled him, as soon as he was in possession of the serum, to completely check an outbreak—the result of a cattle owner's negligence—which threatened to greatly diminish his herd.

To sum up, the course to be pursued by a practitioner when he is confronted with a case of anthrax in a stable where vaccination has not been resorted to, is as follows: Every animal should be carefully watched; temperatures should be taken and they should all be immediately injected subcutaneously, in one dose, with the following quantity of antianthrax serum: 10 c. c.'s for oxen and horses, 5 c. c.'s for sheep.

At the end of five or six days, the two vaccinations can then be proceeded with, at twelve-day intervals and offer no danger.

A high rectal temperature will easily show which animals are in a state of infection; those who have fever should be injected, in one dose, with the following quantity of serum: 50 c. c.'s for oxen, and 20 c. c.'s for sheep; intravenous injection is preferable; furthermore, if the animal shows symptoms of anthrax, these injections should be continued on the following days if the general condition does not seem to improve.

I should like to insist a little more on intravenous injections of the serum, which should always be resorted to in serious cases because their action is quicker, and therefore, more effective than subcutaneous injections.

Vallee has shown that the rapidity of the formation or elimination of precipitins, which are formed in the same way as for antibodies, is the result of the method of inoculation which gave rise to them. Greater rapidity is seen following intravenous injection, lesser rapidity following subcutaneous injection; peritoneal injection gives an intermediary result.

Nevertheless, intravenous injection of the serum has certain disadvantages which it will be well to point out; oxen and sheep inoculated for the first time with horse serum may have certain anaphylactic accidents if they are again inoculated intravenously more than twelve days later with the same serum; this peculiarity will rarely occur, and in such cases, subcutaneous inoculation should alone be resorted to.

As horse serum is slightly toxic for cattle and sheep, it will be advisable not to inoculate the first time intravenously too large a quantity of the serum; 40 to 50 c. c.'s will be sufficient.

As regards complications following vaccination, it sometimes happens that after first or second vaccination, a somewhat voluminous engorgement is seen, after introducing subcutaneously antianthrax vaccine. Engorgements of this kind are generally not serious, but take a long time to be reabsorbed; antianthrax serum will greatly facilitate resorption.

By following these directions, you will have every chance of checking the development of the disease and the complications which may arise after vaccination, in these particular cases.

Antianthrax serum has been used in France for too short a time to enable me to give you any statistics. However, besides Mr. Chone a certain number of our colleagues have been using the serum in similar cases, especially Messrs. Duez, of Maing; Blanchard, of Trelon; Mondine, of Outarville; Brenet, of Pontarlier, and Gros, of Revel. Fatal termination of the disease stopped after the serum was administered. Only a few days ago Mr. Fafin, of Valognes, was telling me of the satisfactory results obtained by him with the serum. I wish, however, to point out to you that while antianthrax serum as prepared at the Pasteur Institute (whose properties as a preventive and curative agent at least equal those of foreign serums) has

(1) Bulletin of the Central Society of Veterinary Medicine, April 30th, 1914, p. 165.

given excellent results in the few cases for which it has been used, we must make certain reservations as regards the positive cure of animals suffering from anthrax. Everything depends not only on the rapidity of intervention but also on the quantity of serum used, method of administering same (intravenously or subcutaneously), and the virulence of the bacterium is also to be considered.

In any case, I am of the opinion, at the present time, that although we have at our disposal a therapeutic medium with which to fight this disease, yet it would not be well to advise against ordinary vaccination, for this is a case where the old proverb (prevention is better than cure) finds a ready application.

Besides the preventive and curative properties to be found in antimicrobial serums, it has been noticed that some of them possess certain peculiar properties due to the presence of so-called sensitizing substances; agglutinins, precipitins, etc. The various investigators have not yet been able to show the presence of sensitizing substances and agglutinins in antianthrax serum. Ascoli, however, perceived in several specimens of serum he was making, a precipitin which enabled him to determine a method for the diagnosis of anthrax bacterium, even when only disposing of old or even putrefied organs.

Veterinarians generally think that the bacteriological diagnosis of anthrax is the easiest thing in the world, and that a little blood, organ pulp, a lamella, a microscope, and perhaps, a few guinea pigs suffice to help them out. Unfortunately such is not always the case. Those who work in laboratories and have to deal with materials more or less well prepared, more or less decomposed, know that microscopic preparation does not always reveal the presence of the bacterium, which is easily and quickly destroyed even in

organs that are relatively fresh, and that inoculation in guinea pigs is only positive if the bacteria have had time to sporulate before disappearing. However, in spite of the rapid destruction of the bacterium, the different organs, liver, kidney, spleen, etc., of animals having died of anthrax have had time to become impregnated with specific thermostatic substances which remain a long time in these organs even when in a state of putrefaction.

This is how Ascoli utilizes the precipitant properties of the serum to show their presence. After grinding down and mixing the suspicious pieces with from four to five volumes of physiological water, he brings the material to a temperature of 100° by heating it in a vessel filled with hot water; at the end of a few minutes, it is quickly filtered and the filtered liquid is placed in contact with an equal quantity of precipitant serum. More or less quickly, cloudiness is observable at the point of separation of the two liquids, this cloudiness forms an opaque ring which is very distinct. In such case, even when it has not been possible to reveal, by bacteriological examination or by culture, the presence of the bacterium, it is quite certain that we are dealing with bacterial anthrax.

As Ascoli only had nine specimens of precipitant serum out of forty serums of varied origin, it seems that he made a special preparation of precipitant serums. I believe personally that the serum prepared with a horse according to the technic given by me, always furnishes a sufficient quantity of precipitins to avoid this complication in the preparation of the serums. Of course certain specimens are richer in precipitins than others. The precipitins of poor serums can then be concentrated by Vallee's process, and can be kept in the laboratory for future use.

Allow me, gentlemen to go no further at the present time into the study of antianthrax serum. Today I only want

(Continued on page 654)

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Effects of Stallion Registration Laws on the Breeding Industry

AT the last meeting of the Illinois State Veterinary Medical Association, considerable discussion of the stallion registration law of Illinois was indulged in, and the act was condemned by a few speakers as being of no particular value; this, chiefly because of lack of provision for regular re-examination of animals that are in service. Opinions were also given that desirable breeding stallions are barred from service because of being afflicted with periodic ophthalmia, and animals of inferior quality are at stud.

Necessarily, those who take the stand that good individuals should not be disqualified as breeders even though afflicted with recurrent ophthalmia, disclaim the influence of heredity of this disease, class it as an infectious ailment and contend that environment is an influential causative factor—an undecided question.

The Indiana Experiment Station has just issued a bulletin wherein a résumé of the stallion enrollment law of that state is given and comparisons are made of the results obtained in the twenty different states having such laws. Par-

ticular attention is given the quality of the stallions now in service, in the several states and a comparison between the number of pure-bred stallions in service at the time registration laws were enacted and the present. In Wisconsin, the first state to pass such a law, an increase of thirty per cent is shown in the number of pure-bred stallions in the last ten years. Minnesota shows an increase of twenty per cent, and Illinois of ten per cent.

A lien clause in the Indiana law prevents any stallion or jack owner from forcing collection of fees, who has failed to comply with the law in every way. Section ten of their law provides for the sale of the offspring, if necessary, for the collection of fees. Stallion owners are benefited in so many ways by the Indiana law that it is decidedly to their interest, as well as for the benefit of the farmers, to support this law.

Progressive practitioners would do well to secure circular No. 52 of the Agricultural Experiment Station, Lafayette, Indiana. Veterinarians in state work where no stallion registration laws are in effect, are derelict if they are not working for regulations which make for

an improvement in the quality of horses and mules bred in their respective states. Stallion registration laws such as are in effect in some states, are of great

benefit to the farmers and stockmen, owners of stallions, and as well, materially contribute toward improved conditions for the practicing veterinarian.

Program for A. V. M. A. Convention

Fifty-second annual meeting, Detroit, August 21-25, 1916.*

Preliminary to the opening of the Convention the Executive Committee and the Committee on Reorganization will hold sessions at the Hotel Statler, Detroit, on August 19th and 20th. The Executive Committee will also hold a session at 8 a. m., August 21st to receive reports from those desiring a hearing.

MONDAY, AUGUST 21ST, 10:30 A. M.

Opening meeting, Detroit Board of Commerce Auditorium.

Address of Welcome to Michigan, Hon. Woodbride W. Ferris, Governor of Michigan.

Address of Welcome to Detroit, Oscar B. Marx, Mayor of Detroit.

Response to Address of Welcome.

President's Annual Address, R. A. Archibald, Oakland, California.

Submission of the Minutes of Previous Meeting.

Report of the Executive Committee.

Unfinished Business.

MONDAY, AUGUST 21ST, 2 P. M.

Detroit Board of Commerce Auditorium.

Unfinished Business.

Report of the Executive Committee.

Report of the Secretary, C. M. Haring.

Report of the Treasurer, F. H. Schneider.

Report of the Librarian, J. N. Frost.

Report of the Committee on Diseases, J. R. Mohler, Chairman.

The Efficiency of the Various Disinfectants, Charles H. Higgins.

Hemorrhagic Septicemia in Cattle in the Middle Section of the United States, A. T. Kinsley.

Hemorrhagic Septicemia with Special Reference to Its Economic Importance, J. R. Mohler.

Non-Specific Treatment of Infectious Diseases in Animals, K. F. Meyer.

A Study of the Milk in Bovine Infectious Abortion.† Ward Giltner.

* After August 7th, address all communications to the American Veterinary Medical Association, Hotel Statler, Detroit, Michigan. By that date the President and Secretary will be en route from California. Beginning August 18, the Secretary will hold office hours at the Hotel Statler, Detroit.

† This paper will be read by title and referred to the Chairman of the Section on Sanitary Medicine to be read at the proposed symposium on that disease.

Report of Committee on Intelligence and Education, N. S. Mayo, Chairman.

Report of the Committee on Re-Organization, C. A. Cary, Chairman.

MONDAY, AUGUST 21ST 8 P. M.

Reception and Ball, Hotel Statler.

TUESDAY, AUGUST 22ND, 9:30 A. M.

Report of the Executive Committee.

Report of the Committee on Finance, E. L. Quitman, Chairman.

Report of the Committee on Necrology, H. Jensen, Chairman.

Report of the Committee on Salmon Memorial, J. F. Winchester.

Report of the Committee on Selection of Emblem, Otis A. Longley, Chairman.

Report of the International Tuberculosis Commission, J. G. Rutherford, Chairman.

Report of the Committee on Journal, F. Torrance, Chairman.

Report of the Committee on Advertisements of Veterinary Remedies, M. Jacob, Chairman.

Report of the Special Committee on Agricultural College Investigation, F. B. Hadley, Chairman.

Report of Committee on Glanders, E. B. Ackerman, Chairman.

Report of the Special Committee on Veterinary Nomenclature, S. Sisson, Chairman.

TUESDAY, AUGUST 22ND, 2 P. M.

SECTION ON SANITARY SCIENCE, Chas. Higgins, Chairman.

The Death and Expulsion of the Immature Fetus as a Standard for Measuring the Prevalence of Infection of Cattle Abortion, W. L. Williams, Ithaca, N. Y.

Contagious Abortion from the Practitioners' Standpoint, C. A. Cotton, St. Paul, Minn.

The Bull as a Disseminator of Contagious Abortion, F. B. Hadley, Madison, Wisconsin.

This paper discusses an experiment, based upon practical and scientific knowledge, in which abortion-infected bulls were bred to non-infected virgin heifers.

The authors, among other conclusions, state:

(1) That the bull is less susceptible to abortion infection than the cow.

(2) That if the bull does become naturally infected by the abortion bacilli the infection usually runs a course much more benign than in the cow.

(3) That the soiled bulls with systemic infections used in the experiments were incapable of disseminating the abortion disease by cohabitation.

A Study of Milk in Bovine Infectious Abortion, Ward Giltner, L. H. Cooledge and I. F.

Huddleson, Laboratory of Bacteriology and Hygiene, East Lansing, Michigan.

This paper deals with various aspects of cow's milk in its relation to bovine infectious abortion and to human health. It is shown that the introduction of Bact. abortus into the udder of a cow causes the appearance of agglutinins in the milk; that agglutinins are always found in milk capable of producing typical lesions of Bact. abortus in the guinea-pig, but that the reverse is not true. No proof is found that Bact. abortus is pathogenic for man, but antibodies for the microorganisms appear in the blood of man as a result of feeding naturally infected milk, probably representing a passive immunity in man. Results are reported also on the, (1) effect of feeding infected milk to rabbits; (2) to guinea-pigs; (3) to new born calves; (4) significance of the matting of the hairy tufts around the sheath and vulva of calves.

The Present Status of the Abortion Question by Adolph Eichhorn, Chief of Pathological Division, Bureau of Animal Industry, and Geo. M. Potter, Veterinary Inspector, Bureau of Animal Industry, Pathological Division.

This paper recounts briefly the history of the disease, quoting authors and setting forth the essential contributions of each; points out the difficulties associated with the investigation of the question; reports some of the work, and conclusions of the Bureau of Animal Industry; and finally outlines methods which have been in a measure successful in controlling the disease.

Discussion to be opened by V. A. Moore, Ithaca, N. Y.

Experiments with Equine Abortion, by J. B. Hardenbergh, Philadelphia, Pa.

This paper outlines experiments in connection with Equine Abortion. It also gives data relative to the vaccination practiced in this disease and also ophthalmic experiments.

TUESDAY, AUGUST 22nd, 8 P. M.

Meeting of various Alumni Associations and Class Dinners.

WEDNESDAY, AUGUST 23RD, 9:30 A. M.

SECTION ON GENERAL VETERINARY PRACTICE.

L. A. Merillat, Chicago, Chairman.

1. Local Anaesthesia in Animal Dentistry, H. E. Bemis, Ames, Iowa.

2. Teaching Pharmacology, H. Jensen, Kansas City, Missouri.

3. Business Methods in a Veterinary Practice, D. M. Campbell, Chicago, Illinois.

4. Topographic Anatomy of the Anterior Part of the Head—An Illustrated Lecture, H. S. Murphy, Ames, Iowa.

WEDNESDAY, 2 P. M.

1. Shipping Fever of Horses, J. R. Mohler, Washington, D. C.

2. Shipping Fever of Horses from the Army Standpoint, C. J. Willgans, Kansas City, Mo.

3. Shipping Fever as Seen from a Large City Practice, G. B. McKillip, Chicago, Illinois.

4. Nymphomania of Mares, H. Fulstow, Norwalk, Ohio.

5. Paraphimosis of Domestic Animals, J. V. Lacroix, Kansas City, Mo.

6. Surgery of Paraphimosis, John Adams, Philadelphia, Pa.

7. Recommendations for the Control of White Scours, A. T. Kinsley, Kansas City, Mo.

8. Some Physiological Experiments in Breeding, H. D. Bergman, Ames, Iowa.

WEDNESDAY, AUGUST 23RD, 9:30 A. M.

SECTION ON SANITARY SCIENCE AND POLICE.

Charles Higgins, Chairman.

Osteomalacia or "Cage Paralysis in Primates, W. Reid, Blair, New York.

Studies in Canine Distemper, John A. Kolmer, John Reichel, George H. Heist and Malcolm J. Harkins.

Hypodermal Anaphylaxis, by S. Hadwen, Agassiz, B. C.

Hog-Cholera, Transmission Through Infected Pork, R. R. Birch, Ithaca, New York.

This paper deals with the possibilities of spreading hog cholera by means of infected pork trimmings in garbage. It includes experimental data obtained by killing hogs in various stages of hog cholera, and feeding small portions of the hams from which the samples were taken were fresh, while others were refrigerated or cured before portions were removed for feeding. Special consideration is given to the relation between meat inspection and this means of hog cholera transmission.

Results of the use of Hog Cholera Globulin on 3,000 Hogs in the Field, Robert Graham, Lexington, Ky.

Hog cholera globulin was used under field conditions in controlling hog cholera in infected herds as well as herds apparently free from the infection. In non-infected herds virus was simultaneously administered in conjunction with the globulin. Hogs immunized by the simultaneous method were later hyperimmunized in some instances. Comparative results of the use of hog cholera globulin and unrefined hog cholera serum indicated that hog cholera globulin in small doses has protective powers against hog cholera equal to those of the unrefined serum.

Further Studies with Hog Cholera with Reference to Spirochaeta Hyos, Walter E. King and R. H. Drake, Detroit, Mich.

The Follow-Up and Combined Systems of Tuberculin Testing, by George H. Hart and J. Traum.

No method will produce 100% reactions in tuberculous cattle and that probably the efficiency by the ordinary technic used in routine work is not more than 90% for any one test. Most tuberculous cattle will react to any one of the tests while some will react to one or even two of the tests and not in another.

In the elimination of tuberculosis from certified herds the writers advocate the combined method of tuberculin testing, using three methods at once or, preferably, if the time permits, the follow-up system, by applying the ophthalmic test twice at intervals of one week, followed immediately by the intradermal method, and after the lapse of six weeks testing by the subcutaneous method all animals that have not been removed by the previous tests.

In routine testing in certified herds alternate semi-annual tests by the subcutaneous and intradermal methods have been used, supplemented by the follow-up method in those herds where over 5% of the reactors were found to be present. The intrapalpebral method is considered to be in principle practically the same as the intradermal. In practice we have found the injection required more time and labor,

and was objected to by cattle owners as causing too much disturbance in the barn. Slight local reactions in the subpalpebral injection are more difficult to recognize than those in the subcaudal fold and there is a higher percentage of doubtful cases to retest.

Studies in Forage Poisoning, Robert Graham and L. R. Himmelberger.

Continuing bacteriological studies of an oat hay which proved poisonous to horse and mule stock, previously reported at the United States Live Stock Sanitary Association meeting, 1915. The pathogenic properties of a bacillus isolated from the oat forage as well as from another forage in a remote outbreak are described. Small animals, including guinea-pigs, rabbits, chickens and white mice, were apparently immune while horses were apparently susceptible. Bovines, sheep and goats less so. Filtrates of this bacillus grown in Uchinsky's protein-free medium on being injected intravenously into horses from day to day resulted in manifest symptoms, coma and death.

WEDNESDAY, AUGUST 23RD, 2 P. M.

SECTION ON SANITARY SCIENCE AND POLICE.

Chas. Higgins, Chairman.

An Army Veterinary Corps, C. J. Marshall, Philadelphia, Pa.

By a Veterinary Corps is meant a department of the Army having its own organization and head.

Its purpose is to insure the purchase of sound horses and care for those that are injured, sick or inefficient. In order to be of the greatest value in reducing the amount of suffering to the minimum, in preventing the spread of transmissible disease to animals and human beings in the army and in civil life during the war and after it is ended, in removing from the fighting and working lines the animals that are not able to work and thereby interfere with progress, it is imperative that a sufficient number should be properly educated, organized, equipped and clothed with abundant authority.

From observations made in the field the Veterinary Corps is the most efficient organization for looking after this important branch of the Army Service. All charity and assistance contributed by humane societies or individuals to alleviate the suffering of animals should be conducted and handled under the supervision of the Veterinary Service.

The National Horse, by R. Vans Agnew, Army Service Schools, Fort Leavenworth.

The improvement of the present stock for breeding the light horse. The giving of Government premiums in all States for the best type of stallion, mare and foal. The present remount depot and the class of animal sent to them. The fallacy of the present contract system. The evil of shipping fever in connection with it. Some suggestions for a remount organization to take the place of the contract system. Cooperation from the State Veterinarians & Agricultural Farms. The types and their crosses for remounts. What has been done in some states to improve the type. The real type and what it is called upon to do in peace and war.

Remounts their Care in Depots and in Transit, by D. Warnock, British Remount Station, Dixie, Que.

Remounts, Joseph N. Hornbaker, Front Royal, Va.

Some of the Advantages of Sanitary Precautions in Cattle Breeding, John F. Devine, Goshen, N. Y.

WEDNESDAY, AUGUST 23RD, 7:30 P. M.

Annual Banquet.

THURSDAY, AUGUST 24TH, 8:00 A. M.

The entire Association, including ladies and all registered visiting veterinarians, will leave on the steamer Britannia for Parke, Davis & Company's plant on the river front. During the entire day the association will be guests of that company. They will visit the Laboratories and sail on the Lake and the River St. Clair.

THURSDAY, AUGUST 24TH, 7:30 P. M.

Report of Committee on Legislation, David Buckingham, Chairman.

Report of the Committee on Resolutions, John W. Adams, Chairman.

Further report of Committee on Re-Organization.

Report of Committee on History, James Law, Chairman.

Reports of Delegates to Conventions.

Unfinished Business.

New Business.

Election of Officers:

1. President.
2. First vice-president.
3. Second vice-president.
4. Third vice-president.
5. Fourth vice-president.
6. Fifth vice-president.
7. Secretary.
8. Treasurer.
9. Librarian.

FRIDAY, AUGUST 25TH.

General Assembly of the Association.

Unfinished Business.

Installation of Officers.

Clinic and Demonstrations throughout the day.

Adjournment.

SATURDAY, AUGUST 26TH.

The members of the Association who will be passing through Chicago have been invited by Sears, Roebuck & Company to visit their establishment at 10:30 a. m. and be their guests at luncheon.

1917 Meeting.

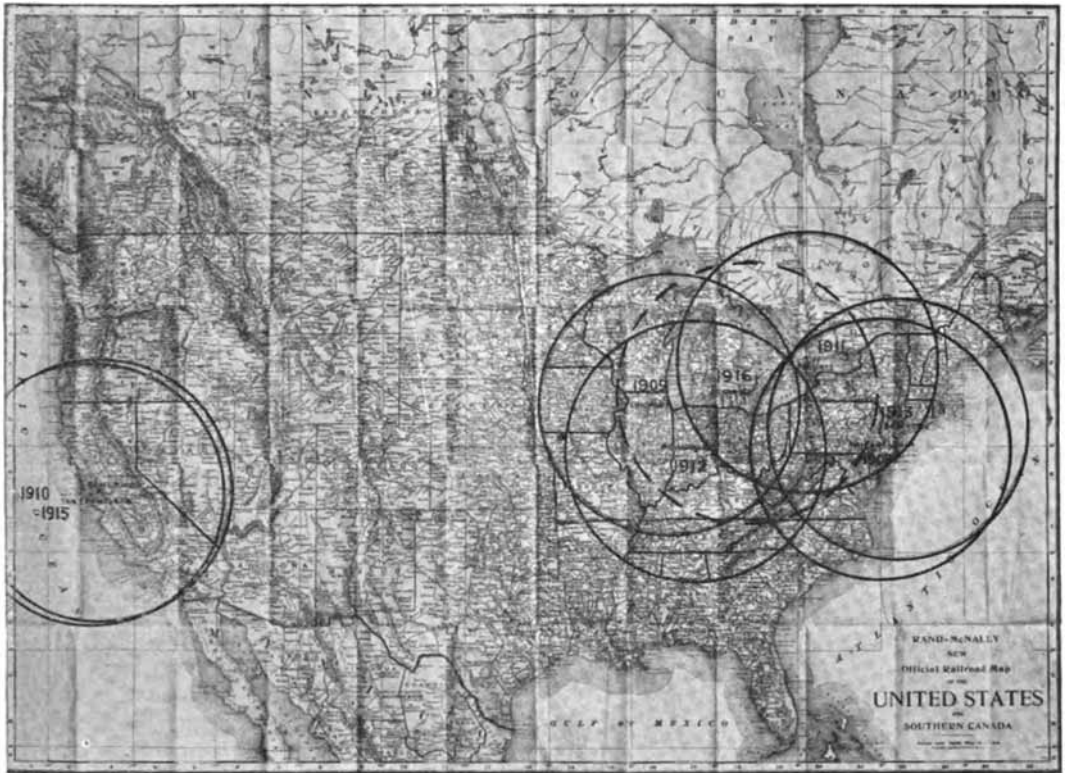
Already there is some talk as to the location of the 1917 meeting of the A. V. M. A. Philadelphia is an active bidder for the meeting and offers the association many inducements to hold its next meeting there.

At its annual meeting at Omaha, July 12th, the Missouri Valley Veterinary Association passed a resolution asking the A. V. M. A. to hold its next meeting in Kansas City and submitted the following in support of its claims upon the association for the 1917 meeting:

The accompanying map of the United States is marked to show the area favored through the holding of A. V. M. A. meetings, over a five hundred mile radius, since 1907 — nine years. The arbitrary five

important reason why the association should hold its next meeting in a territory which has been so long outside of its special influence.

In conjunction the tabulation of member-



hundred mile radius is a very fair standard, beyond which the average veterinarian will not go to attend the meetings.

This diagram shows clearly that the territory west of the Missouri river and east of the Rocky Mountains has been outside of the limit during the designated time. It also shows that the membership on the Atlantic seaboard, or the area east of the Allegheny Mountains, has been within the favored radius four times. Hence the very

ship in the A. V. M. A., also attendance at the several meetings from the eleven states not favored by a meeting within their territory during the nine years is very important. This study of membership and attendance should serve to guide those interested in the growth and usefulness of the A. V. M. A. when selecting the next place of meeting.

From this list it will be observed that more than twenty per cent of the mem-

MEMBERSHIP IN A. V. M. A. IN THE FOLLOWING ELEVEN STATES.

	Ark.	Colo.	N. D.	S. D.	Kas.	Iowa	Minn.	Mo.	Neb.	Okl.	Tex.	Total	Total Membership
Report 1913.....	3	24	55	28	47	69	55	61	50	4	31	427	1855
Elected 1915.....	0	0	6	0	8	10	0	4	15	1	1	45	246
	3	24	61	28	55	79	55	65	65	5	32	472	2101

ATTENDANCE A. V. M. A. MEETING.

Philadelphia, 1908.....	0	3	0	0	5	1	7	7	0	0	0	23	223
Chicago, 1909.....	0	5	2	2	9	35	13	20	18	1	4	109	292
San Francisco, 1910.....	0	4	0	1	2	3	2	5	3	0	0	20	283
Toronto, 1911.....	0	4	2	0	5	8	10	7	4	0	0	40	289
Indianapolis, 1912.....	1	2	1	2	3	6	7	9	3	0	1	35	247
New York City, 1913.....	0	1	0	0	3	4	6	6	0	0	0	20	353
Oakland, 1914.....	0	3	0	0	0	2	0	5	0	1	1	12	128

bership of the Association is within the eleven states enumerated, while the attendance of the meeting of 1915 was less than ten per cent of the total. At the meeting held on the Atlantic Coast it was less than six per cent of the total membership resident in the eleven states.

A study of those attending from these states at the several meetings will show that a great majority of them held official positions as sanitary officers, or were connected with some veterinary college, and that the attendance of veterinary practitioners has been a very small percentage indeed. If the association purposes to secure and hold practitioners as members, it must hold its meetings where said practitioners may have frequent opportunity to attend.

* * *

Of course, there is already some speculation as to who the next president will be, and friends of the following are urging their availability upon the members:

C. A. Cotton, Minneapolis.

G. H. Roberts, Indianapolis.

F. Torrance, Ottawa, Canada.

R. P. Lyman, Michigan.

To Detroit by Auto

Several veterinarians contemplate driving their cars to Detroit for the pleasure of a trip so made and because of the convenience of having their cars while at the meeting. Some who go this way will take their families with them; others will unite with nearby veterinarians and go in small parties.

Inquiry has been made as to the condition of roads; since no general statement can be made on this subject, we give below information concerning routes from various localities within 500 miles of Detroit.

All feasible routes from Chicago to Detroit pass through South Bend. To the latter city there are two approximately equally good routes; both are paved all the way—asphalt, brick, concrete and macadam. The older route via Valparaiso and Laporte runs through a section well studded with small lakes, on which there are numerous summer resorts. The distance is 101 miles. The optional route is via the model city of Gary and the lake

port, Michigan City. It is a newer route than the other and four miles shorter. However, there are numerous railroad crossings on it, several of them being particularly dangerous.

From South Bend, the tourist to Detroit has the choice of two routes with the option of additional routes that differ a part of the way. The shortest route is via Coldwater and Ypsilanti, 190 miles—the “main” route, so called because it is the one selected by a majority of the tourists—via Kalamazoo, Battle Creek, Jackson and Ann Arbor, 209 miles.

The short route, the one via Coldwater, is good gravel all the way to Ypsilanti. From there it is concrete. The “main” route—via Kalamazoo and Ann Arbor—is one of the most traveled in the whole middle western section. The roads are mostly graveled; there are some stretches of sand. It runs through Notre Dame of university fame; Niles of foot-and-mouth disease note; Paw Paw distinguished by its number of summer tourists; Kalamazoo which contains the largest paper mills in the world and near which are the largest celery gardens in the world; Battle Creek noted for its enormous sanitarium and for the Postum and Kellogg cereal companies; Albion, Jackson, the birthplace of the Republican party in 1854; Ann Arbor the seat of the University of Michigan, and Ypsilanti.

Tourists to Detroit from central Illinois and central Indiana points will find it advantageous to go via LaFayette, Logansport, Peru, Ft. Wayne, Bryan, Ohio, Wauseon, Adrian, Clinton and Ypsilanti. The distance from LaFayette is 298 miles; from Ft. Wayne 166 miles. From Indianapolis, the most direct route and the best road is via Anderson, Marion and Pendleton to Ft. Wayne. The distance to Ft. Wayne is 121 miles. All of the Indiana roads above mentioned are good gravel or stone.

From central and southern Ohio points, the routes of choice to Detroit run through Lima. The distance from Cincinnati to Lima is 126 miles; from Dayton to Lima 74 miles; Springfield to Lima 66 miles; Columbus to Lima 90 miles; Marion to Lima 59 miles. From Columbus and Marion, the more direct route lies straight north through Upper Sandusky and Fostoria to Toledo, a splendid road over a distance of 130 miles, but the road from Toledo to Detroit cannot be recommended; if the weather is dry, it is good; if it is wet, better go via Lima and Wauseon, although it is considerably farther.

From Lima to Detroit, the route of choice runs through Ottawa, Napoleon, Wauseon, Adrian, Clinton and Ypsilanti. The distance is 165 miles, and the road good gravel all the way.

Eastern Ohio and Pittsburgh travelers to Detroit will find splendid roads to Cleveland, from where they may embark with their cars on lake boats or drive via Sandusky and Toledo. The distance from Pittsburgh to Cleveland is 147 miles; from Cleveland to Detroit, 200 miles. If the roads are wet, a better route from Pittsburgh is via the Lincoln Highway to Lima and thence to Detroit as already described. The distance from Pittsburgh to Lima is 280 miles.

From Eastern points to Buffalo by automobile and thence to Detroit by boat, is a trip unexcelled and will doubtless be chosen by some.

SALMON MEMORIAL FUND.

Dr. W. Horace Hoskins, secretary of the committee of the A. V. M. A. appointed to receive subscriptions to the Salmon Memorial Fund, reports the collection of \$1,462.00 since the publication of his report in the April issue of the JOURNAL. Of this amount, \$1,000 was received from a single subscriber, the name being withheld to be announced at the Detroit meeting. The remaining \$462.00 was subscribed as follows:

Subscriptions to Salmon Memorial Fund To July 15, 1916

State	Previously Reported	New	Total
Pennsylvania	\$ 298.00	.....	\$ 298.00
New York	266.00	\$133.00	374.00
Massachusetts	156.00	53.00	209.00
Michigan	125.00	65.00	190.00
Ohio	135.00	.....	135.00
New Jersey	111.00	20.00	131.00
Dist. of Columbia	86.00	34.00	120.00
Wisconsin	106.00	5.00	111.00
Virginia	51.00	.....	51.00
Illinois	50.00	.....	50.00
Missouri	.....	25.00	25.00
Minnesota	.....	25.00	25.00
Washington	.....	25.00	25.00
California	.....	25.00	25.00
Louisiana	.....	25.00	25.00
Mississippi	20.00	.....	20.00
Montana	.....	12.00	12.00
Connecticut	1.00	10.00	11.00
Iowa	3.00	5.00	8.00
Maine	5.00	.....	5.00
South Carolina	5.00	.....	5.00
Canada	1.00	.....	1.00
Total	\$1,419.00	\$462.00	\$1,881.00
From unnamed donor	.....	.....	\$1,000.00

Grand total to date (July 15, 1916) \$2,881.00

Individual Subscriptions Since Last Report

New York County Vet. Med. Ass'n	\$25.00
H. Jensen, Kansas City, Mo.	25.00
S. B. Nelson, Pullman, Wash.	25.00
G. W. Dunphy, Detroit, Mich.	25.00
C. E. Cotton, Minneapolis, Minn.	25.00
New York County Vet. Med. Ass'n	25.00
W. H. Dalrymple, Baton Rouge, La.	25.00
Geo. H. Berns, New York City	25.00
(17.00 of this was previously reported)	
H. D. Gill, New York City	25.00
E. B. Ackerman, New York City	25.00
C. M. Haring, Berkeley, Cal.	25.00
James Law, Ithaca, N. Y.	25.00
Elijah E. Patterson, Detroit, Mich.	25.00
Dr. Knowles, Montana	12.00
J. P. Lowe, Passaic, N. J.	10.00
W. H. Lowe, Paterson, N. J.	10.00
J. P. Turner, Washington, D. C.	10.00
R. P. Lyman, Lansing, Mich.	10.00
Edwin A. Cahill, Boston, Mass.	10.00
Thos. Bland, Conn.	10.00
Langdon Frothingham, Boston, Mass.	10.00
S. J. Walkley, Milwaukee, Wis.	5.00
Daniel Emerson, Lynn, Mass.	5.00
A. Eichhorn, Washington, D. C.	5.00
J. H. Searle, Mass.	5.00
W. H. Broderick, Mass.	5.00
Thos. E. Maloney, Mass.	5.00
J. W. Robinson, Mass.	5.00
E. Veldhice, Mich.	5.00
J. I. Gibson, Des Moines, Iowa	5.00
E. P. Dowd, Mass.	5.00
W. S. Plasplaskett, Clinton, Mass.	3.00
J. S. Buckley, Washington, D. C.	2.00
H. J. Washbourne, Washington, D. C.	2.00

R. J. Formad, Washington, D. C.....	2.00
A. R. Ward, Washington, D. C.....	2.00
B. A. Gallagher, Washington, D. C....	2.00
L. T. Giltner, Washington, D. C.....	2.00
H. W. Chaining, Washington, D. C.....	2.00
J. M. Buck, Washington, D. C.....	2.00
Wm. N. Berg, Washington, D. C.....	2.00
Robert Selsor, Washington, D. C.....	1.00

BOOK REVIEWS

A Text Book of Meat Hygiene with Special Consideration of Ante-mortem and Post-mortem Inspection of Food Producing Animals. By Richard Edelmann, Ph. D., Medical Counsellor, Royal State Veterinarian of Saxony, Professor at the Royal Veterinary High School in Dresden.

The excellence of Edelmann's work in Germany stimulated a demand for the work in English, and this, the third edition, translated by Drs. Mohler and Eichhorn, is in itself proof of the demand for a book of this kind. This last edition has been completely revised; new illustrations have been inserted; and there has been added a chapter on the preparation and control of meat food products.

Octavo, 452 pages, with 161 illustrations and five colored plates. Published by Lea & Febiger, Philadelphia and New York. Cloth bound, price \$4.50.

Practical Physiological Chemistry, by Philip B. Hawk, M. S., Ph. D.

The fifth edition of this work has been thoroughly revised and partly rewritten; five additional chapters and thirty-five new illustrations have also been incorporated. The chapters on blood, milk and urine especially are well adapted to the needs of the veterinarian.

Cloth bound, 638 pages, 172 illustrations. Published by P. Blakiston's Son & Co., Philadelphia. Price, \$2.50.

Hospital Laboratory Methods for Students, Technicians and Clinicians, by Frank A. McJunkin, A. M., M. D., Professor of Pathology, Marquette University School of Medicine, Milwaukee, Wis.

As the title indicates, this volume is for use in laboratory diagnostic work and contains directions for making all tests that are required in the laboratory. The tests described are, in the opinion of the author, the simplest possible and at the same time, such that findings will be accurate.

Cloth bound, 139 pages. Published by P. Blakiston's Son & Co., Philadelphia. Price, \$1.25.

Practitioner's Medical Dictionary—the last revision of Gould's Dictionary, by R. E. J. Scott, M. A., B. C. L., M. D.

This new dictionary defines 70,900 terms within 962 pages. A very good quality of thin paper is used, making the book of convenient size—not bulky, yet surprisingly complete. It is not only a desirable dictionary for the practitioner, but the student also will find it to be well adapted to his work. By the elimination of many illustrations, which does not detract from the usefulness of the book, a compact volume has been produced. It may be had in leather or cloth binding, and with thumb index if desired.

Published by P. Blakiston's Son & Co. Philadelphia. Price, \$2.75.

Diseases of the Dog and Their Treatment, by Dr. Georg Müller, Professor Director of the Clinic for Small Animals at the Veterinary High School at Dresden, and Alexander Glass, A. M., V. S. Professor of Canine Medicine in the Veterinary Department, University of Pennsylvania.

This is the fourth revision of the authorized translation of Professor Müller's work by Glass and the principal improvement over the last edition is in a revision of the chapters which deal with serum therapy. Changes have been made in the treatise on "black tongue" and also in the chapter that considers intestinal parasites. The treatise is very complete, and as is the case with most for-

(Continued on page 631)

Department of Surgery

By L. A. MERILLAT, Chicago,
Professor of Surgery in the McKillip Veterinary College,

Pitfall No. 18

A THREE-YEAR-OLD ridgling, castrated on one side as a two-year-old, was cast and secured for removal of the hidden testicle in June, 1915. The operator, an experienced ridgling castrator, found the epididymus in the inguinal canal. It was hanging down almost to the level of the scrotum and was a well developed epididymus, but tracing it into the abdomen no testicle was found attached to it. The vas deferens could be drawn upon but the traction would bring out no testicle, as it usually does. There seemed to be no testicle attached to it. Believing it to be a case of anorchidism, it was decided, after considerable study, to excise only that part of the organ that lay outside of the internal abdominal ring. Examining the excised structure it was found to be only the epididymus, but thinking it would be unwise to search further at that time, the horse was let up. To the surprise of all, the operation was successful in that the subject cohabitated harmlessly with the other animals in the pasture during the whole summer and was wintered with other horses without ever showing any impulsiveness. In the spring of 1916—now a three-year-old—on being turned into the pasture, he suddenly became very wicked, mounted mares, jumped fences and acted as mean as a ridgling can act. The writer being present at the first operation

was consulted and advised another operation. The patient was prepared, cast, secured, positioned and well disinfected. An invasion was made in the usual manner to the internal inguinal ring area and then into the abdomen at its upper posterior quadrant. There was no trouble finding the vas deferens with the inserted finger, but in spite of every attempt no testicle could be drawn up. The vas simply tightened and threatened to tear from the traction. Believing now that some very rare anomaly was responsible for these failures, the whole arm was inserted into the abdomen and the manual search made disclosed a testicle enlarged to the size of a football. It was hard and heavy and floated elusively about the abdomen. As removal through this form of incision would have been impossible, the operation was abandoned and a flank operation advised at some future time when the wound of this second futile operation had healed. It was not thought prudent, with the facilities at hand and with the patient already weakened from the above mentioned manipulations, to attempt any such procedure at the time. As similar cases, while not numerous, are reported from time to time, it would be well for ridgling castrators to keep this anomalous condition in mind. Dr. Charles Frasier reports a case of enlarged testicle successfully re-

moved through the flank after failure to bring it out via the inguinal canal, and

Dr. W. O. Longley prefers this route to all others for all kinds of ridglings.

Clinics at A. V. M. A. Meetings

AFTER having been discontinued for two consecutive meetings, surgical clinics will be revived at the coming Detroit meeting. The first clinic was held in Omaha in 1898 and the last one at Indianapolis in 1912. Between these two years a clinic was held in connection with each meeting; it had become a permanent institution and no meeting was thought complete without it. All of the while, however, there had been an underground sentiment against them that has cropped to the surface now and then in the form of complaints that clinics were more spectacular than instructive and that the time given over to them might have been devoted to matters of greater importance to the profession. It has always been my impression that they were tolerated rather than cherished by those who have the weight of the greater veterinary problems upon their shoulders, and with a kind of "let-the-boys-have-their-fun" attitude, there was no serious objections raised against the enterprise. Being an attractive feature, the clinic was not expunged. It brought together a larger congregation to which the higher gospel could be expounded. Each year the question of whether a clinic should be included in the program has been raised and until 1913 the exponents won over an opposition which was mild enough but, nevertheless, extant. New York decided against a clinic and San Francisco, not to be outdone in this endeavor to give a higher order of instruction, followed suit. Detroit this year comes back to the old order of things and will conclude the program with an exhibition well known to the faithful—a surgical clinic.

What about this feature of the A. V. M. A. meetings? Are the clinics worth

while? Is there anything really instructive about them? Are they a reasonably good reflection of our surgery? Can the A. V. M. A., with its multitude of problems arising out of our rapid progress, afford to devote a day to instruction in the technic of this one branch? Being an ardent champion of surgery, I would naturally be expected to answer these questions in the affirmative. This is, however, not the answer. The A. V. M. A. can no more afford to assume the burden of teaching surgical technic to its members than it can to teach the technic of any other branch. We might as well expect the section on sanitary science to undertake instruction in laboratory technic or the section on general practice to teach pharmacy methods by demonstrations. While these efforts would, of course, be in line with association work, there are other places where such details should be sought. The clinic by right should be an annual feature, but it should be limited to the demonstration of the few new and important developments of surgery. The promiscuous exhibition of common surgical operations should be discontinued in the A. V. M. A. and substituted by a demonstration of current achievements only. And to make these demonstrations still more valuable, they should come first hand from the originator of the idea or inventor of the method. For example, we have this year three distinct innovations with which the rank and file are none too well acquainted and which will be included in the Detroit program. These are Williams' uterine irrigations, Bemis's dental anesthesia and McKillip's ventricular cauterization. To omit such valuable acquisitions from the program of a National As-

(Continued on page 631.)

WORLD'S

An Digest
of all the Current
Literature of
Comparative
Medicine



WORK

in Veterinary
Science

Dr. Adolph Eichhorn
Washington, D. C.

Fistula of the Jugular Vein

By Scherz (Munch. Tierarzt. Wochen.
No. 5, 1916)

The author observed in practice two cases of fistulas of the jugular vein after the bleeding of the animals by a quack. In both cases the vein appeared swollen to the thickness of an arm, and from the opening of the fistula pus evacuated. In one case purulent thrombi developed in the blood vessels of the anterior extremities, resulting in pyemia. The other case completely recovered in 14 days with treatment of moist warm applications of sublimate solution, and inunction with red iodid of mercury ointment.

The Use of Ethyl Chlorid as General and Local Anesthetic

By Dr. K. Kubat (Wisner. Tier. Monats.
Vol. 3, 1915)

While the use of ethyl chlorid in human medicine is extensive, it receives very little attention from the veterinarians, nevertheless it possesses great virtues in one of the most delicate fields of surgery, in the anesthetizing of dogs and cats. The anesthetizing of cats is at present still a risky procedure.

All known anesthetics, such as Billroth's mixture, ether as inhalation anesthetic, scopolamin-pampon, an injection anesthetic, urethan, per rectal administration, all possess various shortcomings, so that the mortalities still represent a correspondingly large percentage. Aside from all of these the various

anesthetizing methods are accompanied with more or less danger for the administrator, especially so in ether anesthetics, in which the stage of excitement is very pronounced.

The author therefore aimed to reach the goal in another way, much more rapidly and without danger, and experimented in a series of cases with ethyl chlorid. This represents, in a chemically pure condition, a colorless liquid having a pleasant, sweetish taste and odor. It boils very easily at 12°, and burns with a flame having a greenish border.

For anesthetizing purposes a mask may be used which is lined with several layers of gauze, or still simpler, several loose layers of bandage gauze may be employed, placed on the mouth and nasal openings.

The animal is secured either in the dorsal position, or better, one hand is placed on its neck, while with the other the animal is held fast in the lumbar region, pressing it down on to the operating table. Thereupon the anesthetic is dropped on to the gauze near the nasal openings. Droppings should not be too fast (in 10 seconds about 10 to 20 drops). Only a few drops are sufficient to produce anesthesia. If it concerns a simple operation all instruments should first be prepared, and the operation should be started immediately after the application of the anesthetic. If the operation is more complicated it is advisable to commence the anesthesia with

ethyl chlorid, and to continue the same with ether.

Compared with the previous method this procedure is much faster and entirely void of danger. Formerly the animal has been laid down and a wad of cotton saturated with ether and administered to the animal. This method has many disadvantages; first of all the danger of anesthesia is very great, the author himself observed in physiological operations, when cats were anesthetized with this method, three fatal terminations out of five cases. Further this procedure has also the great disadvantage that the animals in their excited state may readily injure themselves. Especially dangerous is this form of anesthesia in parturition operations, as fatal accidents may result from the same.

The author employed the same in various operations on cats. In castrations the animals were laid on a table unsecured, and the procedure lasted only two minutes. In the extirpation of the thyroid gland this method of anesthesia has been employed with very good results. He further anesthetized 12 animals without undertaking a surgical operation on them, simply to observe the action of ethyl chlorid.

The anesthesia is quiet and deep, there is no salivation, and the unconsciousness is complete. The animals awaken immediately after the removal of the gauze from the nose, and run around as in normal conditions, whereas with the use of other anesthetics they stagger around for a long time.

Blood Albumen as a Substitute for Eggs

By Alois Walz (Tier. Centr. No. 3 1916).

The scarcity of albuminous foods gave rise to repeated investigations in order to utilize the blood obtained during slaughter for human food. Up to the present only hog blood has been used for the preparation of blood sausage. From cattle blood various kinds of blood

puddings, blood Zweibach, and dry blood has been prepared, without being able to create a popularity for these products. More recently the author succeeded in producing albumen from the blood, which neither in its external appearance, nor in its taste or odor, simulated or resembled blood. This product, which has been patented, under the name "Haematalb" represents a yellowish, coarse powder, and has for months been employed with great satisfaction in hospitals, restaurants, confectionaries, and also in private kitchens as a substitute for the very expensive eggs. "Haematalb" readily dissolves in water, and is obtained by special procedure from fresh bovine blood. According to the official analysis it contains 7.73% water, 9.71% ash, 77.44% of albumen. In the alkaline ash the basic substances are those found in normal blood, such as salts of potassium, sodium, iron, calcium, magnesium, chlorine, sulphur, and phosphorus.

According to the certification of the officials, "Haematalb" is a preparation containing a high percentage of proteids, which represents 3 to 4 times the amount of those contained in meat. It is readily soluble in cold or warm water, and coagulates in hot water. The customary solution for the kitchen is 1:8-10. The yellowish, milky fluid may then be employed for the preparation of pastry and other products in which eggs are being used, as well as a binder for chopped meat.

"Haematalb" may be used alone or in combination with eggs in all instances where it is desired to increase the nutritive value of the food. This is especially of great importance in the present war, where nations aim to utilize everything possible for food purposes, and where it is desired to keep the price of nutritious food at the lowest possible level.

The Williamson state-wide tick eradication bill was passed by the Louisiana senate June 6, only four senators voting against it.

CLINICS AT A.V.M.A. MEETINGS

(Continued from page 628.)

sociation would be a decided loss to the members and would, besides, indicate a retrogressive trend of our surgery. The champions of surgery may reasonably expect to retain the A. V. M. A. as the medium through which to expound its new methods as well as its new doctrines in just the same manner as it serves the other branches, but they should expect no more. By overstepping the bounds of dignity, with ungainly displays of the common grist of surgical operations, we have often actually degraded surgery more than we have elevated it. By attempting to wade through a lot of surgical operations in a short time the A. V. M. A. clinics have been fraught with unsatisfactory results from every standpoint by which good surgery is judged. Entirely wrong impressions have been gained of surgical operations of great merit, operators have been unjustly criticized, and patients have been brutally handled at these clinics, all because the local committees, not to be outdone, have attempted to "pull off" a big show. At other times the expected order of things was entirely upset by some single operator who, in his desire to do his work well, monopolized two or three precious hours with an operation of little significance, while other important operations were postponed until too late to do them well, and in almost every clinic in my recollection there were many patients left over, to the discomfiture and disappointment of those in charge. In order that we may raise to higher dignities these matters must be corrected and this can best be done by limiting the exercises to a few new operations for which ample preparation has been made, and to whose demonstration a given amount of time has been apportioned. In addition, such operations should be well displayed and graphically described.

Governor Burnquist of Minnesota recently appointed Dr. R. R. Price, veterinarian of the St. Paul battalion, M. N. G., to a first lieutenancy.

BOOK REVIEWS

(Continued from page 626.)

eight works, opinions of numerous authorities are given throughout the volume. More attention should have been given to the style in which the subject matter is presented; however, this is always a problem in translations.

Alexander Eger, Publisher, Chicago. Price, \$6.00.

Veterinary Therapeutics a Guide to the Treatment of Disease in the Domestic Animals, by E. Wallis Hoare, F. R. C. V. S., Lecturer in Veterinary Hygiene, University College, Cork, etc.

This, the third edition, has been entirely rewritten; obsolete material has been deleted, and the newer therapeutic measures have been incorporated in this volume. The peculiar, yet appropriate, manner of combining etiology and symptomatology with therapeutics—therapeutics in its broad sense—has necessitated an explanation on the part of the author, to the effect that the work is not intended as a textbook on materia medica or on pharmacy and that it deals with the treatment of diseases of animals.

While many veterinarians are familiar with the previous editions, the work is of such importance that some mention of the nature of its contents is in order.

Part I deals with the subject of *Diagnosis*. The general symptoms of disease are fully considered. The section on *Care, Management and Nursing of Sick Animals* has been enlarged and revised. It now includes articles on cattle, sheep, pigs, dogs, cats and birds, written by practitioners who have specialized in these subjects.

Part II gives consideration of the action, uses and doses of drugs. Here discrimination has been made and only such agents that are of practical value or that give encouraging results are dealt with. A chapter on serotherapy is also included.

Part III treats of diseases commonly

met with in general practice, and in order to better explain the indications for treatment, etiology and symptomatology of many affections are included in a concise manner. Eighty-three pages are given to formulae, written out in regular prescription form and arranged in a manner that should prove very popular with the practicing veterinarian, whether he be a prescriber or a dispenser. In a word, this treatise is written in a manner which characterizes its author—accuracy of statement, practicability and clarity of style in its composition are its noteworthy attributes.

The work is not only well suited for the student of veterinary medicine, but will prove valuable to the practitioner.

Alexander Eger, Publisher, Chicago. Price, \$5.50.

POISONOUS PLANTS AFFECTING SHEEP

(Continued from page 608)

in cases where there is great inflammation of the mucous membranes of the stomachs and bowels, this seems to make matters worse. Raw eggs are always valuable in soothing this irritation.

31. Porcupine Grass

Botanical name—*Stipa*.

While over a hundred varieties of this grass are known to botanists, only one, "Sleepy Porcupine Grass," is known to be poisonous to sheep.

This is commonly a native of the Southwest, abounding especially in southern Colorado, western Texas, lower California, Arizona, and New Mexico. It grows at an elevation of from 5,000 to 9,000 feet; is a very hardy plant, about three to five feet tall, with peculiar long, flat leaf-blades, hence the name, "porcupine grass." The stalks and leaves are bright green, and the seeds very coarse.

Only when the animals are very hungry or the feed extremely scarce will sheep eat it.

The symptoms of poisoning are insidious, but not particularly fatal. The animal becomes droopy and appears

sleepy. Finally, it lies down and, to the unexperienced, the band is minus another sheep. However, in a little while, depending on the amount eaten, the victim awakes like Rip Van Winkle and trots off as though nothing had happened.

32. Uncommon Plant Poisonings

Occasionally a plant will cause trouble in some locality that is not known generally. Also, one comes into contact with poison cases that have occurred in almost unheard of manners. Even in the West, on one forest range, a peculiar grass, such as "bear grass," may be found on one side of the mountains, causing much trouble, while on the other side it is unheard of. Many local poisons have not been touched on for the reason that space forbids.

It requires often the utmost skill to unravel cases that at first defy diagnosis. Eliminating spoiled food, acute infectious diseases, parasites, nearly all range enzootics can be traced to some poison ingested in the food or water.

In every case where the diagnosis is shrouded in mystery, the sheep should be moved to other quarters and given different food and water. These two precautions will often work wonders. An investigation can then be made.

In some parts of the Northwest, two plants found among the foothills of the summer ranges have been condemned by sheep men as poisonous. These are the scutellaria or skullcap, and a form of wild pea, with small white flowers. Poisoning from these usually occurs in the early spring, and perhaps they are only harmful when ingested in large quantities by a hungry animal.

In the eastern part of the United States, pokeweed, corn cockle, horse nettle, jimson weed, horse chestnut and the castor bean have all caused occasional deaths among sheep. It is not common, however, and the animal is dead before discovered, as a rule. The treatment for these cases consists of large doses of tannic acid dissolved in water, if they are discovered in time.

Queries and Answers

The editor will reply to queries appearing here, as he is able and as opportunity permits, but he does not want, nor cannot undertake to monopolize this portion of the department. Any reader who can furnish further and better information in reply to any query is urgently requested to do so. Where the treatments advised in these replies is adopted it is hoped that those employing them will report their results whether good or bad. In all cases give the number of the query when writing anything concerning it.

QUERY No. 241—Please identify a disease common to horses in the central United States. Here is a case illustrating my point of inquiry.

A man buys a horse in March while the weather is cool. He tries him out and his wind is very good indeed. The horse is brought to me, a veterinarian, for certificate of soundness, and I test him in every way I can and pass him sound. The horse is accepted by the buyer on my judgment and his own opinion and upon the seller's warranty of soundness. This same horse works every day sound in wind on up until, we'll say, May, when the first hot sunshiny day comes, and lo, to our dismay he ceases to perspire and pants so badly that he cannot do a horse's work. The man comes to me then to know what steps to take to recover on the seller's warranty. He has ample proof that the horse was afflicted in the same way the summer before and that the owner who sold him also knew it full well. The seller is sued for the breach of warranty and the case comes to trial. Veterinarians, both new and old, are examined rigidly by both sides of the case. They are asked for the name of the disease. They are asked for its pathology. They are asked for its cause. They are asked for prognosis of such cases. And they cannot answer. The court by agreement permits veterinary books on diseases of horses to be read from in court as evidence, and no answer to the above questions is found, and finally the case has to be thrown out on account of non-

identity, or the veterinary profession is laid bare to ridicule and scorn, and judgment rendered on general principles and the horse adjudged as unsound regardless of the ignorance.

I say again, let's have identity for this malady in all its aspects.

"Hey Doc, this horse won't sweat a drap and he pants like a lizzard," says our client. What's the cause? What's the disease? What's the remedy? Now, what should poor "Doc" say or do? Any readers who answer these questions satisfactorily will do a splendid service to many of us.

J. W. H.

REPLY—Greatly to our relief, the opinion of readers and not of the editor is asked for. We leave the reply to this question to readers, but it may make the replies more definite to add to the foregoing that the history further reveals that this malady first attacked the horse very suddenly during some hot day when he was being worked hard, as for example, working on the binder during harvest. It will probably further show that this horse was fed on corn and corn fodder or timothy hay during the following winter; in other words, fed an unbalanced ration, a ration deficient in nitrogenous food. It will further show that the horse possessed a very heavy coat and did not shed in the spring until late—perhaps it did not completely shed at all.

Experience has shown that the majority of these cases are quite readily curable. Where the malady is known to exist the preceding summer, it can in a

measure be forestalled by feeding a well balanced ration, or at least including some alfalfa hay in the regimen during the winter, with oil meal and blanketing if necessary to bring about early and complete shedding. If no precautions are taken and the condition is allowed to become aggravated, with the first days of warm weather and hard work, a different line of treatment is required, but usually success may be obtained from the following:

Clip the horse at once. Wash him thoroughly all over with soap and water. Feed a balanced ration. Administer epsom salts, three ounces daily, until the horse begins to sweat freely, which usually requires a week or ten days. During this time he must not be subjected to any work that will cause the "panting." If auscultation to the trachea reveals loud noises made by collections of mucus in the bronchial tubes, he should, in addition to the foregoing, receive ammonium chlorid, one to two drams three times daily. Further than this, some veterinarians administer sweet spirits of nitre, two ounces, three or four times daily and believe that its action in this ailment is very beneficial.

As stated above, we leave the reply to the query to readers. Let us have your opinions.

QUERY No. 242—Why do some animals that are hosts of millions of intestinal parasites, manifest no particular evidence of ill health or inanition, and in other instances a few parasites cause animals serious disturbances?

REPLY by Dr. A. T. Kinsley—So far as I know it has never been explained why a very heavy infestation of parasites produces but minor symptoms or none at all in some animals, while in others a comparatively light infestation is productive of grave symptoms. Perhaps it is due to the varying degrees of resistance or susceptibility to these parasites by the different animals.

The same phenomenon is observed in

the case of infectious diseases. Taking tuberculosis, for example; it is not rare to find most extensive lesions postmortem in cases that showed but few or no symptoms antemortem, while on the other hand there are animals that exhibit grave symptoms of tuberculosis and on postmortem examination we find comparatively insignificant lesions.

QUERY No. 243—What is the best cure for capped hock? J. A. D.

REPLY—The ordinary case of capped hock, that is, the one where the sheath of the superficial extensor tendon is not involved but where there exists a superficial bursal distension over the os calcis, is best handled surgically.

After preparing the field of operation in a good manner with regard to asepsis, painting the skin with iodine, an incision is made through the tissues into the center of the cyst with a sharp bistoury, and drainage is in this way provided. Such incision should be about one-half to three-fourths of an inch in length, and the interior of the cavity is injected with tincture of iodine and immediately covered with an aseptic dressing of cotton, which is held in position by means of bandages.

After-care consists in keeping the animal on pillar reins if necessary to keep it standing, and absolute quiet is enforced for a period of about ten days.

If one is careful in the execution of the technic, no infection will result and complete recovery will follow within three weeks.

Enclosed please find three dollars for one year's subscription to VETERINARY MEDICINE and one Big Ben binder.

I have read it and would say that the AMERICAN JOURNAL OF VETERINARY MEDICINE is a very interesting and very valuable publication. You have accomplished a great deal with it. I am not like some who say they couldn't live without it. But I should have missed a great deal of interest and value had I not had it. Every veterinarian should take it who wishes to keep in touch with the times in the profession.

Yorkton, Sask. H. V. MARKHAM, V. S.

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary Medicine



It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

The Story of Army Veterinary Legislation

FIFTY years is a long period for a federal service to go unrecognized by a country.

Twenty-five years, or a quarter of a century's efforts, to gain some standing in keeping with the dignity and scientific service of the veterinary profession was a long campaign for justice. Such has been the experience of the veterinary profession in the United States army.

Passing strange, indeed, is the fact that one who entered the United States army veterinary service in the early 80's, a Canadian by birth, should have spent upwards of ten years as an army veterinarian and then, discouraged and hopeless of ever gaining rank in our army, went back to his native country and entered the Canadian army veterinary service, was soon after recognized and honored by rank and in another ten years was promoted to lieutenant-colonel and the whole Canadian army veterinary service placed on a higher plane of efficiency and service than in our own country.

Some will remember the early efforts of Drs. Griffin, Le May, Piche, now in the Canadian army veterinary service; Lusk, Schwarzkopf, McMurdo, Plummer, Corcoran and others who sought proper recognition through army chan-

nels, but who realized the promises made to the ear were to be broken to the hopes.

Others will recall the wonderful campaign led and directed by the lamented Huidekoper at the close of the Spanish-American war under the encouraging aid of the late President McKinley. How he overcame the opposition of some army officers, the forceful feeling of opposition of some senators, the opposition of Senator Sewall, of New Jersey, and with an adverse report of the Senate Military Committee, carried the bill through the Senate in 1899-1900 under the leadership of Senator Kenney, of Delaware. Also successfully overcoming all opposition in the House, even with an adverse report of the House Military Committee, gained the approval of the House directing the establishment of an army veterinary corps with commission and rank to colonel. How a little later the Secretary of War, Elihu Root, and Adjutant General Corbyn succeeded in holding up the measure and finally encompassing its defeat.

Then followed, congress after congress, efforts to again pass some measure, under the leadership of the late Dr. T. Earle Budd, and later under the directing influence of Dr. J. P. Turner,

under whose leadership retirement on age, disability and the granting of pensions was obtained.

At the close of the 61st Congress, and after the election that made the House in the 62nd Congress Democratic—at the Prince George Hotel in Toronto, Canada—several army veterinarians and others of the A. V. M. A. earnestly plead with the writer of this story to accept the post of leadership in another campaign to attain this much to be desired recognition.

Army veterinarians conferred and finally drafted a bill to give commission, rank, pay and allowances up to first lieutenant. The bill was placed in the hands of Congressman Diefenderfer, of Pennsylvania, and later obtained favorable approval of the House Military Committee and later, under the helpful influences of Chairman Hay of the House Military Committee, passed the House without a dissenting vote.

Senator Penrose, of Pennsylvania, had been selected to introduce a similar bill in the Senate, but having it placed on the calendar of the Senate by request, it met the fate that usually follows bills introduced by request and was never reported.

In the meantime the House bill went to the Senate, was referred to the Senate Military Committee and by this body to a subcommittee consisting of Senator Bristow, Chairman; Jones of Oregon and Clarke of Arkansas. The most persistent and far-reaching efforts were made to secure a favorable report of this bill from the subcommittee, but broken promises by the chairman and continued procrastination ended in this Congress reaching its end, but no action by the subcommittee. It is only just to say that Senator Jones, of Washington, was favorably disposed to report the bill out of committee but Senators Bristow and Clarke were opposed to our recognition.

In the 63rd Congress, the Senate having become Democratic, the bill was again introduced in the House by Chairman Hay of the House Military Commit-

tee, and through whom it received early consideration at the hands of this committee, and under the guiding hand of Chairman Hay it passed the 63rd Congress without a dissenting vote.

Senator Kern, of Indiana, introduced the bill in the Senate and it was referred to the Senate Military Committee, by whose chairman, Senator Chamberlain, the bill was referred to the following subcommittee: Senator Luke Lea, of Tennessee, Chairman; Senators Thomas of Colorado and Catron of New Mexico. Later, owing to the absence of Senator Thomas from the Senate for a period, Senator Hitchcock of Nebraska was substituted for Senator Thomas.

A favorable report was obtained from a majority of the committee, Senator Hitchcock dissenting and later joined with Senator Thomas in a minority report opposing the proposed recognition.

The Senate Military Committee as a whole approved the favorable report of the subcommittee, and the bill was placed on the calendar of the Senate. Three successive efforts to pass the bill by unanimous consent failed, through the opposition of Senators Clarke, Hitchcock and Smoot. On the 3rd of March, just twenty-four hours before the end of the 63rd Congress, efforts were made to pass the bill, but under a filibuster, led by Senator Smoot, a motion to lay the bill on the table followed and no opportunity followed to recall it and a second defeat was the fate of our bill.

On the convening of the 64th Congress Chairman Hay, who had so successfully handled the measure in the 62nd and 63rd Congresses, again assured us of his deep interest in our efforts. Charged as he was with drafting an army reorganization measure, he made our bill of the 62nd and 63rd Congresses a part of his army reorganization scheme and increased the proposed rank to that of captain. He again obtained the endorsement of the House Military Committee and later succeeded in having the House approve this measure with but two dis-

senting votes, neither of which was against our part of the bill.

In the Senate a similar situation prevailed. Senator Chamberlain, as chairman of the Senate Military Committee, was called upon to draft an army reorganization scheme and in this bill pay and allowances up to and including major was allowed but no commission or rank was granted the profession. On the 17th day of April, 1916, this bill was amended on the floor of the Senate by adding the word commission and rank before second lieutenant, first lieutenant, captain and major, and, happily for the Chamberlain bill, passed so amended.

In conference, when the final bill was brought out, the House conferees accepted the higher rank of major and those parts of the House bill covering many details of the service were adopted and recommended for passage to the Senate and House, both of which bodies passed the same by overwhelming majorities. The bill was subsequently approved by the Secretary of War and later signed by the President and is known as the NATIONAL DEFENSE MEASURE, undoubtedly the best bill of its kind ever passed by Congress.

The loyal, earnest support given this bill by the profession over the land, the splendid timely support of Drs. Bolser of Indiana, Robertson of Illinois and Hollingsworth of New York, and Turner of Washington during the past five years, was of the most helpful character. This story of our efforts would not be complete without special reference to Congressman James Hay of Virginia, who was won to its support by the justice of this measure and who for five years has been, above all others, the staunch friend and advocate of the profession's hopes to receive this recognition at the hands of your country and mine; nor can we ever forget the splendid contributions from the pen of the lamented Dr. D. Arthur Hughes, that did so much to arouse the veterinary profession to a realization of the merit and importance of the legislation, and to align the ranks of the pro-

fession solidly behind those who were in the forefront of the struggle.

W. HORACE HOSKINS.



The above is a photograph of a tuberculous beef liver. It is interesting on account of its size. The weight was thirty-seven pounds.—James G. Jervis, B.V.Sc., Vancouver, B. C.

STRANGULATED VENTRAL HERNIA OF COLT

Before starting this article I wish it understood that the report of this case is not one of those where we have miraculous recovery as in some that are reported.

I am sending it as it shows that strange and seemingly impossible things can happen, and the man in the field may meet with such experiences not infrequently.

I was called on July 20th to see a mare colt of about six weeks of age and found the animal suffering intense pain and showing colicky attacks, and lying on its back with the feet extended almost constantly.

The history was as follows: The colt was in good shape when the owner left it the night before and on going to the barn the next morning he found it in the condition as above described.

The colt had been sick the greater part

of the night as there were areas where the skin had been bruised; the mother's udder was very much distended with milk which was proof of the colt's illness for several hours. Upon examination I found an enlargement on each side of the mammary gland (this was a mare colt) about the size of a man's two fists and these had appeared after the owner had noticed the colt was sick. The enlargements contained prolapsed bowel. By applying pressure to one enlargement it would increase the size of the other.

It was readily seen that I had a case of hernia to contend with and the next thing to do was to find an opening or outlet from the abdominal cavity.

I made a very careful and close examination and also questioned the owner and he informed me that since the colt was born that it had had an enlargement at the navel but this had not increased in size any. I found the umbilicus somewhat thick but could not recognize any intestine within it so the idea of an umbilical hernia was put aside. The space between the navel and mammary gland (six or seven inches) was not in the least enlarged or thickened I did not think a prolapse could have occurred at that place, but by grasping the skin and at the same time exerting some pressure I was able to recognize bowel and bowel movement.

I then came to the conclusion that the opening was not far away from this point.

I then explained the case to the owner and told him that the colt could not live long in the condition it was in and that an operation was indicated as some relief would be gained by it. The prognosis I withheld for the time being as I was afraid that the intestines had become strangulated and if such was the case the prognosis would be unfavorable (with the unfavorable emphasized) owing to the inflammation that would be present.

The owner consented and we gave the colt a small dose of H-M-C. The case was soon under the anesthetic and we proceeded to operate. I selected

a field about half way between the navel and the mammary gland and after cleansing the seat I made an incision in the skin and further proceeded with blunt dissection. Just below the skin and underlying tissue I came upon a portion of the small intestine and by following this forward (towards the navel) I came to an opening in the abdominal wall about one-half inch in diameter. The external opening was about as near to the internal as if I had already known beforehand where it was. The internal opening was a little to one side of the median line and about three inches posterior to the navel or umbilical opening. The abdominal opening being too small for the return of the prolapsed bowel I enlarged the opening and reduction of the hernia was comparatively easy. The intestines were very much inflamed and discolored and I knew that the prognosis was very unfavorable, as I had before feared. After completely reducing the hernia the abdominal wound was sutured with catgut and the external wound with tapes and drainage provided.

The animal was allowed to remain on its side until the effects of the anesthetic had passed and this did not keep us waiting long as it was soon over and the colt went to its mother and started to nurse showing no further pain.

This took place in the forenoon and the colt did not show any further disturbances until about 3 p. m. when it grew worse and at five p. m. it died. This was one of those cases where the operation was a success but the patient died.

In conclusion I will say that the only way that I can account for the condition as stated above is that there must have been a weakness at the point and a small rupture the abdominal tunic with a following prolapse of intestine and after they had once left the abdominal cavity the gas that was generated in them caused them to push farther out and separate the skin from the underlying tissue. The loose skin in the vicinity of the mammary gland was easily separated but that between the navel and gland being so

tense it held the intestines so firmly that a diagnosis could not be made as far as the exact location of the opening was concerned.

I consider that this is a remarkable case and none of my text books give any information on it. We have umbilical and scrotal hernia but a case of this kind is something unusual and I have never read of one similar.

Pella, Ia. T. G. FULTZ, D. V. M.

A RARE FRACTURE OF THE HEAD OF THE FEMUR

Belgian horse, gelding, color roan, age six years, weight one ton, cost \$300. in Iowa, last November and shipped to this city and put to work on ice wagon after recovery from the so-called shipping sickness.

The horse suffered with lameness after a few days' work, and the practitioner diagnosed it as sprain of the gluteal group of muscles and applied the usual treatment, but without avail. Then, the owner surmised injury to the hip joint, and his friend, the veterinarian, applied a strong blister externally over the region of the joint. The patient was kept in a box-stall four months without visible improvement, and I was called in consultation.

I considered the history and conditions and learned that at no time was there much swelling, which is deemed characteristic of fractures, and I considered we were dealing with a case of what Williams calls trochanteric disease, or what Moller and Dollar describe as inflammation of the bursa of the gluteus medius tendon. The patient walked about as lame as the average spavined horse, and the hand could feel a crepitation when placed over the hip joint, also a well marked clicking sound could be heard in the hip joint region at every step when walking, and the lameness was most marked when the horse was turned around and more pronounced after a short rest.

I advised absolute rest in slings and deep pointed firing with thermo-cautery

over the hip joint, but the owner decided to delay firing and rely on the rest in slings. No improvement resulted in a month, and I was again called in consultation and decided to resort to rectal examination, which had been overlooked. We discovered the fracture after careful manipulation of the limb and palpation by the hand within the rectum. The attending veterinarian agreed with me after following my procedure of examination.

The patient was kept another month in slings and finally killed. Post mortem revealed a transverse fracture of the head of the femur without evidence of repair, as fully described in textbooks mentioned above. The specimen was sent to the Veterinary School of the University of Pennsylvania.

JAS. A. WAUGH.

Pittsburgh, Pa.

ENDORSEMENT FOR MERILLAT'S TREATMENT OF SEROUS SACS

In reading Dr. Merillat's article in the May JOURNAL on serous sacs, I felt like adding something to the treatment as outlined by him. Like most practitioners, I used to open them and endeavor to promote healing by the use of antiseptics but later discovered that if they could be kept aseptic, more than half was accomplished. So I began treating them as outlined by Dr. Merillat, but in addition using a blister of biniodid of mercury over the part affected, and I found the results most gratifying. I find it necessary from time to time to reopen the sac, as if this is not done the primary opening very soon closes and allows the sac to refill. Of course, I always open it in an aseptic manner.

With the treatment as outlined above, these conditions recover in from five to ten days and cause no further trouble, but occasionally one of long standing will form a fibrous wall and will not respond to the above treatment. In such cases, I either cut them wide open

and destroy the wall with tincture of iodine or pack the cavity with gauze soaked in a strong solution of bichlorid of mercury. This will destroy the wall and at the same time not infect the tissues with pus organisms.

While speaking of biniodid blister, in the treatment of this condition I will mention another use that I find for the same, and that is in wounds of nearly all classes of the limbs, with the exception of large lacerations. In the army we get a great number of punctured wounds of the legs, and almost invariably infection is carried into the same by the shoe of the offending animal. Many times there are punctured tendon sheaths or even joints. My method of treatment is to clip away the hair, apply iodine to the part, and then rub in and around the cut or puncture biniodid of mercury and cosmolin, one to four.

In those cases where there is danger of open joint or tendon sheath, I always cover the same with gauze, then a layer of cotton and apply a bandage over all and leave this in place for several days, often a week, unless I find some good reason for removing it. The results have been almost marvelous in preventing infection with pus organisms by this line of treatment, whereas in the old method of trying to overcome infection of wounds became infected and swollen to a great extent.

The logical reason for the benefit gained seems that it is due to the increased blood supply and innervation of the affected tissues, also an increased leukocytosis, with a consequent destruction of any germs that may have become lodged in the tissues. Then, too, biniodid of mercury is a very powerful antiseptic and disinfectant.

I like my new station and now that the army bill has passed, the army position looks good to me and should attract some of our best men from civil life. There will be many vacancies to be filled.

CHAS. H. JEWELL.

Schofield Barracks,
Honolulu, H. T.

PARALYSIS OF THE LARGE COLON IN A HORSE

This horse has had the colic about three times prior in two years. The work he did was hard, but he always kept in fine condition. We always had trouble to get his bowels to move after or during each spell of colic. This day he came in from his work and began pawing immediately. The driver said that he didn't know anything was wrong as the horse hadn't done any pawing before during the day. He began to roll and show all the symptoms of colic and once in a while he sat up like a cat.

I was called and administered a one-fourth grain of arecolin, which brought no visible results, so as he was mean to drench, I administered by means of the stomach pump one quart of linseed oil, one-half pound of epsom salts and chloral hydrate with some nux vomica. This gave no relief, so I administered another one-fourth grain of arecolin. About two a. m. he began to belch gas, so I inserted the stomach tube and relieved the stomach of considerable fluid and some gas and administered about the same dose as I had before while the stomach tube was in the stomach. At eight a. m. I did the same thing again. The horse had no relief all this time, so I administered cannabis indica intravenously, which gave him relief from pain. I gave rectal injections, and on rectal examination, the bowels did not seem to be full or any abnormality present. I administered one-half grain arecolin, which brought no results, and in the two days the horse lived. I had administered aloes, one ounce; linseed oil, one gallon and epsom salts, three pounds, and arecolin, two grains. I did not use the stomach pump to empty the stomach after the first morning. I also gave nux vomica, bryonia, sodium hyposulphite, and in all that time there was no bowel movement.

On post mortem, I found fluid and some feed in the stomach, the small intestine practically empty. The large colon was full of feces in a liquid con-

dition with practically nothing in the floating colon. I forgot to say that on auscultation, peristalsis could be heard on the left side sometimes but not on the right side, the sounds seeming as if far away. The bowels were in good condition, there being no inflammation present, so the only solution to the case that I could see was a complete paralysis of the large colon.

W. B. MORGAN.

Philadelphia, Pa.

THROMBOSIS OF THE DORSAL ARTERY OF THE PENIS

I was recently called to see a stallion which presented symptoms which were entirely physical and subjective in character, yet perplexing as far as the etiology was concerned.

The animal in question was a twelve-year-old Belgian. Previous history was negative. His present condition consists in an inability to obtain a complete erection of the penis when about to serve a mare.

For the purpose of giving me an opportunity of observing the condition to a good advantage, he was brought out with a young mare and after teasing the mare for a short time, I found on making an examination that the penis was in a perfect erection, with the exception of its distal third, including the glans, which was flacid and apparently anemic. There was no sign or history of physical injury, nor was there anatomical malformation. Further, as I have stated before, complete history was negative; heretofore he had been in perfect health and very capable of both erection and copulation. This, in a way, practically removed the condition from the realm of physical injuries and placed it in the category of pathology. Granted that it was a pathological condition, yet, I was in a quandary as to what could affect the organ in this manner, from the standpoint of pathology. Infectious diseases were ruled out, because of the absence of inflammatory reactions and

rise in temperature. The only thing that I could arrive at, was that inasmuch as he was somewhat aged, because of continual sexual excitement and a high blood pressure, he had acquired arterio-sclerosis, a condition often accompanied by emboli. I thought it possible that an embolus had lodged in the dorsal artery of the penis producing a thrombosis and the above stated results.

I put the subject on potassium iodid, arsenic and strychnin. As yet the condition is unchanged and I fear that it will remain so unless a compensatory circulation is set up or absorption of the thrombus takes place.

I should like to hear what others have to say of this condition.

G. E. JORGENSON, D. V. M.

Clermont, Iowa.

EVERSION OF THE UTERUS IN THE COW

One morning a farmer called me, asking that I come to his farm at once, because as he termed it, "the calf bed had come out of his cow." On my arrival I learned that I was the third veterinarian he had called to see this case in the last ten days. One of my brother veterinarians had cleansed the uterus and returned it to its proper place and applied a trust. The second veterinarian had called and replaced the uterus and had sutured the vulva.

I cleansed the uterus well with anti-septics, and then put it in proper place at which time I inserted a rubber ball and blew it up to full size. After it was inserted, I instructed the owner to sell her, as her calf was weaned, and the cow was fat. The farmer replied that he considered such action a fraud and that he could not sell her under those conditions, so in order to help him out of the difficulty and to get my fee I told him I would send a shipper to buy her. That same evening he sold her to our local shipper, who in turn sold her on the Indianapolis market, with the rubber ball still in the proper place. I have

often wondered what the man thought that butchered this cow.

Shelbyville, Ind.

W. S. TUCKER, D. V. S.

Probably if the uterus had been thoroughly and carefully cleansed with a suitable and warm antiseptic solution, such as a half of one per cent solution of some of the proprietary coal tar preparations, and then carefully and properly replaced, recurrence of the eversion would not have taken place if labial sutures had been retained for forty-eight hours. (Ed.)

CHRONIC GLANDERS OF HORSES

Dr. T. D. Hinebauch of Tower City, North Dakota, sends a brief of a case which was tried in the Supreme Court of North Dakota wherein Ole H. Nilson sued Horton & Co., horse dealers, for the price of five horses. The plaintiff established the fact that a gray mare that he purchased from the defendants and which was guaranteed by the said defendants to be "sound and true in all form, shape and manner" was glanderous; that as a result, four other horses became infected, and the five animals were destroyed under the direction of the state veterinarian.

Dr. Hinebauch's letter states that in July, 1897, he examined a bunch of horses on the Erickson farm and found a number of them affected with glanders. The animals were all destroyed with the exception of a certain gray gelding that the owner needed to finish his harvest, which would require but two days. Mr. Erickson faithfully promised to destroy the horse as soon as harvest was completed, but failed to keep his word. In November, 1905, more than eight years after his first visit, Dr. Hinebauch again visited the Erickson farm and found the same gray gelding, showing well marked symptoms of glanders. Needless to say, the horse was immediately destroyed.

Here, it would seem, is an instance where an animal remained infected with glanders for at least eight years.

A PRACTICAL METHOD OF HANDLING TORSION OF THE UTERUS

In going through the March JOURNAL, I noticed on page 224, Query No. 215, information is requested relative to torsion of the uterus in cows, and I wonder if it is not universally known that this condition can be corrected quickly and easily by hoisting the animal by its hind legs until the uterus is pendent. Infrequently some manipulation is required after hoisting, but generally the position corrects the condition. I use this method and cases that previously gave me great trouble are now satisfactorily terminated in a short time.

CHARLES THOMPSON FAKE, D.V. M.
Granville, N. Y.

AN EASY METHOD OF BURNING CARCASSES OF INFECTED CHOLERA HOGS

It is not advisable to bury the carcasses of animals. I know that on some farms the question of fuel is important, but if you dig a trench, say eighteen inches wide, two feet to two and one-half feet in length and eighteen inches in depth and lay across this little trench a few pieces of scrap iron that you might readily find on most farms where they have some of their old machinery, and put the fuel underneath, it takes very little fuel to burn a carcass completely. This is a comparatively easy method and successful in incinerating the entire carcass quickly without a great deal of smoulder and smut about the place. I always advise against the burying of these animals for the simple reason that the owner or the tenant might be of a lazy disposition and not dig the trench deep enough unless you are there to watch him, and hogs might pasture or roam around the place where these bodies have been buried a year or so

afterwards and dig up some of these carcasses, which would then be virulent and produce cholera.

A. T. PETERS.

Peoria, Ill.

A CASE OF OPEN JOINT SUCCESSFULLY TREATED.

A case of open joint due to injury in a runaway was brought to my attention immediately after the injury. A small piece of iron pipe was driven into the fetlock joint at the anterior part of the internal surface of the joint producing a small wound about one-half inch in length. The owner did not think it serious but as it was a valuable horse he decided to call me.

Upon my arrival I immediately observed that synovial fluid was seeping out of the joint and on closer examination I saw something which looked like cartilage. I had considerable difficulty in convincing the owner that the condition was serious.

The horse was then cast and very securely confined; the surface about the wound was clipped and shaved and then washed with a solution of mercuric chloride—1 to 2000—in sterile water. I then rinsed the wound for about five minutes with sterile water using a syringe which had been boiled for 15 minutes. After washing my hands well in a bichlorid solution, I painted them with tincture of iodine and also painted the wound and surface about the wound twice. I then explored the wound to see what it was that looked like cartilage and found it to be a small piece of bone with cartilage attached at the end. I then painted with tincture of iodine and clipped a layer off of the surface of the wound with a sterile pair of scissors. The wound was again painted twice with tincture of iodine and stitched with braided silk which had been boiled for 15 minutes and then dipped into tincture iodine. The surface of the stitched wound was painted twice with tincture of iodine and covered with a thick layer of collodion. This

layer of collodion was watched frequently and any break or crack was recovered with collodion. A course of polyvalent staphylococcus and streptococcus bacterin was given. Upon leading the horse to the barn, only a short distance, he was very lame. Three days later he was slightly lame. Seven days later the horse got loose and tore off the collodion. It then had nearly healed but no more synovia escaped and the wound was well granulated. Twelve days after the injury he was driven but at certain steps would flinch a little. He was then put in the stable for another week and then when taken out did not limp. This horse is owned by Dudley Ferguson, liveryman, Marietta, Ohio, and is now as well as ever; not even a blemish of any kind is to be seen and the joint did not swell at any time.

S. T. LUDWIG.

Marietta, Ohio.

SIGNIFICANCE OF VOMITING IN DOMESTICATED ANIMALS*

There is no doubt that vomiting in the herbivora is always pathological, and as its incidence is well known I shall not add anything on this point.

I am in absolute agreement with those who maintain that vomiting in the bitch during the weaning period of her offspring is physiological.

Many birds—such as the canary and allied finches, pigeons, parrots—feed their young by regurgitating partly digested food from the crop; whilst owls cannot thrive for long unless they swallow fur, skin or feathers, which they reject afterwards by vomiting. Other birds—as the nightingale—vomit pellets containing the chitinous material of those insects on which they thrive.

The cat vomits its fur, and does this with greater ease if she ingests fish-bones and skin, which seem in this creature to have a purposeful action.

Physiological vomiting is mentioned

*Reprinted from *Veterinary News*, London.

in the Scriptures in which they say "a dog returns to its vomit."

Parrots and many other birds vomit when suffering from gastric catarrh, gastritis, gastroenteritis, indigestion, etc. Dogs occasionally, and cats frequently, vomit after chloroform anesthetization. The dog generally vomits after the hypodermic injection of narcotics and intestinal stimulants. Many of the short-faced dogs—as bull-dogs, pugs, Pekingese—will frequently vomit an undissolved capsule, pill, bismuth powder, etc. This cannot be due to a physiologico-chemical action. Many of the smaller breeds confined in a basket or box, or lying on one's lap, frequently vomit when traveling in a carriage, taxi-cab, or train. Cats deprived of verdure for a long time not rarely vomit at the sight of, and upon a green carpet.

Last year a great proportion of the dogs suffering from distemper first manifested repeated vomiting, which disappeared under treatment to be followed by more characteristic symptoms of the disease. As kidney-disease is almost general in dogs over eight years of age, one must be careful in concluding that because a dog died after repeated vomiting and kidney lesions—especially of the chronic type—were found on post-mortem examination, the disease caused the vomiting.

Typhus is fatal in the majority of cases in old dogs, and as kidney lesions are commonly present anterior to that disease, I think co-existence of the two may have much to do with the mortality. In the case of the younger dog there may be no kidney disease, yet repeated vomiting.

Kidney disease may exist in the dog for some years without the animal exhibiting any symptoms likely to attract attention. In numerous cases of polydipsia associated with polyuria—both are often exhibited when there is chronic nephritis—chemical and microscopical examination give no result beyond a low specific gravity of the urine.

Old cats suffering from a chronic

catarrhal gastritis or enteritis associated with chronic hepatitis often have intermittent attacks of vomiting which is occasionally accompanied by diarrhea.

I have never observed stercoral vomiting in typhus—I have in cases showing all the phenomena often seen in the last stages of that disease, when there has been found on post-mortem examination a cork or other foreign body in the stomach or small intestine; stricture of the ileum, etc.

Vomiting is not rarely absent in typhus; I have often seen it absent in gastric tympany, and in impaction with food or hair, both in the cat and dog. These cases, unless relieved, end suddenly; or they may linger until death supervenes from starvation or intoxication. In the case of starvation by impaction, as the stomach is full there is no stimulus for food.

The carnivora often vomit from brain disease, cerebral intoxication or blood-poisoning. Many of the inflammatory diseases set up intoxication of the blood-stream and thus cause vomiting. This is seen in the case of an abscess, or in an accumulation of catarrhal material in senile metritis in the bitch. In these conditions, as soon as there is an escape of the purulent material the vomiting ceases.

Torsion of the uterus, retained dead pups in an impervious uterus, retention of the urine and cystitis, due to the blocking of the urethra, or jaundice, bring about vomiting by absorption of the toxic material which is carried to the brain by the blood-stream.

Pharyngeal and esophageal disease, irritation, or obstruction, set up retching rather than vomiting.

Areca nut seems to act more energetically on dogs suffering from an abundance of worms than when there are one or two; in the latter case it is often rejected by vomiting. It does not seem to matter in what manner or form this drug is given; a dog that cannot retain areca nut in powder or in solution does not often retain it when given in a

capsule, pill or catchet. The same effects also result from similar vermifuges.

HIGH STEPPING FOLLOWING FAULTY SHOEING

The following is a short account of a condition in horses that I encountered quite frequently last spring and which I have not seen before during my three years' practice.

The past spring my attention was called to a number of horses that were affected with a peculiar gait, which at first gave me something to ponder over as the animals appeared to be in the best of health in every way. From all external symptoms, the animals were O. K. with pulse, temperature and appetite normal. When the affected ones were driven or worked in the field on soft ground, all was well, but let one come on hard solid ground, and it would show some of the most peculiar gaits imaginable—a gait hard for me to describe. On solid ground, they would not bring their forelimbs back of a perpendicular line during locomotion and would travel as if they were "tender-footed" and yet would raise the forefeet to an abnormal height and hit the ground with considerable force. When forced to back, the feet would be dragged over the ground in a very peculiar fashion, some animals almost walking on their hind legs. Several of them, on being taken from the barn and led on hard ground would begin to dance, first picking up one foot but quickly letting it down to repeat the action on the other, and so on. There was no swelling or inflammation present in any case.

On carefully inspecting the feet, I noticed that the toes were of considerable length, and after questioning the owners, I was informed by each one that the animals had been shod all winter and the shoes had been removed only a few days before. In every case the condition was noticed a couple of days after the shoes were removed. A pair of shoes were brought to me, on which I noticed

the heel calks were quite high, a thing many shoers believe in. Seeing that the high calks would about bring the foot to the proper inclination, and thinking that the sudden change from high to low heels might cause some soreness of the tendons or slight straining, I proceeded to balance the foot by cutting down the toe.

In almost every case, about one and a half inches were cut from the toe, and to my surprise the cure was almost instantaneous. In a few cases, I was compelled to leave some medicine as the patients had become very nervous and were rather hard to handle. In every case the cure was complete in three or four days after balancing the foot. This is the first experience I have had with such a condition, and I thought it might be of benefit to some of my fellow practitioners.

W. P. BOSSENBERGER, D. V. M.
Williams, Ia.

ONE TWIN DEFORMED; THE OTHER NORMAL

On May 27th, I was called to see a sick mare and on my arrival saw that the mare had delivered a live colt but



was straining. On examination, I found another colt but badly deformed. The

neck was twisted twice on itself, and the front legs, which were about the size of a lamb's legs, were doubled back. The hind legs were also doubled back, but one of the hind legs was shaped like a front leg. In delivering the fetus, I had to cut the neck in order to get it out of the way. The accompanying illustration will give readers some idea how it looked. The mare and the other colt are doing fine.

W. A. ELVER, D. V. M.

Long Prairie, Minn.

INGESTED FOREIGN BODIES*

Under this head we will discuss those conditions which occasionally develop in cattle from swallowing hard substances, such as pieces of iron, wire, nails, hairpins, and similar objects.

The habit of ingesting foreign material such as that described above seems to be a normal one in cattle. Nearly all cattle examined postmortem are found to contain in the rumen and other parts of the alimentary tract numbers of such objects. Apparently they rarely do harm; at least they ordinarily give no sign of their presence during the life of the animal.

Under certain conditions, however, the ingestion of hard foreign objects produces results which are quite serious and frequently fatal.

In such cases the offending object is usually of iron, steel or wire in the form of elongated pieces with a pointed extremity. It may be that the sharp end of the object becomes lodged between folds of mucous membrane, or that it enters the mouth of the ducts of some gland. The peristaltic movements and contractions assist in implanting or embedding the object to such a degree that it remains lodged. Necrosis at the point of lodgement occurs and the object penetrates into the peritoneal cavity or into contiguous organs such as the liver, spleen, through the diaphragm and the heart or lungs.

Nails, pieces of baling wire, and similar objects, have been found on postmortem examination in almost all organs, not excepting the heart, and in many instances the animal suffered no ill effects apparent to the eye during its lifetime; although in some cases the object had traversed the length of the abdominal and thoracic cavities before it become permanently located.

In other cases which have been reported by veterinarians, similar objects have sloughed through the abdominal wall and made their appearance and escape from the body, the cow suffering no particular ill effects.

In many cases, however, serious damage is done and grave consequences, or even death, may result from the passage of foreign bodies through, or into, the peritoneal cavity and other organs.

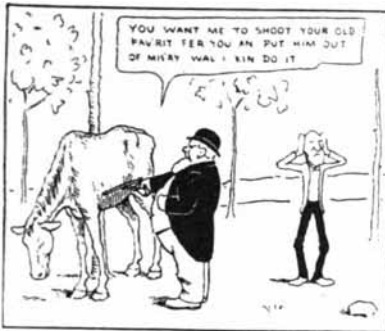
Death may be caused in such cases by the direct presence of the object interfering with the proper performance of function in an organ; by inflammatory or necrotic processes developing in the region of the object; and by secondary pathological conditions occurring as the result of damage done by the object.

The diagnosis of abnormal conditions produced by the emigration of foreign bodies is not easy. With very few exceptions, the diagnosis can be made certain only on postmortem examination. If laparotomy were more practical in cattle it might on certain occasions be resorted to in the diagnoses of conditions in which foreign bodies are suspected. Dr. John K. Bosshardt, of Camden, N. Y., has performed a considerable number of successful laparotomies in cattle for intestinal invagination. For him it is from all appearances an ordinary proceeding. The average veterinarian, however, as a rule does not transgress to any great extent on the abdominal viscera in a surgical manner. We rely for diagnostic purposes chiefly on our powers of observation, on our sense of touch, and other ordinary means.

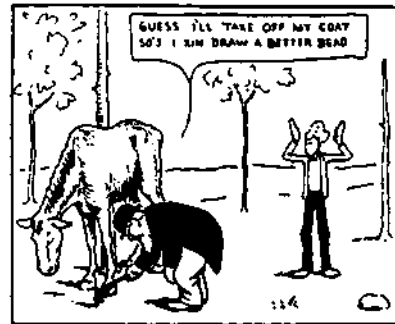
The symptoms produced by foreign bodies which leave the intestinal or ali-

*Reprinted from "Special Cattle Therapy."

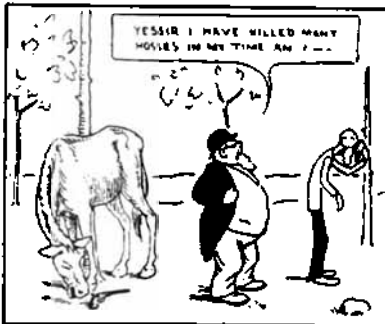
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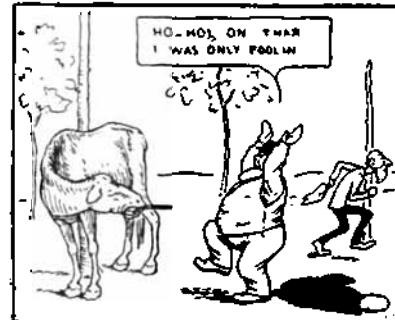
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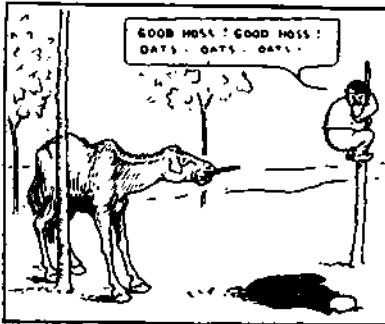
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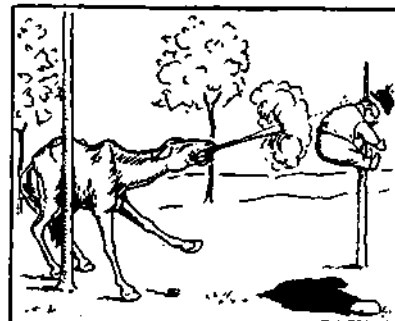
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Courtesy, Country Gentleman.

mentary tract vary, of course, with the extent of the lesions produced, and the organs involved.

The usual history in cases due to the action of foreign bodies is that the cow has been suffering from inappetence for a long time. For weeks she has not been a hearty eater and she looks unthrifty. At times she has had the appearance of a cow suffering dull pains; she stands

almost immovable for hours. The expression of the countenance is that described as "haggard" or "anxious;" she frequently grinds her teeth. At other times she has had slight colicky pains. This covers the general initial symptoms in all cases. Now come special symptoms, varying from now on with the course pursued by the object in its movement within the body.

When the object penetrates and severely injures the peritoneum, the special symptoms are those of peritonitis, with possibly perforation of the abdominal wall and the liberation of the object.

When the liver has been injured seriously by the object the symptoms do not vary from those occurring when the object injures the heart. We find in either instance a set of symptoms which duplicate almost entirely those symptoms seen in infection with *Distoma hepaticum*. The symptoms due to foreign bodies, however, develop more gradually and persist for a greater length of time. Another point of differentiation lies in the color of the fluid in the dropsical swellings; that found in cases of infestation with the liver fluke is clear as water. The fluid contained in the dropsical swellings caused by injuries to the liver and heart from foreign bodies is either yellowish or tinged with blood. Also, in the latter cases, the hide does not peel off as in liver rot.

When a foreign body damages the lung tissue or becomes lodged therein, the symptoms are either those of pulmonary gangrene or of pulmonary tuberculosis; the former when the object is en route through the lung tissue, the latter when it has lodged there permanently.

An exact diagnosis can hardly ever be made with assurance. The diagnosis can be made with reasonable certainty when either the liver or the heart is involved.

The treatment of conditions produced by foreign bodies which have been swallowed and then go through a period of wandering about in the body cavities can only be symptomatic and expectant. If the veterinarian can be reasonably certain that the object is in a portion of the peritoneal cavity where it can be reached and safely removed through laparotomy, he would be justified in undertaking the operation.

In all other locations the symptoms can only be treated as they arise.

Milwaukee, Wis. M. R. STEFFEN.

STOMACH LAVAGE—A RECTAL INJECTION RETAINER

I am greatly pleased with "Colics and Their Treatment," doubly so as it advocates the use of the stomach tube. It has been my sheet anchor in colic troubles for many years. My first one, an improvised affair, I had in commission in 1900. Shortly after that date, I procured a Phillip's tube that I have been satisfied with ever since. On December 19, 1895, at the Victoria Hotel, Chicago, I attempted to exploit the usefulness of the stomach tube to those in attendance at the meeting of the Illinois Veterinary Medical Association, but met with such a storm of protest that I abandoned the idea and concluded that I had either overestimated its value or was the wrong person to introduce it or that my listeners were provoked that they had not originated the idea themselves. To the latter reason, I am inclined, for after writing several articles for publication in veterinary publications I received scores and scores of letters from all parts of the civilized globe asking where a tube could be obtained, also its field of usefulness.

As but little can be added to what is already known, I might say that as the tube enters the esophagus, if difficulty is experienced, a couple of ounces of water thrown into the tube with a syringe, will cause the patient to swallow and the entry into the stomach scarcely requires an effort. Linseed oil is the best lubricant for many reasons.

I can fully endorse Dr. L. A. Merillat's ether treatment, having myself seen the author, Dr. N. P. Whitmore, give a pint of the drug in its pure state in an emergency case. His war cry always was, "If you have faith in your drug, give enough to win out, not just enough to lose your patient."

Early in my experience in bowel lavage, I saw at once that something must be invented to meet the demands of necessity to retain displaced organs. I

obtained the bladder of a large male hog, attached it to a bicycle pump with a long hose with a valve attachment. On being inflated after introduction, it conformed readily to the altered condition of the parts and being non-irritating, could be left in *situ* for a long period. After noting what I had accomplished, I obtained the organs of all of the domestic animals, had them tanned and rubbed in wheat bran until they were as soft and pliable as mole skin. These were tested and found that any and all would stand a degree of air pressure that was surprising. They should be treated to a bath of warm creolin solution and massaged with the hand before introduction.

I shall use Dr. Quitman's salicylic acid treatment at the first opportunity. Coming as it does from so eminent a source, it must be valuable.

F. J. BLISS.

Earlville, Ill.

A TYPICAL PARTURIENT PARESIS

During the past few months I have had some experiences that have been surprises to me and seem to upset our ideas of the causes of parturient apoplexy. In three cases the parturient period had very little to do with the condition.

The first case of this kind that I ever saw happened some years ago and was a Jersey cow that went down with milk fever two successive years at the usual time—a few hours after calving. She missed one year and then, to my surprise, I was called to see her four months after freshening, to find her in comatose condition, and there existed a case of milk fever as plainly manifested as I ever saw. I gave her the usual air treatment and in less than two hours she was on her feet and apparently in a normal condition.

The second case was treated about two months ago. Early one morning I was called to see a cow and I asked the owner over the phone as to the nature of the case and he replied that she had lost her cud, so I went loaded for some stom-

ach trouble. I found that the cow had been down all night. Asking when she was last calved, the owner replied that he had bought her at a sale the fall before and was told that she had been giving milk about two months at that time. So it was at least nine months since she had calved. She was due to calve again in about four months.

The case presented an appearance that kept me thinking of milk fever, but since the bowels had not moved during the night, I proceeded to give a good big dose of salts. She was very restless and when I had given her about a gallon of the solution I noticed that she was not swallowing well and when I let down her head it dropped to her side and apparently there existed the most marked case of milk fever that I have ever met with. I gave her the air treatment and in about four hours she was on her feet and eating.

The third case happened very recently. As the result of an early phone call to see a sick cow, I was told that she had indigestion. The owner stated that he found the cow down on the morning of the day before; when he could not get her up he called a local empiric, who had given her about a pound of salts and then stated that he didn't understand the case. I found the cow laying in usual position, but unable to raise the head. There was no bloating; no movement of the bowels; no milk in the udder. She had been giving about four gallons of milk per day. It was thirteen months since the cow had had her last calf and she would calve again in August. I told the owner of Case No. 2 and called his attention to the fact that this one appeared to be similar. I further told him I was going to give the air treatment and await results. This I did, and gave also one-half grain atropin sulphate.

I went back in half an hour and she was eating the straw about her. I had a long trip to the country and didn't get back until late, but upon my return I called the owner by telephone and he said that the cow had been up for half an

hour. Today she is in normal health and giving her usual flow of milk.

Now, if the coming of spring had anything to do with these cases, was it the parturient condition of the past or the fact that she was pregnant that caused the paresis?

J. C. CALLANDER, V. S.
Parkersburg, West Va.

A STUBBORN CASE OF FISTULOUS WITHERS

On January 24, 1916, a 5-year-old gray mare, draft type, was brought to my hospital to be treated for a swelling which had suddenly appeared in the region of the withers. Upon examination, I found it to be a true case of fistulous withers.

On January 25th, the animal was prepared for operation by giving her two and one-half ounces of chloral hydrate per rectum. After administering the chloral hydrate, the animal was placed in stocks and the field of operation was prepared by shaving, cleansing and painting with tincture of iodine. By the time the operation area was properly prepared, the chloral hydrate had affected her sufficiently and the operation was commenced.

The swelling was incised by making a deep longitudinal incision through its most prominent point, which was superior and medial to the cartilage of the right scapula. The incision thus made, by cutting through the skin, fascia, *trepezius cervicalis*, *rhomboideus cervicalis* and dorso-scapular ligament, extended away from the median line, being some two inches to the right. Through this incision, I could easily follow the fistulous tract, which led to the region of the fourth thoracic spine. Upon palpating the spine, I found its superior aspect to be broken off, and it was easily removed by cutting a few loosely adherent attachments. After removing the piece of fractured bone, I established drainage lower down and in front of the scapula.

After-care consisted in maintaining the drainage aperture patent as long as there was considerable wound discharge and keeping the upper wound packed with a dry dressing. Most of the swelling and discharge subsided in ten days, and the animal was taken home to be treated by packing the uppermost wound daily with a dry dressing.

Fifteen days after the animal had left the hospital, the owner reported that "she is not doing well," and upon examination of the case, I found a peculiar condition existing. The swelling had all subsided, and from an off-standing position, it would have been difficult to detect any abnormality other than a slit-like opening just above and medial to the scapular cartilage. By introducing the fingers into this opening, there was disclosed a shallow cavity between the cartilage of the scapula and the *rhomboideus* muscle. The cartilage of the scapula was easily felt since it had only a very thin covering at this time.

I again established drainage low down and in front of the scapula and carried out the same line of treatment as was employed in treating the original wound, but to my dissatisfaction, I found that the shallow pocket between the scapular cartilage and the *rhomboideus* muscle did not decrease in size, even though drainage was good and there was only a slight quantity of wound exudate. Seeing that low drainage did practically no good in the relief of this condition, I let the drainage tract heal and expected the cavity to heal by granulation, but up to the present time, it has not done so. I have kept the cavity packed with dry dressing continuously and have employed some dressings that were almost caustic, hoping in this way to stimulate granulation which would bring about a cure, but the shallow cavity persists.

At present the cartilage of the scap-

ula is covered with a leather-like covering which lines the entire cavity, and when the animal makes a step, the up-and-down movement of the scapula causes a peculiar "smacking" sound. The cavity is only superficial, and the wound exudate is very limited in quantity, but with the scapular movement, it appears that the cavity will not heal by granulation.

I should appreciate all the information I can get from those who have treated such cases. Please state treatment employed and the duration of the affection.

J. M. COZART, D. V. M.

Evanston, Ill.

ANTITOXIN IN TETANUS

I have often noticed articles on the wonderful curative results obtained from the use of tetanus antitoxin after marked symptoms of the disease are manifest, but I believe that I would absorb such reports with a grain or two of salt, not that I mean to question the veracity of the statement that such cases recover, for cases of tetanus will recover at times—even without treatment. But I do question and hold in doubt the statement that it was due to the antitoxin that they recovered, for I firmly believe that after the toxin molecules have gone into a stable chemical combination with the motor neuron in the spinal cord all the antitoxin on earth would fail to break it up.

The most acceptable theory of immunity is the one known as Erlich's side chain theory. In this, Dr. Erlich contends that the body is made up of multitudinous cells, each cell in turn being made up of numerous molecules of protoplasm. These molecules he believes have open or unsatisfied valences, which he calls receptors, and which are capable of combining chemically with molecules of nutritious material. Unfortunately they are also capable of combining with deleterious

substances such as toxins, etc. When this occurs, by way of a reaction, it produces a number in excess of these cell receptors, which break away from the cell and are to be found in the body fluid in constant readiness to combine with approaching toxin molecules, thereby preventing them from reaching and injuring the body cell.

These then are the anti-bodies, classed in three orders, according to their action, that of neutralizing, zymogenic and agglutinating, however, their function is the same. These substances Dr. Erlich called alexins, and their production depends upon the presence of antigen, which in this case is a micro-organism with its toxins. In tetanus the alexin produced is presumed to be the one known as the "cell receptor of the first order," and is the constituent of our tetanus antitoxin, and its primary function is to combine chemically with the tetano-toxin molecule and neutralize it before it reaches the neurons in the inferior cornua of the spinal cord, while secondarily it may act as diluting medium for the toxin.

If the above may be accepted as a reasonably certain theory, then it can be readily seen that in order to be of any value the antitoxin must be administered before the toxin has reached and combined with the motor neuron.

I agree with Dr. Steffen in his article in the December number, wherein he ventures that the cases which recover after the use of serum would have recovered without the use of it.

G. E. JORGENSEN, M. D. V.

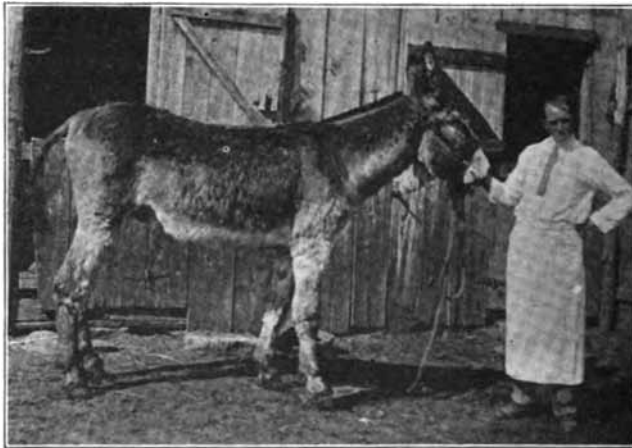
Cleremont, Iowa.

Comment: Suppose we admit that your statement that "after the toxin molecules have gone into a stable chemical combination with the nerve tissue antitoxin cannot break down this combination" is true as it probably is, does it follow that when the symptoms of tetanus appear this action of the tetanus toxin is complete? Is it not probable that this action continues un-

til death occurs or recovery begins? If such is the case may not the administration of the antitoxin stop the combining of toxin and nerve tissue in many cases, while there is yet a chance for recovery? In the complete absence of any proof that such is not the case are we not justified in giving antitoxin on the supposition that such *may* be the case?—Ed. _____

TETANUS IN A JACK.

On May 1st, one of my worthy clients, living one mile north, called at my place of business seeking professional advice regarding his jack, which was sick, he said. Upon being interrogated, he replied: "My jack is constipated and stiff all over, I think he has influenza, and I would like to have you fix up a little medicine for him."



As I had been out to his place a few nights before to see a mule foal (one of this jack's colts) which died of tetanus of the fulminating type, the infection being received at the time of birth following umbilical hemorrhage, I got suspicious and told him I had better go out to the farm and examine the patient thoroughly.

Arriving at the place, I found the jack presenting the usual clinical picture—trismus, tail elevated, "sawhorse" attitude, ears rigid, eyes sunken, and when excited the nictitans membrane protruded over the eye; respira-

tion was very painful and the gait stiff.

Upon further questioning, the owner informed me he had extracted a rusty nail from this animal's foot a few days before; this confirmed my diagnosis of tetanus.

Treatment: I injected 4,500 units of tetanus antitoxin (Parke, Davis & Co.) at once. Some veterinarians upon reading this will say, "He should have injected ten or twenty thousand;" but I did not have it. However, I telegraphed to Parke, Davis & Co. (Kansas City branch) for more antitoxin. Upon making a very careful examination of the foot, the nail wound positively could not be found, so no vigorous antiseptic attention could be given. I then placed the animal in a very large box stall and darkened the same, injected lobelin sulphate (Abbott) one-tenth grain, and ordered plenty of fresh water for the patient as well as clean hay and bran mashes.

On May 2nd, the antitoxin arrived, and 6,000 units more were injected as well as lobelin one-tenth grain. This same dosage of both the antitoxin and lobelin was repeated on May 3d and 4th, when the animal took a change for the better. Then, I gave smaller doses of the antitoxin, but the same doses of lobelin up to May 12th, when I discontinued the antitoxin, having given in all 37,500 units, but I continued giving lobelin until May 16th, when recovery was complete.

The entire number of units of tetanus antitoxin administered in this case was rather small as the average case requires fifty or seventy-five thousand units. Tetanus antitoxin as a curative agent is not accepted by a large number of veterinarians because they have seen desperate cases of tetanus recover without any treatment.

This, however, does not prove anything at all because the same can be said of a number of diseases that can be relieved with specialized weapons to be found in the progressive veterinarian's armamentarium.

I wish to comment on the action of lobelin sulphate which was very gratifying in this particular case. After injecting lobelin each day, I noticed it relaxed the masseter muscles considerably, allowing the patient to eat every day during the attack, and it also relieved the painful respiration to a large extent. This was my first experience with lobelin, but it will occupy a prominent place in my hypodermic tablet case from now on. Before alkaloids became popular with the veterinary profession, the writer injected large doses of fluid extract of lobelia hypodermically and noted that it did more good than anything else. The accompanying photograph shows the animal on the third day of the attack.

Naval infection in foals in this section is generally followed by tetanus of the fulminating type as a complication making a "bad thing worse," and in the future I will not treat a case of navel infection without giving a prophylactic dose of tetanus antitoxin in conjunction with symptomatic treatment as indicated.

GLENN PARSHALL, D. V. M.
Okarche, Okla.

RABIES IN CATTLE

On May 7, the writer was called in consultation with Dr. A. C. Yow, of Henderson, North Carolina, to see a suspected outbreak of rabies in a herd of cattle near the Virginia line. Several dogs in this community had been killed since Christmas, suspected by the laity of being rabid. They had not been known to have been in the pasture with this herd of eighty head of cattle. Shortly after Christmas, a calf and its mother died within a week of one another from symptoms simulating

rabies, although no diagnosis had been requested by a veterinarian at this time. A few weeks later, a young steer died with somewhat similar symptoms and several head of cattle, some distance off, had died, as well as a few hogs, presumably from rabies. Some two weeks ago, a cow out of this herd died and since then three more have died, making seven deaths out of the herd of eighty. Dr. Yow saw the first case he was called to Saturday, May 6, in a cow that was supposed to have shown first symptoms on the day before. Upon our arrival at the farm Sunday afternoon, this cow was found dead, having succumbed about noon. Another heifer had been confined in a small enclosure, having acted strangely the evening before, with symptoms typical of rabies. The animal was almost continuously lowing, the eyes were bulging and she would make for one when coming near the fence, however, seeming to appreciate the obstruction, she would stop short before striking the fence. She could be driven off by a stick, but would become wonderfully excited over a threat to strike her and she would fall to the ground. Saliva was drooling rather freely from the mouth, and upon offering her a bucket of water she simply played in it without swallowing any. Before being penned, she made the white colored animals bear the brunt of her hallucinations, chasing them until they were greatly fatigued. She had also shown increased sexual desire as did all of the others, which had died within two to four days after showing similar symptoms, consequently she was shot. The brain of the one that had recently died was packed in ice and brought to the veterinary laboratory of the College of Agriculture and Mechanical Arts at West Raleigh, where microscopical examination was made and a positive diagnosis established upon finding numerous negri bodies.

G. A. ROBERTS, B. S., D. V. S.
West Raleigh, N. C.

PROBABLY FORAGE POISONING

Now, for a little information, if you please, on a very perplexing ailment that I have been treating in about fifty cases in cattle ranging from the three-year-old to the old toothless mamma.

History: Cattle may or may not have been turned out to pasture, or wintered on silage—shredded or cut or long cornstalks with the corn remaining. The corn did not mature the past year, and contains some black mold and considerable white mold. In some places one may find nice bright timothy hay while in others it is rather moldy and dusty. Alfalfa is good in some places and on adjoining fields, poor. The water supply is good; drainage is adequate; stables are light, well ventilated and warm. Animals are salted at regular intervals. Some of the cattle are fat enough for beef while others are in an emaciated condition. Some of these cases are found out in the pasture, others in the barn, and some in the barnyard—not more than two occur in any one place at the same time. Some are fresh milkers, and others are well along in milking, while some are dry.

A man may milk his cow at night and get a normal quantity of milk; the cow's appetite is good; and when he goes out in the morning, the cow is down unable to rise. They are found in asternal recumbency; ears are erect; the nose is warm and moist in most cases. There is some constipation and it does not readily yield to the action of a good physic and stimulants. In from two to three days, the subjects are able to stand, and within a week the usual flow of milk returns and everything is normal. But where the waiting game is practiced for two or three days before you are called, the eyes become red; the muzzle is dry; the extremities cold; and the ears are drooping. Feces are dry and more or less coated, and symptoms simulating

milk fever are present. These are the kind that are fatal.

Others take a different course. They travel in a circle, seldom bumping into anything but are seemingly unable to walk in any other way. They see where they are going and are fully conscious but still travel in the same circle. They eat and drink and give a certain amount of milk; still their heads remain turned aside as though injured in the region of the poll. Temperature ranges from normal to subnormal, none of them reaching 103 degrees F. By pricking with a pin along the spine, recumbent animals evince sensation, and some draw their legs under them.

One of my clients wrote to Dr. David Roberts of Wisconsin for his advice. Of course he was ready with a positive diagnosis. His answer was that it was paralysis of the posterior bowel. When the cow defecates in a perfectly normal condition and no bloating is present, how can this be? I thought it possible that some of the older heads might be able to figure this out for me—my hair is only tinged a little around the edges.

B. W. W., M. D. V.

SEROTHERAPY OF BACTERIAL ANTHRAX

(Continued from page 618)

ed to show you that the horse is capable of furnishing a sufficiently active serum, and that it seems to me to be the best animal when great quantities of serum are needed for practical purposes.

Its effectiveness in veterinary medicine cannot be denied, and it is now for practicing veterinarians to use it in fighting anthrax. Only after we are able to gather together a great number of observations will it be possible for us to be definitely informed as regards its curative value; the experiments conducted by me give us great expectations on the subject.

AUGUST VETERINARY MEETINGS

Aug. 2, 3, 4, New York State Veterinary Medical Society, Ithaca, N. Y.

Aug. 8, York Co. Veterinary Medical Society, York, Pa.

Aug. 8, Chicago Veterinary Society, Chicago.

Aug. 8, Keystone Veterinary Medical Assn., Philadelphia.

Aug. 14, Natl. Assn. B. A. I. Employees, New York City.

Aug. 16, Los Angeles Veterinary Medical Assn., Los Angeles.

Aug. 21 to 25 inc., American Veterinary Medical Assn., Detroit.

Aug. 23, Massachusetts Veterinary Association, Boston.

Aug. 23, 24, Georgia State Veterinary Assn., Savannah.

MEETING OF THE ALUMNI ASSOCIATION OF THE N. Y. STATE VETERINARY COLLEGE

The annual meeting of the Alumni Association of the N. Y. State Veterinary College at New York University, New York City, was held at the Hotel Astor on the evening of June 15, 1916.

A special effort had been made to gather as many of the alumni of the two old schools as possible for the purpose of celebrating the gift of a veterinary building—a donation of the university. The veterinary building is situated near the medical school and it is hoped that with the combined facilities afforded by the medical and veterinary schools and the clinical material and other advantages available in this great metropolis, that this school may again take the rank which it once so gloriously held. It already possesses one of the finest libraries and museum collections of any veterinary school in the world. It is hoped that the legislature will see fit the coming session to give this school its rightful aid as just recognition of the splendid work it has done in the past and its promising future and so crown the efforts of the

loyal faculty that has for years instructed without compensation.

Several speakers responded to the call of Toastmaster Hoskins during the evening, but the enthusiasm displayed when our dear old friend, Dr. Munn, and our loyal hustler, Dr. Gill, were spoken of for what they had done to perpetuate the old college clearly showed that deep appreciation after all is a great reward for those who labor persistently and unselfishly for a good cause.

MISSOURI VALLEY VETERINARY MEETING

The 22nd annual meeting of the Missouri Valley Veterinary Association was held at Omaha, July 10, 11 and 12. It was said to have been one of the most successful meetings on record. A large number of veterinarians were in attendance.

The meeting opened on the morning of July 10th, with an address of welcome by City Attorney Tepole of Omaha. Dr. R. C. Moore, of St. Joseph, Mo., replied in behalf of the Association to Mr. Tepole's welcome.

The report of the committee on surgery by Dr. R. R. Dykstra, Chairman, was next presented. This report dwelt particularly on the use of blistering and bandaging in the treatment of chronic inflammation of tendons and tendon sheaths, and it also brought out the feasibility of local anesthesia during dental operations, which notable advance in veterinary dentistry had been announced by Dr. Bemis of the Veterinary Division, Iowa State College. Dr. L. A. Merillat, who was a member of the committee on surgery, contributed some observations relative to the importance of veterinarians familiarizing themselves with the new anatomical nomenclature. He also discussed local anesthesia in dental operations as advocated by Dr. Bemis, and the modern treatment of open articulations. There was considerable discussion by the members of the views expressed by Dr. Merillat, and this occu-

pied the rest of the forenoon session.

At the afternoon meeting, the following papers were read and discussed by the members:

Opsonic Therapy, A. T. Kinsley, Kansas City, Mo.

The Influence of Temperature Upon Bacteria and Their Toxins in the Animal Body, E. A. Logan, St. Joseph, Mo.

Internal Secretions and Ductless Glands, C. F. Nord, Onawa, Ia.

Drugs and Therapeutics, E. L. Quitman, Chicago.

The report of the executive committee was presented by Dr. R. F. Bourne, Secretary-Treasurer, in which he submitted the names of six veterinarians making application for membership in the association. The members present voted to elect them to membership. The committee also recommended that the charges against Dr. J. W. Connaway of Missouri be dropped because of the absence of witnesses against him, and this recommendation was passed by the assembly.

The report of the committee on sanitation was submitted by Dr. J. I. Gibson, Chairman, dealing with the sanitary control of hog cholera, the discussion of which occupied the rest of the afternoon session.

In the evening the members and visiting veterinarians were invited to the Ak-Sar-Ben den and initiated into the mysteries of that organization.

Tuesday, July 11th, was devoted to the clinic at the horse and mule barns on the south side. Dr. Shipley operated on a pig for eversion of the vagina. Two horses with fistulous withers were brought in, but after Dr. Hughes and Dr. Moore had examined the animals and explained the conditions, it was decided not to operate.

Dr. Merillat demonstrated the operation on a horse for alveolar periostitis. Drs. D. M. Campbell and E. L. Quitman demonstrated the administration of Quitman's new anesthesia to a dog during oophorectomy. Dr. Hughes lectured on a case of chronic osteo-arthritis in a

horse, and Dr. Miller operated on the animal by ligating the saphenous vein.

Much interest was displayed in the clinic and an instructive discussion was engaged in by the members present.

An exhibit of pathologic specimens obtained from the packing houses had been arranged by the local Federal inspectors, and the members of the association repaired to Cudahy's packing plant and inspected this display during the balance of the afternoon.

The annual banquet was held at 7:30 p. m. in the Hotel Castle, and a good entertainment had been provided. Dr. Gibson, as well as Miss Gibson, and Dr. Miller favored the assembly with several songs. In addition, an imitator of barnyard animals and musical instruments, a magician and a boxing match between two colored boys refereed by Dr. Mayo, lent novelty to the occasion.

At the morning session on July 12th, Dr. R. F. Bourne presented his treasurer's report, in which, among other items, the total membership of the association was given as 518.

Dr. L. A. Merillat of Chicago, who was an honorary member of the association, was elected to active membership.

Dr. C. W. McCampbell, Secretary of the Kansas Live Stock Registry Board, next presented a paper on "Important Essentials in Profitable Horse Production."

Dr. S. W. Alford then submitted his report of the committee on therapeutics, which dealt with the increased cost of drugs, the use of the stomach tube, the importance of care in making rectal injections, quinin-urea-hydrochlorid as a substitute for cocain, carbolic acid in the treatment of hydrocele, etc., etc.

The election of officers which was next in order, resulted as follows:

President, Dr. R. C. Moore.

Vice-President, Dr. C. C. Hall,

Secretary - Treasurer, Dr. R. F. Bourne.

Board of Censors, Dr. D. H. Miller, Iowa; Dr. J. H. Scott, Missouri; Dr.

Burt Conrad, Kansas; Dr. H. R. Morris, Nebraska; Dr. Joseph Hughes, Member at large.

The report of the committee on resolutions was submitted, and the following resolutions were passed:

WHEREAS, it has seemed best to Almighty God, in His infinite wisdom, to transfer to another field of work and usefulness our friends, co-workers and fellow members, Drs. C. W. Browne and John A. Boyd;

WHEREAS, it seems fitting that this association should record its feeling of grief at their loss;

Therefore, Be It Resolved, that in the death of these associates this association feels the loss of personal friends and co-workers, and the profession has also suffered a loss;

And be it further Resolved, that we extend to the families of each the assurance of our sincere and heartfelt sympathy in our common bereavement.

Recognition of the Final Eradication of Foot-and-Mouth Diseases From the United States

WHEREAS, the livestock industry was severely affected by the recent outbreak of foot-and-mouth disease;

WHEREAS, the disease has been successfully eradicated by the Bureau of Animal Industry through co-operation with the various states concerned;

WHEREAS, the work was successfully consummated with a limited loss of livestock considering the extent of the outbreak and at a less expenditure of money than in any similar outbreak on record;

Therefore, be it Resolved, that this association express its gratification and confidence in the ability of the veterinarians taking part in this work;

And be it further Resolved, that this association further appreciates the co-operation of the livestock interests which facilitated the prompt eradication of the disease;

And be it further Resolved, that a copy of these resolutions be forwarded to the Secretary of Agriculture.

Passage of the Army Bill

WHEREAS, the Congress of the United States has seen fit to recognize the importance of the veterinary army service by commissioning the army veterinarians;

WHEREAS, the Honorable James Hay and Dr. W. Horace Hoskins, and many Senators, Representatives, veterinarians and members of the army legislative committee, devoted much time and energy to the support of this bill to its successful passage;

Therefore, be it Resolved, that this association express its appreciation of this recognition;

And be it further Resolved, that this association express its appreciation to the various parties for their service to the army veterinary corps and the profession at large.

Be it Resolved, that we sincerely thank the retiring officers and committees for their successful efforts in the carrying out of their various duties;

Be it further Resolved, that we express, as an association, our appreciation of the very excellent way in which the local committee on arrangements has provided for this meeting and extend to its members our thanks for their thoughtfulness for our welfare and entertainment.

A resolution on hog cholera control presented by the committee was not approved by the members and was referred back to the committee for reconsideration.

At the afternoon session the applications of eleven new members were acted upon and they were admitted to membership in the association.

The executive committee recommended that in the future the clinic be held on the last day of the annual meeting and not on the second day as it was this year, which recommendation was favorably voted upon by those present.

The committee on resolutions reported that they had reconsidered the resolution on hog cholera control, and after con-

siderable discussion, it was decided by the members present to divide the matter into two resolutions, which were finally passed as follows:

Hog Cholera Control Work

WHEREAS, hog cholera is a serious and widespread disease and has for the last few years caused serious losses. However, through the untiring efforts of the veterinary profession, it has been kept under control with diminished annual losses;

WHEREAS, the veterinarian alone is especially fitted by virtue of his education and training to cope with the prevention and treatment of hog cholera;

WHEREAS, there is considerable agitation to transfer the Government hog cholera control work from the Bureau of Animal Industry to another department;

WHEREAS, the Bureau of Animal Industry through co-operation with the various state organizations and veterinary practitioners has successfully eradicated pleuropneumonia and foot-and-mouth disease from our country and has materially diminished the scabies and tick infested areas and has made material progress in the control of hog cholera, thus demonstrating its efficiency;

Therefore, *be it Resolved*, that this association express its confidence in the Bureau of Animal Industry and urge the Secretary of Agriculture to use his influence for the continuation of hog cholera control work by the Bureau of Animal Industry;

Be it further Resolved, that a copy of this resolution be sent to the Secretary of Agriculture, U. S. A.

The County Agricultural Agent

Be it Resolved, that this association commends all the good work accomplished by the county agricultural agent movement, and especially in those instances where the county agents have co-operated with the local veterinarians;

Be it further Resolved, that this association deplores the fact that in some instances county agricultural agents have

assumed to render services that only qualified veterinarians are prepared to do. Therefore, we urge that the Secretary of Agriculture issue instructions to all county agents to refrain from treating diseases of livestock unless such agents are qualified veterinarians.

Be it further Resolved, that a copy of this resolution be sent to the Secretary of Agriculture.

The committee presented another resolution at this time, which was passed, as follows:

WHEREAS, the American Veterinary Medical Association has not held a meeting in the Missouri Valley since 1907;

WHEREAS, the number of veterinarians has increased materially since 1907 and the profession is benefited by such an association meeting in its territory;

Therefore *be it Resolved*, that an invitation be extended to the American Veterinary Medical Association to convene at Kansas City in 1917.

The following papers were next presented and discussed:

The County Agricultural Agent in His Proper Sphere, Dr. Henry Hell, New Liberty, Ia.

The Care of Hypodermic and Serum Syringes, Dr. C. J. Norden, Kansas City.

The Business Side of Veterinary Practice, Dr. N. S. Mayo, Chicago.

Dourine in Iowa, Dr. C. A. Langenfeldt, Carroll, Iowa.

Simultaneous Vaccination Against Blackleg, Dr. F. S. Schoenleber, Manhattan, Kans.

FOURTH JOINT MEETING OF THE CAL. STATE VET. MED. ASSOC. AND ITS SOUTHERN AUXILIARY, HELD IN LOS ANGELES, JUNE 21-22, 1916.

When Pres. W. R. Carr called order in the Assembly Room of the Chamber of Commerce, Wednesday, June 21, 1916, he opened the fourth and largest joint meeting of these associations, and after a short address appreciative of such a

DR. J. H. OESTERHAUS
 Graduate of
 Kansas State Agri. College
 Kansas City Veterinary Col.
 Late Veterinarian in U. S.
 Army

JOHN J. O'HERN
 Purchasing Manager

DR. FRED C. CATER
 Graduate of
 Kansas City Vet. College, '04
 Formerly Vet. with Govt.
 Serum Lab., Manila, P. I.

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full attendance all eager to take up the program he introduced Mr. John S. Mitchell, president of the Chamber of Commerce.

Mr. Mitchell, in his usual happy manner, welcomed those assembled to the city to which President Roadhouse of the Northern Association, very ably replied.

Dr. R. A. Archibald, president of the Western Laboratories, then read his very able paper on "A Brief Review of Some of the Late Developments Along Immunological Lines," which was followed by a most interesting paper on "Hemorrhagic Septicemia," by Dr. J. P. Iverson, Deputy State Veterinarian. The discussion of these papers continued up to the noon hour.

After lunch all took automobiles to "Santa Anita Rancho," the country estate of Mrs. Anita Baldwin, which was formerly the home of her father, known to the turf as "Lucy Baldwin." Here Professor J. I. Thompson and Professor Major, present and former profes-

sor of animal husbandry, University of California, entertained with demonstrations of live-stock judging, using the pure bred animals of which there were plenty.

In the evening all met at the Hollenbeck Hotel, at the banquet, and every chair prepared was occupied. At the close of the banquet, Toastmaster J. L. Tyler called on R. A. Archibald, president of the A. V. M. A., who gave us some past, present, and he hoped, future, of that association, to which C. M. Haring, secretary of the A. V. M. A. also responded.

Dr. L. M. Powers, health commissioner of Los Angeles, then read a paper on "Fields for Veterinarians in Preventive Medicine." Other cities have their health officers, but none has one that is a better friend or more appreciative of the veterinarians' services than Dr. Powers, and in his paper he cited many ways by which the departments of food, health and sanitation could be assisted by the veterinarians.

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SHEEP DISEASES

By E. T. Baker, D. V. M.

The demand for information on this subject has been too great and the reception of the articles on sheep that we published recently has been too enthusiastic to permit of a delay of a year or more in rendering the series of articles on this subject available for readers as was announced in the June issue of the Journal.

To meet this demand, we shall publish Dr. Baker's manuscript immediately in book form. It will comprise a work of about 260 pages and will be incomparably superior to anything that has heretofore been attempted on this subject. The following abbreviated list of contents gives an idea of the completeness of this work.

Section I, History of the Breeds.	Sec. XIV, Diseases of the Brain and Cord.
" II, Anatomy.	" XV, Diseases of the Organs of Locomotion.
" III, Hygiene.	" XVI, Non-Parasitic Diseases of the Skin.
" IV, Medicines and Their Administration.	" XVII, Diseases of Obscure Origin.
" V, Acute Infectious Diseases.	" XVIII, Diseases of the Lamb.
" VI, Diseases of the Blood.	" XIX, Diseases of the Ewe.
" VII, Diseases of Metabolism.	" XX, Diseases of Rams and Wethers.
" VIII, Diseases of the Urinary Organs.	" XXI, Surgical Diseases.
" IX, Diseases of the Circulatory Organs.	" XXII, Parasitic Diseases.
" X, Diseases of the Respiratory Organs.	" XXIII, Poisons—Mineral, Plant, Animal.
" XI, Diseases of the Digestive System.	" XXIV, Predatory Animals.
" XII, Diseases of the Liver.	" XXV, Quarantine and Transportation Regulations.
" XIII, Diseases of the Peritoneum.	

The illustrations constitute an exceedingly valuable part of this work.

There are six three-color lithographs of poisonous plants showing the plant, flower, fruit and root in their natural colors.

There are twelve to fifteen full page half-tone plates showing typical specimens (ram and ewe) of the principal breeds of sheep, and in addition,

There are fifty to sixty half-tones in the text, showing parasites, bacteria, methods of handling and other matters discussed in the text.

To bring out the illustrations to the best advantage, the work will be printed on the best quality of enamel paper that we can buy. It will be expensive to manufacture, and we cannot set a price upon it as yet. However, we shall have a large edition printed and in this way hope to keep the price low.

For those desiring to procure a copy of "Sheep Diseases" as early as possible, we are making the following money-saving special offer:

Send us \$2.00 now (before Sept. 1) and we will send you all charges prepaid a copy of this splendid work as soon as it is ready for distribution, which will be some time this month. The price after the book is published will be more than \$2.00.

American Journal of Veterinary Medicine
 9 South Clinton Street Chicago, Ill.

J. Traum, bacteriologist division of veterinary science, University of California, followed with a very complete paper on methods of diagnosing tuberculosis. His wide experience giving him ample material, taking up the various forms of applying the tuberculin test as well as physical examinations. The discussion of this paper consuming the balance of the evening.

The morning session, June 22, was opened at the Chamber of Commerce, by a paper on "Anthrax Serum and Spore Vaccine," by F. W. Wood of the veterinary department of the Cutter Laboratory. This paper was thoroughly discussed, especially by state and county veterinarians present.

L. M. Hurt, Los Angeles county live stock inspector, then read his paper "Illegal Practitioners and Steps to be Taken to Correct this Evil." This was presented in such a manner as to cross the live wires of discussion to the extent of carrying it over to the afternoon session, which convened at the hospital

of Drs. Carr & Stevens at 1:30 p. m., for the clinic and conclusion of session.

This discussion of Dr. Hurt's paper included the county farm adviser and higher education for the veterinarian, and a motion was made and passed that resolutions be framed and presented to the regents of the California State University urging the establishing of a veterinary school at that institution.

Drs. Archibald & Longley, the two remaining active members of the State Veterinary Examining Board, announced their intention of resigning from that board, and requested that the association take some action calling the attention of the governor to appointing a new board.

A committee was appointed to draft and present such resolutions.

The publication committee was instructed to publish the proceedings of the meeting and all meetings for the coming year.

At the clinic Dr. G. T. Irons, in-

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KANSAS CITY : MISSOURI

spector in charge of the Los Angeles Station, U. S. Bureau of Animal Industry, exhibit of pathological specimens found in meat inspection, was a museum in itself, and appreciated by all.

Dr. J. R. Beach from the university farm demonstrated the method of preparing and administering chicken pox vaccine, which being a new field, was very interesting to all present.

A cholera pig was procured and Dr. Bert J. Cady, of the field department, of the Bureau of Animal Industry, posted it, calling attention to the most minute pathological conditions which made it very instructive.

Dr. W. R. Carr operated on a roarer which required the double operation, and this closed the meeting.

J. A. DELL, Secretary.

SOUTHERN TIER VETERINARY MEDICAL ASSOCIATION

The second annual meeting of the Southern Tier Veterinary Medical Association of New York was held at Owego,

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July 1, 1916. This is the youngest veterinary association in New York state and there was an unusually large attendance for what might be termed a district society, taking in as it does only counties in the southwestern part of the state.

The advancing interest and the progressive evolution of the country veterinarian was strikingly manifest at this meeting, practically every veterinarian in attendance being from a rural district, and, with the exception of possibly one or two, they were graduated, licensed men. A decade ago we question whether or not ten licensed graduated veterinarians could have been assembled at a veterinary meeting in this locality.

The subjects, too, that were discussed added further evidence of the changing of vocation, so to speak, of the practicing veterinarian from what might have been once termed "an equine specialist" to a diversified practice pertaining to all domestic animals.

The meeting convened at the hospital

of Dr. E. F. Vorhis. The genial doctor, who has guarded the livestock of this community for nearly a quarter of a century, provided ample material and convenient equipment for the conducting of a very instructive clinic. There were several surgical cases, including roaring, fistulas, tumors, etc., which received skillful surgical attention by Drs. Frost, Muldoon, Birch and others.

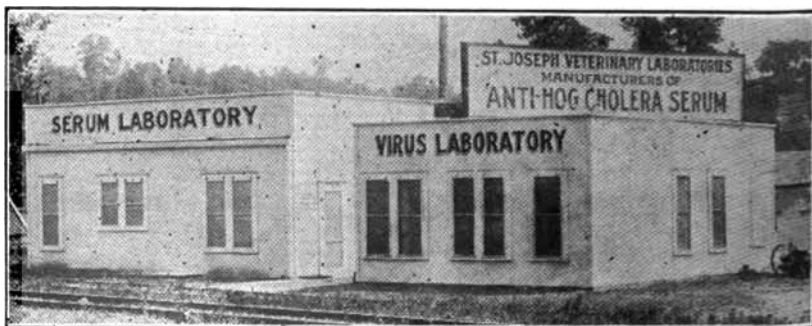
The clinics finished, we had a joyful hour at luncheon at the Ah-wa-ga Hotel, after which the business and literary program was opened with an address by President Vorhis.

The president reviewed the changing character of veterinary practice and mentioned particularly the great interest that has been taken of late in dairying and the improvements of dairy methods and stated that it was his opinion that the rural veterinarian could be the most important factor in the reduction of tuberculosis among cattle. He predicts a great future for the profession and looks upon it as a public necessity which is increas-

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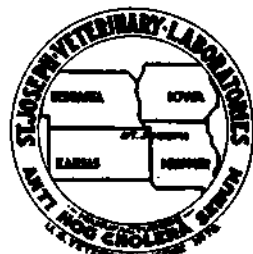


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Dr. G. A. Johnson, Veterinarian.

F. G. Whitmer, Secretary and Treasurer.

Dr. F. W. Cairy, Veterinarian.

ing rather than decreasing. Following the president, the secretary submitted a formal report and made special mention of the recent veterinary legislation which, in his opinion, was not satisfactory to the veterinary profession, and he urged all to attend the coming annual state meeting, at which the matter will be discussed at length.

The program was as follows:

"Some Advantages of Sanitary Precautions in Cattle Breeding," by Dr. J. F. DeVine, Goshen, N. Y.

"The Veterinarian and the Farmer," by Mr. E. R. Zimmer, Mgn. Farm Bureau, Tioga Co., N. Y.

"Veterinary Dairy Inspection with Special Reference to the Physical Examination of Cattle," by Dr. C. D. Pearce, Binghamton, N. Y.

The writer spoke on some practical points with reference to the close association of abortion, sterility, mamitis and infectious scours in calves, and recited experiences occurring in his practice which proved, in his opinion, that the



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EDWARD J. CREELY,

Secretary.

controlling of all of these maladies were more or less interdependent.

Dr. Moore stated that Dr. Williams contends that where calves are fed on milk from a herd affected with contagious abortion, the heifers abort during their first pregnancy; he urged that the members of the Society give this statement special attention to determine if all experiences on this question agree.

Mr. Zimmer made a plea for improved agriculture and better livestock. He deplored the lack of judgment of the farmer in not seeking the advice of a capable veterinarian sufficiently prompt so as to get the greatest value from his services. He gave some interesting data of certain localities showing the excessive expense of producing milk where the dairy cows were of low production, and pointed out that the veterinary profession could do a real service in assisting in improving our dairy breeds and encouraging the rearing of young stock of high quality.

In discussing the milk question, Dr.

Pearce stated that the main purpose of the veterinary inspector should be healthy cows, so protecting human health and life. He lays much stress upon the importance of physical examination and recited the principles and described his method of making such, as follows:

"General appearance of the cow; palpate the glands of the neck; auscultate the lungs; handle the udder, taking a small amount of milk from each teat."

This paper was discussed by Drs. Birch, Battin, Koneig, Udall and Moore. The latter explained that in the investigation of the Boston and Baltimore outbreaks of septic sore throat the reports indicated that streptococcal organisms were in the milkers' throats and simply carried by the milk. It was also brought out that in one of these outbreaks the incriminating milk was pasteurized milk.

Following this discussion the officers for the ensuing year were elected and the meeting adjourned.

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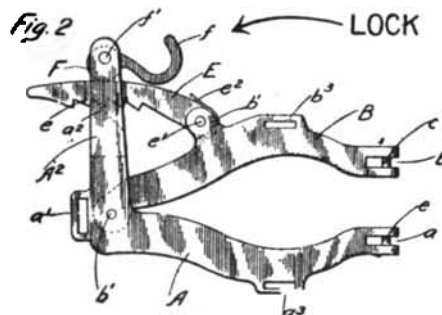
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"Laboratory Number X-467—Test No. 3—This test was made for the purpose of establishing the comparative penetrating and germicidal power of Iodum-Miller and tincture iodine. The skin was cleansed thoroly with water and the iodine applied without drying. Penetration of Iodum-Miller was very deep, being aided in its penetration by the presence of water; penetration of iodine tincture was very slight, being restricted, apparently, by the presence of water. Iodum-Miller sterilized much more quickly and more extensively than iodine tincture.

"Bacterial life exists almost wholly in the aqueous medium of the body rather than in the oily media. In the use of iodine as a germicide it is necessary that the iodine be made to penetrate the aqueous medium which Iodum-Miller does. It is therefore more effective in destroying bacterial life than tincture iodine which penetrates the oil media."

This, together with my personal experience, convinced me that in Iodum-Miller we have a remedy that gives all of the best effects of iodine with the bad features, as found in other combinations, practically eliminated.

In my practice I note that when using Iodum-Miller in surgical dressing to injuries, abscesses, etc., the tissues are not cooked; there is a greater protection against infection; wounds heal more quickly and in all ways conditions are better than when iodine tincture is used. In fact, I find that Iodum-Miller is a stimulant of, rather than a retardant to, nature's efforts at repair.

Further, when using this preparation internally my patient bears it much better than potassium iodide and, greatly to my surprise, I always get a germicidal action of iodine on the body tissues—an action I have never had when using potassium iodide. It is to this germicidal action of iodine that we may attribute the phenomenally good results from Iodum-Miller in the treatment of infectious and zymotic diseases.

I could cite you to many conditions in which Iodum-Miller has proved superior to the older combinations of iodine and iodides, but I trust I have said enough to start investigation by other veterinarians because we want to find and use the best.

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Liquid Blackleg Vaccine

After extended experiments in Europe, Prof. LeClainche, chief of the Sanitary Bureau of the French Department of Agriculture, and Prof. Vallee, Director of the Veterinary School at Alfort, France, have perfected the first improvement made in more than a decade in the prevention of blackleg.

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ASSOCIATION MEETINGS

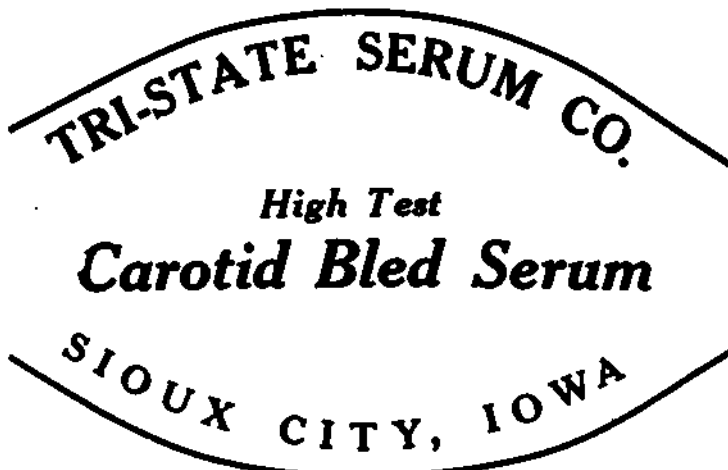
The information given below is up-to-date and has been furnished by the secretaries of the various associations listed. Secretaries are requested to supply us data regarding their associations after each meeting; otherwise, the association will naturally be dropped from the list. We ask secretaries to kindly co-operate with us in keeping before the members of their associations the date and place of the next meeting.

Name of Association	Date of Meeting	Place of Meeting	Secretary
Alabama Vet. Med. Assn.			C. A. Cary, Auburn, Ala.
Alumni Assn., Col. of Vet. Med., O. S. U.	Jan. 10, 1917.	Columbus, O.	W. E. Hobbs, O. S. U., Columbus, O.
Alumni Assn., N. Y. State Vet. College.	June 10, 1916.	New York	F. K. Nichols, Fort Richmond, N. Y.
Alumni Assn., U. S. Col. Vet. Surg.		Washington, D. C.	Chas. M. Mansfield, 1344 Newton St., Washington, D. C.
American Vet. Med. Assn.	Aug. 31, '25.	Detroit, Mich.	C. M. Barlow, Berkeley, Cal.
Arkansas Vet. Med. Assn.	January, 1917.	Little Rock	R. M. Gay, Little Rock.
B. A. I. Vet. Assn. of So. Omaha.	3rd Monday of month.	So. Omaha, Neb.	J. W. Giffen, c/o B. A. I., So. Omaha
California State Vet. Med. Assn.	2nd Wed. in Mch., June, Sept., Dec.	Univ. Farm, Davis, Cal.	State of Cal., Berkeley.
Central Canada Vet. Assn.	Jan. 19.	Ottawa, Ont.	H. D. Sparks, 448 Wellington St., Ottawa.
Central N. Y. Vet. Med. Assn.	Last week in June and Nov.	Syracuse, N. Y.	E. H. Yumkin, 2344 N. 19th, Philadelphia.
Chicago Vet. Society.	2nd Tues. of month.	Chicago, Ill.	W. B. Switzer, Owens, N. Y.
Colorado Vet. Med. Assn.	Jan. 1917.	Denver, Colo.	Gleason Brown, 3308 Lowell Ave., Chicago.
Connecticut Vet. Med. Assn.	January 27.	Greenwich, Conn.	I. E. Newcom, Ft. Collins, Colo.
Genesee Valley Vet. Med. Assn.	August 23, 24, 1916.	Rochester, N. Y.	A. T. Giltzard, Waterbury, Conn.
Georgia State Vet. Assn.	Monthly	Savannah, Ga.	O. B. Webber, 134 Andrews, Richmond.
Hudson Co. Vet. Practitioners' Club.	Monthly	Jersey City, N. J.	Peter F. Bahnsen, Capitol Bldg., Atlanta.
Idaho Assn. of Vet. Graduates.	Feb. 4, 1917.	Boise, Idaho.	B. D. Blatz, 783 Montgomery St., New York City, N. Y.
Illinois State Vet. Med. Assn.	July 19, 1916.	Peoria, Ill.	C. V. Williams, Richfoot, Idaho.
Illmo Vet. Med. Assn.		St. Louis, Ill.	L. A. Meritt, 1327 Washburn Ave., Chicago.
Indiana Vet. Med. Assn.		Indianapolis, Ind.	L. E. McKinley, Frostburg, Ill.
Iowa Vet. Med. Assn.		Ames and Des Moines.	A. F. Nelson, Indianapolis, Ind.
Kansas Vet. Med. Assn.	Jan. 2, 4, 1917.	Wichita, Kan.	H. R. Truman, Rockwell City, Ia.
Kentucky Vet. Med. Assn.	April	Louisville, Ky.	J. H. Burt, Manhattan, Kan.
Keystone Vet. Med. Assn.	2nd Tuesday of month.	Philadelphia	Robt. Graham, Lexington, Ky.
Los Angeles Vet. Med. Assn.	3rd Wed. of month.	Los Angeles	L. B. Davis, 257 E. Girard, Philadelphia.
Maine Vet. Med. Assn.	Feb. 15.	Rockwood, Me.	J. A. Dail, 16th & Pacific, Los Angeles.
Manitoba Vet. Assn.	4th Wed. each month.	Winnipeg, Man.	E. Maddoch, Atascosa, Pa.
Massachusetts Vet. Assn.		Worcester in Sept.; Boston rest of year.	W. Hilton, 375 James St., Waukeg.
Michigan State Vet. Med. Assn.	1st Tues. & Wed. after 1st Mon. in February.	Lansing, Mich.	E. A. Cahill, Boston, Mass.
Minnesota State V. M. Assn.	2nd Tues. & Wed. Jan.	St. Paul.	W. Austin Ewalt, Mt. Clemens, Mich.
Mississippi State Vet. Med. Assn.	Jan. 10, 11, 1917.	Cleveland, Miss.	G. K. Leach, Winona, Minn.
Mississippi Valley Vet. Med. Assn.	July 7, 1916.	Galesburg, Ill.	E. E. Norton, Greenville, Minn.
Missouri Valley Vet. Assn.	July 10, 11, 12.	Omaha, Neb.	W. Lester Bollinger, Avon, Ill.
Missouri Vet. Med. Assn.	Last week in July.	Nesmo, Mo.	R. F. Bourne, 1330 E. 15th, Kansas City.
Montana Vet. Med. Assn.	Jan. 28, 29.	Bozeman	C. D. Foley, 1330 E. 15th St., Kansas City.
Nat'l Assn. B. A. I. Employees.	2nd Mon. in Aug., 1916.	New York City.	A. D. Knowlin, 303 E. 4th St., West Minnola, Mont.
Nebraska Vet. Med. Assn.	1st Tues. & Wed. in Dec.	Lincoln, Neb.	E. J. Walker, 135 N. W. Ave., Milwaukee.
New York State Vet. Med. Society.	Aug. 1, 2, 4.	Ithaca, N. Y.	S. W. Axford, Lincoln, Neb.
			C. F. Frick, Ithaca, N. Y.

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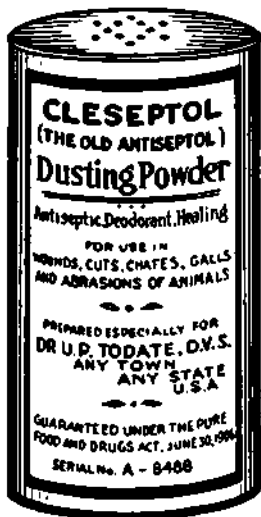


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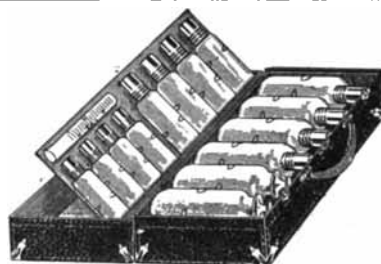
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Name of Association	Date of Meeting	Place of Meeting	Secretary
North Carolina Vet. Med. Assn.	June 21, 22, 1916.	Wrightsville Beach, N. C.	J. P. Spoon, Burlington, N. C.
North Dakota Vet. Assn.	July 18, 19, 20.	Fargo, N. D.	W. J. Mulroony, Havana, N. D.
Northeastern Indiana Vet. Assn.	Sept. 12.		C. R. Baumgartner, Arcola, Ind.
Northwestern Ohio Vet. Med. Assn.	Feb. 16.	Toledo, O.	Paul E. Wood, Ottawa, Ohio.
Ohio State Vet. Med. Assn.	Jan. 11, 12, 1917.	O. S. U. Columbus, O.	F. A. Lambert, care O. S. U., Columbus
Ohio Valley Vet. Med. Assn.	July 11, 1916.	Ohlong, Ill.	G. J. Behrens, Evansville, Ind.
Oklahoma Graduate Vet. Med. Assn.	July, 1916.	Oklahoma City.	R. C. Smith, Enid.
Oklahoma Vet. Med. Assn.	March 7, 8.	Oklahoma City.	S. H. Gillier, Norman, Okla.
Oregon Vet. Med. Society.	June, 1916.	Probably Corvallis, Ore.	B. T. Simms, Corvallis, Ore.
Pennsylvania State Vet. Med. Assn.		Pittsburgh, Pa.	E. H. Yunker, 2344 N. 18th, Philadelphia.
Rhode Island Vet. Med. Assn.	2nd Tues. Jan.	St. Wayne, Ind.	U. S. Richards, Woonsocket, R. I.
Schuylkill Valley Vet. Med. Assn.	June 14, 1916.	Reading, Pa.	C. R. Pottelger, Reading, Pa.
South Dakota Vet. Med. Assn.	July 11, 1916.	Lake Madison.	S. W. Allers, Watertown, S. D.
Southern Aux. Cal. State Vet. Med. Assn.	June 21, 22.	Los Angeles.	J. A. Dell, 16th & Pacific, Los Angeles.
Tenn. Vet. Med. Assn.	Nov. 8, 9, 1916.	Humboldt, Tenn.	F. W. Morgan, Chattanooga, Tenn.
Texas Vet. Med. Assn.		Not decided.	Allen A. Foster, Marshall, Tex.
Twin City Vet Med. Society.	Once a month.	St. Paul.	C. C. Palmer, St. Paul, Minn.
U. S. Live Stock Sanitary Assn.	Dec. 1916.	Chicago.	J. J. Ferguson, U. S. Yards, Chicago.
Utah Vet. Med. Assn.	Feb. 5.	Logan, Utah.	E. P. Coburn, Brighton City, Utah.
Veterinary Assn. of Saskatchewan		Regina, Sask.	H. G. Chasmar, Hanley, Sask.
Vet. Med. Assn. of New Jersey	2nd Thurs. in Jan.	Trenton, N. J.	E. L. Loblein, New Brunswick, N. J.
Vet. Med. Assn. of N. Y. City.	1st Wed. ea. mo. except July, Aug., Sept.	New York City.	R. S. MacKellar, 351 W. 11th St., N. Y. C.
Vet. Med. Assn. of Geo. Washington Univ.	1st Sat. each month.	Washington, D. C.	C. W. Rippon, 2115 14th St., N. W., Washington, D. C.
Vet. Med. Society Wash. State College.	1st and 2nd Tues. ea. mo.	Pullman, Wash.	Claude Holden.
Virginia State Vet. Med. Assn.	July 13, 14.	Ocean View, Va.	W. G. Chrisman, Blacksburg, Va.
Washington Vet. Med. Assn.	June, 1916.	Seattle, Wash.	Carl Oehler, Bellingham, Wash.
Western N. Y. Vet. Med. Assn.	Last week in June.	Buffalo, N. Y.	F. F. Fehr, 36 Prospect Ave., Buffalo.
Wisconsin Vet. Med. Assn.	July 26, 27.	Menominee, Wis.	W. A. Wolcott, Madison, Wis.
York Co. Vet. Med. Society.	1st Tues. after 1st. Mon. of each month.	York, Pa.	E. S. Bausticker, 325 Newberry, York, Pa.

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I consider "Canine Medicine and Surgery" by Saunders a most excellent work; in fact, I think it the best and most up-to-date work that I have ever seen on these subjects. It should be of great benefit to the veterinarian who is doing any dog practice whatsoever. The symptoms of the different diseases are given in a terse manner, in plain language, and to the point. The treatments are up-to-

date and scientific, with dosage for the different medicinal agents, and in many cases prescriptions compiled, which makes it very valuable for the busy practitioner, especially the one who only occasionally has a case in canine practice and is also oftentimes in a hurry to formulate a treatment for a case of ailment in the dog. The busy practitioner will find it very handy and serviceable, and should not be without it.

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Easily erected or moved by anyone. No skilled mechanics are necessary.

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- Large locking doors and window.
- Ventilators and tool shelf.

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truck bodies, tanks for
any purpose.

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PRODUCTS

An advertisement in the *Clarksdale (Miss.) Register*, which is inserted by Dr. W. L. Gates, constitutes an offer of twenty-five cents each for buzzard heads. The bodies are to be burned as soon as the birds are killed. This is a part of Dr. Gates' campaign against anthrax in Coahoma County, Miss.

The 27th annual meeting of the New York State Veterinary Medical Society will be held in Ithaca, August 2, 3 and 4. There will be three sessions daily on the 2nd and 3rd, and clinics will be held on the 4th in the operating rooms of the New York State Veterinary College.

The mid-summer meeting of the Illinois State Veterinary Medical association was held at Peoria, July 19 and 20. About 250 veterinarians were present. A four-hour scenic excursion and a short business session on board a boat in the Illinois River occupied the first day with a visit to the Elmore Live Stock Co.'s plant in the evening. A clinic was held at the hospital of Drs. John Scott and C. G. Brown on the afternoon of the 20th.

The Jean du Luth farms at Duluth, Minn., claim to have the champion Red Poll cow. She showed a gross earning capacity of \$1,000 annually for milk alone, with an additional \$1,000 for her calf. In a year the cow gave 20,280 pounds of milk, containing 891 pounds of butter fat. This is said to beat all Short-horn records, all records for brown Swiss cows, any official milk record by a Jersey, and has been beaten for milk only by one Guernsey.

Six horses died recently on a farm near Ottawa, Ill., and the University of Illinois was called upon to make an investigation of the cause. The university sent five of its own horses to the farm and four of them were taken sick immediately, resulting in the death of one. The conclusion reached was that the animals died of silage poisoning.

Dr. W. E. Simonsen, who for three years has been connected with the veterinary department of the Iowa State College at Ames, located at Cherokee, Iowa, for the practice of veterinary medicine, July 10th.

Dr. L. B. Mallette, of Princeton, Minnesota, was married to Miss Mina Bradshaw, of Kansas City, Mo., June 29th. Dr. and Mrs. Mallette will make their home at Princeton, where he doctor is well established in practice.

The next meeting of the Veterinary Association of Saskatchewan will be held at the University of Saskatchewan, Saskatoon, Saskatchewan, July 31st, August 1st and 2nd. Dr. L. A. Merrilatt, of Chicago, will act as director of the surgical clinic.

A New and Complete Work on Lameness of the Horse

By **J. V. LACROIX, D. V. S.**

(Author of "ANIMAL CASTRATION")

This volume will contain about 400 pages and will be well illustrated. It deals specifically with diagnostic principles, symptomatology and treatment.

The following, which is abstracted from the table of contents, gives an idea of the range of subjects considered:

INTRODUCTION

SECTION ONE

Etiology and Occurrence of Lameness
Affections of Bones
Affections of Ligaments
Affections of Thecae and Bursae
Affections of Muscles and Tendons
Affections of Nerves
Affections of Blood Vessels
Affections of Lymph Vessels and Glands
Affections of the Feet

SECTION TWO

Diagnostic Principles

SECTION THREE

Lameness in the Fore Leg
Anatomo-physiological Review of parts of the Fore Leg
Shoulder Lameness
Fracture of the Scapula
Scapulohumeral Arthritis
Luxation of the Scapulohumeral Joint
Inflammation of the Bicipital Bursa
Contusions of the Triceps Brachii
Muscular Atrophy (Swiney)
Paralysis of the Suprascapular Nerve
Radial Paralysis
Thrombosis of the Brachial Artery
Fracture of the Humerus
Inflammation of the Elbow Joint
Fracture of the Ulna
Fracture of the Radius
Wounds of the Anterior Brachial Region
Inflammation and Contraction of the Carpal Flexors
Fracture and Luxation of the Carpal Bones
Carpitis
Open Carpal Joint
Thecitis and Bursitis of the Carpal Region
Fracture of the Metacarpus
Splints
Tendinitis
Chronic Tendinitis and Contraction of the Flexor Tendons
Contracted Tendons of Foals
Rupture of the Flexor Tendons and Suspensory Ligament
Thecitis and Bursitis of the Fetlock Region

Inflammation of the Fetlock Joint
Open Fetlock Joint
Open Tendon Sheaths of the Flexors of the Phalanges
Luxation of the Fetlock Joint
Sesamoiditis
Fracture of the Proximal Sesamoids
Inflammation of the Posterior Ligaments of the Pastern Joint
Fracture of the First and Second Phalanges
Ringbone
Sidebones
Navicular Disease
Laminitis
Calk Wounds
Corns
Cartilaginous Quittor
Nail Punctures

SECTION FOUR

Lameness in the Hind Leg
Anatomo-physiological Review of Parts of the Hind Leg
Hip Lameness
Fractures of the Pelvic Bones
Fractures of the Femur
Luxation of the Femur
Gluteal Tendo-Synovitis
Paralysis of the Hind Leg
Iliac Thrombosis
Fracture of the Patella
Luxation of the Patella
Chronic Gonitis
Open Stifle Joint
Fracture of the Tibia
Rupture and Wounds of the Tendo Achilles
Spring-halt
Open Tarsal Joint
Fracture of the Fibular Tarsal Bone (Calcaneum)
Tarsal Sprains
Curb
Spavin
Bog Spavin
Thorough Pin
Capped Hock
Rupture and Division of the Long Digital Extensor
Lameness from Interfering
Lymphangitis

The manuscript is now in the hands of the printer and the work will be ready for distribution soon. Price \$3.00. Advance orders received before the work is published will be filled for \$2.50.

American Journal of Veterinary Medicine

9 South Clinton Street,

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Chicago, Illinois

Dr. S. O. Fladness, who has been engaged in tick eradication work in Alabama, is being sent by the Bureau of Animal Industry to northern Argentine Republic, Uruguay and Brazil. His stay in South America will be for an indefinite period.

Dr. Joe Bowen, of Trinidad, Colo., a graduate veterinarian, 22 years old, and said to be worth \$3,000,000, joined the signal corps of the national guard, where he holds the position of blacksmith. He expects to be promoted to company farrier. He has donated his twin-six touring car for the use of the signal corps.

Daniel Fleming, aged 75, a veterinarian, died at his home at Dublin, Ohio, July 9th. He had lived for fifty years in the house in which he died.

The city council of Cleveland, Ohio, refused to approve the dog-muzzling ordinance presented by Health Commissioner Bishop, who stated that since the first of the year 767 persons have been bitten by dogs and 96 of the dogs had rabies.

The Hon. Newton D. Baker, secretary of war, under date of May 22nd, invited the American Humane Association to prepare and organize a relief service for animals used in the United States army, which shall do for

them what the American Red Cross is prepared to do for our soldiers in time of war.

Hemorrhagic septicemia has again made its appearance in the lowlands of Michigan. Last year fifty head of cattle died of the disease in that locality.

The Washington Pure-Bred Stock Association met at Spokane, Wash., June 17th. About fifty stock breeders from all parts of the state were present. It was proposed that the county agricultural agents be made honorary members of the association and work in cooperation with it. H. R. Graves, commissioner of agriculture for the state, asked that the aid of the association in securing a larger appropriation for the fight against tuberculosis. He stated that 25,000 cattle have been examined for tuberculosis this year and only 1,000 have re-acted.

North Dakota sanitary officials have lifted the ban on cattle importations from Illinois, and it is expected that considerable breeding stock will now be shipped from the latter state.

Dr. C. L. Passmore, of Huntley, Ill., was named the defendant in a damage suit at Algonquin, Ill., recently, brought about by the collision of the doctor's car with another automobile.

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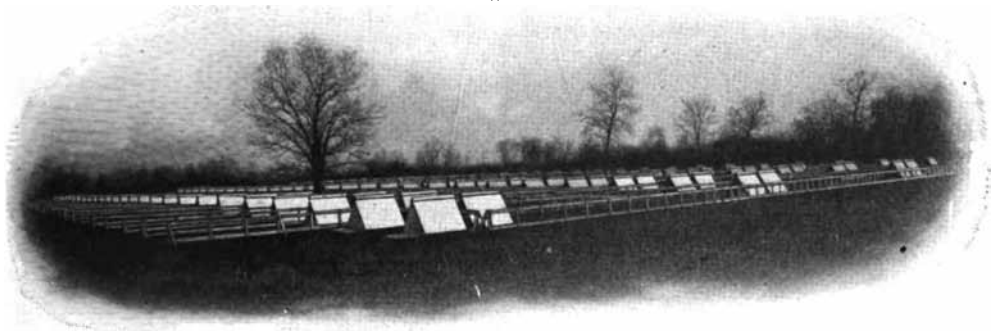
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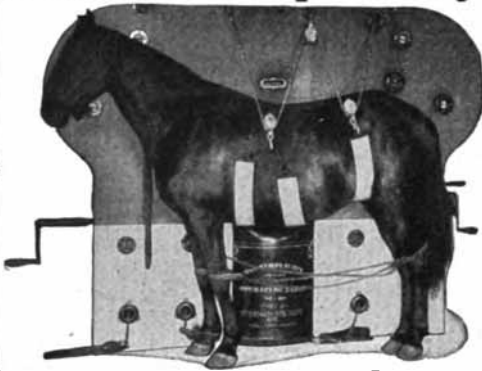
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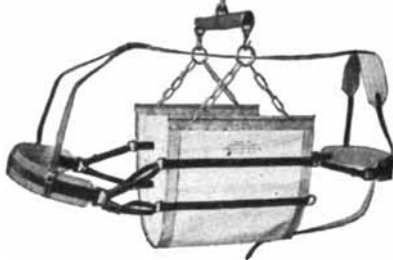
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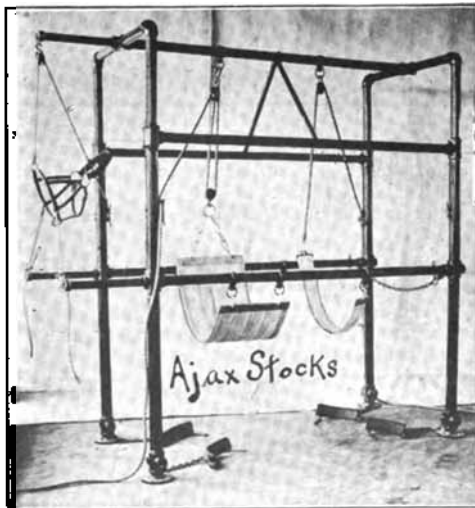


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Blackleg is said to be prevalent in Marshall County, Indiana, and many farmers in that vicinity are having their stock vaccinated.

Dr. M. P. Freed, of Conneaut, Ohio, recently operated on an Angora cat and removed an eight inch hatpin which she had swallowed.

Dr. P. H. Canakis, of Chicago, has been at Milan, Ill., attending to the practice of Dr. Gillespie during the latter's illness.

Dr. Stephen O'Toole, of the veterinary department of the North Dakota Agricultural College, has been chosen by the health department of Atlanta, Ga., for the position of veterinarian in that department. Hee will report for duty August 1st.

Dr. Wm. A. Clare, state veterinarian, Deputy Commissioner of Agriculture Romaine A. French and County Agent Wm. H. O'Kane inoculated 119 head of cattle at Sonyea, N. Y., June 19th, with anthrax serum in the effort to check the spread of the disease. Eight cattle had died of the disease up to that time.

The Iodum-Miller Co., of Kansas City, Mo., have issued a new booklet to veterinarians, describing the combinations, action, application and uses of Iodum-Miller in the different conditions met with in veterinary practice.

The semi-annual meeting of the Mississippi Valley Veterinary Medical Association was held at Galesburg, Ill., July 7th. Papers were read by Dr. J. C. Brown of Joy, Dr. F. C. Eiler of Chapin, Dr. J. M. More of Galesburg, Dr. J. R. Fessler of Bushnell, Dr. G. E. McIntire of Alexis and Dr. E. K. Glover of Indianapolis. The following new members were added to the association: Drs. E. G. Cluts, Canton; L. H. Reynolds, Cordova; Robert F. Curran, Buda; Charles F. Fidler, Canton; H. C. Reinhart, Rushville; J. T. Nattress, Delevan; E. S. Sailor, Warsaw, and W. R. Salter, Stronghurst. One of the chief events at the morning session was the passage of a resolution approving the action of Governor Dunne in having the Illinois cattle-tuberculin law passed. The association was organized eleven years ago with only a handful of veterinarians and now there are approximately sixty members. The officers are Dr. W. J. Morgan, Seaton, president; Dr. M. C. Eckley, Galesburg, vice-president; Dr. W. Lester Hollister, Avon, secretary-treasurer.

The new regulations governing the movement of cattle from ticky districts will not affect Kansas City's quarantine market. The local bureau of animal industry at Kansas

Practical, Up-To-Date Works On Animal Husbandry

Selected for the Busy Veterinarian

At the recent annual meeting of the Illinois Veterinary Medical Association, a resolution was passed providing for a committee to investigate the available works on animal husbandry topics and to select a list of those in its opinion adapted to the needs of veterinarians and present recommendations to the association at its next meeting.

The following are among the list selected:

Horses *Productive Horse Husbandry* by Carl W. Gay, D.V.M., B.S.A. This volume contains 331 pages and 175 illustrations. Price \$1.50. It has been widely adopted as a text in agricultural colleges and has the endorsement of experts everywhere. It is practical, progressive, scientific and will benefit every veterinarian who reads it, particularly those having no agricultural college training.

Swine *Productive Swine Husbandry* by Geo. E. Day, B.S.A. 363 pages; 95 illustrations. Price \$1.50. This work discusses in a clear, authoritative manner; Uses and Types of Swine; Breeding and Selection; the history and description of each of the breeds with illustrations and a score card for each; Feeding; Management of the Boar, Sow, young Pigs and fattening Hogs; Marketing; Curing pork; Buildings and Sanitation, etc., etc.

Feeding *Productive Feeding of Farm Animals* by F. W. Woll, Ph.D. 362 pages; 96 illustrations. Price \$1.50. This is not the most exhaustive work on this subject, but it is the newest and because of its brevity, best adapted to the needs of veterinarians. Dr. Woll is Professor of Animal Nutrition in the Univ. of Cal., formerly of the Univ. of Wis., and ex-president of the Ass'n of Agri. Chemists of Amer. His name as writer is a guarantee of the authoritativeness of the work.

Poultry *Poultry Culture Sanitation and Hygiene* by B. F. Kaupp, M.S., D.V.S. 418 pages; 196 illustrations. Price \$2.00. Dr. Kaupp's writings on poultry topics are too well known to veterinarians to need particular mention. This work deals with the poultry industry in its broadest sense, separate chapters being given to the discussion of breeds of poultry, mating, breeding, hygiene and sanitation, poultry houses, diseases and parasites, feeding, marketing, incubating, etc.

Specialized Farming *Productive Vegetable Growing* by John W. Lloyd, M.S.A. 339 pages; 193 illustrations. Price \$1.50. This work comprises the information obtained from experience that has cost millions of dollars.

Productive Orcharding by Fred C. Sears, M.S. 315 pages; 156 illustrations. Price \$1.50. Describes up-to-date methods of selection, planting, protection, pruning, harvesting and marketing.

Productive Bee Keeping by Frank C. Pellet. 316 pages; 135 illustrations. Price \$1.50. Tells how to begin and how to see it through; the methods found to be the best money makers by extensive honey producers.

Productive Farm Crops by E. G. Montgomery, M.A. 501 pages; 204 illustrations. Price \$1.75. This work gives twentieth century, scientific information on the principles of fertilizing, planting and cultivating.

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City state that ticky cattle which come to the city quarantine division may be dipped under regulations in force in the last year and shipped out for stocker or feeder purposes as in the past.

The Oregon State Veterinary Association met at Corvallis, Oregon, June 9th and 10th. The following papers were read and discussed: Hog Cholera, Dr. S. L. Brown; Impaction of the Horse, Dr. C. W. Lassen; Hemorrhagic Septicemia, Dr. W. H. Lytle, state veterinarian; Contagious Abortion of Range Cattle, Dr. Notz, Baker; Surgical Antiseptics, Dr. R. G. McAllister; Review of Work of State Stallion Registration Board, Prof. Carl N. Kennedy. At the clinic, a double cryptorchid operation was performed by C. W. Lassen; two shoulder tumors were operated upon by Dr. W. B. Coon, of Forest Grove; extraction of molar by Dr. Reagan; spaying of bitch and dilatation of os uteri of a cow by Dr. Simms; diagnosis of lameness case by Dr. S. L. Brown, of Portland; demonstration of ophthalmic mallein test for glanders by the state authorities. The following officers were elected: Dr. C. W. Lassen, Pendleton, president; Dr. B. T. Simms, college veterinarian,

secretary-treasurer; Dr. Reagan, Hillsboro, first vice-president; Dr. R. G. McAllister, Corvallis, second vice-president; Dr. Roy Smith, third vice-president.

Remount station No. 2 at Fort San Houston has been trebled in size and 15,000 horses have been sent to the post to undergo treatment before going into the army service. Buyers have been scouring the Middle West and Southwest for horses, competing with agents from France and Great Britain, who are also buying horses in this country for the European allies.

Fourteen children between 6 and 15 years old were given the Pasteur treatment at Indianapolis, Ind., all having been bitten by the same dog, July 8th. Dr. Howard Danner, veterinarian of the city board of health, shot the animal. It was suffering from rabies.

John Frazier, aged 88, the oldest veterinarian in Butler county, Pennsylvania, died at Butler, July 11th. He was born in County Down, Ireland.

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the Cattlemen's Association of the Southwest with headquarters at Liberal, Kansas, June 17th.

Dr. R. J. Truman and Miss Jessie Sanders, of Bushnell, Ill., were married at Peoria, Ill., June 10th. Dr. Truman enjoys a large practice at Bushnell and is also connected with the Truman Pioneer Stud Farm.

Dr. F. H. Hollingsworth secured a judgment for \$2,500 against the Midwest Serum Co. in the district court of Council Bluffs on the ground that serum he purchased from them was not properly prepared and caused the death of a number of hogs. The company has appealed to the supreme court of the state from the finding of the local court.

A veterinarian at Roseville, Ill., has invented a hog trap for holding the animals while undergoing vaccination.

Dr. Benton Allen and Miss Lura Harlan, of Dunlap, Ill., were married June 22nd.

The city clerk of Milwaukee, Wis., has instructed the chief of police to arrest all persons owning unlicensed dogs. It is claimed there are more than 3,000 dogs for which a license has not been paid this year.

Dr. John Cunningham, president of the Southern Illinois Veterinary Medical and Surgical Association and who has a practice at Egypt, Ill., has announced himself as a candidate for nomination on the Republican ticket for coroner of Marion County, Ill.

A tailless calf was recently born at Oak Mills, Kansas. Last month a similar anomaly was reported near Grand Rapids, Wis.

Twenty head of cattle out of a herd of forty were condemned as tubercular at Sturgeon Bay, Wis., by Dr. F. A. Wilson, of Green Bay, June 13th. The cattle were pure bred Brown Swiss, estimated to be worth \$3,000.

Three cows owned by a farmer near Ridott, Ill., each had twin calves within three weeks.

A cow near Souris, N. D., recently gave birth to a calf with only one hind leg.

The American Humane Society is planning to organize the American Red Star Animal Relief to take care of horses in the event of war.

A wholesale cattle poisoning plot in the vicinity of Baker, Ore., is believed to be responsible for the death of several cows there, the indications being that copper sulphate had been mixed with the salt given to the cattle.



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No. 9

Presidential Address*

By R. A. ARCHIBALD, Oakland, Cal.

FELLOW MEMBERS OF THE AMERICAN VETERINARY ASSOCIATION AND FRIENDS:

By reason of the high honor you conferred upon me a year ago I am privileged to follow the time honored custom established by my distinguished predecessors of addressing you this morning.

Before proceeding, however, I desire to take advantage of this opportunity to attempt to express my heart-felt appreciation for the great honor conferred in being elected to the office of president of the largest veterinary association in the world. I am keenly conscious of the fact that this honor was not bestowed upon me because of any intrinsic merit I might possess but rather I desire the privilege of considering it a well-deserved recognition of the yeoman service in the work of upbuilding the veterinary profession in North America by the veterinarians of the Pacific Coast, particularly those of California.

California Veterinarians Loyal to the A. V. M. A.

California, even though somewhat isolated by location, has for the past few years ranked among the first two or three states in point of membership in this Association. This should be looked

upon as remarkable, and more credit is due when we consider the veterinary population of the State of California as compared to the veterinary population of such states as New York, Pennsylvania, Illinois, Iowa, Ohio, and others. As this condition of affairs cannot be ascribed to accident, it demonstrates that the work of organization along veterinary lines in California has been prosecuted unceasingly for the past twenty-five years.

Journal of the A. V. M. A.

From an analysis of the work accomplished by this association during the past twelve months, the following achievements stand out most prominently: The acquiring of an official scientific Journal for this organization has been for many years a crying necessity and that this administration has been able to purchase the *American Veterinary Review* and successfully finance and edit same for the past year as its own publication in the face of innumerable difficulties must be considered gratifying in the extreme. The fact that in previous years this Association was frequently in such financial straits as to make it necessary to borrow money in order to meet its obligations makes this achievement still more impressive. We believe nothing has been done in recent years that will do more towards concentrating and ce-

*Delivered at 52nd annual meeting A. V. M. A., Detroit, Mich., Aug. 21, 1916.

menting the interests of the veterinary profession in this country than the continued successful publication of this heretofore much-needed veterinary literature.

Army Veterinary Legislation Obtained

As you will know our efforts to obtain legislation for the army veterinarian has been finally brought to a successful termination and while this administration desires as much credit as possible for the consummation of this desired recognition of our profession, we do not wish in any way to undervalue the work of those who for years have untiringly waged a campaign to obtain this recognition for our army veterinarians. We realize very forcibly that many of our members have toiled faithfully for years to lay a foundation for this legislation and perhaps we have been undeservedly fortunate in being able to step in at the psychological moment and reap the reward for our army confrères that has long been their due.

While considering legislative matters we must not overlook the fact that a campaign is being waged to provide legislation whereby proper classification of employees of the Bureau of Animal Industry may be legalized and we sincerely hope and trust that the so-called "Lobeck Bill" will meet with a success similar to that of the army veterinary bill.

Eradication of Foot-and-Mouth Disease a Remarkable Achievement

While we in the far west have only vague ideas of the intricacies of the sanitary and police problems which arose incidental to the late outbreak of foot-and-mouth-disease in the east and middle west, we do believe we are sufficiently alive to the situation to unqualifiedly commend the work of our Bureau of Animal Industry whose destinies are watched over by our Drs. Melvin, Mohler, and an efficient corps of trained veterinarians, for the splendid manner in which it assumed the work of control and eradication. As a result of the firm stand adopted in the handling of this dis-

ease, the results accomplished by our Bureau will go down in the archives of veterinary history as one of the remarkable scientific achievements of all time.

While great credit is due the Federal authorities in this connection, we must not overlook the splendid work performed by members of the profession occupying semi-official or perhaps unofficial positions. With few exceptions these men when called upon to assist at great personal and business sacrifices contributed their time and energy with only one objective viewpoint: viz., the eradication of apthous fever from this country.

Tuberculosis, Hog Cholera and Contagious Abortion

Regarding the control of tuberculosis, it is quite apparent that we can only report progress at this time. It is hoped, however, that the International Commission on Bovine Tuberculosis will submit at this meeting data and advice that will tend to guide our footsteps over the many obstacles this problem presents, as it has done on several occasions in the past.

Hog cholera is another disease that should receive more study and consideration. We trust that some action will be taken during this meeting towards laying a foundation for the control and use of anti-hog-cholera serum and virus, particularly virus. It has undoubtedly been shown in some states where the use of these biologics is properly controlled that the most encouraging results have been obtained, whereas in communities where their use has been placed in the hands of the laity and other irresponsible individuals scientifically, the results have been disastrous, detracting as a result from the confidence that should and would be placed in these prophylactic agents when properly applied.

Little need be said with reference to the next most important disease, namely, contagious abortion. The programme committee has arranged for a symposium upon this vital question and there is no doubt but that the ground will be

thoroughly covered both by scientific papers and discussions.

Only passing mention of the above named diseases is made, as it is realized that the various committees appointed for the specific purpose of considering they will deal with them at such length and in such a manner as could not possibly be attempted in an address of this character.

Changes in Our Conception of Immunity

A matter that is dear to our heart and which is considered pertinent to an address of this nature is the tremendous progress being made in the solving of problems underlying the question of immunity. As probably you all know the theories of Metchnikoff, Ehrlich and others, while they have served as stimuli and have laid a foundation for research and study, later developments have shown that such theories have failed to furnish logical explanations for the changes an animal undergoes during the progress of an infectious or toxemic disease. The work of Vaughn, Peterson, Wright, Jobling, Abderhalden, Bordet, Friedberger and many others have shown that the theory of phagocytosis of Metchnikoff and the side chain theory of Ehrlich have not been entirely satisfactory, and as a consequence they will have to undergo modification or even give way to the newer theories which deal with the physio-biological factors designated as ferments and anti-ferments. These elements are attracting the attention of physiologists, biologists and pathologists almost to the exclusion of all the hypothetical factors heretofore considered. The fact has already been established that normal balancing of these elements has a vital bearing on normal metabolism and that the therapeutics of the future will be largely confined to an attempt to regulate the normal balanced relationship between these elements. In other words it becomes more and more apparent that upsetting this balanced relationship is the main factor in bringing about pathological conditions, and in controlling

pathological conditions the big problem confronting the medical world today is how to rationally maintain the normal balance between the ferments on the one hand and anti-ferments on the other by increasing or decreasing either as the occasion requires. The action of these ferments and anti-ferments as research has shown are not necessarily specific in character, hence, while specific reactions and changes are not denied, they are not the only factors involved in the process of immunity.

The lesson to be learned here is that those of us who have been pinning our faith on specific therapy in the treatment and control of infectious diseases and relying upon the doctrine of specificity to explain the changes occurring during the progress of acquiring immunity and in our study of immunology, must prepare ourselves to accept and to understand the principles involved in the newer ideas gained from actual experimental research and clinical application of the knowledge acquired by a study of the role played by the physio-biological elements known as ferments and anti-ferments.

The Task of Keeping Up-to-date

The man who endeavors to keep up with the progress of scientific medicine of today has his work cut out for him, and in order to keep pace with modern progress, he must be endowed with extraordinary energy, in fact must be of an exceptional character and be fortified with a mentality that is capable of being stimulated by association and contact with those who are interested and are working along similar lines. No man who is devoting his life to the work, study, and elucidation of the many questions concerning the control and eradication of disease can hope to make progress along these lines unless he mingles with his fellow-men whose mission and life work is devoted to the solving of these problems.

Our main object in calling attention to these facts is to endeavor to show that for the man who is working along sci-

entific lines today, even though he may be engaged in constructive work himself, his big problem is to keep abreast of the tremendous progress that is being made and to emphasize the fact that he who does not exert every energy he possesses with this object in view will fall by the wayside or will at least become a non-entity in his community as far as the medical profession is concerned.

If these be the facts, it is quite evident that the veterinarian who desires to be alive to the issues of the day and remain in the march of progress must take advantage of the facilities afforded by membership in the American Veterinary Medical Association and to use to the fullest extent the meetings of this Association as a medium to commune and exchange ideas with his fellow-workers.

The Most Important Matter Before The A. V. M. A.

Coming down to a consideration of the future as it pertains to the welfare of this organization, the first problem that strikes us most forcibly is that of reorganization. It is self-evident that this Association should proceed as rapidly as constitutional practice and parliamentary law will permit to change the present methods of conducting its ultra-business affairs which have proven to be entirely inadequate to handle the enormous amount of business that is forced upon us as the result of rapid growth, increased membership and responsibilities. Reorganization of this Association therefore, bringing it up to a standard commensurate with its size and future aims and objects, is unquestionably the most vital problem confronting us during this session. If this body should do nothing else during the next few days but reconstruct its constitution and by-laws, rendering them adequate to meet the necessities of such an organization as ours, we will feel when adjournment is reached that we have witnessed the conclusion of the most successful meeting in the history of this Association. While we have no doubt but that the Committee on Reorganization will sub-

mit a complete report dealing with this problem, we feel that the experiences of the past have given us some insight as to the inadequacy of our present constitution and by-laws to meet the necessities and particularly the emergencies that crop up from time to time. In this connection therefore, I desire the privilege of submitting to you and to your Executive Committee certain recommendations or suggestions.

Affiliation with State Associations

We believe steps should be taken to interest all state associations in national association work for if all state organizations become component parts of this Association, it would solve the problem of controlling the personnel of our membership and in this way it could be readily determined whether or not a prospective member was or was not an association man and whether he was a man in good standing in his own community.

A President Elect Desirable

The custom followed by the American Medical Association of electing its president one year prior to the actual assumption of the duties of his office should be adopted by this organization as we do not believe, judging from experiences gained during the past year, that any man should be injected into or be required to assume the duties and responsibilities incidental to the office of president without some time for preparation.

A Budget System for Expenditures

Some arrangement should be made to better control the indiscriminate use of the Association's money, more especially in the matter of regulating appropriations and controlling the unauthorized contraction of bills by the various committees and resident state secretaries. The finance committee should be properly constituted and be required to pass upon all proposals for appropriations before such proposals are submitted to the Association for final action. The committee on finance should also have jurisdiction over all matters pertaining to the finances of the Association and should

be empowered to employ an expert accountant to audit the books of the Association at least once a year. Further I suggest that all moneys collected in the name of the Association be placed in the hands of the treasurer and its use be controlled by the administration at all times.

A "Full Time" Secretary Required

It appears that the time has arrived when it is absolutely imperative to have a full time Secretary elected for a period of not less than five years, whose office should be located where he would be in almost daily contact with the editor of our Journal.

Better Revenue System Required

It is essential that a fixed policy be adopted in regard to the matter of dues as it is quite evident that the present chaotic condition of affairs in this connection are to say the least deplorable. Your Secretary in his annual report will probably have something to say on this question.

Associate Members an Advantage

Associate members should be provided for as there are many men whose qualifications are not such as to render them eligible to active membership but whose support and co-operation would be invaluable from a scientific standpoint.

A Managing Editor Needed

One of the most pressing needs is the early selection of a business manager for the Journal. At present such duties devolve upon the editor. We think it is the experience of all who are familiar with journalistic work that the functions of editor and business manager have seldom, if ever, been carried on successfully by one person. If this is true, the future success of our Journal necessitates the immediate selection of a business manager whose mission it will be to take charge of the business features of the publication.

Shall We Emulate the Clam?

The suggestion is made that all papers and committee reports presented to the

Association be copyrighted and that only original papers be submitted to this body for consideration or to the Journal for publication.

Animal Husbandry a Part of Veterinary Curriculum

In view of the tremendous change in the character of veterinary practice, especially in rural districts, conditions that are largely due to the passing of the horse, it would not only seem desirable but in fact especially necessary for this Association to take a decided stand in requiring veterinary colleges to supplement regular veterinary instruction with a course on animal husbandry, particularly with reference to the breeding and care of meat- and milk-producing animals. If this policy is carried out, the veterinarian of the future will be enabled to occupy the position in farming communities that is now indifferently filled by the so-called Farm Advisor or agricultural graduate.

Sanitation Should be Taught in Veterinary Colleges

The various veterinary educational institutions of this country should also be required to change their curricula so that students could acquire, at least, a fair working knowledge of problems incidental to veterinary sanitary science and police and public health matters in general.

This thought is suggested because in recent meetings called for the purpose of dealing with problems connected with animal husbandry, and sanitary problems incidental to the production of meat and milk, the veterinarian instead of being the leader or a prominent factor in such movements is only present by courtesy or as an invited guest.

Acknowledgments

The program committee has labored hard to prepare a splendid literary banquet for this meeting and bearing as it does the name of the men who are constantly doing things, it is hoped that all will take advantage of the occasion presented to obtain all possible benefits therefrom.

This opportunity is taken to express my deep sense of appreciation for the splendid support accorded me during the past year by both officers and members of the various committees and I particularly desire to express my heart-felt appreciation for the support and assistance accorded me by your secretary, Dr. C. M. Haring, who has been untiring in his efforts not only to assist me with counsel and advice in the hour of need but also for the vast amount of time and energy he has displayed in conducting the affairs of the Association with only one thought in mind, the best interests of the pro-

fession we have the honor to represent.

Let Us Be Broad

I realize fully that your time is altogether too valuable to be taken up by me in the discussion of generalities so I will close by expressing the hope that this meeting will be a success and will be marked by harmonious deliberation so that our thoughts will not be swayed by personal grievances and desires, but will be centered upon the business at hand for in that way only can the best possible interests of the veterinary profession as a whole and the individual as a unit be conserved and promoted.

Bovine Hemorrhagic Septicemia*

By DR. A. T. KINSLEY, Kansas City, Mo.

HEMORRHAGIC septicemia is now considered to be a specific infectious disease of cattle and related animals, and is caused by the *B. bovis*. A few years ago hemorrhagic septicemia was a group name and included a variety of conditions, some of which have been identified as specific diseases and others as types of true hemorrhagic septicemia. This disease manifests some very interesting peculiarities. It may occur sporadically and enzootically, and recently it became epizootic. It may appear suddenly and practically disappears suddenly, and in many outbreaks the source of infection has not been determined.

This disease has been identified in various sections of the United States. It was first recognized in Tennessee in 1898 and in Minnesota in 1901. It has prevailed in Missouri since 1910, however, it was more prevalent during October and November, 1915, than previously. The disease was widespread in Kansas in October, November and December, 1915, in fact, the

sanitary authorities considered regulations to control the movement of cattle from public stock yards. Nebraska sanitary officials investigated several herds, during the last year, in which hemorrhagic septicemia had been introduced with shipped-in cattle. Wyoming has had at least four outbreaks. Reports of the prevalence of this disease have also been obtained from the sanitary officials of California, Colorado, The Dakotas, Indiana, Iowa, Massachusetts, Michigan, Mississippi, Minnesota, Montana, Ohio, Oklahoma, Oregon, Pennsylvania and Texas. The disease has not been identified by the state sanitary officials of Tennessee, Kentucky and Rhode Island, and Illinois have had only one or two outbreaks. The Pathologic division of the Bureau of Animal Industry reports that they have identified this disease in Kentucky, Tennessee, Virginia and West Virginia since January first, 1916.

Hemorrhagic septicemia is more prevalent than is generally supposed. This disease occurred in from five to ninety per cent. of all carload shipments of calves and yearlings from public stock

*A paper read at the 52nd annual meeting, A. V. M. A., Detroit, Mich., Aug. 21, 1916.

yards in the middle west during October, November and December, 1915, and January, 1916. The losses in the affected herds varied from one to ninety per cent. One calf commission company estimated that at least 10 per cent. of over 60,000 calves and yearlings shipped from one market in the past ten months died of this disease.

Hemorrhagic septicemia has been variously designated as shipping fever, strangles, influenza, catarrhal fever, infectious pneumonia and septic pleuropneumonia. Different types of this disease have been identified, viz., the pectoral, abdominal and cutaneous forms. A fourth type, the meningial form has also been recognized. The cutaneous form was considered as the usual type of hemorrhagic septicemia in America until recently. The pectoral form of the disease was recognized in Missouri only after summarizing the facts obtained from the investigation of several outbreaks of the disease in 1910-11-12.

Cattle of all ages are susceptible to hemorrhagic septicemia, but young cattle are apparently more frequently affected with the pectoral form of the disease than mature cattle. The condition of the animals does not appear to be a factor in susceptibility as animals that are in good flesh are as frequently affected as those that are thin and emaciated. Changeable weather predisposes to the disease, especially the pectoral type, or at least more cases are observed in the fall and winter seasons. The shipping of cattle predisposes them to this infection.

Recently weaned calves that are shipped to public markets are especially subject to respiratory infection because of their persistent bawling.

The specific cause of the disease is the *B. bovis*, a micro-organism belonging to the *pasteurella* group. This microbial agent appears to be universally distributed and this accounts for the sporadic cases of hemorrhagic septicemia. The *B. bovi-*

septicus is a non-motile, cocco-bacillus, pleomorphic, Gram negative, bipolar staining micro-organism. They are primarily aerobes, form no spores, do not liquify gelatin or coagulate milk. Several different strains have been isolated from various outbreaks and some variations from the characteristics above given have been observed.

It is probable that infection *B. bovis* from any source, excepting diseased animals, rarely produces disease unless the resistance of the infected animal has been diminished. Only two instances have been recorded where the pectoral form of hemorrhagic septicemia appeared in herds of cattle that had not been shipped or moved to new premises and in which no new cattle had been introduced.

The *B. bovis* eliminated from affected cattle are more virulent and young cattle exposed to such infection frequently become affected with the pectoral form of hemorrhagic septicemia. Thus native cattle on a farm not infrequently contract the pectoral form of this disease from shipped-in cattle and especially from cattle that have passed through public stock yards, and in some instances the shipped-in cattle remain healthy, in spite of the fact that they have been carriers of virulent *B. bovis*.

The *B. bovis* may gain entrance to the animal body through the various mucous membranes, but especially through the respiratory and digestive mucosa, and less frequently it may be introduced through the skin.

As previously stated three or four different types of this disease have been identified, viz., pectoral, abdominal, cutaneous or exanthematous and meningial. This disease may be peracute, acute or chronic. The specific lesions depend upon the type or forms of the disease. The principal lesions of the pectoral form occur in the thoracic viscera, those of the abdomi-

nal form in the abdominal viscera, those of the cutaneous form in the subcutaneous tissue and those of the meningeal form in the meninges.

Acute or peracute hemorrhagic septicemia is characterized primarily by hemorrhages which occur in the subserosa, submucosa and subcutis. The hemorrhages are usually petechial in size and they usually occur beneath the epicardium and endocardium in the acute form and in the epicardium and endocardium in the subacute form of the disease. In the subacute form there are subpleural hemorrhages and in the pectoral form there is usually an accumulation of serous fluid in the pleural cavity, also pneumonia, in which there is an interstitial exudation. Areas of hepatization occur in one or both lungs, these portions being red, brown or grey in color and of a friable consistency, other portions of lung will be hyperemic and even hemorrhagic. The visceral pleura may be inflamed and in extreme cases it may be covered with fibrinous exudate. The mediastinum may contain a gelatinous exudate.

The abdominal form is usually acute or subacute and is characterized by submucous and subserous hemorrhages, or by hemorrhagic enteritis and peritonitis in which there is a quantity of serous or sero-hemorrhagic exudate in the peritoneal cavity. In some cases the spleen may be enlarged.

The subcutaneous form is evidenced by petechial hemorrhages and a marked accumulation of serous exudate in the subcutis, particularly of the inferior cervical region.

Reynolds and Nunn have reported some cases in which there was a marked hemorrhagic meningitis. In these cases there is usually extensive petechial hemorrhages in the subcutis of the cervical region. It is rather common to find two or more of the foregoing types of lesions occurring simultaneously.

The symptoms of this disease de-

pend upon the type of lesions. The early stages of the disease are usually evidenced by depression, dullness and inappetence. The affected animals are usually stiff and have little tendency to move. There is usually a rise in temperature of from two degrees to five degrees F. The pulse rate is increased and the character changed. In the pectoral form, the respiratory rate is increased and there is labored breathing. The affected animal has a dry, painful cough, and there are frothy serous or sero-sanguineous nasal and ocular discharges, the discharges later becoming of a purulent character. Pleuritic friction sounds and solidity of lung areas may be determined by a physical examination. Those cases in which there is involvement of the abdominal viscera, show temperature, circulatory and digestive disturbances. There are colicky pains and diarrhoea, the fecal discharges being frequently streaked with blood. The exanthematous form of the disease is characterized by high temperature, circulatory disturbances and by subcutaneous, inflammatory edema, especially of the inferior cervical region, although it may occur elsewhere. This tumefaction may interfere with circulation, deglutition and respiration, as well as with locomotion. So-called Mad Itch has recently been identified by Norden and Salsbery as a type of cutaneous hemorrhagic septicemia.

The meningeal type is manifested by disturbance of the brain functions. Animals so affected are usually nervous, excitable and sometimes vicious. This type of the disease is usually rapidly fatal. In some of these cases the affected animals will hook or butt posts, troughs, mangers or other objects. There is usually a hypersensitive condition of the cutaneous structures of the cervical region and diminished sensations in the posterior third or half of the body and in some instances there are no reflexes posterior to the lumbar region. Animals so

affected are usually down as they appear to have no control of the forelegs and the hind legs are rigid. Thus when made to move in their attempts to arise to their feet, they may stand on their heads or even turn somersaults. There is usually a dilatation of the pupil in these cases.

In the subacute or chronic form of the disease regardless of type the affected animals show marked emaciation.

Symptoms indicating the presence of a single type of this disease may be observed, but it is not rare for the disease to affect the thoracic viscera in the beginning and later, to involve the digestive viscera. Such cases show a combination of symptoms.

Hemorrhagic septicemia may be confused with mycotic forage poisoning, blackleg, malignant edema, anthrax, pneumonia and strongylosis. The ante-mortem diagnosis of hemorrhagic septicemia is not possible in all cases, and where opportunity presents, the diagnosis should always be verified by autopsy and laboratory examination.

So-called forage poisoning, in which the active causative agent is mycotic in nature, is the most difficult condition to distinguish from hemorrhagic septicemia, especially when the lesions found in autopsy are the only evidence upon which to base a diagnosis. The lesions in the very acute cases of mycosis consist of petechial hemorrhages in various body tissues but occur especially in the subendocardium. The only positive method of differentiating between hemorrhagic septicemia and mycotic forage poisoning is the demonstration of the *B. bovissepticus* in hemorrhagic septicemia and the negative findings in mycotic forage poisoning. (The *B. bovissepticus* does not occur in the blood of affected animals until just before death.) As the technic of the diagnosticians become more perfect the cases of mycotic forage poisoning become less frequent and it may be possible that perfection of labora-

tory technic for field diagnosis will determine that mycotic forage poisoning is hemorrhagic septicemia.

The ante-mortem differentiation of hemorrhagic septicemia from blackleg is not difficult as the emphysematous tumefaction characterizes blackleg. In those cases in which the disease affects internal muscular structures an autopsy reveals the lesions of the muscular tissue, consisting of darkened color, peculiar odor, dry and friable consistency characteristic of blackleg. Blackleg is confined to young animals and hemorrhagic septicemia affects cattle of all ages.

Cutaneous hemorrhagic septicemia is strikingly similar to malignant edema, but those conditions can be distinguished ante-mortem by the fact that the serum escaping from an incision deep into the local tumefaction of hemorrhagic septicemia is inodorous and the serum from such an incision in a tumefaction of malignant edema has an offensive odor and in some instances contains bubbles of gas.

Localized anthrax or charbon may be differentiated from cutaneous hemorrhagic septicemia by demonstrating the black, tarry, varnish-like non-coagulable blood in the localized anthrax lesion. The blood throughout the carcass of an animal dead of generalized anthrax has the same appearance as from the local lesion and the *B. anthracis* is demonstrable and is easily distinguished from the *B. bovissepticus*.

The pectoral form of hemorrhagic septicemia is frequently primarily manifested as pneumonia and is difficult to distinguish by ante-mortem examination from ordinary pneumonia, excepting for the infectiousness of the disease.

It is differentiated ante-mortem from verminous broncho-pneumonia by the absence of the wheezing respiration and the paroxysms of coughing that characterizes the latter. Absence of vermes, portions of vermes or their ova in the nasal discharges should be

sufficient evidence to eliminate verminous broncho-pneumonia. The presence of vermes is usually demonstrable by post-mortem examination and thus verminous pneumonia can be readily differentiated from hemorrhagic septicemia pneumonia.

The subacute or chronic form of the pectoral type of hemorrhagic septicemia is clinically similar to bovine pleuro-pneumonia. Pectoral hemorrhagic septicemia is usually acute and rapidly fatal in the beginning of an outbreak which further distinguishes it from bovine pleuro-pneumonia—the latter being essentially chronic. The lung lesions of pleuro-pneumonia are characterized by the variegated color, due to an interstitial fibrous formation and variation in the age of the pulmonary lesion. The lesions of hemorrhagic septicemia pneumonia are very similar but in the former disease there is an interstitial exudate of fibrin or sero-fibrin and the interstitial exudate in the latter disease is fibrous, a distinction sufficient for differentiation.

The differentiation of pulmonary strongylosis and pectoral hemorrhagic septicemia has been discussed. The differentiation of the abdominal form of hemorrhagic septicemia from gastric or intestinal parasitism is usually not difficult, as parasitism is essentially chronic and the abdominal form of hemorrhagic septicemia is acute. Should there be any confusion in distinguishing these clinically, an autopsy of an animal recently dead will reveal the difference and give the evidence for a positive diagnosis.

Hemorrhagic septicemia is usually an acute and highly fatal disease, how-

ever, the pectoral form of this disease is occasionally observed in a chronic form. The acute cutaneous and abdominal types usually terminate fatally in from 6 to 36 hours. The acute form of the pectoral type rarely terminates fatally in less than three days and the chronic form of the pectoral type may persist for from one to three weeks or even longer and some of the affected animals may recover, but in these cases a chronic lung affection usually persists. The prognosis in all cases is unfavorable.

Medical treatment of this disease in any of its forms is of little value. Some practitioners have claimed that favorable results were obtained by the early application of bacterin in affected animals but the use of such an agent in the acute types of any disease is of questionable value. There appears to be an abundance of evidence of the successful prevention of the development of hemorrhagic septicemia in exposed cattle by the use of bacterin.

Sanitary measures should be resorted to in the control of this as well as the control of other infectious diseases. However, such measures cannot be as effective as in most other acute, readily-transmissible infectious diseases because of the universal distribution of the causative agent, the *B. bovissepticus*. Vehicles of transportation and public stock yards are a means and source of infection and should be cleaned and disinfected at frequent intervals to diminish the possibility of dissemination of infection. Carcasses dead of the disease should be disposed of in such a manner that all infectious material will be destroyed.

Present Status of the Infectious Abortion Problem

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EPIZOOTIC abortion has received a great deal of attention from both American and European investigators, and is considered by many to be even a greater menace to the livestock industry than tuberculosis. It is not the purpose of this paper to report any original research, but merely to review the more recent literature concerning progress being made with a general view to combat the disease.

Investigators differ as to the extent of the distribution of epizootic abortion. Thus, Williams believes and insists that every dairy herd worthy of the name is infected, and, furthermore, every cow in the herd is infected. There is, no doubt, some foundation for such statements, but, nevertheless, it appears that statements of this character are a bit too broad. The writer has repeatedly tested cows in large dairy herds without the slightest suspicion of reaction resulting to either the complement fixation or agglutination tests. There is every reason to believe that the condition known as infectious or contagious abortion is epizootic in a great majority of the dairy herds of this country as well as Europe, and that this condition is caused by a micro-organism known as bacillus abortus, first isolated by Professors Bang and Stribolt, of Denmark, and reported in 1897. There is a generous amount of literature supporting the work of Professor Bang, and this etiological factor has been studied and isolated by many institutions in Europe, including the British Commission, whose report in 1908 confirms the existing opinion that the infection was widespread in England. The work of McNeal, Good, Giltner, Hadley

and others is proof of its great prevalence in the United States. The disease has been recognized in South Africa.

There is another condition considered by some to be closely related to infectious abortion. This condition is generally known as "infectious granular vaginitis." Williams and others are convinced that the presence of vaginitis in a given herd is evidence of the presence of epizootic abortion. According to Zwick, this condition is not considered to be a cause of abortion. We have seen it present in herds which have never had a history of abortion and in which blood samples gave no reaction to either the complement fixation or the agglutination test.

Considerable controversy exists at present regarding the avenues by which bacillus abortus (Bang) gains entrance to the animal body. According to the work of the British Commission, an animal may be infected with abortion by the injection of virulent material or active cultures into the blood stream. It is also possible to infect animals by subcutaneous inoculation of considerable quantities of infective material. These, however, are, of course, unnatural avenues of infection. Naturally, the abortion organism may gain entrance either by way of the genital passages or by way of the mouth. Surface has also shown that it is possible to produce infection by introducing material in ways other than by way of the vagina. Williams insists that the most prevalent and perhaps the only way in which the pregnant animal becomes infected is by way of the vagina previous to the sealing of the os. This method of infection has always been supposed to be the natural

method. Infection by the use of infected sires is considered by some the most frequent way in which the disease is spread. It has been proven beyond question, however, that infection may be established after conception and in advanced periods of gestation. The part played by the sire in spreading infection is, of course, difficult to ascertain. When it is considered, however, that infection can be brought about by the ingestion of virulent material, circumstantial evidence which previously pointed to the bull as a factor of almost exclusive importance is weakened to the extent of putting the sire in a secondary role as a spreader of the disease. For example, aborting cows on pasture infect the pasture to a greater or less extent, which, in case of its being consumed by other animals, in a short time would be capable of establishing infection. It must be borne in mind, however, in this connection that the infected material is not discharged in any considerable quantities before the act of abortion. It is quite possible that an animal which has aborted may be a source of infection for a considerable length of time subsequent to abortion. Stockman takes the position with regard to bovine abortion that infection "takes place most frequently and surely by way of the alimentary tract, owing to the animal swallowing infected food or water or licking infected material on the bodies of others or elsewhere. It is also theoretically possible, however, that a cow may be infected by the contaminated penis of a bull at the time of service, but it seems very doubtful if the pregnant uterus of a non-infected cow can become infected by the bacillus of bovine abortion traveling up the genital organs from without, and in this connection it has to be remembered that the bacillus of Bang is non-motile." As regards infection by way of the genital tract, introduction of virulent material from soiled gutters, etc., is quite improbable. A consideration of this subject would be incomplete without mention of the possibility of the bacilli persisting in the womb from one

abortion to the date of the next pregnancy.

We are supposed to have at our command methods for the diagnosis of this disease which are reliable. Microscopic examination is to a certain extent unreliable. The methods of complement fixation or agglutination used in the diagnosis of other diseases in both man and domesticated animals have been applied to this disease more or less successfully. Surface, Hadley, the British Commission, Zwick and others were the first to apply these methods in the diagnosis of epizootic abortion and vouch for their reliability.

Abortin, a preparation similar to tuberculin, has been used by the British Commission, Giltner and others in attempts to establish its value as a means of diagnosing this disease. Thus far, the preparations used have not given much promise. It is suggested that their refinement might lead to more reliable and constant results. According to Zwick, the agglutination and complement fixation tests are of value in establishing the presence of infection in cattle. Moussu in a communication in the Tenth International Veterinary Congress at London, in 1914, maintains that methods of diagnosis, based upon the use of abortin, the agglutination and complement fixation tests, have proven of no value. Stockman attaches great importance to the complement fixation and the agglutination test in diagnosing the disease in cattle because cattle may become infected with two distinct infections, viz., the bovine infection and the ovine infection. It is, no doubt, established that these two methods are of value in the detection of the disease, provided a reliable antigen is used.

Methods of prevention which are now in use are numerous. One cannot consider the treatment or prevention of this disease without at least making mention of attempts at the use of chemo-therapy. For a number of years phenol or carbolic acid was regarded as a specific for this disease. This treatment has very

slender claims for its existence. It is now accepted by most authorities that its use is impractical and unjustifiable. Experiments performed by the British Commission have proven it to be of no value whatever.

Methylene blue has also been given a prominent place as a preventive of this disease. Its present status is, of course, in question, but there is no reason to believe from the theoretical point of view that the administration of this material results in the destruction of bacilli which may be present in the pregnant uterus. While the material is eliminated through the kidneys, there is no reason to believe that any of it reaches the uterus, though somewhat astonishing results have been obtained in various herds by its use, but would not the same results have been obtained without its use? Furthermore, are not some of the results credited to its favor due to an immunity acquired as the result of a previous abortion? It must also be considered that in the use of methylene blue expert advice is usually obtained by the owner. Such advice usually includes instructions for sanitary precautions which may be responsible for many of the good results obtained by its use.

At present, great attention is being given to immunization as a possible solution of the problem. When it is considered that the majority of aborting cows do not abort at two or three successive pregnancies, it must be admitted that this is, no doubt, due to an active immunity established, and immunization offers the most promising solution of the difficulty. It is true that some animals do abort twice and a lesser number will abort three successive times. This would indicate that an immunity had not been established by the first infection. The disease is, no doubt, a chronic one and must be treated as such. Therefore, it is necessary to conclude that a considerable time must elapse and the animal subjected to considerable exposure before an immunity is built up. McFadyean and Stock-

man, in experiments carried on and reported under the British Commission, used large doses (in some cases as much as 125 c. c. of bacterial suspension) of killed cultures for the purpose of immunization. Several animals were used in their experiments and the results obtained were promising. In a few cases, however, a protection was not produced, but when it is considered that the experimental animals were subjected to immense quantities of virulent material, quantities greatly in excess of those which an animal would naturally secure, their results would seem to indicate that the method has a promising future. Stockman, in a later report (1914), gives the results of experiments in which both living and dead cultures were used in attempts at immunization. While better results were obtained with living cultures than with dead cultures, the former is too dangerous a procedure to be adopted generally, and it seems that dead cultures constitute the only hope of immunization. Bevan, in a report of work done in South Africa, shows that immune bodies were produced in large quantities by the subcutaneous injection of large doses of dead organisms. He showed that the intensity of the reactions varied with the number of organisms used. This brings up the question as to whether or not immune bodies have any relation to actual resistance. There is reason to believe that the agglutinating titre of a serum may be some indication as to the resistance possessed by that animal; however, it is a disputed question. Hallman conducted experiments with both living and dead cultures and found that the use of living cultures was apt to result in sterility and that there was little to encourage one in the use of dead cultures. In view of the experience of English workers, however, it must be taken into consideration that Hallman used but 10 c. c. of bacterial suspension, injected at intervals of two weeks, the number of dead organisms being 45,000,000,000 per c. c. It can be seen from this that his doses were much less than those used by English workers.

In reviewing the immunization experiments performed by the various workers, one is forced to the conclusion that the injection of dead organisms may prove of value.

It is conceded that the treatment of the aborting animal is of exceeding importance to her future usefulness. In cases of abortion it is usually necessary to remove the placenta manually. This necessarily increases the chance for a contamination of the uterus with microorganisms of secondary importance and which may play an important role in the production of a metritis, resulting in subsequent sterility. The work of Wall has shown conclusively that the abortion infection of the uterus is not as serious as the resulting secondary infection. These secondary invaders may be involved in perfectly normal parturitions and sterility result. This may account for a great deal of the sterility that evidently has no connection with an abortion history.

Giltner and Himmelberger, in a publication in 1912, showed the value of lactic acid prepared from pure cultures of lactic acid bacteria in milk as a local treatment in cases of infectious abortion. Recently, Giltner again calls attention to "the hopeful field of lactic acid therapy." There is reason to believe that the ordinary chemical antiseptics exercise a bad influence upon the mucous membrane of the genital tract. This fact has not been noted when lactic acid cultures have been used. The main trouble with this treatment is the difficulty experienced in conveniently securing the material in sufficient quantities.

The Disease in Other Animals

Infectious abortion in mares and ewes has also received considerable attention and is, no doubt, of great economic importance. Good was the first to isolate the etiological factor of this disease in mares, and 1911 reported it to the United States Live Stock Sanitary Association. The organism, which Good named bacillus abortivo-equinus, belongs to the colon

typhoid group and the part played by it in abortion in mares has since been confirmed by other workers both in America and Europe. The disease in mares appears to be susceptible to the prosecution of research to a more successful end, in that it has been possible heretofore to combat the various conditions arising from infections of this type of organism. Good and Smith have produced an immune serum which will protect rabbits against a lethal dose of the organism. *B. abortivo-equinus* has also been isolated from cases of joint ill and it has been the experience in many studs to have foals, whose dams aborted the previous year, develop an articular trouble.

The disease in sheep is said to be caused by a vibrio, and Stockman considers the bovine animal susceptible to this infection. It seems remarkable that a disease affecting three species of animals and very similar in many ways should be caused by a different etiological entity in all three species.

Good and Smith, in a very recent publication, report the isolation of *B. abortus* Bang from sows suffering from this disease. This is the first time, to the writer's knowledge, that the Bang bacillus has been definitely incriminated as a cause of abortion of brood sows. This is, indeed, an important contribution to veterinary science, for should the distribution of the Bang bacillus become widespread among the pure bred swine herds of the country, as it has among the pure bred dairy herds, the losses possible would be appalling.

From the foregoing brief consideration of the progress being made as regards the methods of fighting infectious abortion, it will be seen that for the present recourse must be had to disinfection, sanitation and possibly immunization. For the prevention of sterility, local treatment of the aborting animal should be practiced to prevent any changes in the uterine mucous membrane of an inflammatory nature.

The Results of the Use of Hog Cholera Globulin on Three Thousand Hogs in the Field

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THE apparent advantage of hog cholera globulin over unrefined anti-hog cholera serum (blood minus fibrin) has been pointed out by Reichel*. The Kentucky Agricultural Experiment Station desired further information regarding the merits of globulin, particularly the results to be obtained under field conditions where its protective powers against hog cholera might be observed in different outbreaks. Up to this time data regarding the results of the use of globulin under actual field conditions were wanting, as the evidence consisted solely of experimental trials and laboratory tests. Laboratory tests had demonstrated that hog cholera serum could be chemically treated and concentrated without influencing the potency of the product. In our tests the existing field conditions, including feeding and housing methods on the different farms, represented favorable as well as unfavorable surroundings. The results of the treatment of 3,000 hogs with globulin under such conditions would seem a satisfactory basis upon which accurate deductions might be made, and also to furnish data for comparison with results obtained with unrefined serum.

The herds treated with globulin were situated in remote localities of the State; some herds were healthy and received globulin and virus simultaneously, while in infected herds only globulin was administered. The majority of the herds treated with globulin included in this report were personally supervised by Dr. Crisler and Simmons of the Experiment

Station staff; the other herds were treated by competent men under their direction. In some instances the globulin-virus treated animals were later hyperimmunized under the personal supervision of our Dr. Pontius. The virus used was of the virulent strain originally obtained from the government laboratory at Ames, Iowa, and used at our laboratory for serum production and for field use in herds treated simultaneously with unrefined serum. The results of the treatment were obtained six to eight weeks following treatment and the data included in the following tables are taken from the signed statements of the owners.

As a basis of comparison of the results obtained from globulin and from unrefined serum, we have selected the herds treated with unrefined serum produced at our laboratory in the ordinary routine of work, during the month of December, 1915.

Infected and Exposed Herds

The animals included in table IV were exposed to cholera infection, as indicated by history of the herd and confirmed by anatomic alterations observed in sick animals destroyed for autopsy. In the routine work of hog cholera control, globulin was administered to a total of 26 herds, including 1,889 hogs. Temperatures of the animals in the various herds recorded at the time of treatment indicated that 408 were suspicious*. Reports from owners six to eight weeks following treatment indicated that a total of 85 animals in these 26 herds died

*Report of the Eighth Annual Meeting of the U. S. Live Stock Sanitary Association, Feb., 1915.

*A temperature over 104° F. is regarded as suspicious.

TABLE NO. I.
Globulin Alone. Date: September 27, 1915.

No.	Temp.	Wt.	Glob.	No.	Temp.	Wt.	Glob.	No.	Temp.	Wt.	Glob.
1	105.4	200	20	24	103.2	250	25	48	102.5	125	15
2	102.0	100	10	25	103.2	250	25	49	101.0	125	15
3	102.5	200	20	26	102.6	300	30	50	102.5	125	15
4	105.2	250	25	27	102.0	200	30	51	103.0	125	15
5	103.0	90	10	28	104.0	300	30	52	101.5	125	10
6	103.2	250	25	29	103.8	250	25	53	103.0	125	10
7	102.5	200	20	30	101.0	200	20	54	102.5	125	10
8	103.0	250	25	31	103.0	150	15	55	101.8	125	10
9	106.2	125	15	32	103.2	200	20	56	101.0	125	10
10	103.0	150	15	33	103.8	400	40	57	102.0	125	10
11	105.2	250	30	34	103.5	250	25	58	102.5	125	10
12	101.0	250	25	35	102.0	300	30	59	103.2	125	10
13	103.0	250	25	36	104.8	250	30	60	101.0	125	10
14	102.0	300	30	37	106.4	150	20	61	103.2	125	10
15	105.4	300	30	38	102.6	125	15	62	105.8	200	20
16	105.6	300	30	39	103.4	125	15	63	102.5	200	20
17	104.2	250	25	40	102.5	125	15	64	105.6	150	15
18	103.2	250	25	41	101.8	125	15	65	104.4	200	20
19	103.4	300	30	42	102.0	125	15	66	104.0	250	25
20	102.5	300	30	43	102.5	125	20	67	102.5	200	20
21	102.6	250	25	44	104.0	125	15	68	102.5	200	20
22	102.4	200	20	45	100.6	125	15	69	104.5	100	10
23	102.0	300	30	46	103.0	125	15	70	102.0	100	10
				47	102.0	125	15				

from all causes, while 1,804 animals survived, a loss of 4.5 percent and a saving of 95.5 percent in infected herds. For example, in Mr. W's herd, which included 70 animals, 3 had died before treatment and necropsies held upon visibly sick pigs destroyed for this purpose revealed unmistakable gross anatomic alterations of cholera. (See table I.)

Results: On October 30, 1915, a loss of three animals from all causes as reported in this herd by the owner. The approximate weights of the animals in the above herd total 13,365 pounds. The total amount of globulin used was 1,370 c.c., an average of 13 c.c. for every 133 pounds live weight, illustrating the advantage of a concentrated product.

TABLE NO. II.
Globulin Alone. Date: March 13, 1916.

No.	Temp.	Wt.	Glob.	No.	Temp.	Wt.	Glob.	No.	Temp.	Wt.	Glob.
1	102.0	250	20	45	105.0	15	10	90	104.0	120	20
2	102.3	250	20	46	104.1	20	10	91	102.1	130	20
3	102.0	250	20	47	103.1	5	10	92	102.4	140	20
4	101.4	160	20	48	104.0	10	10	93	102.5	120	20
5	102.8	150	20	49	103.2	10	10	94	104.0	130	20
6	101.0	120	20	50	103.0	15	10	95	101.0	120	20
7	102.0	100	20	51	102.5	15	10	96	101.6	130	20
8	104.4	100	20	52	104.4	10	10	97	101.0	140	20
9	103.5	150	20	53	104.0	10	10	98	102.0	140	20
10	102.0	160	20	54	104.2	10	10	99	103.2	120	20
11	101.0	190	20	55	103.0	10	10	100	103.0	140	20
12	102.0	65	15	56	102.3	10	10	101	102.1	150	20
13	102.3	65	15	57	106.0	120	20	102	99.4	120	20
14	102.0	65	15	58	103.0	120	20	103	101.2	150	20
15	102.0	65	15	59	106.0	120	20	104	104.0	140	20
16	104.0	50	15	60	105.0	120	20	105	104.0	120	20
17	102.1	50	15	61	103.0	250	20	106	102.4	150	20
18	102.1	60	15	62	102.0	150	20	107	104.0	150	20
19	106.0	60	15	63	103.8	125	20	108	103.0	150	20
20	102.1	60	15	64	102.3	130	20	109	102.8	120	20
21	103.4	60	15	65	102.6	130	20	110	102.2	120	20
22	103.0	60	15	66	103.5	125	20	111	103.1	160	20
23	103.8	60	15	67	102.6	130	20	112	103.4	120	20
24	103.2	60	15	68	103.0	150	20	113	104.1	140	20
25	103.0	100	20	69	104.0	120	20	114	102.0	150	20
26	103.2	60	15	70	102.3	120	20	115	101.3	150	20
27	103.1	60	15	71	104.0	130	20	116	103.0	120	20
28	105.8	60	15	72	103.0	140	20	117	102.6	150	20
29	102.3	60	15	73	102.3	150	20	118	103.0	120	20
30	104.6	40	10	74	102.3	140	20	119	103.8	140	20
31	103.8	75	15	75	104.1	120	20	120	102.0	130	20
32	104.0	20	10	76	105.0	130	20	121	102.4	140	20
33	104.0	30	10	77	105.0	120	20	122	102.0	140	20
34	102.3	20	10	78	104.2	120	20	123	102.0	140	20
35	104.0	30	10	79	102.3	150	20	124	104.4	160	20
36	103.6	20	10	80	102.5	140	20	125	102.4	150	20
37	104.0	20	10	81	103.4	180	20	126	102.3	140	20
38	104.0	20	10	82	102.0	160	20	127	102.0	140	20
39	102.3	20	10	83	102.3	140	20	128	102.3	140	20
40	104.1	20	10	84	102.1	120	20	129	102.3	130	20
41	102.3	20	10	85	104.2	120	20	130	101.3	130	20
42	104.0	20	10	86	102.0	140	20	131	102.1	130	20
43	104.2	20	10	87	102.0	140	20	132	107.0	140	20
44	104.2	20	10	88	102.0	150	20	133	102.1	120	20
				89	102.3	140	20	134	102.2	140	20

The following is a record of the weights, temperatures and dosage of globulin employed in another herd belonging to Mr. D. where infection existed as determined by history of the herd and post mortems held upon sick animals destroyed for this purpose.

Results: On April 20, 1916, the owner reported a loss of seventeen animals in this herd from all causes.

In our field tests with globulin, the results indicate that the following amounts afford protection against natural exposure equal to that of the unrefined serum in the doses ordinarily employed. (See table III.)

ilar classified herds treated during the month of December, 1915, suggesting that the mortality observed during December was not at great variance with other months or series of months. It is noted in table IV that slightly more favorable results were obtained in herds treated with globulin, which furnishes evidence of the potency of globulin.

Apparently Healthy Herds:

From the history and physical appearance of the animals in the herds included in table VI, they were considered healthy and virus was administered in doses of ¼ to 2 c.c. simultaneously with the globulin. In 16 herds, involving 759 ani-

TABLE NO. III.
Dosage Table.

Globulin.	Unrefined Serum.
10 c. c. for 50 lbs. and under.....	10 c. c. up to 10 lbs. in weight.
15 c. c. for 50 to 75 lbs.....	15 c. c. for all sizes between 10 and 20 lbs.
20 c. c. for 75 to 125 lbs.....	20 c. c. for all sizes between 20 and 50 lbs.
25 c. c. for 125 to 175 lbs.....	30 c. c. for 75 lbs. or more than 50 lbs.
	40 c. c. for 100 lbs. or more than 75 lbs.
	50 c. c. for 150 lbs. or more than 100 lbs.
	60 c. c. for 200 lbs. or more than 150 lbs.
	70 c. c. for 250 lbs. or more than 200 lbs.
	80 c. c. for 300 lbs. or more than 250 lbs.
	90 c. c. for 400 lbs. or more than 300 lbs.
30 c. c. for 175 lbs. and upward.....	100 c. c. for more than 400 lbs.

During the month of December, 1915, 65 infected herds, including 2,381 animals, were treated with unrefined serum in the doses indicated in the above table. In the various herds 270 animals were considered suspicious. Complete and reliable reports were obtained on 53 of the herds so treated, including 2,011 animals,

89 were considered suspicious. Reports on 15 herds, including 704 animals, indicate that 7 died from all causes and that 697 lived, a loss of .9 percent, and a saving of 99.1 percent. In Mr. E's herd, including 45 animals, weighing 190 to 200 pounds each, 30 c.c. of globulin were administered simultaneously with 2 c.c.

TABLE NO. IV.

Comparison of Results of the Use of Hog Cholera Globulin and Unrefined Serum in Infected and Exposed Herds.

	Globulin		Unrefined Serum	
	Alone		Alone	
No. herds treated.....	26		65	
No. hogs treated.....	1,889		2,381	
No. hogs suspicious (temp. over 104° F.).....	408		270	
No. hogs reported.....	1,889		2,011	
No. hogs not reported.....	0		370	
No. herds reported.....	26		53	
No. herds not reported.....	0		12	
No. hogs lived.....	1,804	95.5%	1,824	90.7%
No. hogs died from all causes.....	85	4.5%	187	9.3%

showing that 187 had died from all causes and that 1,824 survived, a loss of 9.3 percent and a saving of 90.7 percent. From records on file at the Kentucky Station of several thousand hogs in infected and exposed herds treated with unrefined serum, results indicate an approximate loss of 10 percent. The mortality rate observed in a larger number of hogs over a period of four years coincides closely with the results of sim-

ilar of virus. In another herd belonging to Mr. R. the following dosage was employed:

TABLE NO. V.
Globulin-Virus.

No.	Temp	Wt.	Date: February 26, 1916.	
			Glob.	Virus
1	Nor.	100	20 c. c.	1
2	Nor.	125	20	1
3	Nor.	100	20	1
4	Nor.	100	20	1
5	Nor.	125	20	1
6	Nor.	125	20	1
7	Nor.	100	20	1
8	Nor.	100	20	1
9	104.0	125	20	1
10	Nor.	100	20	1

No.	Temp.	Wt.	Glob.	Virus
11	Nor.	100	20	1
12	Nor.	100	20	1
13	104.2	125	20	1
14	Nor.	100	20	1
15	Nor.	100	20	1
16	Nor.	100	20	1
17	Nor.	100	20	1
18	Nor.	100	20	1
19	Nor.	100	20	1
20	Nor.	125	20	1
21	Nor.	125	20	1
22	Nor.	100	20	1
23	Nor.	100	20	1
24	105.0	125	20	1
25	Nor.	125	20	1
26	Nor.	125	20	1
27	Nor.	100	20	1
28	Nor.	100	20	1
29	Nor.	100	20	1
30	Nor.	100	20	1
31	Nor.	100	20	1
32	Nor.	100	20	1
33	Nor.	100	20	1
34	Nor.	125	20	1
35	Nor.	100	20	1
36	105.0	100	20	1
37	Nor.	125	20	1
38	Nor.	125	20	1
39	Nor.	100	20	1
40	Nor.	100	20	1
41	Nor.	100	20	1
42	Nor.	100	20	1
43	Nor.	100	20	1
44	Nor.	100	20	1
45	Nor.	100	20	1
46	Nor.	100	20	1
47	Nor.	125	20	1
48	Nor.	125	20	1
49	104.0	125	20	1
50	Nor.	100	20	1
51	Nor.	125	20	1
52	Nor.	100	20	1
53	Nor.	100	20	1
54	Nor.	125	20	1
55	Nor.	125	20	1
56	Nor.	100	20	1
57	Nor.	125	20	1
58	Nor.	100	20	1
59	Nor.	100	20	1
60	Nor.	125	20	1
61	Nor.	125	20	1
62	105.	100	20	1
63	Nor.	125	20	1
64	Nor.	125	20	1
65	Nor.	125	20	1
66	Nor.	100	20	1
67	Nor.	150	20	1
68	Nor.	125	20	1
69	Nor.	150	20	1
70	Nor.	125	20	1
71	Nor.	100	20	1
72	Nor.	100	20	1
73	Nor.	100	20	1
74	Nor.	125	20	1
75	Nor.	100	20	1
76	Nor.	100	20	1

Results: On March 23, 1916, the owner reported a loss of two animals in this herd from all causes.

herds to protect against natural exposure furnishes sufficient protection in the globulin and virus treatment.

During the month of December, 1915, 14 apparently healthy herds were treated with unrefined serum and virus, including 592 animals, of which 50 registered temperatures above 104° F. A report was not obtained from one herd including 76 animals. In 13 herds including 516 animals, 7 were reported dead from all causes and 509 living, a loss of 1.4 percent and a saving of 98.5 percent. A record of the simultaneous treatment with unrefined serum on several thousand hogs indicates an approximate loss of about 2 percent in our experience, suggesting that the herds treated during the month of December were representative of the average. In the herds mentioned in table VI, the slight margin in favor of the globulin is of little significance other than the fact that hog cholera globulin in small doses, in the tests as carried out, provides protection equal to that of unrefined serum.

Hyperimmunization of Hogs Treated with Globulin-Virus:

The animals in table VII were hyperimmunized intravenously to determine the immunizing virtue of globulin preparatory to injecting large quantities of virus. Varying doses of virus were injected simultaneously with the globulin.

In one herd including 75 animals averaging approximately 200 pounds each, 3 c.c. of virus and 30 c.c. of globulin were administered. In another herd of 15 animals averaging 150 pounds each 5 c.c. of virus and 20 c.c. of globulin

TABLE NO. VI.
Apparently Healthy Herds.

	Globulin-Virus	Unrefined Serum-Virus
No. herds treated.....	16	14
No. hogs treated.....	759	592
No. hogs suspicious (temp. over 104° F.).....	89	50
No. hogs reported.....	704	516
No. hogs not reported.....	55	76
No. herds reported.....	15	13
No. herds not reported.....	1	1
No. hogs lived.....	697 99.1%	509 98.6%
No. hogs died from all causes.....	7 .9%	7 1.4%

Observations on the use of hog cholera globulin in the simultaneous treatment suggest that the dose used in infected

were administered, and 3 animals averaging 250 pounds were given 30 c.c. of globulin and 5 c.c. of virus. In the

majority of the herds treated with globulin and virus 1 to 2 c. c. of virus were used with globulin in the following doses:

10 c. c. up to 50 pounds.
15 c. c. 50 pounds to 75 pounds.
20 c. c. 75 pounds to 125 pounds.
25 c. c. 125 pounds to 175 pounds.
30 c. c. 175 and upward.
30 c. c. 175 pounds and upward.

It was shown from our results that larger doses of virus might be used with safety.

TABLE NO. VII.

Hog Cholera Globulin-Virus Treated Herds, Plus Hyperimmunization.	Herds, Plus	
No. herds treated.....	6	
No. hogs treated.....	352	
No. hogs lived.....	352	100 %
No. hogs died following hyperimmunization.....	23	6.8%
No. hogs lived.....	329	93.2%

The results following hypering were suggestive of the immunizing properties of globulin in the above doses. 23 animals died from all causes subsequent to hypering, and 329 lived, a loss of 6.8 percent and a saving of 93.2 percent. It must not be understood that the globulin failed to protect these 23 animals, for the mortality included death from respiratory arrest, pulmonary hemorrhage, and edema. The mortality rate from hypering the globulin-virus treated animals compares favorably with the mortality record of unrefined serum-virus immunized animals at our laboratory.

From the results of the use of hog

cholera globulin upon 3,000 hogs under field conditions, it was observed:

TABLE NO. VIII.

Comparison of Results of the Use of Globulin and Unrefined Serum.

	Globulin.		Unrefined Serum.	
Total No. herds treated.....	48		79	
Total No. hogs treated.....	3,000		2,973	
Total No. hogs suspicious.....	497		320	
Total No. hogs reported.....	2,945		2,527	
Total No. hogs not reported.....	55		446	
Total No. herds reported.....	47		66	
Total No. herds not reported.....	1		13	
Total No. hogs reported lived.....	2,842	96.5%	2,333	92.3%
Total No. hogs died from all causes.....	103	3.5%	194	7.7%

Summary:

1. Hog cholera globulin possesses immunizing properties equal to the whole unrefined hog cholera serum.

2. It protects against natural exposure and artificial infection (1 to 5 c.c. virus) in .2 c.c. per pound weight.

3. It may be used in smaller doses than unrefined serum owing to its concentration. In this connection, it offers the advantage of reducing labor of administration.

4. It seems reasonable to assume that a small immunizing dose is absorbed more rapidly by the animal, as the units of value are more quickly available.

5. Globulin is a sterile product, which affords an added advantage over unrefined serum.

Hog Cholera and Diagnosis and Differential Diagnosis of Hog Cholera*

By A. D. GLOVER, Kansas City, Mo.

EVERY veterinarian knows what hog cholera is, what it does to its victims, to the hog raiser, what it does sometimes for the serum producer and for the veterinarian.

Hog cholera is the scourge of the hog-raising industry. Personally, I believe it to be of as many types or degrees of destructiveness as there are herds of swine. This fact is due to the varying

degree of susceptibility of animals and to the varying virulence of the causative factor of cholera.

The lesions of hog cholera, especially in the field, are not of a fixed or constant nature. By laboratory selection lesions of a more or less fixed or constant nature may be produced. Whether the lesions we find in hog cholera are due to the cause of cholera itself or to associate organisms, remains as yet a mystery.

*Presented at Annual Meeting of the Mississippi Veterinary Association, Galesburg, Ill., July 7, 1916.

The veterinary practitioner often meets with puzzling conditions because of the non-existence of characteristic lesions of hog cholera as have been his experience to find or as have been described by others.

Hog cholera being a disease of a septicemic type, the characteristic lesions are of a hemorrhagic nature, existing on serous and mucous membranes, lungs, spleen, kidneys, skin and lymph glands, the microscopic appearance of which, when existing, being very familiar to the experienced practitioner.

Very acute cholera often causes death in such a short time that slight, if any, lesions exist. In such cases the finding of dead hogs is often the first evidence of disease in a herd. Again, in sub-acute or chronic types, slow incubation with prolonged illness, resulting in occasional recoveries, may, upon autopsy, manifest extreme lesions of hog cholera.

In chronic cholera often secondary invading organisms, such as *B. necrophorus*, pneumococcus, etc., are involved, producing lesions characteristic of each.

Differential diagnosis is the *big stick* in the hands of the veterinarian.

This one thing, in my opinion, makes it very evident that *only* the veterinarian should deal with the vaccination of hogs for cholera if we ever expect that use of anti-hog-cholera serum to gain positive recognition as to its actual value when properly administered.

By proper administration I mean not only from a sanitary standpoint, but from the scientific standpoint of proper diagnosis, using the right method, proper dosage, etc., being governed by good judgment, based upon autopsy findings, history of outbreak and type of the disease existing.

Symptoms alone are often confusing, as many diseases resemble cholera in one way or another. Pneumonia, in various types; necrobacillosis, both acute and chronic; swine plague or infectious pneumonia, all show clinical symptoms that are misleading and often mistaken for cholera.

Again, parasitisms, forage poisoning, feeding lye, etc., are often the cause of disturbances easily suspected of being cholera, and which only careful autopsy will properly diagnose.

The lesions of pneumonia, of the croupous type, are well known to the veterinarian, and as this disease follows some predisposing influence, the history of the herd, together with climatic conditions, aids in diagnosis of same.

Swine plague, or infectious pneumonia, possesses lesions of a typical catarrhal pneumonia, usually of a chronic nature.

I do not have the same belief as to swine plague as is advanced by some—that it is a contagious and infectious disease, as is cholera; but, rather, that the *B. suis* septicus, or swine plague bacillus, is an omnipresent organism, as is *B. necrophorus* or pneumococcus, and when a hog is subjected to predisposing conditions, such as other disease, exposure in bad weather, dietary disturbances, etc., and the natural resistance of the hog is lowered, it is then that *B. suis* septicus may take advantage and swine plague result.

Necrobacillosis is a term used to cover all pathologic conditions resulting from infection with *B. necrophorus*, all usually of a chronic nature.

In the hog the more common diseases caused by this organism are necrotic stomatitis, necrotic enteritis, necrotic pneumonia, etc., appearing alone and as complications with other diseases, such as hog cholera.

More recently it has been determined that *B. necrophorus* is a decidedly resourceful organism and capable of a multitude of sins. The fact that it is considered an anerobic germ makes it seem impossible almost that it could create any disturbance in a septicemic way; that is, by way of blood stream. Nevertheless, there is no doubt that it does and it was my good fortune to discover evidence of just such a condition. The outbreak was among pigs weighing 70 to 100 pounds, which were shipped during bad

(Continued on page 762)

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Prompt Report of A. V. M. A. Proceedings

In this issue we present what is without question the most complete report of any A. V. M. A. meeting that has ever appeared within four months of its adjournment; and yet this report, complete as it is, was in the

hands of the printer the day following the adjournment of the Detroit meeting, and the issue containing it was mailed to subscribers on the fourth day following adjournment. Do you appreciate such service?

Teaching Canine Pathology

A RECENT number of the *Veterinary News* (London) contains an editorial by Mr. E. Wallis Hoare, F. R. C. V. S. on "The Teaching of Canine Pathology" which follows:

"Owing to the importance of canine diseases in the present day, one would imagine that in every veterinary school a lecturer on the subject would be found in the form of a practitioner who had specialized in canine medicine. This, however, is not the case, and it is quite evident those who were responsible for arranging the curriculum did not appreciate the necessity for the young graduate to be taught in a thorough manner the principles and practice of canine medicine and surgery. The curtailment of horse practice, owing to the advent of motor traction, has led to many practitioners taking up the treatment of dogs and cats; in fact this has become a necessity in several instances. Added to this, we know that canine and feline medicine is being slowly wrested from the empiric, the kennel man and the patent

medicine vendor, and the public are commencing to recognize that veterinary surgeons have at last decided to devote attention to diseases of dogs and cats. For many years the profession was seriously to blame for permitting a lucrative department of the calling to be usurped and annexed by quacks. In the days when equine practice was at its zenith, the majority of veterinary surgeons disregarded canine pathology, and had to admit frankly that they knew nothing about the subject. The number of practitioners who devoted special attention to the diseases of the dog and cat was very small, and confined to the metropolis. Can it be a matter of surprise that canine quacks flourished, and the advice of the kennel man was preferred to that of the qualified veterinary surgeon? Times have changed to a great extent, but there is still much room for improvement. The quack is still with us, and sends many dogs to an untimely end by his ignorant treatment and his partiality for 'worm' medicines. The patent medicine vendor still advertises his 'cure-alls', publishes

hand-books, and professes to cure all the ailments which canine flesh is heir to.

"Obviously, it is the duty of the profession to take steps to educate the public on the evils of quackery, and to point out the desirability of employing qualified men when dogs and cats require treatment. But in order that such a recommendation may bear fruit, it is necessary to ensure that young graduates must be properly trained and capable of practising canine and feline medicine. The present system of education requires reformation, and serious attention must be given to the fact that the young practitioner starts on his career with a very indifferent knowledge of the diseases of dogs and cats, unless, indeed, he has served a pupilage with a veterinary surgeon who specializes in these subjects. The solution of the difficulty is to be found in the election of an extramural lecturer in canine pathology, to every veterinary school. It is absurd to imagine that the professor who teaches veterinary medicine can find time to give a special course on the subject, and also to teach it clinically. Moreover, he may not have the necessary experience in the subject. It is only the specialist who can teach it in a manner likely to prove useful to the student. The appointment of extramural lecturers does not present marked difficulties, and we hope the day will come when not only the subject of canine pathology will be taught in this manner, but subjects such as the diseases of cattle, sheep, and swine, and also obstetrics."

A lack of interest on the part of students, amounting to a positive hinderance, and not incompetency of lecturers on this subject, is the chief difficulty to giving more efficient instruction in canine pathology in this country. The average veterinary student reared in the country is not a champion of the dog, does not look upon canine practice as being worth while and is not at present an enthusiastic supporter of this part of the veterinary college curriculum. After graduation, the majority of such veterinarians return to country towns to establish themselves in practice. Because of the indifferent attitude which they have maintained toward this subject, they have not fully profited by their more or less limited course of instruction and are not awake to the possibilities of canine practice in their localities. The in-

frequent and somewhat unwelcome opportunity for making use of such knowledge of this subject as they do possess in rural practice, is not calculated to cause them to become enamored with this phase of veterinary science. Furthermore, they are anything but enthusiastic and appreciative participants in the consideration of subjects pertaining to canine practice when such are presented at veterinary society meetings. Since this attitude is the predominating one in any gathering of veterinarians and is generally appreciated by students of veterinary medicine, can we wonder at the manifested indifference to canine practice by the average student?

Many times the general practitioner, particularly the one who is doing country practice, is wont to look upon canine practice as a joke and the canine specialist as a sort of parasite. Worse still, in some instances, this important and remunerative sphere of veterinary work is held in feigned if not actual contempt.

Paradoxical as it may seem, the country practitioner, more than any one else, should be an enthusiastic supporter of the breeding and development of good dogs. No veterinarian can justly deny the value of the collie on every stock farm, of the bulldog as a trustworthy sentinel when left to guard any home, or the usefulness of many other breeds in their respective capacities. Neither can it be denied that the natural habitat of the dog (with the exception of toy breeds) is in the open country where there is ample opportunity for doing mankind a real service and, as well, to be a *dog* some of the time without infringing on the rights of his master's neighbors.

Beyond any question the rural practitioner will be called upon to treat dogs more and more frequently as his clients come to look upon him as a scientific veterinarian and not a horse and cow doctor. In truth, many laymen judge a veterinarian's ability as a practitioner by

his aptitude or unfitness to acquit himself creditably in the handling of any one given case, whether it be one pertinent to the domain of canine pathology, equine dentistry or contagious abortion of cattle. What may be the appraisal in the mind of such a person of an otherwise competent veterinarian who

woefully fails in handling a favorite dog? Consequently, are we not hindering seriously the advancement of veterinary science by indirectly discouraging the efforts of those who are endeavoring to improve the courses of instruction in canine pathology given at the various veterinary colleges of this country?

Detroit Entertains the A. V. M. A.

THE 52d Annual Meeting of the American Veterinary Medical Association was called to order in the Board of Commerce Auditorium, Detroit, August 21st, 1916, by President R. A. Archibald; about 312 members and visitors being present at the opening meeting.

In the absence of the governor of the state and the mayor of Detroit, the welcome to the Veterinarians was extended by former senator Jas. H. Lee of the corporation counsel's office. Mr. Lee said in part. "It is my pleasant duty this warm morning to extend to you a welcome on behalf of the mayor.

"With respect to the profession which you gentlemen represent, we have here in Detroit, Dr. H. E. States, a veterinarian connected with the Board of Health of the city of Detroit, who has done much work in serving the public health through the veterinary profession. We are helped a great deal in this respect by the 12 government veterinary inspectors who work in conjunction with the Detroit Board of Health. My attention was called by Dr. Patterson, a local veterinarian, to the fact that the old time horse doctor has been relegated to the past; that the man who goes out to practice without a scientific examination has gone away with the old time lawyer who could be admitted to the bar upon motion.

"Of course, without my saying it, you all know that we have here the most beautiful city in the world; and in connection with this matter of welcoming you to the city, I want to tell you a

story. It used to be the custom in this locality to have upon the city hall in large electric letters the sign "Welcome," and underneath it we would put in the names of the various conventions. They became so numerous, however, that we could not get them all on the sign, and



R. A. Archibald, President, A. V. M. A.

as a consequence some would become a little jealous of the others. We found it impossible to accommodate all of them, having only one sign, and we, therefore, concluded that hot air was cheaper than electricity and that we would come around and welcome you in person.

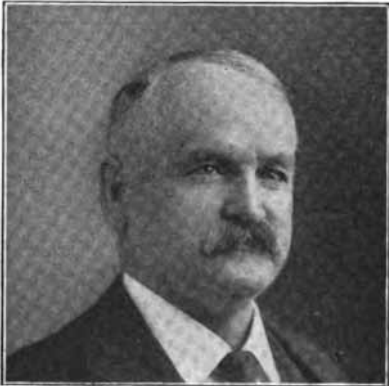
"I wish to say that we give to you a cordial welcome to the city. We want you to have a good time. Don't forget that we are not only the largest automobile city, but we also have the largest pharmaceutical works and the largest stove works. We have also a splendid boulevard system and excellent facilities

for excursions on the water. In fact, we have everything you require to enjoy yourselves, and it is our earnest desire that you do enjoy yourselves."

Butler's Bouquets.

Response by Dr. Tait Butler:

"Ladies and Gentlemen, since arriving in the city, or rather since leaving St. Louis yesterday morning, I have been trying to figure out this 'hot air' that Detroit is furnishing us, and I am glad that Mr. Lee has stated the explanation. I was interested also in knowing the reason for that hot air. He said Detroit has the largest stove works, and to judge from the temperature, I think they must all be at work. That may seem strange coming from the



J. F. Winchester, Former President, A. V. M. A.

South where it is hot, but we can not compete with anything that we are enduring this morning in Detroit.

"It seems strange to me that the veterinary profession should be for Detroit, the automobile city. You have heard that the chief object of the veterinary profession was going out and being replaced by the automobile. This is the answer of the American Veterinary Medical Association.

"Today, there are more horses at work for man than ever before in the history of the world. Some of them it is true are being used in war, but by far the larger number are working for man's betterment, and this profession, magnificent

in its numbers and its attainments, has been developed for the livestock of the farm. It seems that the future of the American Veterinarian is particularly bright. Perhaps it has never occurred to you that among all other means of building up and maintaining soil fertility economically, livestock has become recognized by all authorities as the chief. We already have a large number of animals, per capita in this country, and the time is not far distant when the number of domesticated animals in America will be doubled and quadrupled in proportion to capita to what they are now, and the American Veterinarian must progress in the same proportion of increase.

"I have not the ability to express to Senator Lee the appreciation of our being welcomed to Detroit. We have been here before—sixteen years ago we were in this city. I remember it clearly for good and sufficient reasons [Dr. Butler was elected president of the association at the Detroit meeting in 1900—EDITOR] and I am sure that every one who was here on that occasion has not failed throughout these sixteen years to carry in his heart a warm place for the Veterinarians and the people of Detroit. I wish to say to Senator Lee that we accept the welcome in the spirit it is given, and we have found from past experience that we shall have a splendid time in the city of Detroit. As the Senator has well said, there is not a more beautiful city in the world than Detroit. I had heard about it many times before I came here, and I was not disappointed. I have yet to see another American city so clean, so beautifully laid out, with such attractive parks and highways. I feel we are going to have a splendid time at this meeting, and I wish to thank Senator Lee on behalf of our colleagues and the ladies and gentlemen here assembled for his splendid address of welcome."

The President's annual address was then delivered as published elsewhere in this issue.

At the afternoon session Monday the Executive Committee presented a list of applications to membership in the association, and as the list comprised some 414 names, it had been printed and was distributed to the members present with the request that they look over the names and vote on them at a later session.

Secretary Reports Association Prospering.

The secretary presented his report and called attention to the matter of raising the dues from \$3.00 to \$5.00, which subject had been discussed by Dr. Marshall at the morning session. The report also stated that the financial prospects of the association for the coming year are excellent. Because of the lack of sufficient funds to purchase the American Veterinary Review on October 1, 1915, the members of the sub-committee gave personal notes amounting to \$1,500. Only \$500 of this remains unpaid. It was recommended that the association proceed to reorganize, the present by-laws being unsatisfactory in conducting the affairs of the association. Attention was called to the fact that the Oakland meeting accepted a recommendation of the Executive Committee that the association be incorporated as the American Veterinary Medical Association. During the year, eleven members had resigned and fifty-eight had been suspended on account of non-payment of dues. The report was received and referred to the Committee on Publication.

The treasurer's report, which had been printed and was distributed to the members, showed a balance in the bank on Oct. 4, 1915, of \$1,192.27 and receipts since that time of \$8,919.16, making the total receipts \$10,111.43. Against reported that all the veterinary colleges on the accredited list of the association were visited by one or two members of the committee or by a representative of the committee.

The report of the librarian contained

the suggestion that the editor of the official journal take over the office of librarian. The report was accepted and the recommendation referred to the Executive Committee.

Report of the Committee on Diseases

The report of the Committee on Diseases, by Jno. R. Mohler, chairman, was a résumé of some of the work done during the past year by the Bureau of Animal Industry.

Dr. Mohler stated that hemorrhagic septicemia was more prevalent during the past year than heretofore, and that because of the time and effort given



W. H. Dalrymple, Former President, A. V. M. A.

to suppressing foot and mouth disease, hemorrhagic septicemia had, perforce, not been regulated by quarantine measures, although quarantine has been considered.

The disease has been reported from fourteen states and in some instances losses occasioned by hemorrhagic septicemia have been considerable. It has been communicated to sheep from cattle and in one instance from sheep to a colt. The disease has been known to exist in the United States for twenty years, but not to the extent that it is now present, especially in the northwest.

Losses were great where cattle (young or old) have been sent to market and detained for several days in

ill-ventilated stables. In such instances, losses ranged from two to twenty per cent and the post mortem findings at the abattoirs supplied conclusive evidence that the disease was hemorrhagic septicemia.

He recommended that preventive measures be taken in the control of the disease. Everything that is conducive to the maintenance of health, such as proper housing, suitable regimen, etc., constitutes rational prophylactic measures. Bacterins have been employed with good results in preventing the spread of this disease.

Dr. Mohler expressed the belief that if foot and mouth disease were to become prevalent again in any part of this country, its eradication would be



J. G. Rutherford, Former President, A. V. M. A.

accomplished with dispatch because of the great number of veterinarians who have been trained in this particular work. Since the last quarantined area in Illinois has been freed from the disease, no recurrence of the malady has occurred, but a force of inspectors are keeping close check on conditions in these parts of the country, nevertheless.

The Bureau of Animal Industry has been testing the value of the complement fixation test for tuberculosis, but it has not compared favorably with the tuberculin test. It does not return a

positive finding in some known cases of tuberculosis which are to be detected by means of tuberculin. Eighty-one and six tenths per cent of tuberculous animals may be recognized as reactors by the complement fixation blood test, but this proportion is too small to justify its use as a method to supplant tuberculinization.

Dourine has increased considerably in the last year and its spread has been unchecked because of lack of funds. On some Indian reservations, especially, this disease has become quite prevalent.

Quite a little attention has been given swamp fever lately. Its existence has been reported from several parts of the United States. A peculiarity of this disease is the manner in which it is spread. In one case, blood taken from a horse that had been affected with swamp fever six years previously, was found virulent. In this instance, swamp fever was transmitted to an animal and it developed in fourteen days by the injection of this blood.

Since contagious abortion and influenza were scheduled for consideration by others, Dr. Mohler did not discuss these diseases.

The efficacy of the various disinfectants was the subject of a paper by Chas. H. Higgins, of Ottawa, Canada.

Dr. Higgins called attention to the difficulty which is encountered in conducting accurate tests in this sort of work. The methods of testing the various disinfectants which he mentioned, were such as are outlined in the Bulletin of the Hygienic Laboratories. Their tests revealed the fact that liquor cresolis compositus was one of the more constantly regular disinfectants, as to germicidal strength. Creolin was tested and found to vary more than did liquor cresolis compositus. In all such preparations sedimentation causes a difference in the product so that the lower portions of the contents of containers possesses a

higher phenol co-efficient than do the upper portions. Sunlight has a decidedly detrimental effect upon all the coal tar derivatives, and such antiseptics should be kept in amber glass bottles. Dr. Higgins' most practical suggestion for the practicing veterinarian was that they purchase their disinfectants on their phenol co-efficient strengths. There has been a tendency on the part of a few concerns to market proprietary antiseptic preparations that would not justify the advertising of phenol co-efficient strengths, but all reputable dealers gladly furnish this information upon request at present.

REPORT OF THE SALMON MEMORIAL COMMITTEE

Dr. J. F. Winchester of Lawrence, Massachusetts, chairman of the Committee on the Salmon Memorial Fund, in rendering his report briefly reviewed the history of the movement for a memorial to the late Dr. Salmon. He stated that he believed the committee would be able to raise about \$10,000, and he estimated it would require three years to do this.

He stated that no part of the fund collected had been used for the expenses of the committee or would be used for that purpose. To date the expenses of the committee had been met by the individuals comprising it, and he asked that the association reimburse them.

Dr. Winchester's report was discussed as follows:

Dr. Hoskins: "I did not know I was to be called on this afternoon and did not bring the report of the work so far done. We were to have three years to raise a sum of \$10,000. Unfortunately, so much of my time was taken up along another line for the first six months that we were not able to get the plan into working order as rapidly as might be desired. Up to this time we have received \$3,000, nearly one-third of the amount. We have the committee organized in about fifteen of the states. At a very late date the secretary of this association sent out instructions to the state secretaries that they would undertake a part of this work in co-operation

with the Salmon Memorial Committee, so that within the last three or four months we have had the assistance of the resident state secretaries in a number of the states. At the present time New York State leads with something like \$300; Pennsylvania follows with nearly \$300; and these amounts go down until they reach the sum of \$2.00 from one state. Seven different state associations have each appropriated \$100 from their treasuries. There has been some little misunderstanding among some of the state associations, who have been under the impression that when this money was

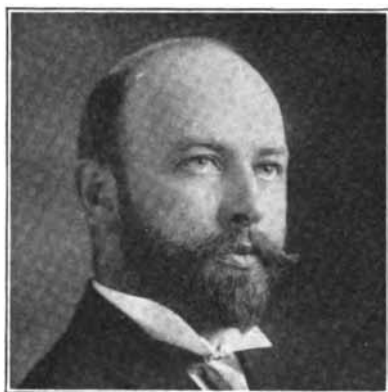


Geo. H. Glover, Former President A. V. M. A.

appropriated it was necessary to turn the money over immediately to the Salmon Memorial Committee. We plan to obtain this sum of \$10,000 within a period of three years, so that state associations that desire to take action need not fear that they will have to pay over the money at once that they may appropriate from their treasury. We hope and expect that we will raise in each of the states of the Union the equivalent of \$1.00 for each veterinarian registered in that state. We believe a large number contributing to this fund, will add very materially to the success of the aims of the association. We trust that when you make your appeal to your state, you will make it very forceful and make it understood that the very smallest contribution one may see fit to make is just as much desired as a large contribution from those who are able to give. The value and the purpose of this movement will be enhanced by a great number of small contributions rather than by a small number of large contributions. From one source the committee has received an appropriation of \$800, and there is a prospect that this may reach \$5,000 from similar sources. This is a source outside of the veterinary

profession, but one that recognizes the great work that Dr. Salmon did in this country. I trust every one will co-operate with the committee and make it a success within the next three years, so that the interest from this fund may aid some one to go to college or may be the means of carrying out some special work. In this way the good work that Dr. Salmon did for twenty-five long years, will be perpetuated by this memorial to the good of the profession."

Dr. Butler: "Could the committee give some estimate of the expenses? In appropriating money, we had better have some idea of how much it is. I don't anticipate the committee spending too much, but as a matter of business, I want to know the amount that will be used."



John R. Mohler, Former President, A. V. M. A.

Dr. Hoskins: "I think the expense would amount to about \$300 a year."

Dr. Quitman: "I want to say first that I am heartily in accord with this memorial fund, but I should like to ask the chairman of that committee, or perhaps the president can inform me, whether there is any definite plan made or anything in view as to how that fund is going to be distributed, how the selection of the men to attend the institutions is going to be made, and as to what colleges or class of colleges—state universities or private schools. If the A. V. M. A. pledges itself to an impartial distribution of this fund, they will get the money together faster. I have been asked that question by practitioners from time to time, and they want to know whether any one man or school is going to be favored. I am ignorant about it; perhaps the association may know; and if they don't, I should suggest before any further steps are taken that the association pledge itself to the veterinary profession of America as to how this fund is to be distributed.

Dr. Winchester: "That is a point that I am mighty glad was brought up. I answered that indirectly before. This committee was appointed to raise this fund, the interest from which would be sufficient for a scholarship. When that fund is raised, this committee ceases to exist. It is a matter of the A. V. M. A. then how it will be disposed of. We have nothing whatever to do with it. The association at that time certainly will be broad-minded enough and liberal enough not to be narrowed down to any one thing, except as I understand it, it will be confined to the North American continent.

Dr. Quitman: "I still insist that the A. V. M. A. should go on record in line with what Dr. Hoskins has just stated. He said that was a statement made by the committee. He admits or the committee admits that when they have collected this fund, they will have nothing further to say about it. I maintain that the association ought to go on record along the lines as mentioned by Dr. Hoskins, that the students or intended students be allowed without prejudice to choose their college. Furthermore, some definite plan should be worked out by which that student should be chosen. We do not want to especially favor a few in this association, nor should two or three or six or ten of us have the say as to who should receive the benefit of this fund. Some definite plan should be worked out and stated on the literature of this committee. When that is made public, the association will get many contributions that are being held up until that plan is made public. If they will work on that plan, they will get the money together in two years or even in one year. Go on record and pledge this fund as to how it is to be distributed and how the candidates are to be selected."

Dr. Butler: "I move as an amendment to Dr. Mayo's motion that the sum of \$300 a year or as much thereof as may be necessary be appropriated to this committee."—Carried.

President Archibald: "What is the pleasure of the meeting?"

Wisconsin Heard From.

Dr. Eliason: "If you are out of anything to do, I should like to tell you some of the conditions which confront us in Wisconsin relative to hemorrhagic septicemia. I will just report a couple of peculiarities in diagnosing this disease. I am now speaking of two spontaneous outbreaks. One was in a herd of cattle. The symptoms of this were very high temperature, and the animal might look as if it was apparently well, go around grazing and walk the distance of

this room and fall dead. It was diagnosed by the practitioners as anthrax, and examination under the microscope revealed some microbes that looked very much like those of anthrax. On personal examination, I found one animal that exhibited a very high temperature, but as the animal did not show any indications of dying immediately, we decided to draw some of the blood from the jugular vein and two samples were taken and put in sterile bottles and each of these was submitted to a different laboratory. The first laboratory reported that they found bodies which resembled those of anthrax. We immediately got ready for vaccination of the balance of the herd. During the time that it took to get the vaccine, the other laboratory followed up the examination of this a little further. Their first examination was also that of bodies like that of anthrax; but, to make a long story short, the examination by animal inoculation showed conclusively that the disease was that of hemorrhagic septicemia. The herd was placed in the barn about the time that these samples were taken, and after this one animal died, no further casualties were found. Just before coming away, there was an outbreak of this disease in a herd of hogs, but the bacteriological examination of the specimens in this case has not been completed. One of the symptoms shown by these hogs is, that a hog will lie quietly, but if another animal comes up and disturbs it, it is likely to get up and give the other one a whack with its tusk. There is no indication of any soreness. One of the hogs went totally blind one day and the next day he was apparently well and running around. At the last report, he was still living. We have made examination of at least eight hogs in this herd and all of the symptoms which have been enumerated by Dr. Kinsley were found in these hogs. The lesions were those of pneumonia—hemorrhagic areas underneath the skin, also in the kidney. In one kidney there was found some pus in the hilus. The intestines were also hemorrhagic—hemorrhagic areas, not petechiae. There was also found a sore in the stomach of one of the hogs. That, however, might not have had any connection with this disease. The lungs were very typical of what has been described this afternoon."

A member asked whether bacterins had been employed in the treatment of cholera—immune swine for hemorrhagic septicemia.

Dr. Mohler: "Theobald Smith was able to isolate this organism in swine that showed no traces of hog cholera. As far as the

immunity of these hogs to hog cholera, I am not able to state. The Bureau has never used any bacterins of this kind on hemorrhagic septicemia, but there is no reason in the world why the vaccine for hemorrhagic septicemia would not work as well on hogs as on horses and cattle."

The reception and ball at the Hotel Statler Monday evening was a thoroughly enjoyable affair and largely attended.

Restricted Publication.

Tuesday, the second day of the meeting opened with the weather as hot as the preceding day, but with a decided increase of veterinarians at the meeting. There were 236 present at the general



C. J. Marshall, Former President, A. V. M. A.

session in the morning. This session was devoted largely to hearing reports of the committee.

Among other resolutions the executive committee recommended the adoption of the following with regard to the publication of papers and reports:

Resolved: That papers presented at the meeting of the A. V. M. A. are the property of the Association and shall first appear in the Journal of the Association; provided, however, that the reports of state and federal employees be excepted with understanding that when possible, arrangements be made with the editor to publish them first.

Resolved: That the reports of the special standing committees should be reserved for publication in the Journal.

Resolved: That the Committee on Journal shall have discretionary powers to reject papers or permit their publication through other journals.

These recommendations were accepted without discussion, except by Dr. Tait Butler who spoke upon them as follows:

I believe it is a mistake to withhold the report of the Resolutions Committee for exclusive publication in the monthly journal. I believe that resolutions of this organization are intended for, and should be given the very widest circulation and that they ought to be published in the daily press at the time the report is adopted. I think it is a serious mistake to smother these resolutions for publication in the official Journal because thereby you defeat the very purpose for which the resolutions were intended. I, therefore, move an amendment that the reports of the Committee on Resolutions be exempt from this ruling.—Carried.

In the opinion of the writer this action is unfortunate for the association and not likely to be adhered to for long. While it may be of small advantage to the *Journal* it cannot but render more difficult the already somewhat arduous task of securing high class original papers and committee reports for our program—when it is fully realized that the publication of these papers and reports that have cost so much labor and are potential for so much good to the association must be delayed from one to eleven months. Further owing to the exceedingly limited distribution of these papers among prospective members when published the association will lose the great advantage of the favorable advertising and the prestige that would accrue to it from the wide distribution of its scientific papers and reports. The large number of non-members will not suffer in the least from this action since VETERINARY MEDICINE will continue as heretofore to keep its readers fully informed on every development of veterinary science in this country and to give a résumé of what is being accomplished throughout the rest of the world limited only by the space at its disposal.

A Record Breaking List of Applications.

Action was taken upon a printed list of more than 400 applicants for membership

which had been distributed to the members at the Monday session. Except for the applicants listed under North Carolina that were excluded as being ineligible, all were accepted with the exception of that of Hudson Chadwick of Mississippi to whom Dr. S. Stewart raised an objection that was sustained. It is understood of course that the executive committee had spent several hours examining the qualifications of these applicants and that they came before the association with its endorsement and recommendation.

Dr. Marshall then presented fifteen additional applications that were not received in time for printing in the list. These also had been passed upon by the executive committee and all were accepted.

Better, Not More Veterinarians Wanted.

Dr. N. S. Mayo, chairman of the committee on intelligence and education reported that all the veterinary colleges on the accredited list of the association were visited by one or two members of the committee or by a representative of the committee.

He placed the approximate number of practicing veterinarians in the United States and Canada at 20,000; and stated that during the past year, there were in the veterinary colleges in the United States and Canada 3,240 students of whom 835 were seniors. Continuing he said in part:

"America is now fairly well supplied with veterinarians. The demand is not for more veterinarians but for veterinarians with a more thorough training, not only in strictly professional lines, but in related lines, which will make them not only more efficient as professional men but more useful to society at large. There is a demand not only within the profession but from the public for thoroughly and accurately trained veterinarians.

"Most of the veterinary colleges are making an earnest effort to strengthen their forces by adding new subjects to their curricula, by giving more laboratory work and more efficient teaching. The training given veterinary students now is better than ever given before, but there is still room for im-

provement. The greatest weakness is in the smaller private schools, which is natural as their income does not permit of instituting the facilities that they desire and need.

"The Committee believes it is the desire of this association to increase the efficiency of veterinary colleges. We shall emphasize only a few points where improvement is needed. The greatest defect in veterinary education at present is a lack of thorough preliminary education on which to build a professional training. This is necessary, not only that the student shall be able to get the full benefit of a veterinary training, but to meet the demands that are made upon professional men. At present there is a wide difference of opinion as to entrance requirements. Prospective students who fail in entrance examinations at one college go to another and pass the same or similar examinations. Most of the examinations are simple and the grading is too liberal.

"This association has adopted certain entrance requirements that are susceptible of widely different interpretations. To overcome this difficulty and to obtain uniform entrance conditions, we recommend that the Committee on Intelligence and Education be authorized to confer with the deans of the private veterinary schools and arrange a plan by which the entrance examination questions shall be prepared, the examinations held, and the papers graded, so that they will meet the requirements of this association.

"We also recommend that this association urge the inauguration of short courses for graduate veterinarians that will enable the practitioners to become acquainted with the latest developments in veterinary science.

"We also recommend that the Committee on Intelligence and Education be instructed to correspond with the examining boards of various states to urge upon them the importance of conducting their examinations so as to place a candidate upon his own responsibility.

"We also recommend that the Committee on Intelligence and Education prepare an outline schedule for a four-year veterinary course that can be used as a guide by the various veterinary colleges."

The report urged that veterinary students be surrounded by a more "ethical professional atmosphere," and stated that "we shall only be recognized as a profession when we meet the standards of similar professions." The report was accepted without discussion.

Our Absent Members.

Dr. H. Jensen, Chairman of the Committee on Necrology, read the names, together with brief biographical data, of members recently deceased. The list comprised sixteen members, of whom thirteen died in 1916, two in 1915, and one in 1914.

Dr. W. Horace Hoskins spoke upon the report as follows concerning the death of Dr. D. Arthur Hughes, a department editor of VETERINARY MEDICINE.

"I wish to say a word in regard to Dr. D. Arthur Hughes. Dr. Hughes was one of the strong men of the profession and one who always had a deep interest and con-



D. Arthur Hughes. Deceased.

cern for its advancement and welfare. No man was a greater factor in bringing to your attention why the veterinarians of this country should receive recognition at the hands of the Government in the army veterinary service. I am sure there is not one within the sound of my voice but who received some circular or pamphlet that he prepared incident to the work of interesting Congress in this matter. They were printed in almost all of our veterinary journals under the nom de plume of "Garison Steele." He appealed to you to support this measure that our profession might be recognized at the hands of the federal government. His loss was a great loss to the veterinary literature of this country, for he was a constant contributor to the veterinary journals and always brought up something that was for the true advancement of the profession.

A motion to adopt the report of the Committee on Necrology was carried.

Ubiquitous Walkley

Secretary Haring read a telegram from Dr. Walkley of the National Bureau of Animal Industry Employees, appealing to the association for financial aid in boosting the Lobeck Bill. Dr. Mayo made a motion, which was duly seconded and carried, that the communication be referred to the Executive Committee.

Dr. W. Horace Hoskins, Secretary of the Committee on the Salmon Memorial Fund supplemented their previous report as follows:

There was called for yesterday some specific recommendation as to how this



C. M. Haring, Secretary, A. V. M. A.

money was going to be utilized. That was offered at Oakland a year ago in the following language, and was accepted and endorsed by the association that "The Salmon Memorial Fund shall be undertaken by this body and that a standing committee will be appointed by this organization for the carrying out of this monument; that the form shall be a scholarship, fellowship or special work to be carried out as may be decided by the association; that a sum of money of not less than \$10,000 shall be raised among the upwards of 17,000 veterinarians in North America, this money to be invested at the direction of this association so that the income will be awarded for the purpose above referred to; that the scholarship shall be in a college in North America, and if a fellowship, not to be in the same school of which the beneficiary is a graduate. This was offered at the Oakland meeting and was approved by the association.

Dr. Hoskin's report also included data as to the contributions already received,

which have been published in *VETERINARY MEDICINE*. A motion that the report be accepted carried.

The Official Journal Has Prospered.

Dr. Frederick Torrance, chairman of the committee on Journal reported that they had taken over *The American Veterinary Review* as the official journal of the A. V. M. A. paying Dr. R. W. Ellis the sum of \$2,500 therefor. Dr. P. A. Fish was appointed editor and the *Review* became the property of the association October 1, 1915. Details of this transfer were published at the time in *VETERINARY MEDICINE*. It would require an auditor of attainments to arrive at an accurate finding of the financial loss or profit on the official journal. The receipts of the journal aside from appropriations from the association treasury were \$6,438.96 for the ten months included in the report; the expenditures aside from the purchase price apparently \$6,778.40. What portion of the receipts should be deducted for un-filled subscriptions and what should be added for unpaid bills was not stated. In any case the official journal affords a more economical means of publishing the reports of the meeting than the book form previously employed.

It was stated that slightly less than one third of the subscriptions to the *Journal* are from non-members. This number is decreasing; the delinquents among non-members being nearly 70 per cent greater than the new subscription received from non-members.

The average circulation for the ten months was 2,770 copies. The committee expressed the highest appreciation of the splendid work done by Dr. Fish as editor of the *Journal*.

It was moved, seconded, and carried, that the business proceedings of the association together with the constitution and list of members be printed in a supplementary number of the *Journal*; also that when an article is published in the *Journal* fifty reprints will be furnished the author without charge and additional copies at the regular rates.

Further the editor was allowed \$75.00 a month for assistants and office expenses.

Veterinary Science for Agricultural Students.

Dr. F. B. Hadley, chairman of the special committee on Agricultural College Investigation, presented their recommendations, chief of which are as follows: That a curriculum of veterinary subjects taught at agricultural colleges should contain:

(1) Anatomy of Farm Animals. A study of the structure of the animal body with demonstrations to show the normal appearance, position, and relations of the various organs.

(2) Physiology and Hygiene of Farm Animals. A study of the functions and hygiene of the animal body, including the physiology of obstetrics.

(3) Common Diseases of Farm Animals. A discussion of the causes, symptoms, methods of prevention, and first aid treatment of the commoner non-infectious diseases.

(4) Common Diseases of Farm Animals. Continuation of Course 3, with special reference to the infectious diseases.

The committee, judging by Dr. Hadley's report, was mindful of the great difficulty which is ever present when rudimentary veterinary instruction is given agricultural students in a practical manner, and at the same time avoiding encroachment upon the domain of the trained veterinary practitioner. Inference was made that the present day agricultural student receives a better training in matters pertinent to infectious diseases than was given in veterinary colleges several years ago; that it behooves the practicing veterinarian to keep abreast of the times in such matters. The report was accepted.

Discussing this report Dr. Potter said:

"I think this a good time to bring up a question that is very closely related and that is the credit which is allowed agricultural graduates when they enter veterinary colleges. They are allowed one year's credit, and I think that is a great mistake. From my own experience in veterinary work and from observation of students who have entered veterinary colleges with one year's credit, they did not have the foundation for a veterinary education. They need more than anything else training in anat-

omy, physiology, bacteriology and such other things as veterinary colleges give in the first year. If they are graduated with a year's credit, they miss these things, and I think this practice should be discontinued."

The Blue Cross Favored.

In presenting the report of the Committee on Emblem, Dr. D. M. Campbell explained that the committee's report was in the hands of the acting chairman of the committee, who like the chairman was absent. Continuing he said that the committee was surprised at the amount of interest expressed in the selection of an emblem. We heard from what I might call a



P. A. Fish, Editor, Journal of the A. V. M. A.

large number of association members, expressing their desires as to an emblem. So far as I know none was averse to the adoption of an emblem. Most of the designs recommended were some form of a blue cross, and on the exhibit floor of the building I think a number of the firms have displayed various forms of the blue cross. We believe that a very large majority of the association wish an emblem of some form of the blue cross, and we thought we would not undertake the responsibility of suggesting a design; but the committee recommends that some form of the blue cross be adopted by the association as our official emblem.

The report was received and referred to the Executive Committee.

Dr. Mayo: I should like to present another matter to the association at the request of Secretary Haring that is quite closely associated with the blue cross emblem. At the meeting of the Missouri Valley Veterinary Association in Kansas City last winter, Dr. Vans Agnew of the U. S. Army Veterinary Service brought the subject to the attention of the Missouri Valley

Association and the following resolution was adopted:

Reserve Veterinary Corps for U. S. Army

In view of the difficulties experienced by and to facilitate the work of the Quartermaster's Department of the U. S. Army, the Missouri Valley Veterinary Association recommends that the American Veterinary Medical Association prepare for the use of the Quartermaster General a list of qualified veterinarians available for army service in case of emergency, such a list to indicate the branch of the service for which the veterinarian is best adapted.

I would say that I have also some other correspondence from Dr. Vans Agnew in



N. S. Mayo, Chairman, Committee on Intelligence and Education.

this connection. It has been the experience of the Quartermaster's Department of the U. S. Army that in an emergency they were not able to get as well qualified veterinarians as they wanted. They had to take anybody that turned up, and it is expected that this will be of valuable assistance to the Quartermaster to have this list of veterinarian recommended by this association. Dr. Vans Agnew says this will be a great step toward attaining veterinary efficiency. There is a civilian association organized to care for horses in time of war—the American Red Star Relief. It has been the experience of the nations now at war, however, that it is absolutely essential that civilian organization shall be subservient to the military authorities, and it is necessary that the civilian association co-operate with them.

Dr. Buckingham stated that the War Department had been too busy to act on the veterinary reserve list; that the army was not well supplied with veterinarians, and that with the troops sent to the Mexican border had been sent several unqualified men to fill the veterinary positions. He also

said that the conditions and remuneration afforded veterinarians under the supervision of the Quartermaster's Department were not such that they would appeal to competent practitioners.

Dr. Turner: I should like to make a statement that this condition of affairs described by Dr. Buckingham is obsolete from now on. We are going to have an army reserve corps in about two months. This condition is changed now, and Dr. Mayo's resolution should be out of order. There will be a list of reserve army veterinarians from which those passing the highest examination will be turned into the regular service. From this time on, we will have regularly commissioned lieutenants attached to the Medical Department. This Army Bill passing Congress throws all of these objections into the background. Within a month or so, we will have a properly organized veterinary corps in the Medical Department—not what we would, gentlemen, but we had to take the best we could get, and I have no doubt that the fine morale existing in the Medical Department of the U. S. Army will be reflected in the veterinary service. I have the highest opinion and the brightest prospects in view of this veterinary organization we will have in the army. The next examinations should draw some of our very best men into the army.

The resolution was referred to the Executive Committee.

Dr. Hoskins: The age requirement of veterinarians entering the army service will be extended in the near future from 27 to 30 years.

Secretary Haring: I should like to explain that your Secretary has written many letters to Washington to get this information which we have just received this morning. Usually I received no reply. Lately I have been receiving letters that the matter has been referred to the Surgeon General, and just before going here, I received a reply from the Surgeon General stating that the information would be printed and supplied in due time.

Many Tests for Glanders.

In the report of the Committee on Glanders, Dr. Cotton read the additions that had been made to the original report three years ago. The principal factors of the added information dealt with the incubation by natural infection, which would appear to be from several days to several weeks. The committee recommended the repeating of physical examination where glanders is suspected about every eight days, and that where two tests

(thermal and blood) indicate occult cases, it should be accepted that the animal is diseased. The ophthalmic test is believed to be as accurate as any and has the advantage of being possible to repeat with increased rather than less accuracy in twenty-four hours. A re-test where advisable may be repeated in twenty-four hours but should three tests be decided upon, it is best to delay the third three weeks from the second test. The intra-palpebral test is believed as reliable as the ophthalmic. The agglutination test seems to have advantages in testing mules. The committee recommended immediate destruction of positive cases and the quarantining and re-testing with the eye test after fifteen days any animal in which blood test indicates infection at the original test. All apparently well animals in such a stable should be held under quarantine until re-testing indicates that they are free from disease.

Dr. Quitman: You say that the same brush or cotton swab may be used on the same horses without any treatment of it. Personally I should like to see you strike that out of your report. It is not even ordinary cleanliness. One can use swab sticks on which sterile gauze may be wound and use one of these for each animal. You can then go ahead and test a thousand horses at a cost for swab sticks, etc., of \$1.00 all told. I move that the report be accepted with that exception.

Contagious Abortion

The symposium on contagious abortion, Tuesday afternoon, proved the most interesting, and the most largely attended session of the meeting. The free discussion from every part of the audience, the wide diversity of opinion, the close interest notwithstanding the extreme warmth of the assembly room, all testified to the unusual interest that practitioners and research men alike are taking in this momentous question. Undoubted good must come from this interchange of opinion.

The symposium was opened by a paper from Dr. Williams. Dr. Williams discussed fertilization of the ovum followed by death and expulsion of the embryo or fetus at any time up to its full develop-

ment. The author explained that research work has been largely an effort to ascertain the cause of death, reviewing the work of such men as Macfadyean and Stockman, where their reports indicated they could produce abortion experimentally with the abortus bacillus.

He does not believe that one can judge the contagiousness or the intensity of the diseases in a herd by the number or lack or number that are affected or to rapidity with which it is spread. He believes calves are infected either utero or by the milk. He stated that he had herds where 20 per cent of all calves reacted to the blood test at the age of two weeks. He has no faith in bacterins as a treatment.

Dr. Devine followed Dr. Williams, the title of his paper being "Some of the Advantages of Sanitary Precautions in Cattle Breeding." He appealed to the practitioner to encourage and apply sanitation in controlling contagious abortion and allied ailments such as sterility, calf scours and mammitis.

Dr. Cotton's paper on "Contagious Abortion from the Practitioner's Standpoint" reviewed the history, etiology, symptoms, diagnosis, and control of this disease. In summing up, the Doctor pointed it out as his opinion that sanitation is our only salvation at the present time.

The next paper was by Dr. F. B. Hadley, title "The Bull as a Disseminator of Contagious Abortion."

This paper discusses an experiment, based upon practical and scientific knowledge, in which abortion-infected bulls were bred to non-infected virgin heifers.

The authors, among other conclusions, state:

(1) That the bull is less susceptible to abortion infection than the cow.

(2) That if the bull does become naturally infected by the abortion bacilli the infection usually runs a course much more benign than in the cow.

(3) That the soiled bulls with systemic infections used in the experiments were incapable of disseminating the abortion disease by cohabitation.

An experiment was carried on with 10 virgin heifers and two bulls believed to have been infected, having done service in a diseased herd. In this case, however, every heifer carried the calf to full term, but information gathered from these experiments would on the whole indicate that the bull is a disseminator.

Dr. Giltner's paper dealt with the study of the milk in bovine infectious abortion. He reviewed the problem from its economic side and its relation to public health, and called attention to the fact that the abortion organism does not pro-



C. A. Cary, Chairman, Committee on Reorganization.

duce udder lesions, and that up to the present time there is no possible evidence that drinking of the milk containing the abortus bacillus was pathogenic for the human subject. He further added that it had not been satisfactorily demonstrated that a calf has ever been infected or not been infected by infected milk, and that drinking of milk infected with bacillus abortion had no influence on matting and lack of matting of the hair tufts of the sexual organs.

Dr. Eichhorn reviewed the "Present Status of the Abortion Question," pointing out the difficulties in getting at the true characteristics of this disease, its chronic nature being one of the difficulties. In speaking of immunity it is the author's opinion that there is a tendency for this disease to die out in herd and we may call it immunity or whatever else we

choose. The National Soldier's Home herd was formerly badly infected by this disease, but is now apparently free of it. The author advocates sanitation of both the male and female for the control of this malady.

These papers were discussed as follows:

Dr. V. A. Moore: This disease certainly is one of the most important that the veterinarian has to meet; one of the most serious, and the one that threatens the cattle industry the most. We are sure, from what has been said, that a large amount of experimental work has been done, but I still confess my doubts as to the interpretation of a large amount of this experimental matter. I have worked with this disease some myself in certain experimental phases of it. I became perfectly confident that I knew something about it, and then I have found that my information has been sadly disappointing. I believe that the question before us is to determine first the general distribution of these organisms. Is the germ of infection a widely distributed organism, infesting a large number of places in a mild attenuated form, or do these outbreaks that occur come from the introduction of the virulent organism at that time? This is a great biological problem that will have to be solved by a long series of bacteriological examinations. The next proposition is the virulency of the organisms, the different strains, the causes that tend to their acceleration and their attenuation. These are questions on which we have very little knowledge. How are these animals infected? Is such a way the one in which they are infected, or is there another way? Is it introduced through the digestive tract? We have had the experiments of feeding with milk, but what is the interpretation of it? There is also the question of the bull. I am always reminded when I read these papers of a farmer that lives near me who comes to see me once a year to discuss this with me. He has a herd of cattle, and his brother has a herd of cattle. He is not troubled with abortion in his herd, but his brother is constantly troubled with abortion in his herd. Then we have the question of immunity. Do some animals possess immunity? Is immunity established through the agency of infection? It seems to me that the serious problem is that the work that has to be done has to be fundamental in connection with the etiology of the disease and the reaction of the animal body to the infection. I do not believe that I can give you any information of any sort or any interpretation in regard

to this matter. We are simply confronted at the present time with a very serious phenomenon which we must interpret and apply for the eradication of this plague.

Dr. G. A. Roberts: The problem is in being able to get enough of this disease at one place. We have been hearing of a few cases in North Carolina, and if all of them were in one herd, we individually would be interested enough to go into it. The question is as to how far we can go with what has been stated here and what has been given before along the line of cleaning up premises and animals infected.

Dr. Williams: I should like to explain the use of one word which Dr. Hadley has apparently misunderstood. In my writings I have said that the infection is not readily spread by cohabitation. In the use of the word I have taken the usual etymological meaning, and "cohabitation" of animals means their living together, and has nothing to do with sexual intercourse. There has been much said here, and there is much in our literature regarding the reaction of the serological test. I should like to ask Dr. Hadley what constitutes a positive reaction.

Dr. Hadley: I mean that the serum of the animal under test in the case of the agglutination test agglutinates the antigen. In the case of the complement fixation test, as you all know, there is fixation of the complement by the specific antibodies.

Dr. Williams: In speaking of the agglutination test, what is the proportion you consider a positive reaction?

Dr. Hadley: We consider it positive when 1/1,000 c. c. of undiluted serum agglutinates one cubic centimeter of the antigen.

Dr. Eichhorn: The titre presented by Dr. Hadley is somewhat higher than the one we accept as a positive reaction.

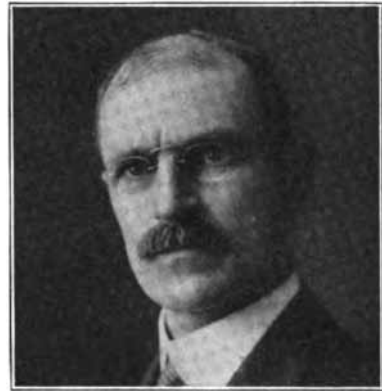
Dr. Williams: What scientific foundation have you for fixing that basis? Why is it not as positive a reaction if you get a reaction at 1/10 as it is if it is 1/1,000? What scientific basis have you for differentiating it?

Dr. Hadley: I think it is largely a result of experimentation on the part of the pathologists in the Bureau of Animal Industry and investigators in Germany and elsewhere, and I think it is a generally accepted point that it is positive when we get a certain agglutination.

Dr. Eichhorn: I think we have to accept the work as applied for infectious diseases. For instance, we take Malta fever—we take glanders—we know that a normal animal will give an agglutination titre, say 1 to 5, in glanders, and only in exceptional cases will the titre approach 1 to 2,000. Now in

the same way the agglutination of other organisms is determined. In proportion we consider that an agglutination of 1 to 50 is highly suspicious and 1 to 100 is positive and indicative. This has been established by all the laboratories over the world, and we ought to accept it as final.

Dr. J. P. Turner: After hearing the discussion this afternoon from the bacteriological standpoint, it would seem to me that the average practitioner feels that he had better lie down on this proposition, that contagious abortion is really beyond him. It occurred to me to look up the records of a herd that I have had under observation for sixteen years—a herd of about 200 grade cows. That herd did not breed its own calves and did not raise any heifers



R. P. Lyman, Sub-Committee on Journal.

until 1908, and from 1900 to 1908 cows were purchased each June, about 25 or 30 at a time. Those cows were springers, were fresh. They would be bred in September and abort in March or April. At that time we had 25 to 35 abortions a year, with the usual accompaniments of retained placenta, scours of calves, etc. The high price of cows and the scarcity of milk cows caused us in 1908 to decide to raise every heifer that was born healthy. At that time the herd consisted of about 150 cows, and now it consists of about 200 cows and 100 calves. Abortion has existed in this herd for over twenty years. In 1910 we had 18 abortions. In 1911 we had 14 abortions, and it is interesting to note that 1911 was the last year we purchased cows for increasing this herd. In 1913 there were nine abortions; in 1915 three; and the herd increased until it reached its maximum of about 200 cows and 100 heifers, and up to this date with 200 cows and 100 heifers we have had three abortions. Blood was drawn from all of these cows by Dr. Potter, and the complement fixation test gave negative results.

That is interesting from the practitioner's standpoint. I believe we shall always have abortion in a herd as long as we continue to bring in this fresh material. We have raised now 168 heifers, which have been in milk from their first calf to the sixth. Contrary to the opinions offered this afternoon, our abortions among these heifers raised in the herd have not occurred with their first calf. We have had 14 abortions, and three occurred with their first calves. Of these three all have calved successfully since, and none of these three has been sold. They have turned out to be very good milk cows. With the second calf we had four abortions. One of these had a live calf before these abortions, and afterwards the calf was sold as unprofitable. With the third calf five



A. Eichhorn, Sub-Committee on Journal.

have aborted; with the fourth calf, one; with the fifth calf, none, and with the sixth calf, one. The control of abortion in a herd hinges just on this fact, that so long as some cows have abortion, two cows will keep the disease in the herd. It is also interesting to learn that all of these heifers were raised on abortion milk. We have paid special attention to the cows which have been bred. We have disinfected them thoroughly, but we have not made any attempt to disinfect the bull. This bull is now ten years of age, and this last year, after cleaning him thoroughly and disinfecting him, I put him back with the herd, and his impregnations are going on regularly. It has impressed me that we may get some self-immunization in the calves in this herd.

A Member: What is the sterility in this herd?

Dr. Turner: We have had some sterility, but as the herd has changed from a purchased herd into a raised herd, we have very little sterility. I feel very sure that if the veterinarian has absolute authority in the veterinary matters in a herd and is not

interfered with by herdsmen or owners, he will get success. But if he is simply called in and no attention paid to his efforts, there will be no success. If the owners of fine cattle wish success, they must put this matter entirely in the hands of their veterinarians to get results.

Dr. L. A. Merrillat: Dr. Cotton recommended the immediate removal of the placenta. I should like to know how one is to remove a stubbornly attached placenta.

Dr. Cotton: We all know that in cases of contagious abortion the afterbirth is retained and oftentimes it is almost impossible to remove it, except by severe traction, and when we do that I think we will have trouble with the uterus afterward. I think we have all been a little too anxious in the past to tear and pull the placenta. I know that I have in the past. Oftentimes we would wait for a week and then undertake to remove it. I think that is a mistake, because the surface retracts and the walls of the uterus remain flaccid, and it is more difficult to get at it. I believe if you can take it away without much force, you should do it immediately. Answering Dr. Merrillat's question, when you are unable to remove it, in order to prevent any increased infection, I think we should flush the uterus and continue it weekly or oftener, if possible.

Dr. D. H. Udall: In connection with the question that just came up in reference to the placenta that will not come away with ordinary traction, I think the same will prove true here as in handling it in the hog. There is no one manner of procedure that will apply in all cases. When retained placentas fail to come away, we find it is best to leave them alone, unless they will come away very easily. In cases where they are retained so that they cannot be removed very easily, place an iodoform capsule in the uterus, and they will come away very easily of themselves. I am not certain but what it is the best way, even where they do come easily, simply to insert an iodoform capsule, which seems to prevent infection.

Dr. Turner: Do you open the capsule and spread it out?

Dr. Udall: That is not necessary. Simply put it in as far as you can reach.

Dr. Turner: I did do that in some pigs I had and one died in which three capsules had been put, and I found all three of these capsules agglutinated in the uterus, and they had not dissolved. You must remember that we do not have any vermiform action in the uterus.

Dr. J. F. DeVine: It seems to me now that pure bred cattle have become such an important factor in agricultural sections,

that this very topic is just as important to us as anything I know of. Some seven or eight years ago, I wrote an article for the *Review* deploring the fact that our colleges turned out young men who went out and manipulated the uterus of a pure bred cow the same as they would a scrub. It cost me a great many nights' loss of sleep and lots of criticism. Any man who will attempt to use traction on the fetal membrane where it won't come away of itself, is making a serious mistake, and if he ruptures a blood vessel, the animal is liable to go off feed and get poor, or die. I also have found capsules to be undissolved after making an examination several days after. A cow that has a fetal membrane this is decomposed on a day like this, needs to be irrigated three or four times a day. Another fault is that we make our antiseptic solution too strong. In fact, a common salt solution will do just as well as anything. An important thing, however, is to keep the exterior clean by all means.

Dr. J. W. Connaway: I think that the record Dr. Turner gave of his experiences teaches us a very important lesson, one that we can take home and apply, and one which farmers, one which many of the breeders, would like to hear; that is this—don't dispose of a herd that is infected with contagious abortion. The practice in the past has been, when this disease got into a herd, to hide it, not tell anybody anything about it at all, and proceed to get rid of those animals one by one, or later on, if it got bad, to hold a sale and dispose of the whole herd. I have known of many men to do this, who ought to be in the pure bred business today, and would be if they had had proper advice at that time; but I didn't know what to advise them nor did any other veterinarian at that time. Observations have shown that this is a disease that tends to immunization of the herd, and if we do not do anything, by and by we will have a herd which will raise us calves, and that is what the breeder wants—that is what the dairyman wants. I know of herds that have had this disease for fifteen or twenty years, and which at the present time are not producing very many calves. These old cows still respond at this time to the complement fixation reaction, whatever that may be or however little faith Dr. Williams may have in this test or our methods of applying it. I believe it is a good test, and our experiment stations ought to make this test useful to the breeder to detect infected herds in the state, and to detect in the infected herds the individuals that are infected, so we can apply sanitary measures and segregate those animals. I think there should be isolation of these infected animals, and the isolation of the calves and thorough disinfection of the

premises and buildings where these are housed. I think we are making progress along these lines. I believe the scientific investigations, although we have not enough facts established yet, and our interpretations may be at fault, should go on until we have the facts to present. I think this is a scientific fact in regard to contagious abortion—I believe much of this disease is transmitted through the calf. We know that the fetuses that are aborted contain the germs of the disease. We also know that some of these calves that are dropped are undersized. These calves no doubt carry the germs of this disease, so I think there is pretty good evidence that the calf has it. These calves will retain the infection, or at least the antibodies, for 100 days or longer.



J. H. Blattenberg, Committee on Reorganization.

We have had some that reacted 180 days after their birth. Of course there is a possibility that some of these might have kept up that infection by drinking infected milk, but we know they had that infection at birth, and we know many of them lost it in five or six weeks. The question is: Has that calf lost that infection, or is it simply lying there in a dormant condition awaiting the period of gestation in the case of the breeding female, and in the case of the bull? Some of these little bull calves, too, show that reaction at the time of birth. They lose it, but the question is: Does the bull calf retain this in an encapsulated condition and later on at breeding time does it crop out again? We had in some of our experiments this peculiar thing. We bought a bull in Massachusetts for an experiment and bred him to a non-reacting heifer, and after we bred him for a time or two, he showed up a positive reaction. Where did it come from? This bull had never been bred to any infected female, and was kept away from infection. So there is this possibility that it may be held in some organs of the

body, possibly in the sexual organs. We have a whole lot to learn about this, but let the good work go on.

One word as to the question of sterility. This is one of the big questions that are up to the breeders today. I know of one man who is not raising very many calves, and he has not any abortion in his herd. His cows simply won't conceive. I think the work Dr. Williams has done in this line is going to help us out a great deal in this matter. I think that some recent work that was done in Chicago along human lines may throw some light on this subject. Dr. Rosenow, in one of his hospitals in Chicago, you may recall, found in cystic ovaries in the human a coccus. They came to the



A. T. Kinsley, Committee on Diseases.

conclusion that this may have something to do with sterility in this woman. One important case is this, that in a virgin that had an imperforate vagina, and consequently could not have received the infection through the vaginal tract, on operation of the ovaries, they found some streptococcus in these organs. They made some experiments with this, and reproduced the same trouble in rabbits. This is in line with some observations I have made on sterile cows. In one herd where four cows did not conceive, one of these cows never had raised a calf. She had been bred several times, and these other three had raised a few calves and had quit. In every one of these cows we found nails in the reticulum. That, of course, is not an uncommon thing, but we found in these cows evidence of pus infection, a perforation into the diaphragm and pus formed in several parts of the body, so it is possible that that may have traversed the blood stream to the ovaries.

Dr. Potter: I think we should instruct a man who has contagious abortion in his herd how to keep his herd clean. I should

like to ask Dr. DeVine, who spoke of irrigating the uterus two or three times a day, how does he get at it?

Dr. DeVine: I have had that question asked before. One young man feared that by douching the uterus with water he might rupture it. That, of course, is impossible. As to taking out the fluid, we siphon it out until we have cleared it. If there are any shreds in there, we take them away with our hand. We put in just as much water as we choose. I have sometimes seen six or seven buckets used.

Dr. Jensen next presented his paper on "Teaching Pharmacology." The doctor's opinion is that this subject is not given the attention that it should receive in veterinary colleges. He emphasized the necessity of the practitioner being fully acquainted with the drugs he uses.

Section on General Veterinary Practice

DR. L. A. MERILLAT, CHAIRMAN.

Dr. L. A. Merillat in calling the section on General Practice to order said: As it is not customary for the chairman to make any address, do not expect me to open this meeting with an oratorical entertainment. The year 1916 is a mighty important one in veterinary history. United States and Canada will have to look upon the year 1916 as one in which the American veterinary profession showed their work through their successful stamping out of the very serious outbreak of foot-and-mouth disease—an accomplishment that has never been paralleled in the history of veterinary science, and it looks to me that this constitutes a great compliment to the veterinary profession in that they have succeeded in stamping out this widespread outbreak from the country. It is not only important because it has protected the livestock industry, but because it established a precedent of what the veterinarians could do. That is one of the big things, I think, 1916 will be noted for in the future.

Another thing is, we will remember 1916 as the year in which Congress finally put the veterinarians on the map—the year in which the government recognized the veterinarian in the army service. That

is also why 1916 is an important one to the veterinary profession.

It is also the year in which contagious abortion got some likelihood of being cleared up in some of its important phases. I think it is the year in which Dr. Williams took the "con" out of contagious abortion. When Williams told us, probably for the first time, that abortion was probably the symptom of a general disease, it made us look upon it in an entirely different light than ever before.

I should like to have Dr. White open with his paper that I have christened "Lost Opportunities."

Dr. David White: There seems to have existed in the mind of our chairman the idea that sometimes our meetings were too intensely scientific. He felt, therefore, that a little dilution would be a good thing. He was like the Kentucky colonel who on visiting with friends one night was offered a little whiskey as a nightcap. As the host poured the whiskey into the glass, the colonel shut his eyes. The host said to him, "Why do you that?" The colonel replied, "Whenever I look at that stuff, it makes my mouth water, and I like it straight."

The honor and pleasure of addressing you on this occasion was not sought by but thrust upon me. The chairman of this section not only requested me to do this thing but went so far as to assign a specific text, "Lost Opportunities." He probably felt that a person without a text is like a shoemaker without a last. A text has the advantage of affording a point of departure. Whether it also furnishes a point of arrival or application will depend upon the speaker's individual ability. Let us pray for hope and help in this arrival.

Continuing with his paper Dr. White said in part:

Too many emphasize what they term the practical. Is there no more to the veterinary profession than drenching horses for colic, pumping up the udders of milk fever cows, injecting serum under the skin of animals and castrating ridgling colts? Is the almighty dollar the only standard by which we measure success? Is there no

other opportunity afforded than this routine service? Most of us measure our service in the coin of the realm. If you ask the average practitioner how successful he has been, the invariable answer is in so many dollars' worth of business. To the bigger man, our profession offers more than monetary remuneration for the services rendered. He is capable of correlating the related sciences with facts related to the cause, prevention and cure of disease. One of our lost opportunities is our failure to recognize, sometimes, the value of such an individual and induce more men of this type to enter our profession, until our own ranks will contain a number of men we consider exceptional, who are now being shunted into human medicine and law.



E. L. Quitman, Chairman, Committee on Finance.

It is now conceded that preliminary to entering a professional college, the minimum training should be a high school education. To this there is some objection, namely, that by exacting these requirements, we prevent the farm boy or the poor boy from entering the profession. This has served to check the progress and development of education in this country. It can only appeal to the thoughtless and ignorant. In any case, it is a reflection upon the youth whose home happens to be on the farm or whose pocket happens to be empty. There is absolutely nothing in this plaintive plea for the poor country boy, unless you limit the definition to those who are uneducated because they lack brains, ambition and courage. All the other professions bar men of this stripe. Do you want to fill the ranks of our profession with such men as these? Is our profession to become the asylum of the rejected of other professions? The source of any profession is the men in it, and no profession can make a man, but men do make the profession. The plea of the non-endowed medical school was that high-

er entrance requirements would put it out of business. They did put it out of business, and the result was a better class of men in the profession. Generally speaking, we pay for what we get in this world, although sometimes we don't get what we pay for. I firmly believe that as we increase the caliber of the product of our veterinary schools, the emoluments of practice will also likewise increase. A veterinarian renders his community a certain service which has a fixed market value, and receives in return just what it is worth. It may be \$400 or \$4,000 per annum, depending upon his education, business training, acumen and personality. The better he is trained, the better he will be prepared to carry on that work.



L. A. Merrillat, Director, Section on General Practice.

Subjects like animal husbandry, meat and milk hygiene and forensic medicine, are also taken in the Pickwickian sense by veterinary students. The modern veterinarian should be an animal engineer with a good practical knowledge of types, of animals, feeds and feeding, etc. The thinking husbandman will soon learn to appreciate the importance of this service, for which he will be willing to pay a fee.

The student is not entirely to blame for the lack of appreciation of pure science, animal husbandry, etc., which he looks upon as extraneous matter. Sometimes the teacher is at fault. In veterinary schools there are now two groups of teachers—teachers of the basic science and laboratory men. Few of them have had veterinary training in practice. Those teaching the clinical branches are often mere artists. While the former group may consist of good pedagogues, what they teach may not always apply, as the veterinary background is lacking. Too few of our veterinary teachers know anything about pedagogy. I do not believe there are in the United States a

sufficient number of teachers of veterinary subjects to make up a single well manned school.

A college cannot furnish an education. This must require the application of the student. Thousands of persons who never entered the halls of learning, are, nevertheless, educated. One of the best informed and learned veterinarians I ever knew was one who had been a country school teacher until the demands of the rich farming community in which he was located forced him to take up veterinary work. He was self-taught and self-instructed by reading the best veterinary books of his day. Assisted by naturally good observation, he acquired exceptional skill. His powers of observation and education and knowing how to know, which is more important than knowing what and why, made him valuable to his community and to himself. Had he only had the opportunity of a college education he would have been a leader among us. The veterinary graduate usually feels that his education is complete, and he denies himself books and papers and association with fellow practitioners. His treatment of disease is largely guided by the influence of some drug house remedy. Most of his professional literature comes from the drug house. He takes his post-graduate course through a drug firm. He has allowed himself to degenerate into a mere routinist.

One great defect in our educational system is a lack of adequate schools where the practitioner may attend post-graduate courses. In the few courses that are given, the curriculum is very brief and consists of mere fragments.

There is before us a great opportunity to make our profession what it should be and what it is in many older foreign countries. We fail to realize the true situation if we keep our standards below that of other professions, which means that we will have to accept their leavings. The better man will pass us by to where his better educational preparation permits him to go higher up.

In conclusion, permit me to indicate briefly a few of the opportunities we cannot afford to lose.

First: High standards for those entering the profession. I would not be unreasonable and demand that the gates be kept open to only the chosen few, but with due regard to maintaining an adequate supply of trained men.

Second: More intensive, better taught curriculum and better facilities and equipment for our colleges.

Third: A standardized curriculum and a lengthened curriculum.

Fourth: More veterinary teachers and

better veterinary teachers. The teaching of veterinary medicine is a profession in itself.

Fifth: More real post-graduate courses and fewer makeshifts. There should be somewhere a high grade school open to men in the field who crave more professional knowledge.

Sixth: Better organized, less political and more scientific veterinary medical organization, whether community, state or national in membership. Only the spirit of real service should underlie them.

Seventh: Better technical literature, especially in the way of sound, up-to-date, well edited veterinary periodical literature.

Eighth: A greater effort on the part of the veterinarian to become a social and political factor in his community. When I find a colleague a mayor of his home town, I am more tempted to shine up my A. V. M. A. button than I am on learning of anything else.

Ninth: Adequate laws to protect the veterinarians from quacks.

DISCUSSION.

Dr. W. Horace Hoskins: I just turned to my colleague on my right and said that we needed just such a paper as this. We need it because from the selfish nature of our lives, we too often stray too far away from the ideal. I have been delighted with this paper, and I have been helped materially to a much higher aspect of my own personal duties, to my profession and to you, my fellow colleagues. I have been stimulated to do much better work in the future by this recalling us to a higher sense of duty, so well presented by our colleague, Dr. White. I trust that each one of us will think many times in the years to come of what he has said to us so forcefully and so well—how he has pointed out to us the way in which we should go in order that we may make the work of the past look like a candle compared with an arc light to the work of the future. So I say, we have all been benefited this morning, and if we had traveled across the continent to attend this convention and would not hear any other paper, it would be well worth our while to have come that long distance to hear this paper, treating, we might say, of the everyday, constant aspect of our profession.

Dr. N. S. Mayo: There is one particular phase of this excellent paper that I wish to emphasize if possible. In visiting various veterinary schools of this country or quite a number of them as a member of the Committee on Intelligence and Education, one of the painful impressions is the poor quality of some of the teachers in these schools. It is a crime to waste the students' time

with some of these teachers. They are men too that have had an excellent training, thoroughly trained in some of the best universities of this country, and yet they were not teachers. They were not inspiring, and there was a waste of the teachers' time and more than a waste of the time of the students in those classes. Now we have certain regulations regarding the faculties, that they shall not be graduates of the institution in which they teach and so on. Of course, this is necessary in a certain way, but it doesn't make so much difference where a man comes from if he is a teacher. Another phase that we also presented in our committee report was the need of preliminary training. I would not shut a single man out of the profession if he has the

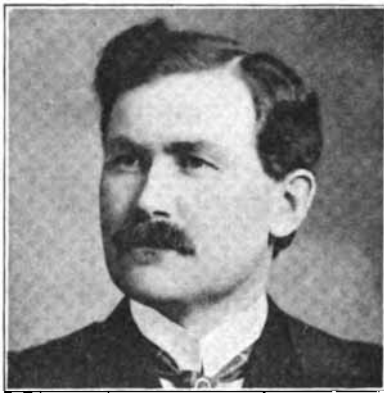


J. F. DeVine.

intent and determination to go into the profession. I do not care how poor he is or how few facilities he has had in the past, but in this present day and age, the opportunities for a preliminary education are at every mans door; and it is absolutely necessary if we raise the standard of the profession of this country that our veterinary students shall come to the veterinary school with a more thorough preliminary training. Another important point we touched upon is the fact that all students in veterinary colleges are not students. There are a good many of the students in a veterinary college who think if they are in a veterinary college, they are veterinary students. Unfortunately a college cap and a college yell does not make a student. There are many men who have not seen the inside of a college who are profound students and thinkers. That condition must be remedied very largely by the teaching force and the atmosphere carried by the institution. The atmosphere that prevails in some is that as soon as a graduate gets a degree he thinks he has all the world has to offer him in

veterinary lines. A teacher should impress upon the student that when he has completed his course he is just on the threshold of his education and he must go on and study and keep up with the times.

Dr. S. Stewart: I see a number coming in, and I regret that they do not have the stimulus and sense of pride that would come to them in hearing Dr. White's paper. It should swell the breast of every veterinarian to have such an ideal presented. One particular feature, I should like to dwell upon is the entrance requirements for veterinary education. There has been before this association for years the proposition that high school training of a specific amount should be the basis for entering a veterinary college. High school training as



W. J. R. Fowler.

represented by units is a very uncertain factor. Veterinary students who have had a high school training may have very little comprehension of veterinary science, while those who have not had such training may have a good ability to comprehend and grasp the science. So if a high school education is accepted as the basis for a veterinary training, there should also be a provision for finding out even then whether the student has the capacity to understand the science. Many who have attended high schools may have little mental capacity. We are wont to place so much importance in high school training that we overlook that an individual may acquire an education without going to a high school, education meaning the development of the power of observation and interpretation of what is seen and heard. So I hope that when this association shall put its stamp of approval on entrance requirements, this will be taken into account.

Dr. H. E. Bemis read a paper on "Local Anesthesia in Animal Dentis-

try." To Dr. Bemis is due the credit of having originated a method of "nerve blocking" which promises to revolutionize major dental operations. His method of producing anesthesia consists in cocainizing the nerves which supply the cheek teeth. The superior maxillary nerve is anesthetized by means of a hypodermic syringe fitted with a four-inch needle, and a cocaine solution is introduced from a point just below the orbit. The inferior jaw is similarly treated and from a point on the mesial side of the mandible, the nerve is anesthetized just proximal to the mandibular foramen.

Dr. L. A. Merillat: The use of anesthesia on the dental nerve in an animal was first done by Dr. Bemis. I have had some correspondence about this procedure, but I have not heard of any one who did nerve blocking before. This operation has been tried and has proved its feasibility. Two weeks ago I had a case before the students of the University of Saskatchewan, and every one present was agreed that the animal suffered no pain. It is something that should be universally adopted by veterinarians.

Dr. H. Fulstow in introducing his paper on Nymphomania in mares said:

"Nymphomania or excessive sexual desire on the part of the mare is of somewhat common occurrence. Mares affected with this affliction are a source of great annoyance to their owners. A good many theories have been advanced as to the cause of the affection by different authors, but nothing definite has been proved. It is often caused by diseased conditions of the ovaries. Disease of the uterus and vagina, new growths, atrophy and hypertrophy of the womb, are also mentioned. It is in itself only a symptom of various causes. Tumorous cysts are very common affecting both ovaries. I remember sometime ago removing cysts from both ovaries, one that weighed $7\frac{3}{4}$ ounces and the other, $1\frac{1}{2}$ ounces. In a few cases, I have been unable to find any pathological conditions either in the ovaries or in any other part of the sexual organs. Heredity is an important factor that should not be overlooked. Some animals are born with

bad dispositions inherited from the sire or dam or perhaps both. I have known of some females that produced vicious colts, both male and female. So far as the exact cause is known, nymphomania is due to irritation of the genital system, together with a mean or bad disposition.

"The symptoms are easily recognized. The animals are irritable and ticklish. Every touch seems to annoy them. They will kick and strike on slight provocation. They will show a desire to urinate, passing a small quantity of urine and straining in doing so. If excited, they switch their tails and sometimes kick. Some breed fairly well for a few years, and some are practically worthless for this purpose."

In summing up his paper Dr. Fulstow said:

This report extends over a period of sixteen years and covers something over 200 cases. In looking over my notes, I find that at the Toronto meeting I divided them into three classes.

First.—Mares that are mean when in heat only and those that are in heat continually but do not kick. They will all be cured by oophorectomy.

Second.—Mares that kick nearly all the time whether in estrum or not. Some will be cured by oophorectomy; others will be benefited only; and in a few instances the operation will do no good.

Third.—Old mares that have kicked for years and the habit has become confirmed and those that kick all of the time when not in heat but are gentle when in heat. These, as a rule, will not be benefited at all by the operation.

The results of the operation upon the first class are generally immediate. On the second class the results may be immediate in a few instances in young animals, but the majority go all the way from a few weeks to several months. One of this class which I reported, went nearly two years before improvement was shown. As to the third class, I generally tell the owner I consider it useless to operate upon them.

Dr. E. L. Quitman: Did you try the operation of clitoridectomy for the class of cases described? How do you compare that operation with oophorectomy?

Dr. H. Fulstow: I performed clitoridectomy a number of times before doing the oophorectomy, but it did not do any good,

and in one of these cases, I did operate by oophorectomy and it improved some.

Dr. G. A. Roberts: There is no operation that we have been doing that has met with as much public favor as oophorectomy. It is true there are cases that will be improved and those that will not, but we have not had a sufficient number of them to divide them into the different classes. Out of thirty-one we have operated on, there is only one that did not respond. In the South, we largely use the mule, and out of these thirty-one, we have operated on four mare mules with invariably splendid results. In every case where we have found nymphomania, we have not failed in a single instance to find cystic conditions of the ovaries. As a matter of experiment, we tried to remove only



A. H. Baker.

the affected ovary, leaving the other ovary to see what the effect would be. In this case of the mare mule that we operated on of the four, we left one ovary, which we are positive was sound so far as we could tell. The one ovary that we removed was larger than my fist. In less than four months afterwards, the animal had completely gotten over the habit of kicking and squealing; but as Dr. Ellis reported sometime ago in a case in which there was a return of the same condition, in less than four months there was a return of the condition here also. On re-operation we found to our surprise that the second ovary, which at the first operation was normal, was now in the same condition as the one originally removed. In every one of these mules, however, with the removal of both ovaries, perfect results were obtained, and as I said previously, there was only one case in which the results were not successful. We operated on one that was kicking all the time. This was an old gray mare that was driven to a laundry wagon, and the ani-

mal had been getting worse and worse until finally they could not get a colored man to drive her at all. In a month's time after the operation, there was not a driving animal of thirteen possessed by the laundry of a more gentle disposition and more easy to drive than this one, and she was twenty years of age at that time. In every one of these cases from the mildest to the most extreme, they responded to the operation except the one case mentioned. With reference to the safety of it, we have been extremely fortunate, lucky perhaps, because of the thirty-one we did not have a single accident happen. At some other times, however, there have been some losses through hemorrhages.

Dr. Ellis: The doctor has referred to a



C. G. Lamb.

case of mine that I reported. I want to say just a word here because we have to find some other cause for the return in my case. The conditions were identical in that one ovary was very large and cystic while the other was normal, but both ovaries were removed at the same time, and yet we had the return. It may have been a psychic condition, or it may have been that the handlers of this mare were so determined that she could not be relieved of that habit by operation that they used every test they could to see if she would kick again, and she accommodated them. You probably all remember the mare mule I reported about 15 or 16 years ago that was giving the milk. I called it lactation of a virgin mule. That was one of the most marked cases of nymphomania that I have ever seen.

Dr. J. H. Blattenberg: I should like to ask the gentleman who has had so much experience with mules, what was the mode of restraint used?

Dr. Roberts: We had a fellow at the twitch, one at the halter and one at the

tail. Unfortunately, we have not had an opportunity to get the subject confined. We put a side-line on over nine-tenths of the cases. We have simply had the side-line on out in a lot. We try to keep them moving so they won't get down on us. We have attempted to use some local anesthesia. Some of them have stood perfectly still, and others we have had to raise up off the ground in order to keep them still.

Dr. J. V. Lacroix: I was very much interested in Dr. Fulstow's paper and particularly in the restraint that Dr. Blattenberg has just spoken of. I believe the average practitioner who is not doing this operation is a little timid in undertaking the matter of restraint, which is an important one. If, however, you administer an ounce and a half to two ounces of chloral hydrate into the rectum after having an assistant empty the contents, the restraint will not be difficult. I have handled young animals in an improvised chute, down on the ground, and almost every other way. About the ballooning of the vaginal wall, I think the unskilled operator may have some difficulty if he depends upon this operation to carry out the operation successfully and conveniently. A novice may be a little slow in executing his technic, and by the time he gets ready to make the incision in the vaginal wall, the ballooning may have subsided. I use in these cases an ordinary blunt pointed embryotomy hook. I do not stop to inject fluids to balloon. I think it is well in each instance to locate the arteries, locate the aorta and iliac branches, and in this manner one can readily avoid puncturing. With regard to results, I have not had occasion to classify them as did the essayist, but it is a well known fact that in conditions that have been chronic, results if attained at all do not come to pass for several months.

Dr. Roberts: I want to ask Dr. Lacroix if he did not get a good deal of hemorrhage by the use of chloral hydrate. We have used that ourselves but generally we get too much hemorrhage.

Dr. Lacroix: I will say briefly that I have had no trouble from hemorrhage. There may have occurred hemorrhage, but I have not noticed it and have had no losses due to hemorrhage.

Dr. Merillat: I think you old surgeons have done this operation so much that you take it for granted that every one can do the operation easily, when as a matter of fact there are lots of stumbling blocks that the new operator meets. You are giving an entirely wrong idea of this operation by saying it is easy for anybody to tie up the animal and get the ovary. I find that new operators often fail to find the ovaries very

easily. Sometimes the new operator fumbles quite a long while before the ovary falls into his hand. So often the great mesentery lies between the hand and the ovary. That is one of the stumbling blocks of intra-abdominal surgery. You operators meet that not only in castration of mares but in all kinds of intra-abdominal surgery. I think if the operator has this in mind the moment he enters the abdomen, he at once manipulates his hand so as to overcome the difficulties. Dr. Fulstow, of course, can operate on these mares standing on his head because he has done it so often, but others do not do it so easily. I have noticed in veterinary clinics that even those who have done the operation quite often do it rather poorly. The possibility of making brood mares out of some of these animals has not been thought of, but since Dr. Roberts mentioned a case with only one affected ovary, I think only the affected ovary need be removed. In the future in my operations, I shall only remove the affected ovary and believe that it will be sufficient, and shall conserve the breeding animal.

Dr. Ferguson: The class of mares I have operated on have been mostly vicious mares, and my technic for operating has been confinement in the stocks, and I consider that none too good a confinement. They were all mares that would fight considerably, and in addition to confining them in the stocks, we had a sling under them, ropes over them and their feet hobbled to the floor. I always anesthetized them with chloral hydrate from an ounce to two ounces in accordance with the size of the mare. The results of my experience have been along the line of Dr. Fulstow's. Considerable time elapsed in my case before improvement was noticed. One mare in particular had a very sore neck, and after operating on her, I cautioned the owner to be very kind to this mare for some time, and he was kind to her and treated her nicely and she was improved and apparently making a nice recovery from her mean disposition. One day he sent his man after some baled hay with this mare and another horse, and they got into a position where they had to do considerable backing and they had no breeching on the harness. That started this mare up again, and it was over two years before they could get that mare back so she was as good as she was immediately after the operation. Eventually she made a good recovery. The incision in my experience is the hardest part of the operation. In one case that I operated on I prepared the mare by having her fast thirty-six hours, and during that time

my stableman reported that she pawed considerably. I operated and one-half hour afterwards, I found her with her feet on the manger. She was fed a light meal, but after eating she seemed to be inconvenienced and we gave her a little treatment. She eased up in time, but after the next meal she developed the same symptoms, and continued along that line for a week. In the meantime we had to relieve her rectum, and eventually she had a bad turn, and we took her into the country a mile and killed her. On post mortem, I found that in removing one ovary, I had taken the mesentery, ovary and all, which caused a protrusion of the bowel and strangulation. I thought possibly this mare was affected before the operation, but talking to Dr. Merillat and comparing notes, I think there is no question but that the damage was done during the operation.

Dr. Fulstow: I should like to ask Dr. Roberts the difference between a graafian follicle and a cyst. Can you tell the difference before you take it out of the mare?

Dr. Roberts: I don't know that I can. We have never made a rectal examination but we should have done so. On the other hand, in cows we have not made the vaginal operation, but we have made lots of rectal examinations, and in the case there might be some difficulty on the first inference as to whether it was a graafian follicle or a cyst, we have made re-examination afterwards. From a purely surface examination, I do not believe it is possible to make the distinction between the two. On the other hand, the graafian follicle is so different from the cyst that we have considered it anyway that we were able to differentiate it. We have always satisfied ourselves with the manipulation while we were in there, and after we got in there we found one ovary so much altered and the other so apparently normal that we have concluded it was normal.

Dr. Lacroix: You will recall there is a difference in the density and in the thickness of the covering of the ovaries in the cow from that in the horse. In the mare in my own experience, I have not been readily able to distinguish a graafian follicle from a cyst. The heavy dense tunica albuginea does not allow much bulging so it is not so easy to distinguish the two in the mare in my experience.

Dr. Murphey: I should like to offer just a little comment on this in regard to the cow. We have been making a study of this problem to tell whether they were cysts or graafian follicles, and I am inclined to believe there is no distinction between cysts and graafian follicles in the early stages of

the cysts at least. So far as our studies have shown, there are no points of distinction, and we question the ability of anybody to diagnose by surface indications.

Dr. Roberts: We have done some work of this kind in cattle, and we have found cysts that are no more than graafian follicles, and in others we have found a large number of cysts. Our point was simply to distinguish a pathological from a normal condition.

Dr. Campbell: I understood Dr. Fulstow to classify these cases in two classes, as to cause, the larger one where there was disease of the ovary and the smaller class, containing an appreciable proportion of the cases, where he said he believed it was due to heredity.

Dr. Fulstow: I have noticed that some I have operated upon had no diseased condition of the ovaries.

Dr. Campbell: I don't see the safety then of removing only one ovary and leaving the other. I understood Dr. Roberts to say that every one of his cases was of diseased ovaries. It seems that the discussion has been about one class of cases while the paper dealt with a broader classification. Therefore, it would not be safe to leave one ovary. If the mare is a bad one, it will be necessary to take both out.

Dr. Fulstow: I think there are mares that have not any diseased condition of the ovaries that will kick at the period of estrum, and by removing the ovaries you cure that irritation.

Dr. Merillat: How long after the operation in a confirmed kicker is there manifest improvement?

Dr. Fulstow: One kicker had kicked for five years, and in ten days after the operation, she was kind and gentle. Then there were some that required two months, six months, and one, two years.

Dr. Merillat: Practitioners often form a wrong idea in spaying mares by expecting immediate improvement. Some of our cases have been improved after ten or eleven months, and a splendid improvement, too. Others have improved after three months. I have in mind a fine chestnut draft mare that became vicious and was perfectly useless. She was spayed and was sold a month after for a small price because the operation had not been a success. I had occasion to see that mare three months after and found her being driven around with a single wagon, perfectly tractable. That is an important point in the prognosis of the disease.

Shipping Fever

D. John R. Mohler of the Bureau of

Animal Industry opened the symposium on shipping fever, including under this term, strangles, pink eye and influenza. He stated that the bureau has one veterinarian giving his whole time to an investigation of this disease. The aim being to learn its distribution and the comparative intensity of the infection in different localities. He stated that it may take a year or even longer to procure this information but that when it is available it is the plan of the bureau to inaugurate a systematic plan of control for this disease.

Dr. Mohler cited the experience of Kentucky where shipping fever has decreased in prevalence fifty per cent within a year; coincident upon the enforced disinfection of railroad freight cars and examination of all horses shipped into the state.

Dr. A. Eichhorn, Chief of the Pathological Division of the Bureau of Animal Industry in a discussion of the treatment of influenza reported very gratifying results that have attended the use of a serum, when employed early in this disease. The department has been experimenting with serum which is taken from vigorous animals affected with acute types of influenza. Blood taken from such animals is defibrinated and one-half of one per cent of phenol is added at once. Twenty-five cubic centimeters of this serum is injected, (observing antiseptic precautions) intramuscularly, in the neck of horses suffering from incipient influenza. Following such injections, in a large percentage of cases, temperature drops gradually and recovery is complete within a few days. [This report is, of course, not founded upon a sufficient number of cases treated, to warrant its being considered absolutely dependable.—EDITOR.]

Dr. G. B. McKillip presented a paper on "Shipping Fever as Seen From a Large City Practice." He spoke of the malignancy of this disease during the past five years which has done serious harm to the horse industry, and has

served as a stimulus to the use of the motor truck. In emphasizing its importance he gave statistics to show where a large business concern lost from eight to ten per cent of their animals under the best practical, sanitary precautions, and that the horses that recovered required an average of six weeks for convalescence and an additional cost of from ten to fifteen dollars for each sick animal, aside from the loss of use. The loss aggregated \$27,000 on a \$200,000 purchase. Another firm made a purchase of better animals and there resulted one-third less sickness and mortality. The author also discussed the various structural changes which make this disease so destructive. The handling of influenza by employing thoroughly scientific prophylactic measures was recommended.

Dr. C. J. Wilgans, veterinarian, U. S. Cavalry now stationed at Kansas City contributed his views on the subject of shipping fever of horses from the army standpoint. He presented some rather unique opinions concerning factors which predispose horses to influenza. A good account of the manner in which horses that are handled from the time they are purchased at recruiting stations until they reach their destinations constituted a convincing argument for an improvement in methods now employed in handling these animals. Dr. Wilgans recommended that specially constructed cars which would afford a means of ventilation without exposure of the animals might also enable more rapid transportation of the horses. This together with provision for clean, comfortable yards for feeding the animals in transit and the avoidance of side-tracking cars, thereby exposing horses to nervous shock, fright and inclement weather, would materially diminish the number of cases of influenza is his belief.

The Veterinary Corps in the Present European War

Dr. C. J. Marshall in introducing his subject—An Army Veterinary Corps,

stated that he had recently made a trip to the war zone of the English and French armies for the purpose of making observation on the care of horses in the war. That the trip was made through the generosity of the University of Pennsylvania, and as a delegate for the A. V. M. A. and the American Humane Society. Permission was granted by the English and French war departments to visit their armies, and an opportunity was afforded to investigate the work of the Royal Society for the Prevention of Cruelty to Animals, and the work of the Blue Cross Society. The experience was wonderful and the surprises many.

Continuing Dr. Marshall said:

Of the first 100,000 horses that passed through the English veterinary hospitals 70 per cent were returned to the army, in most cases better horses than when first purchased. Better results are now possible, for the reason that the hospitals are better established and the men better equipped to carry out their instructions. Men enlist for the veterinary corps the same as for the other branches of the army. There are something like 10,000 men serving in the British army veterinary corps. The field hospitals are supplied by the mobile hospitals, which are located near the activities of the army. There is one mobile hospital allowed for each division of the army of a cavalry brigade. When the troops are stationary, the mobile sections may be utilized for a limited number of cases. Most of the cases sent to the mobile sections are sent on as soon as possible to the base hospital. Only the minor cases that can be cured in a few days are held for treatment. Animals that are seriously injured or considered incurable are destroyed at once.

Regarding the personnel of the British army veterinary corps, he said:

There are something over one thousand veterinary officers connected with the English veterinary corps. The organization of their magnificent service has required years of hard work. No country has done more than Great Britain for horse breeding in general. The British are as good horsemen as the world has ever known, and it is but natural that they should evolve a plan for the caring of horses that is the best that can be effected.

From a veterinarian's point of view, the French army veterinary service, is not so

well organized. Their veterinarians, however, are as well trained as the English veterinarians. Both are required to have a preliminary high school education before entering the veterinary college. Promotions are made for merit only. The French veterinary service was not properly organized before hostilities began, and there has been no time for deliberations on this subject since. The French are doing their best under conditions as they exist, and getting results. After the present conflict it will probably be possible to outline a plan of organization that will be more perfect than the one in use by England at this time.

Concerning our own army veterinary service Dr. Marshall advises:

The United States army should study this and seek to bring about a similar service in our own army. We have been awarded the much deserved rank. Let us keep up our interest until the veterinary army service is properly organized. A properly organized veterinary service in the army will not only increase the efficiency of the army, but it will increase the standard of our veterinary schools.

Discussion:

Dr. Turner: One fact stands out alone in my mind in regard to the British army, where they have 1,200 or more veterinary officers and where 1,200 horses are given the attention of 350 or 360 officers and men. In our army at the average post where we have 900 or 1,000 horses, we have one veterinarian and two stable men to do the work. Secondly, there is the paper which has just been sent to us from the Quartermaster Department. The paper had to be sent here by permission of Captain Hawkins. It is illustrative of what conditions exist in our army today. They will not exist six months from now. It illustrates that our army veterinarians occupy positions of civilians, and are absolutely under the control of laymen who are fighting them. Dr. Marshall's paper draws out another point, that in an organization which stands on its own honor, where it is responsible for its own action, where there is a veterinary head, where the veterinarians are held absolutely responsible for the horses and there are no interfering laymen, the loss from glanders has been about one in a thousand. When we had our Spanish-American war, in 1898, conditions existed in those days where the veterinarian in civil life had to go to his district attorney to protect himself against the army officers selling glandered horses in his home markets. We will be criticised in our country, those of us who have been interested in the organization of a veterinary service, and I suppose two-thirds of those assembled have

aided in the organization of our veterinary service. They will wonder why we don't have something done. We are now starting an organization just about where England was 75 years ago. If we get a big war we will get a veterinary corps, but it won't be until after the war. England didn't get her veterinary corps until she had been thoroughly disciplined by the Boer war. We will get ours only after a similar experience. We will get it sometime. Do not be disappointed by this little organization we have at present, because I can see a growth. The signal corps of our army started with a few second lieutenants, and they now have a corps. Since we couldn't get anything else, we agreed the best place to put a veterinarian was under a trained medical officer, so we agreed to be in the medical corps. That is the best corps we have in the army, and I have no doubt that when the surgeons in the army have time to think this matter over, we will see a great change in our service. The dental corps started just like we are starting, but with nothing like the rank; they started as first lieutenants. I glory in our profession, that we have been taken in as gentlemen. We are put on the basis of all other officers, except West Point graduates, inasmuch as we must be put on six months' probationary service. That is necessary, because some men cannot stand discipline, and naturally such men would not be successful in the service. To think that veterinarians have been made majors in the service, we should be thankful, when we consider the dental corps. We are about on the same basis today as the Russian army service. The Russian veterinary corps is included in the medical corps of the army. I certainly congratulate our British veterinarians that they have the most efficient service that exists.

Dr. Buckingham: The subject which attracted my attention was the fact that there is in our country a deficiency in army remounts, owing to the fact that for more than two years the European armies have been such heavy buyers on this continent. Again, the fact was drawn forcibly to my attention that our army does not purchase mares, and I thought it might be possible for the regulations and specifications to be changed so that we might compete with the foreign armies in the purchase of mares and use these animals in our own country for a source of future army remounts. The greatest struggle on the field of battle ever known has now been in progress for two years. France has recently drained American farms of 25,000 or more horses, in addition to 100,000 previously sent over. Italy has been a steady buyer, and asks for the very best. England has taken her thou-

sands, and Greece follows with a big purchase. While we are the greatest farming people in the world, with a horse census of millions, yet we must remember that only the fit are taken and the old and unsound are left. Even our brood mares are purchased. When the United States army was trying to complete its quota on contract, horse after horse was brought up for inspection and a great number were allowed to pass by because they were mares. A great number of inferior horses were also offered, simply because the bids made were so much lower than offered by foreign countries. The Southern Department has bought to date about 48,000 horses, out of the total of 62,800 authorized by the Secretary of War. In the great corral at Fort Sam Houston with 11,000 horses, there will be found a great percentage of high class animals but many misfits are also seen, which shows somebody has blundered. My first advice is to stop exportations of mares, and second, to buy mares for the army when shown for inspection. I have prepared a resolution to the Secretary of War along that line which I will turn over to the Committee on Resolutions.

Cause of Paraphimosis

Dr. J. V. Lacroix presented a discussion of "The Etiology of Paraphimosis of Domestic Animals." A brief analysis of the predisposing causes of paraphimosis, which were considered due to the character of the structures involved, was an essential part of the paper. The predisposition to paralysis and subsequent paraphimosis in the horse was pointed out and comparisons were made with the other animals as to the occurrences of this affection. Cases were cited to illustrate the subject.

Surgery of Paraphimosis

Dr. John W. Adams, Professor of Surgery of the Veterinary Department of the University of Pennsylvania, discussed the handling of paraphimosis. Dr. Adams condemns amputation of the penis as a method of treatment of penile paralysis or paraphimosis. He stated that in every instance where amputation was done, sooner or later, urethral stricture resulted. In many instances distension of the bladder follows stricture of the urethra and in a few cases which

he autopsied, dilation of the ureters and also the pelves of the kindeys were in existence. His method of handling cases of paralysis of the penis, whether due to paraphimosis or other causes, when radical operation is necessary, consists in the removal of the zone of prepuce around the penis, of sufficient size so that when the two edges of the prepuce are subsequently joined by suturing, the penis is held back in its sheath. Care is taken to remove just enough prepuce so that the glans penis will protrude beyond the sheath just far enough that urination within the sheath will be avoided. No after-care is required following this operation and remarkably prompt healing of the surgical wound follows in such cases.

Thursday, August 24th, the members of the association, ladies and all registered visiting veterinarians were the guests of Parke, Davis & Company, going for a trip on the steamer Britannia on the Lake and the River St. Clair, as well as visiting the laboratories of the company.

Association Finances

Dr. E. L. Quitman, Chairman of the Finance Committee, stated that an examination of the books of the Secretary, Treasurer and the JOURNAL of the A. V. M. A. had found them to be correct so far as it was possible for them to determine. The public accountants employed for the examination advised, however, that the books as kept did not conform to the approved methods of bookkeeping, and while all important items relating to cash were correct, they urged the introduction of the double entry system of bookkeeping. The books of the Treasurer showed total receipts from all sources from August 1, 1915 to August 7, 1916 of \$11,542.98 and disbursements of \$8,962.37, leaving a balance of \$2,580.61, cash on hand and in bank, to which should be added dues receivable \$10,736.00 and investment in the JOURNAL \$2,000.00, making the total resources as of August 7, 1916, \$15,-

316.61. Against this were liabilities, the amount of which could not be determined, consisting of expenses of the present convention, salary appropriations, balance due to JOURNAL, expenses operating JOURNAL during current year, sundry unpaid bills, reserve for uncollected bills, etc., etc. The books of the JOURNAL OF THE A. V. M. A., according to the accountants, showed assets of \$3,310.57 and liabilities of \$5,590.85, making a current deficit of \$2,280.28. It was moved and carried that the report be received for publication.

Guarded Endorsement of the Intradermal Tuberculin Test

Dr. Reynolds presented the report of the International Tuberculosis Commission, stating that a meeting of the commission was held at Chicago, December 1, 1915, in connection with the U. S. Live Stock Sanitary Association. Careful consideration had been given to the available information concerning the newer tuberculin tests, and the commission decided at the December meeting that an endorsement of either the simultaneous or intradermal tests was at that time inadvisable on account of inconclusive data and because of the difficulties that would arise in public work. It was their conclusion that the intradermal tests had no advantage over the thermic under ordinary conditions but may have some advantage under certain circumstances. It was also brought out that there should be official recognition and registration of tuberculosis free herds of pure bred cattle, and that the A. V. M. A. should take a prominent part in this work.

Report of the Committee on Legislation

Dr. Buckingham's report of this committee dealt mainly with the National Defence Act which became operative July 1, 1916, and provides for a veterinary corps in the army, which shall be part of the medical department. Ex-

aminations for this service were held on July 17, 1916, at Ft. Sam Houston, Texas. Successful candidates will be ordered to report for physical examination and if found acceptable, will go into the army veterinary corps as second lieutenants.

It was recommended that proper recognition be given by the association to Congressman James Hay for the valuable assistance he rendered in obtaining the desired legislation for army veterinarians.

The report was received and referred to the JOURNAL for publication. It was also moved and carried that Congressman Hay be elected an honorary member of the association.

Dr. C. A. Cary, Chairman of the Committee on Reorganization presented a draft of a new constitution and by-laws, which after considerable discussion were adopted. The new plan makes drastic changes in the present plan of organization. While acknowledged to be far from perfection it represents a marked improvement over the old constitution and will constitute a basis for further improvement.

The Committee on Resolutions presented the following resolutions which were voted upon and carried:

That a certified public accountant be employed each year to audit the books of the association;

That a voucher check be adopted by the association;

That the association protests against the activities of county agents in the practice of veterinary medicine and that such agents should confine their work solely to educational channels among the farmers and that a copy of the resolution be forwarded to the Secretary of Agriculture;

That a letter be forwarded to the Secretary of War calling attention to the serious depletion of horses by their purchase and shipment to Europe and that the United States Government should meet the prices of foreign governments; also that the purchase of mares for the army be authorized;

That the association commends the services to the country of national and state authorities in suppressing foot-and-mouth disease;

That the association learns with pleasure that the veterinarians of Wisconsin and Oklahoma have settled the differences within their respective ranks and achieved fraternal solidarity;

That the association expresses its appreciation of the entertainment furnished to members by Parke, Davis & Co.;

That the association expresses appreciation and tenders thanks to the local committee of arrangements for its efforts in making the Detroit meeting a success.

County Agents' Activities

Referring to the resolution regarding county agents, Dr. Mohler stated that there has been no question but that the county agents has done a little more than he should in many instances. He said further, however, that there is now an agreement between the Bureau of Animal Industry and the State Relations Service, in which the county agent in the future will be prohibited from doing work that he has been doing in the past along veterinary lines.

The Committee on the Advertising of Veterinary Remedies recommended a resolution, which was voted upon and carried, to the effect that misleading claims for biological products should not be tolerated by the association and any member of the association who belongs to a firm or corporation which allows false of misleading claims to be made, should be expelled; also that as a standard the federal regulations governing biological products be adopted.

Read By Title

A paper entitled "Recommendations for the Control of White Scours" by Dr. A. T. Kinsley, Kansas City, was read by title. Likewise, papers by Dr. H. D. Bergman, Ames, Iowa on "Some Physiological Experiments in Breeding" and a paper entitled "Treatment of Equine Pneumonia" by Dr. R. C. Moore of St. Joseph, Mo. were read by title, owing to a lack of time to hear them.

Clinic, August 25th

Remarks by Prof. W. L. Williams in demonstrating uterine irrigation of sterile cows:

What we try to do is to get a thorough record of the animal. We wish to know regarding the previous history—when she calved last, how long she carried that calf, what the consequences were, whether she retained the afterbirth, etc. We should like to know how many times she has been bred since last calving. We should also like to know the general character of estrum. In this particular cow we cannot get that information. Her general condition is good. Regarding the state of lactation, we should say she was dry. That would have some influence upon what we should do with the cow. In diseases of the ovaries we usually have some change in the broad ligaments of the pelvis. The broad ligaments here are normal and she is not presumably a nymphomaniac from her appearance. The vulva and vagina are normal. The os uteri apparently is sealed. This mucus does not look like the mucus of heat or non-pregnancy. It looks like the mucus of pregnancy—it is fragile and thick, and the os uteri seems to be sealed. We do not know the history of this cow; consequently we have to go very cautiously. We would not, for instance, attempt to ram a finger through this cervical canal, because if we did that and she chances to be pregnant, we would abort her. Sometimes there is no history of breeding, and the owner is sure the cow has not been bred, yet we find her pregnant. There are a great many ways in which one may be deceived. One may have a false seal in the cervical canal and we have to go through there cautiously to keep from getting into trouble. In these large cows, in order to get a good examination, I very often put the forceps on to the uterus and drag it back. We can pull the uterus back about eight or ten inches without any difficulty and bring it that much nearer to the examiner. It also brings it higher up because it brings it up to the pelvic

floor. When the uterus is flabby and drops down into the abdomen and lies quite far away so that we cannot very well reach it, we get so much farther away from the rectum and we have to push down to hold open the rectum in order to get hold of it. The uterus was lying in the abdomen and now it is in the pelvis. This uterus is enlarged and flaccid. The gut contracts a good deal as it does in a large number of cows. The work is one in which a man must never be in a hurry. You simply have to await the good will of the cow to make an examination. A great many men put the hand into the cow's rectum and bring it out covered with blood. That does not show very good surgery. In small heifers, one will inevitably get blood, but in large animals, it is rare that one needs to get any blood at all.

The right oviduct is normal, the left ovary is three-fourths of an inch from normal and the left oviduct is normal. Now there is a question that comes up—without knowing anything about her history, she might be pregnant in the right horn. We should know the history of the cow and know whether she had an opportunity to be pregnant on account of this sealing of the os uteri. The left ovary is about three-fourths inch out of place and the right ovary is nearly two inches from the corpus luteum.

Question: Is there any danger of lacerating the uterus?

Prof. Williams: No.

Question: Do you ever use the speculum there?

Prof. Williams: No, we do not. There is the seal in the os uteri which looks like pregnancy. It may be a false seal, but I should hate to break it down. It looks very much like pregnancy. In this cow, in the condition she is in, there seems to be a typical seal of pregnancy, so we are not going to break that down. She may be anywhere from thirty to sixty days preg-

nant in the right horn of the uterus, so we would say in our diagnosis—genital organs normal; possibly pregnant. In a heifer we can tell pregnancy in thirty days. In a cow we can tell in sixty to eighty days, by palpation of the uterus. As a general rule we do not use any lubricant at all. I hope you understand that we cannot be quite certain that this cow is pregnant, and consequently we would not break down that seal nor dislodge the corpus luteum, nor take any action, but wait for a time until we can determine whether she is pregnant or not. The size of the uterus, etc., would suggest pregnancy of thirty to fifty days.

(Examines another cow.)

This cow is under the same conditions as the other. She has been sterile for some two years, but we know nothing very positive about her history. We do not know her age, but we know she is not very old as shown by the vulva here. Her physical condition is fair. We know nothing about her estrum, nor exactly how long she has been sterile. She is dry like the other cow. Her vulva is normal. Her vagina is normal. Her os uteri is open and the mucus is of a different character than that observed in the other cow. It is of a lubricating nature rather than adhesive.

Question: What is your objection to using a lubricant?

Prof. Williams: In palpating the vagina, the lubricant is objectionable because you cannot get the keen sense of touch necessary to determine the sealing of the os uteri. We recognize it principally by its adhesiveness, and if it is lubricated, it is not adhesive. The lubricant is quite unnecessary. There is a very great objection to alkaline soap, because it makes the cow strain.

The rectum is now dilated and hard and there is a cubic foot of air in it. I cannot do anything now until I can force that air out. Sometimes when

the rectum balloons that way, if you reach far forward and get hold of the loose folds of the rectum, pulling them back, it may let the air out. This cow's uterus is slightly enlarged. The right ovary varies $1\frac{1}{4}$ inches from normal; the left ovary is $1\frac{1}{2}$ inches from normal with a protruding corpus luteum. It seems to have a small cyst in the center of it. It is soft, so it started long ago and we have cystic degeneration. Our diagnosis here would be that we have a chronic endometritis and cystic corpus luteum.

There is considerable irritation, but the os uteri seems to be quite open, and I should imagine that a small sized catheter would enter quite readily. As a general rule the cervical canal ranges downward and upward. The principal danger often encountered here is that some people take a broom stick or steel rod and push it through this canal. We should be very careful to avoid force, and we try to get the catheter to enter without force. We ought to have the point turned down in going into the uterus. I use about two pounds pressure.

Question: What is the normal length of the non-pregnant uterus?

Prof. Williams: In the longer curvature about eighteen inches and in the lesser curvature, probably six. If we get into trouble here in regard to inserting the catheter, we always prepare the way by the introduction of the uterine dilator, which goes in very much easier. In a young heifer, we may have to work for a long time in order to find our way through, but eventually these forceps go through very much easier. If we take some of these crooks out of the cervix we may by a little care dilate that cervix, so that we can really put in a soft rubber horse catheter, and in a great many cases we do so where there is a large amount of pus. I think I have not failed to pass through the cervix without force in over a year. Prior to that

time, my technic was not so accurate, and I failed occasionally. Any cow which menstruates has an open cervical canal; otherwise, she cannot menstruate.

Question: Is it possible to make a mistake in a diagnosis of this kind?

Prof. Williams: Mistakes are always possible with me.

Question: If a cow is having normal estral periods, that is of normal duration and normal time between, is that an indication that the ovaries are normal?

Prof. Williams: The ovaries in that case are at least nearly normal.

Question: Is there dumb estrum?

Prof. Williams: Yes, generally caused by pus in the uterus. If we wish to flush the uterus good, we generally push this catheter in so that there can be no reflow and then we like to keep it in the uterus so we get sufficient distension. We ordinarily use about 2 per cent Lugol's solution and then massage to see that all comes out, and flush with salt solution afterward to remove the Lugol's solution. If we leave some salt solution in the uterus, we do not care, but we do not like to allow any Lugol's solution to remain.

Question: How long would you irrigate a case of chronic endometritis?

Prof. Williams: Where the cow is sterile for a long time, we would irrigate with Lugol's solution, 2 per cent, and use it with the salt solution, once a week for three to five weeks and then breed. If she has not conceived after a reasonable time, we can take her out of breeding again and repeat the process until the desired purpose is accomplished.

Question: Do you ever find it advisable to use a stronger solution of Lugol's?

Prof. Williams: Not ordinarily. Even a 2 per cent solution should not be left in the uterus. I have used 10 per cent in old cows, but ordinarily I use 2 per cent. There are more men taking up this work and spoiling good cows than anything that is being done

in veterinary science. Many good cows are being ruined by men going at it in a hammer and tongs fashion, tearing and rupturing the genital organs.

Remarks by Dr. Merillat in demonstrating McKillip's ventricular cauterization for roaring:

This is the same operation we have done before in the recumbent position. With the exception of castration, I haven't anything good to say about standing operations of any kind. Operations that are done at a disadvantage on account of the unexpected and more or less sudden movements of patients, are never deliberately done. It is wrong in principle to do what some have called "perambulating" surgery, starting at one end of a ten-acre field and ending at the other. Standing operations are all right when necessity demands it, where there is no help and no place to cast the subject. The operation can be done in the standing position, but where there are provisions for proper restraint that will admit of very careful deliberate work, of course, that is to be preferred.

This horse is fifteen years old and a bad roarer.

One man ought to stand at the poll and fix the poll on a given place on the table while another stands at the nose, and during the cutting part of the operation, this man ought to hold to prevent any sweeping movement. Oftentimes in securing horses that are afflicted with roaring, they die before the operation because of suffocation. To stop a horse from choking to death, to stop the occurrence of fatal dyspnea, the operator only needs to hold the nose shut for a moment or regulate the instreaming air for a few minutes and the procedure is over.

This is an old horse with a very rigid kind of larynx. With a good forceps, we grab the edge of the vocal cord and let the weight of the forceps open the ventricle up, and in that way the forceps turning the vocal cord itself, one can see right down the ventricle, so the position is favorable for thrusting the iron.

This is a unilateral case so far as we can see. In a horse in this condition we insert one of Dr. McNeil's tubes and allow him to be raised to the standing position.

Election of Officers

Dr. Chas. E. Cotton of Minneapolis was nominated for president, and there being no further nominations for this office, it was moved and carried that the nominations be closed, the rules suspended and the secretary instructed to cast the ballot of the association for Dr. Cotton as president.

The following nominations were made for the office of vice-president: Drs. F. A. Bolser, Indiana; A. T. Kinsley, Kansas City, Mo.; Lester Howard, Boston, Mass.; David Buckingham Washington, D. C.; Seymour Hadwin, British Columbia; T. J. Heer, Wisconsin; V. A. Moore, New York; Geo. W. Dunphy, Michigan; G. A. Roberts, North Carolina. There were cast a total of 261 votes, resulting in the following elections: Dr. Geo. W. Dunphy, first vice-president; Dr. F. A. Bolser, second vice-president; Dr. Seymour Hadwin, third vice-president; Dr. V. A. Moore, fourth vice-president; Dr. Lester Howard, fifth vice-president.

Drs. C. M. Haring, L. A. Merillat and N. S. Mayo were nominated for the office of secretary, Dr. Haring asking that his name be not voted upon. Of the 253 votes cast, Dr. Haring received two; Dr. Mayo, 110; and Mr. Merillat, 141.

Dr. F. H. Schneider of Philadelphia was nominated for treasurer and Dr. J. N. Frost for librarian, and as there were no further nominations, it was moved and carried that the rules be suspended and the secretary instructed to cast the ballot of the association for these men as treasurer and librarian respectively.

Installation of Officers.

Dr. Cotton: I have not sufficient command of the English language or vocabulary sufficient to express my ap-

preciation of this honor conferred upon me. I realize the duties involved in this position, and facing this new constitution and by-laws, I hesitate. I am simply a common everyday practitioner. I have no affiliations with schools or executive positions. I will undertake to fill this position. Gentlemen, I certainly will need the support of every member of this association. This is going to be one of the hardest years under this new régime, under this new constitution and by-laws. It is certainly with hesitancy that I undertake to perform the duties of this office. I will certainly need the support of all my loyal friends. I thank you again for this honor.

Dr. Hadwin: I have every occasion to be proud of this honor, and I only



George H. Hart.

hope I will live up to the standard set by my predecessors in office.

Dr. Merillat: There isn't anything to say on such an occasion as this except the old academic speech that goes with it, and, therefore, I will simply say that the honor is appreciated and that the duties of the office will be done as fully as I am capable of doing them. I am in a better position than my worthy superior in that I was not unanimously elected, for he has an awful reputation to live up to. A great deal must be ex-

pected of a president that is unanimously elected by this association. With me, Dr. Mayo divided the honors so evenly that you can only expect me to be half as good as the president. I want to thank you very much for this privilege, and I hope very sincerely indeed to be able to be of assistance to the president.

Dr. Schneider: I wish to express my appreciation to the association, and I can assure you that I will fill the office to the best of my ability.

The association was invited by Dr. Kane to hold the 1917 convention at Mobile, Ala., and Dr. Kinsley representing a committee from the Missouri Valley Veterinary Association presented the claims of Kansas City for the 1917 meeting.

The Banquet.

The banquet was held Wednesday evening at the Hotel Statler. Members with their wives, friends and visitors gathered in the banquet hall to the number of about 300, where several pleasant hours were spent in music, song and speech making. The latter was delightfully entertaining, consisting of humor and instruction.

Members of the A. V. M. A. Registered at the Detroit Meeting August 23.

Alabama 3; California 7; Canada 11; Colorado 3; Connecticut 4; Delaware 1; District of Columbia 8; Georgia 1; Illinois 28; Indiana 24; Iowa 13; Kansas 5; Kentucky 3; Louisiana 3; Maine 3; Maryland 4; Massachusetts 10; Michigan 57; Minnesota 8; Mississippi 4; Missouri 12; Nebraska 2; New Hampshire 3; New Jersey 2; Nevada 1; New York 36; North Carolina 2; Ohio 47; Oklahoma 2; Oregon 1; Pennsylvania 23; Rhode Island 2; South Carolina 2; South Dakota 1; Tennessee 2; Texas 3; Vermont 2; Virginia 1; West Virginia 2; Wisconsin 16; Wyoming 1. A. V. M. A. members, total 363; ladies 258; visitors 300. There were some additional registrations after the above list was compiled.

Department of Surgery

By L. A. MERILLAT, Chicago,
Professor of Surgery in the McKillip Veterinary College.

Dentistry of Domestic Animals

"Dentistry gives better return for the remuneration received than any other service rendered by the veterinarian."

THE above remark was made during an extemporaneous post-prandial address before the Ohio State Veterinary Medical Association, January, 1916, by Dr. J. V. Newton, who enjoys a nation-wide reputation and acquaintance; who has occupied an influential position among his colleagues and fellow citizens during an exceptionally long professional career; who is a pioneer practitioner among pioneers; whose judgment in matters involving large stakes was always revered by horsemen far and wide; who, did not his modesty forbid, could proudly point backward over a career worthy of emulation, and who, now retired from his former activities, is venerated by all, but especially by those who know him best. The remark has weight because it was made without any inclination to exaggerate and in a plainly extemporary manner. Spoken in a reminiscent rather than in an argumentative mood by one so well qualified to judge and to advise, these words force themselves upon me as an appropriate preamble for these chapters.

Horse dentistry is an American institution; it is one of the naive conceits of the American veterinarian; it is practiced more in America than in any other country; it has been called an American fad; and it has even been branded as an

American fake. Several times in the past, writers from both sides of the Atlantic have made passing jeers at our unbounded faith in its importance. We have been criticised for floating the molars and for defending the practice as rational against deliberate opinions to the contrary.

These criticisms were sometimes pretty sarcastic; sometimes extremely acrimonious, and sometimes they assumed the form of a sneer at our faith in this simple procedure. Only a few years ago an editorial in a French veterinary journal reviewing the work of American veterinary colleges made a delightful joke out of our custom of specializing this branch of surgery. I do not recall the writer's name nor his exact words, but have always retained a very vivid impression of this man chuckling over the ten-strike he was making against American institutions by showing that our college catalogues announced special courses in dentistry. What a crime against the conventions of the Old World! Just think of it. Dentistry a specialty in a veterinary college! Erstwhile, a farrier's stunt, now dignified as a branch of learning in these schools! How can veterinary education make any progress in America with this handicap? The whole tenor of the editorial and the temper of

the editor displayed in this tirade against dentistry, is but one of many attacks made to discredit our growing faith, but in spite of all, horse dentistry has lived and will continue to live either harmoniously or discordantly among the branches of domestic animal therapy and prophylaxis.

The itinerant horse dentist of past decades did unwisely, imprudently and indiscreetly exploit tooth floating and the pioneer graduates who located permanently in our towns and cities probably preached a gospel about dentistry that was none too sound; but the faith that led them was an honest faith and in following its dogmas they have erred no more than the surgeon of the past who resorted to venesection for every ill; no more than the veterinarian of the past who pinned his faith in neurotomy for all claudications; no more than we erred ten years ago in removing the clitoris for nymphomania; and much less than the physicians of today who ride to death the hundreds of medical hobbies that are useless and harmful. Passing to our sister profession we might remind them of the day not long past when women were unsexed at wholesale for almost every female complaint, or of the day just passing when decapsulation of the kidney was a fad operation for all renal disorders. We might go on indefinitely, relating the mistakes of the past, as these "has beens" can be enumerated *ad infinitum*, for what is medical history but a succession of blunders, brightened here and there with a real achievement? Mistakes, misconceptions, indiscretions, plain blunders, errors in judgment seem to be inevitable consequences of a healthy, exuberant progress in medicine. In fact, there is less to be ashamed of in our past attitude toward horse dentistry than in many of our other enterprises, because horse dentistry, after many years, has lived and has continued to prove its worth, while many of our medical and surgical devices (?) lauded to the skies for the time have passed into a well-deserved oblivion. We have, therefore,

reasons to be proud of ourselves rather than condescending to our critics, and I am quite convinced that the loudest criticisms have come from those least qualified to judge. The criticisms were contumacious, teeming with plausible theories and entirely lacking the wholesome influence of practical experience and close observation. The veterinarians today who still belittle horse dentistry are men who have not had enough experience to know the weight of their own words. All old practitioners, especially those who practice among good horses, know its worth and no mere argument to the contrary will change their opinions.

The exponents of horse dentistry are those who have had a wide experience in equine practice; those who have a keen inclination to search beneath the surface for cause and effect; those who are horsemen as well as veterinarians, and those who have a working knowledge of the fine points of horsemanship in all of its angles. The opponents are those who lack actual, practical experience; those who know little and care less about horsemanship; those who diagnose carelessly and indifferently; those who hold themselves aloof from this effort of giving comfort to dumb brutes; those who feign to soil their hands; those who have not enough practice to employ a good assistant; teachers who do not practice; practitioners who are too lazy, and, finally, laboratory enthusiasts to whom clinical diagnosis is a puzzle and a bore.

The actual amount of pain, agony, annoyance, misery, discomfort and poor health suffered by animals on account of disorders of the teeth and jaws is not easy to determine, because animals do not display every little ailment, every trivial discomfort or every slight pain to which their flesh is heir conspicuously enough to attract attention from casual observers. They suffer in silence every ailment that is not of an overwhelming character, and thus diseases not announced by some pronounced maneuver goes unchecked day after day, week after

week and month after month, gnawing away at the vital forces until emaciation or a run-down condition comes as the initial warning that something is wrong. Then for the first time we locate a disease that has been rampant for a long while and which nature has been fighting unnoticed. This is practically just what happens with almost every decayed molar where there is no occasional examination made. Wholesale floating of the teeth might be defended against all opposition with no other argument than that through these operations the more grave disorders are uncovered. In the examinations preparatory to floating, the decayed or elongated molar is often discovered, and very frequently when no such serious ailment was even suspected. Here is discovered a serious disease that would sooner or later have developed into an incurable complaint. Every practitioner will confess that many, if not nearly all, molars extracted are encountered in this unexpected manner. In floating the teeth of a hundred horses consecutively, three, four, five or even more are found affected with a major disease and when all of the horses of an establishment have been carefully examined and treated there is indeed no conscience money to refund. Examinations of the mouths of dogs and of cattle disclose many unexpected abnormalities in addition to those originally sought, and in these animals where dentistry is not practiced, dental disorders are usually in an advanced stage when finally disclosed by some fetid emanation or failing health. On the other hand, in horses subjected to frequent dental examinations and operations the diagnosis of grave disorders is often made in the incipient stage. Excursions into the mouths of horses necessitated by floating the teeth have saved many a poor brute years of misery from a decaying molar or a torturing elongation. Where dentistry is never practiced animals suffer for years from disorders that sap the vitality inch by inch, while on the contrary, where dentistry is a prevailing

practice, all of these painful, devitalizing troubles are "nipped in the bud" and the poor brutes that are fortunate enough to fall into the hands of owners thoughtful enough to insist upon having such matters attended to for their benefit, become habituated to lives of comfort. Animal dentistry is a nondescript, but it is surely endowed with untold merit when all of its fine points are weighed without prejudice. I use the word nondescript advisedly, because animal dentistry is an unexplored field that does not end merely with the floating of the molars, but which begins with this discredited operation as an opening for research into more mysterious realms.

The powerful influences of the teeth upon the organism is reflected plainly enough in such phenomena as *rage dentale* of puppies and in the epileptiform convulsions of the young of other species, and just how often the dental alveoli serve as portals of entrance for infections as they are now known to do in humans is a problem we have not worked out. This field has been explored so little in the search for cause that for the present we must be content with suspicions and theories until facts are established. The readiness, however, with which streptococcic and staphylococcic infections spread to the aerial mucous membranes through the alveoli indicates plain enough why suppurations of the submaxillary and retropharyngeal nodes, unaccountable joint afflictions, suppurations in unusual foci, maxillary actinomycosis and other mysterious diseases might reasonably be attributed to entrances channels afforded by the dental alveoli. Because the influence of the teeth upon the health of animals is slow, uncertain, imperceptible and often indirect, these organs have received very little attention in the study of etiology. No studies looking to incriminate the teeth in any except strictly direct causes have ever been made in animal pathology, but this fact and the fact that it is difficult to establish relations between disorders of

the teeth and that of other organs is no argument that no such connection exists. On the contrary, there is evidence that we shall soon be paying more attention to the teeth as etiologic factors in diseases other than those due directly to impaired function.

But aside from this new suspicion and entirely independent of the sharpness that calls for floating, there are innumerable disorders of the teeth, jaws and contiguous organs, met almost every day in a veterinary practice, that have not received the attention their importance calls for. Disorders of detention alone are very numerous, varying from trivial to exceedingly grave conditions. Irregularities of the teeth due to deformations or to attrition, diseases of the teeth and alveoli, new growths of the jaws, abscesses and fistulae, obstructions of the nasal chambers, and traumatism, will make up a very long list of ailments when grouped together, and after a good many years of close study of these ailments the writer is convinced that at least some of them have been misjudged and erroneously handled. Some have been meddled with where procrastination would have been better while others have been neglected or ignored to the certain detriment of the patient. There are a number of ailments manifested by bulging of the jaws, in the young and in the mature, that need a very careful study to analyze and unless the nature of the ailment is determined, errors are sure to occur in the advice given for their management.

Your Co-Operation Is Asked

It is the purpose of these chapters to present our conception of animal dentistry in all of its phases, and in doing so we invite a free criticism from our readers. The Department of Surgery is open to articles, short or long, on the subject of dentistry, and from anyone who has had a broad, a moderate or only a nominal experience. We shall be especially thankful for reports of rare cases of dental disorders, of unusual experi-

ences in dental operations, of untoward sequela that have occurred in dental work, of any original ideas touching any part of the subject. Let us discuss it well, thoroughly, perfectly; let us dissect it, scrutinize its vitals, study its ethics, review its merits; and then, when our work is done, let us take a vote to either dignify it as a laudable enterprise or else brand it indelibly as monumental fake.

(To be continued)

Tuberculosis of the Dog

By Dr. M. Bertani

*(Zentralbl. für Bakteriologie, etc.,
Bd. 76, 6, S.)*

Pathologists in general are of the opinion that dogs may become spontaneously infected with tuberculosis, but at the same time they are not at all susceptible for artificially inoculated tubercle bacilli.

Bertani injected dogs with material from a tubercular focus of a hog's liver, which by inoculation into rabbits proved to have been caused by the bovine type. The small pieces of this material were injected into the abdominal cavity of the dog.

After 2½ months the animal showed a slight emaciation, and at the end of the third month a confluating nodule appeared near the penis. The dog was destroyed.

The intestinal lymph glands were found to be somewhat enlarged, the mesentery contained a nodule of the size of a walnut, the spleen was swollen, and numerous miliary tubercles were present in the liver; larger tubercles were also present in the lungs. Tubercle bacilli were demonstrated in all organs.

Repeated inoculations from this material into other dogs produced infections invariably. These findings proved that infections may be produced in the dog by transplantations of tubercular tissue originating from cattle.

Therapeutic Digest

By MART R. STEFFEN, Milwaukee, Wisconsin

Medical Council Items

SYNTHETIC camphor, made from turpentine, is said to be entirely available for internal use.

Better not accept this conclusion too quickly. Levy and Wolff claim the synthetic product to be more toxic than the natural.

Powdered veratum destroys the larvæ of the fly in the manure. It does not decrease the fertilizing value of the treated matter.

Purpura hemorrhagica is coming under control by using one or more of the following measures: Subcutaneous or intravenous injections of blood serum, blood transfusion, and intramuscular injection of whole fresh blood. This latter is especially easy and is often surprisingly effective. About 20 c. c. may be injected at one time (human dose).

Haskins has shown that while hexamethylenamin dissolves uric acid in a test tube, it cannot be given in sufficient dosage to have much effect in the body in this direction. Theoretically, hexamethylenamin will even dissolve calculi of uric acid, and large doses will, for a time, reduce gravel, but these large doses cannot be kept up.

A weak solution of oxalic acid removes permanganate stains; then carefully wash with warm water and soap.

Wilson's post mortem findings showed a myocarditis in every fatal case of pneumonia studied by him, and he believes that cases who recover all have had more or less damage to the heart. How unwise, then, to give circulatory depressants!

Dr. W. E. Dandy, at Johns Hopkins, has removed the pineal gland, once considered as having a valuable internal secretion, from a number of puppies. No influence upon their growth or development resulted. From this it would seem that pineal gland extract is inert.

Human physicians look for the most benefit from internal treatment in their cases of arthritis deformans; they do not expect much from local treatment. Veterinarians might bear this in mind when treating some of their spavin and ring-bone cases. While the pathology is not exactly the same as that of arthritis deformans, it closely resembles it in many of its clinical manifestations. Guaiacol carbonate, arsenic and iron are used by physicians internally in the treatment of this condition, and the system of the patient should be supplied with lime. It is not recommended to use this treatment alone in cases of spavin or ring-bone, but it might be a good plan to use it in conjunction with the usual local treatment in these cases.

Queries and Answers

The editor will reply to queries appearing here, as he is able and as opportunity permits, but he does not want, nor cannot undertake to monopolize this portion of the department. Any reader who can furnish further and better information in reply to any query is urgently requested to do so. Where the treatments advised in these replies is adopted it is hoped that those employing them will report their results whether good or bad. In all cases give the number of the query when writing anything concerning it.

QUERY No. 244.—On June 3rd I was called to see a cow at pasture that was down with milk fever. The usual treatment was given and in less than two hours she walked home, a distance of about three-quarters of a mile. The placenta being retained, it was then removed, although not without some difficulty on account of the nervousness of the animal. She had given birth to a well developed calf two days previously. The next morning she was turned out to pasture with the rest of the cows, apparently in as good health as any of them. Two hours later the owner discovered that she was not with the other cows and went to investigate, when he found the cow dead in some underbrush. He said he never was more surprised, and also stated that she had died apparently without a struggle. Two hours before she was grazing and appeared to be as well as any of his cows. What may be the possible cause of death?

A. H. H.

REPLY.—Your experience is similar to that of other veterinarians on such rare occasions. Occasionally, after inflating the cow's udder (possibly because of a lax condition of the sphincter muscles of the teats), the udder becomes deflated and a recurrence of the attack takes place. Whether a secondary manifestation of parturient apoplexy is due to the air escaping from the end of the teat or to its early and too rapid absorption, remains to be solved. We cannot answer your question directly, but would suggest, as a matter of precaution, that in

every case of parturient apoplexy, when it is practicable, the subject should be kept under observation for six or eight hours or more.

QUERY No. 245.—I am treating a bad wire cut on a mare. The wound is situated on the anterior aspect of the hock. I have used the cautery and, as well, the medicinal preparations, but new tissue still forms and protrudes from the edges of the wound. Kindly give me some advice as to what to apply to prevent, or at least stop, the growth of tissue.

C. C. S.

REPLY.—Your case of wounded tarsus is undoubtedly one of the annoying types of granulating sores, particularly because of its being situated on the inner or flexor side of the joint, and undoubtedly because of exposure to irritations, such as may always gain access to these wounds, the condition takes on an almost malignant form. If the exuberant granulations are not too large, their cauterization and the subsequent application of equal parts of exsiccated lime and zinc sulphate three or four times daily should check granulation. If granular tissue exists in abundance, it will, of course, need to be removed surgically, and hemorrhage is then controlled with the actual cautery. In the treatment of all such cases, where it is possible to do so, granulations are kept down at or below the level of the skin and the wound kept as clean as possible, avoiding the use of irritant preparations of all kinds, and in due time recovery should take place.

QUERY No. 246.—I was called to see a mare on June 10th and on arrival found her in the following condition: Temperature, $104\frac{1}{2}^{\circ}$ F.; pulse, 86; very haggard looking; ears drooped, etc.; standing up, but continually stamping with hind limbs; groaning as if in great pain; breathing very fast and straining occasionally. On the evening of the 9th the mare had started to foal and had been led two miles to a barn, where, with the assistance of a neighbor, the owner had helped in delivering a pair of twins. At noon on the 9th the neighbor came back and removed the placenta, all but a small strip, which I took out. There were about eight quarts of fluid in the uterus. Kindly give treatment which you would advise and state if the small piece of placenta was the whole cause, or did the bruising and retaining of placenta for twenty hours have the most to do with the cause?

REPLY.—The contusions and sub-mucous injuries which resulted from the manipulations that this subject undoubtedly experienced must have been the cause of the trouble. The condition which you describe did not result from the retention of a piece of placental membrane for the short period of time which existed in this case.

After having removed the retained portion of placental membrane, irrigation of the vagina is in order. A one per cent aqueous solution of liquor cresolis compositus or of similar preparations should be injected once or twice daily for a week or more. Every second or third day the well cleansed and lubricated hand may be introduced into the vagina to determine the character of local changes which occur. The one grave condition in such cases, aside from possible fatal infection, is adhesion of the contacting and inflamed vaginal walls and subsequent obstructions so occasioned, which render the subject of no value for breeding purposes. When much sloughing of mucosi succeeds in these cases, no practical means of preventing adhesions is known,

in less severe instances frequent introductions of the lubricated hand, together with the employment of douches, may prevent adhesions occurring.

QUERY No. 247. Is there any way of detecting electricity in the body of an animal that has been electrocuted? I am often called upon to determine if an animal has been killed by lightning and find it sometimes very hard to do so if the animal has been dead twenty-four hours or over.

G. S. P.

REPLY. There is no way of detecting the presence of electricity in the carcass of an animal which has been electrocuted, but in post mortem examination one may usually recognize some typical lesions. We reprint the following from *The American Journal of Veterinary Medicine*, Vol. 8, page 539. It is a contribution of Dr. L. S. Michael of Collinsville, Ill.:

"Skin is very dry and adherent to the subcutaneous tissue, often only unilateral, this makes skinning very difficult. Mucous membranes of all external openings highly congested. Rapid decomposition of the carcass. Kidneys contain the most prominent lesions. The uriniferous tubes and capillaries are as if shaken apart, and in appearance as if parboiled, slightly bleached. Red-hepatization of the lungs either unilateral or bi-lateral; pleura congested. Peritoneum congested in places. If a very strong bolt the intestines will also be congested.

Spleen: capsule normal; size normal; the parenchymatous tissue is very soft and nearly black. Liver and bile normal.

A live case might be mistaken for a case of paraplegia or azoturia."

As a part of the annual report of 1915, the Connecticut Agricultural Experiment Station has sent out two bulletins—one on *Commercial Feeding Stuffs*. It contains an analysis of feed of various kinds such as is on sale in the state.

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary — — Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

Examining Horses for Shipment to Italy

THE National Stock Yards horse market at East St. Louis, Illinois, is the largest horse and mule market in the world and has experienced wonderful growth since the business was started about twenty years ago. It is ideally situated as a central collecting and distributing point for a large section of the country.

As might be expected in such a center, there is certain to be more or less of equine diseases. The one causing shippers, dealers and outside buyers alike the most loss is "shipping fever." The forms of "shipping fever" so classed at the yards include influenza, equine distemper, pink eye and contagious pleuropneumonia. The virulency of these conditions varies, and many varied mixed infections are to be seen, some combined and others in sequence, with the usual sequelae. Acute coryza, laryngitis, tracheitis, bronchitis, bronchial pneumonia followed with a very persistent harsh cough, pleurisy, pleurodynia, and intestinal influenza are the most common, and with many sequelae as purpura hemorrhagica, anasarca, etc. Some are very slight and some are very severe, and during the time I was around the market most losses came from the

contagious pneumonia and intestinal forms.

Every week from 500 to 3000 or more horses and mules are shipped into these yards. Most of these horses are "fresh from the country," but from the conditions of gathering horses at shipping points and subsequent transportation through varying degrees of weather and excitement, quite a few arrive sick or exposed and in a short time after arrival will show symptoms of fever and depression. Every shipper is anxious to sell out as soon as possible as the feeding expense and possible chances of sickness are against him.

The government contracts are filled through the firms there, and no shipper sells direct to the governments buying. The horses are shown in the different inspections according to their class or price desired. Many a horse has gone the rounds of all and some more times than once while his owner was trying to find him a "job" before going to the auction ring. There are times when the "ring" pays more than the war "jobs." In the past, men made considerable money buying in the ring and making the rounds with the horse again with or without alterations. It is to the ship-

per's advantage in some cases to sell horses to the "inspections" as they will then go through on the inspector's judgment and if accepted, there is no "come-back" on the shipper. Horses sold privately or through the ring are sold as they are. Their "wind" is called and also sickness or blemishes if any, and then the buyer takes the chance at a reduced figure. If sold sound and the horse is proved not to be so, the shipper loses.

My duties in the inspecting were to determine the animals' state of health and physical condition. With me it was a question: Will this horse stand the trip to Italy? The first 5000 head on this particular contract were insured until landed in Italy at about \$320 per head. The insurance company contracted for the inspection, immunization and supervision of the shipment with Dr. W. L. Bell of Brooklyn, N. Y. This East St. Louis, Illinois, contract was at first in charge of Dr. H. H. Newcomb, whom I assisted for a few days previous to his transfer to Chicago.

These horses were examined at the same time as the Italian inspection and had to pass three inspectors before branding and acceptance. If the animals showed any symptoms of sickness or were in poor physical condition, they were rejected. The examinations made by me were mostly without the aid of a thermometer except in some cases of doubt or to prove my decision. Some of these sick horses were "prepared" for the occasion and others were not well enough or were just coming down. Many horses shown and accepted "had been through their sickness." That term expresses the thoughts of horse men that shipping fever belongs to the horses, and there is plenty of truth in the phrase if a fresh animal stays very long. However, the recovered animals if left sound were better risks than fresh horses. These fresh horses were vaccinated immediately after inspection hours. The procedure was to put six head in the receiving chute at a time and inject subcutaneously in the neck. The usual time

consumed in this part of the work was ten minutes for twenty-four horses. They were afterwards sent to the loading pens. These animals were shipped by express to Jersey City in thirty hours from East St. Louis, and there received additional doses of vaccine.

Personally I am well pleased with the results obtained with that procedure and prophylactic treatment, and at one time in checking up losses on over 3000 insured East St. Louis horses, I found a trifle over one per cent sick at Jersey City before loading on the boats. This was in early spring shipments. This may be considered high by some with the care given in examination by Dr. Newcomb and myself, but my theory of the matter is that possibly the yards there may harbor a more virulent type of primary invader than some other points where a lower percentage of losses was obtained.

I agree with Dr. Mohler on the presence of a filterable virus as a primary invader and that other organisms gain foothold in proportion to the animal's resistance. I do not believe, however, that shipping fever can be controlled in any horse center with the present status of knowledge of the virus and cellular inclusion factors. I think that a special endeavor should be made to produce a prophylactic virus antibody stimulant that should be given as soon as an animal is purchased by the shipper. Many shippers have been using various biological products with some good results. I think that the profession needs more enlightenment on the virus theory of this class of diseases. Mules possess a greater resistance than horses to shipping fever.

Shipping fever control should be carried on between the shippers and veterinarian from the point of origin to the market and final destination. This will be a hard disease to control in a practicable way by working in centers only, although there could be improvement in a sanitary way with regard to

shipping, stabling, feeding and watering to prevent losses in all large centers.

Another thing that was quite noticeable to me from the viewpoint of interest, was the great number of Middle Western horses with defective eyes. They are classed by horsemen as "blue eyed," "dead eyed" and "speckled" or "feather" in the eye. The last named are due probably to accidents as they are on the cornea.

I found my co-workers, two different Italian inspection commissioners, to be cultured gentlemen, very thorough and conscientious in obtaining the kind of horses that their country needed. Only about one in three was accepted on the average. Over 3000 were accepted in March, about 1500 in April, and about 500 in May, at East St. Louis on this contract.

P. H. EAGAN, D. V. M.

Nashville, Tenn.

TETANUS FROM UMBILICAL INFECTION

I was called to see a five-day-old mule colt May 23rd. The colt was found down, with labored and painful breathing, and was dripping wet with perspiration. The history was that the colt had not been out of the stall; that he was all right in the morning, but was found at noon stiff and had muscular generalized tremors. Examination revealed a scrotal hernia, a pervious urachus, and when the colt was raised to its feet it stood in a braced manner. The muscular rigidity was very pronounced; tonic spasms were present and the membrana nictitans protruded over the eye. Destruction was recommended; to this the owner did not consent, but the colt died about ten o'clock the following day.

June 4th, I was called to see another colt that had navel infection. Knowing that there was tetanus infection in this barn, I advised the owner to have the colt given a prophylactic dose of tetanus antitoxin. He wouldn't listen to this, so no serum was given. In a week the

owner was surprised to find the colt was presenting the same symptoms that a yearling colt had manifested a year before, following castration. This man now knows it does not pay to take a chance when there exists a probability of tetanus infecting any sort of wound.

FRED M. MAXFIELD.

Tama, Iowa.

CAUSE AND TREATMENT OF BOG SPAVIN

Bog spavin is seen mostly in young horses (from the ages of three months to five years). However, older animals may become affected. It is more often found in animals of inferior breeding—poor individuals that are of faulty conformation. The condition is, no doubt, hereditary in a great many cases.

I think that so-called navel ill is an exciting cause, and it may also be a predisposing cause. Influenza is a predisposing cause, and I have seen a few cases following acute laminitis in animals about three or four years old. Other exciting causes are strains of various degrees.

This condition causes lameness only during active inflammation, or when the bony structures of the parts are in a pathological condition. Some veterinarians say that a blistering agent applied to a bog spavin will nearly always cause lameness. I do not agree with them as I have effected a complete cure in at least twenty cases by blistering alone. Bog spavin very rarely recovers spontaneously.

The most successful treatment for bog spavin, in my opinion, consists of the injection of U. S. P. tincture of iodine and alcohol, equal parts, into the joint capsule. The *modus operandi* is as follows: The parts are shaved, then carefully cleansed and disinfected by washing with a good antiseptic solution. The skin is dried and painted with tincture of iodine, thoroughly. A sterile sixteen-gauge needle is inserted and as much synovia as possible is withdrawn, after which there is

injected from 5 to 15 cc. of the above mentioned mixture, according to the size of the distension. The needle is withdrawn and the skin again painted with tincture of iodine. This treatment should be followed with the daily application of tincture of iodine or some good absorbent liniment. It is very essential to carefully observe antiseptic precautions.

In some cases beneficial results follow the operation known as ligation of the saphenous vein. Some veterinarians think that the good results obtained from this operation are due to the ligation of the small nerve that lies beneath the vein in this region. I am inclined to think this is correct, but I am not positive.

Treatment by aspiration and injection of tincture of iodine and alcohol has been an efficient one in my practice.

G. F. JUNGERMAN, D. V. S.

Hiawatha, Kansas.

IS THIS MARE A TETANUS "CARRIER?"

I wish to report to your valuable Journal a series of incidents that may be of interest to your readers.

A mare stepped on a nail; tetanus developed and she died, leaving a month-old colt, which was then fed cow's milk and oats till old enough to discontinue the milk. The colt matured nicely and was bred when three years old. She gave birth to a colt the following spring, which developed a case of tetanus when about three weeks old and died.

The mare was bred again and her second colt died of tetanus when about one month of age.

This spring she had her third colt, which showed symptoms of tetanus when about a week old. I was called and administered 3,000 units tetanus antitoxin, disinfected the navel, which was inflamed, and gave an injection per rectum of warm water in which was dissolved one-fourth pound of Epsom salt. I called again the next morning and found the tetanus symptoms subsiding and the colt looking better. I gave another 3,000-unit dose of tetanus anti-

toxin and left tablets of iron, quinin and strychnin compound with nuclein to be given night and morning, and potassium permanganate to wash the navel. The colt made a good recovery.

The owner is always careful to have the stalls clean and well bedded before colts are born. These colts are the only cases of tetanus I have known on the farm since their grandmother died with it. The mother seems normal in every way. If she is bred again, would it be advisable to give her an immunizing dose of tetanus antitoxin a few days before foaling time and the colt a dose at birth?

C. R. OSBORN, M. D. V.

Brook, Ind.

So far as I know there is nothing in literature that supports your hypothesis that this mare may be the "carrier" of the infection and communicated it to her colts, and in the absence of more proof that it is otherwise we should probably assume that these were cases of post partum umbilical infection. Still, if I were in your place, I would give her next colt, and I believe all her following colts, 500 units of tetanus antitoxin as soon as they are born. It won't cost much to do this and with the record she has made, it seems advisable.—EDITOR.

"COME LET US REASON TO- GETHER," SAID PAUL

The purpose in the writer's mind is to arouse a discussion upon the subject of drug economy or rather ways and means to success in medication without the agents we have found so expensive of late. Some I suppose will offer surgery as a hobby and suggest extravagant procedures to supplant drug therapy, while others equally impractical and only half as prudent will advocate drug nihilism, but what I aim to elicit is the voice of the rank and file in a discussion of ways and means to use drugs under the present circumstances and not lose money.

For instance, what is a successful substitute for the iodides, bromides, sul-

phocarbolates, eserin, arecalin, acetanilid, phenol, guaiacol, creosote, quinin, salicylic acid, sodium salicylate, and all such articles the prices of which are vaulting sky-high at present?

Who has a satisfactory substitute for potassium iodid? What may we use to supplant Fowler's solution since potassium bicarbonate has gone so high?

J. W. HARBAUGH, V. S., D. V. M.
Corydon, Ind.

ACTINOMYCOSIS—HOW IS IT SPREAD?

I have recently come in touch with a rare occurrence of actinomycosis, which will no doubt be interesting to other veterinarians. Some time ago, 220 fat steers, taken from lot A and killed under United States inspection at the South Omaha market, showed infection in twenty-five per cent of the animals. Nearly all showed affection of the sub-maxillary glands. Possibly ten had some enlargement of the jaw, but most of these were slight.

These steers had been on feed an average of five months, being put into the lot a few at a time. The feed consisted of chopped alfalfa hay, corn chop and linseed meal. The hay was bought at several different times and came from different places.

The same number and grade of cattle taken from lot B, adjoining A, showed six per cent effected. This lot had been fed about the same time and exactly the same feed had been given them.

When lot A was started, it was noticed that there were two that had lesions of the jaws. Neither is thought to have had an external fistulous opening, but this is not certain. There were no noticeable cases in lot B when it was started on feed. The percentage of affection a year ago was not so large but was larger in lot B than in lot A.

It is believed that cattle get the fungus from hay or grass, but inasmuch as these cattle were fed alfalfa hay, which grows quickly and is not usually pastured, would it not be more reasonable

to believe that infection scattered about the lot by these affected ones developed on the litter, feed troughs and fence and that in this indirect way so many became affected?

Regardless of theories of this outbreak, should these lots be considered so infected that it would be unsafe to put other cattle in them? If so, for how long a time and what would be a practical way of disinfecting them?

C. F. EDWARDS, D. V. S.
Omaha, Neb.

RECTUM TORN BY UNKNOWN AGENCY

I was called on the evening of March 12th to see a draft mare nine years old, and heavy in foal. The history of the case showed that she was as well as ever at noon and ate her feed, was hitched to an empty wagon and driven to town. On the way home she stumbled frequently, almost falling at several different times. The owner stated he never saw her stumble before in her life.

At home, she refused food and water, stood and pawed and made attempts to lie down, and when allowed to do so, it was difficult to compel her to rise again. While very little struggling or rolling was indulged in I could see cold sweat about the shoulders; respiration quick and labored; pulse quick and wiry; conjunctiva badly congested; temperature 104° F. per rectum; peristalsis almost absent; and there was a faint gas sound in the cecum. I at once suspected an inflammation of some of the larger bowels, as in inflammation of the small bowels, there are always colicky spasms, while in the large bowels there is never so much pain. I was anxious to find the cause, so a rectal examination was made to palpate the cecum and large bowels to see what I could find as a causative agent.

When I passed the hand into the anus the trouble was located immediately. The entire walls of the rectum were torn about one-half inch inside the

anus, and the torn part had dropped anteriorly just over the pubis, allowing the contents of the bowels to escape into the peritoneal cavity.

I informed the owner of the trouble and my prognosis was of course that death was certain. I gave no treatment. She died at 11:45 the following day.

The mare was due to foal in about a month. She was with no other animal except a mare, and had not been out for a day. She was in the barn in the evening, ate her feed and hay at night, ate feed in the morning, and at noon was driven to town after feeding. She apparently was well until she got home in the evening when she showed slight pain and refused feed and water.

The rectum possibly was loaded with feces, and the stumbling may have torn this, although I am at a loss to know how. If it is not possible for a sudden jar or jerk to tear the walls of the loaded rectum and other integuments, I am at a loss to know the cause, but can positively state that such a condition did exist. I have never seen anything like it before, nor have I ever heard of it.

E. E. HOBSON, D. V. M.

Osage City, Kans.

A PRACTICAL LEG AMPUTATION IN A COW

This illustration represents a three-year-old pure bred cow that broke and crushed her leg to such an extent that I



could not get it to unite. After giving it my attention for about twenty days, I told the owner the only thing that would

save his cow was to amputate the leg, and he gave his consent; he valued the cow very highly for she was in about three months of calving. I amputated the leg at the hock and she made a fine recovery and gave birth to a good calf, which she is raising without difficulty.

W. C. SHIKLES, D. V. S.

Plattsburg, Mo.

CONCERNING ATYPICAL PARTURIENT PARESIS

In regard to parturient paresis, I think there is something none of us quite know. Dr. Callander in his article in the August number of the AMERICAN JOURNAL OF VETERINARY MEDICINE, wonders if the parturient condition had anything to do in his case with the attack. Possibly my experience might either enlighten him a little or else put him a little farther in the fog.

Several years ago I had a number of cases remote from the parturition period which simulated so-called milk fever and readily responded to the treatment, but I had one in particular a little different from the rest.

A client called me early one morning and said, "This is Jim Brown. That cow that had milk fever last fall is down again and appears the same as when she had it last fall." I asked if she had freshened again, and he said, "No. You know I told you she was old and that I would never breed her again."

I went out and gave her the usual treatment and she was up and apparently well in two hours. In looking back through my records, I found that there was an interval of ten months between the two attacks in this instance.

A. B. SEXMITH.

Charlotte, Mich.

Comment: A great many cases in which there was a greater or less degree of coma have been given the udder inflation treatment and because they have promptly responded to such treatment and a speedy and complete recovery followed they have been diagnosed as milk fever, even though occurring, as they

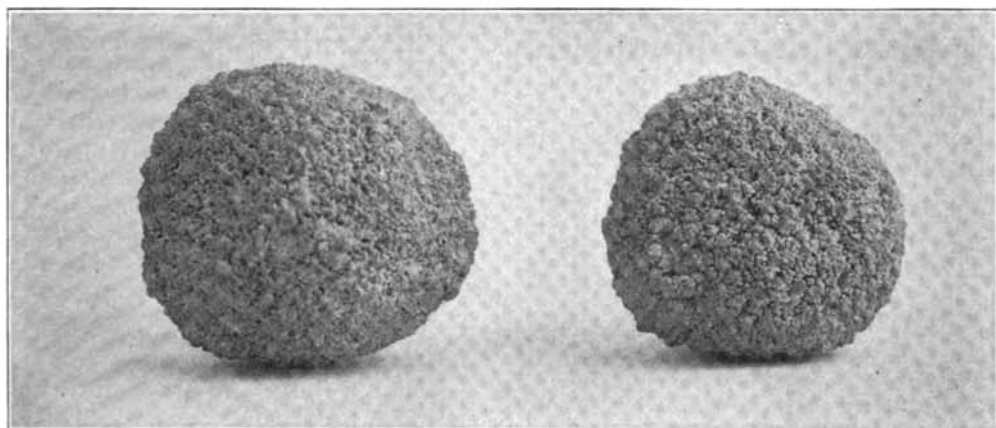
have in countless cases, remote from the parturient period.

The circumstances in not a few of these cases point strongly to some form of forage poisoning as the trouble. Are we justified in saying these cases are all milk fever because they respond satisfactorily to the air treatment? Do we know that inflation of the udder is not as beneficial in cases of coma due to forage poisoning as it is in coma due to milk fever whatever that maybe?—
EDITOR.

URETHRO-LITHOTOMY IN A JACK

The subject was a very valuable five-year-old jack, that had been suffering for at least one and a half years, from

rectum was flushed with warm water to remove all feces. The tail was then wrapped with a sterilized bandage. The perineum and surrounding parts were thoroughly cleansed with a solution of bichlorid of mercury. One ounce of a one percent solution of quinin-urea-hydrochlorid was injected into the perineum and underlying tissues. The seat of the operation was then painted with tincture of iodin. A soft rubber catheter was passed and all urine withdrawn. About two quarts of a weak solution of potassium permanganate was injected into the bladder to cleanse it, also to distend the bladder so that danger of grasping the internal mucous coat would be lessened. The catheter was then withdrawn just through the cervix to prevent the escape of the solution.



cystitis, and was very much emaciated. There was a constant dripping of urine from the penis, a depraved appetite and meninguria. On examination, two calculi were easily felt, and I advised the owner that an operation was all that would save his animal and that it should be performed at once. After I had given a guarded prognosis, he advised me to go ahead as soon as possible. I at once ordered lithotomy forceps as I did not possess such an instrument. One week later the operation was performed.

The jack was put into a single stall and the stall boarded up behind to a height of three and one-half feet. The

With all instruments sterilized and in convenient position, the operation was performed, as follows: The incision was made about two and one-half inches in length just above the arch of the ischium, making the incision as deeply as possible with the first stroke of the scapel; then cutting through the urethra on to the catheter. The catheter was then withdrawn and the urethra carefully dilated to furnish free passage for the lithotomy forceps. With one hand introduced into the rectum to guide the forceps on to the calculus, it was thus firmly grasped and gently withdrawn, as was also a second one. Very little hemor-

rhage was experienced. The urethra was closed with stitches of sterilized catgut, eight in number. After careful cleansing, the external incision was closed with silk; the animal given an injection of mixed bacterin, and the operation was completed. The calculi weighed nine ounces, and are shown in their actual size in the accompanying illustration. Aseptic technic was followed as nearly as possible during the operation.

The animal made an uneventful recovery, and the owner was well pleased and ready to part with a very generous fee. The operation was very interesting to me as it was the only case of this kind I have ever seen in several years of practice.

F. N. WINCHESTER, D. V. S.
Burdett, Kans.

BACTERINS IN NAVEL ILL

I have had good results in the use of bacterins for prevention of navel ill in colts, as well as the use of same after the manifestation of infection.

Bacterins were employed on twenty-five mares and colts the past spring without mortality. However, one colt in a lot of ten mares and colts treated, showed a pronounced pyemic arthritis but responded nicely to the injection of bacterins in conjunction with laxative and diuretic treatment. The prophylactic treatment with bacterins was used only on farms that have suffered yearly losses from navel ill infection.

Treatment consisted of the injection of the mare three or four weeks prior to parturition with 2 c. c. Jensen-Salsbery's navel ill bacterin. At twenty-four hours of age the colt received 1 c. c. of the same bacterin, in five days, the injection of 2 c. c., and in ten days 3 c. c. were administered. Tincture of iodine was applied to the navel once daily for five days.

All colts are in a healthy condition at this time and show evidence of immunity.

J. C. McCABE, D. V. M.
Fairfax, Iowa.

PRIVATE PRACTITIONERS AND STATE AND MUNICIPAL WORK

At the present time a great deal is being said pro and con regarding the new Federal ruling* pertaining to inspection in Illinois by Federal inspectors. In my opinion this is a step in the right direction and is in keeping with what I have advocated for some time. Not that I think our assistant state veterinarians are not qualified nor that there is any dishonesty on the part of our state veterinarian or his deputies. On the contrary, I have the highest regard for the ability and integrity of our state officials. In fact I have spent quite a little time trying to calm the unrest that prevailed among some misguided stockmen in my locality during the recent outbreak of foot-and-mouth disease, assuring them that our state and Federal officials would handle the situation to the satisfaction of all impartial and fair minded persons, and I think that they have done so.

But the point I have long advocated and the one I wish to make now is that all public health officials, whether in the employ of the Federal government, state or city, should receive a sufficient salary to enable them to live independently of private practice. Under the system that has been in force, a veterinarian depending upon his clientele for a livelihood is appointed assistant state veterinarian without salary for a nominal fee he is expected to exercise police jurisdiction over that same clientele and further, in most cases, to collect his fee from the client also.

Again, a city decides that in order to protect its citizens against impure milk and diseased meat, the services of a veterinarian are essential. The mayor, in many instances at least, is instructed to appoint one of the resident practitioners to the place at a salary of from one hundred to nine hundred dollars a year.

*This communication was received Feb. 29, 1916, but its publication has been unavoidably delayed.—Editor.

The veterinarian is then placed in a peculiar position. His salary being inadequate for his needs, he must look to the dairyman, the butcher and the grocer for a livelihood. At the same time, he is obliged to prosecute these men for any infraction of the public health regulations. Understand me, I am not making charges against any one, but I ask candidly. What is one to do who is so situated—protect the public and starve or shut one eye and make a living? A proprietor of a grocery and meat market once remarked to me. "I have to employ Dr. _____ because he is city veterinarian and can make me a lot of trouble if he wants to."

So my position is this. To whatever branch of government service our health officers are attached, allow them sufficient salary to live and let them serve but one master.

W. H. WEATHERS, M. D. C., D. V. M.
Hennepin, Ill.

MORE ABOUT SHORT-WINDED HORSES

CONCERNING QUERY No. 241 which was published in the August issue of your journal, and signed J. W. H., permit me to say that I have seen many hundreds of horses affected with the disease mentioned in this query, but I have not seen it described or named in any of our text books. In Nashville, Tennessee, I saw hundreds of horses with this malady every summer, and the veterinarians of that city gave it the names of "pink eye", influenza, etc., but I never considered these names appropriate, or that they properly named the disease.

I too would like to know the correct technical appellation of this trouble, and what text book or books discuss the subject.

My experience has been that in nine cases out of every ten, when a horse is affected with this disease, red petechia

appear on the membrana nictitans, along with the symptoms mentioned in the query, especially the panting and lack of sweating. I have also observed that animals so affected are more easily foundered and are subject to colics.

I beg to differ with the remarks made by the editor, in which he says that the history of these cases will further reveal that the horse was fed on an unbalanced ration, and that it possessed a very heavy coat that did not shed until late, perhaps did not completely shed at all. I do agree with him in that the malady first attacks the horse during hot weather while doing hard work, and that the majority of these cases are quite readily curable.

I have seen numbers of properly fed horses have the malady, as well as those that shed their coats well in the spring, although badly nourished animals appear to have the disease more frequently than do those that are in good condition, this being the case in many other diseases besides the one under discussion.

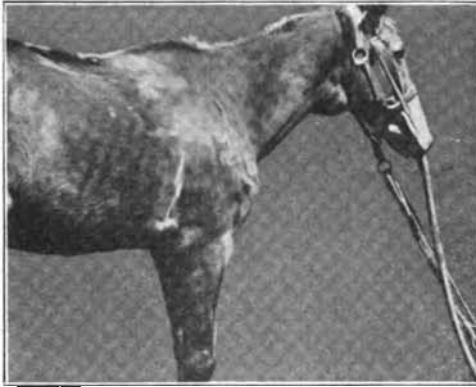
I have no doubt but that the malady is of a contagious nature, and that flies are the chief agency for spreading it from one animal to another. I have often noticed that flies seem to be especially attracted to animals that are badly affected with this trouble.

As to the treatment, I usually get best results in those cases where the animals are not too old or emaciated, but this is only natural, being so in most other diseases. I prescribe Fl. Ex. nux vomica, Fl. Ex. gentian, Fl. Ex. jaborandi and Fowlers solution of arsenic and feed laxative foods such as bran mashes, oats and grass. Rest helps out a whole lot in treating this malady, and I believe that most animals will get over the trouble without any treatment if they are turned on pasture and allowed to rest.

L. D. WHITAKER, D. V. S.
Farmville, Va.

ILLUMINATING GAS FOR DESTROYING HORSES

The accompanying illustration depicts a gas mask which is in use in Denver, Colorado, by Walter C. Cox for destroying horses. The mask is joined by means of rubber tubing to an illuminating gas



main, and horses are in this way. it is said, destroyed in a very humane manner; there being no pain, no fright, no struggling, and death resulting in less than a minute. There seems to be a practical contrivance which will serve a good purpose wherever illuminating gas is obtainable.

HOG CHOLERA, ITS DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS

(Continued from page 708)

weather, this acting, in my opinion, as a predisposing influence. Clinical symptoms resembled cholera, temperatures ranging from 104.5 to 106.8, labored breathing, weakness, loss of appetite and diarrhea, which was of chocolate color.

Autopsy showed hemorrhage in lymph glands, serous and mucous membranes, kidneys and lungs. In the glands these hemorrhages differed from cholera, inasmuch as they were really diffuse hemorrhages, surrounded by normal glandular tissue, and not a condition of marginal or a general hemorrhagic condition, as in cholera. They appeared to be distinct ruptures of individual capillaries. In the mucous membranes of the stom-

ach, and especially the large intestines, similar ruptures existed with evidence of extravasation into the lumen of the bowel which accounted for chocolate colored feces, resulting from the decomposed blood.

In the lungs these hemorrhages ranged in size from that of the cross-section of an ordinary lead in pencil to size of quarter, and were of same type as in glands.

In the kidneys the hemorrhages were general, of irregular shape, differing from the characteristic ruptured glomeruli of cholera. Cross-section of the kidney showed that the hemorrhages extended into uriniferous tubules. The skin of the underside of body was purplish red, being a diffuse blush and not of circumscribed areas as is usual in cholera. The spleen, liver and heart were apparently normal.

The most convincing evidence I found was the characteristic odor of *B. necrophorus* in the incised lung, liver and in the intestines. This odor, when once experienced, is always remembered, whether grown in a culture tube or found in an animal body.

One can easily understand how this condition, even after autopsy, could be mistaken for cholera, and I believe it has been many times. It is a foregone conclusion that anti-hog cholera serum is of value only in the treatment and prevention of hog cholera, and when such other diseases and conditions as I have mentioned exist, anti-hog-cholera serum is useless unless, possibly, if cholera exists along with these conditions, some relief may result by giving serum to combat the cholera, thus fortifying the hogs against the combative forces of one enemy.

In conclusion, I will say that if anti-hog-cholera serum is to receive the reward of which it is worthy, and the veterinarian is to earn the reputation due him, serum administration must be governed by scientific judgment after careful diagnostic procedures have been employed.

MALCONDITION AND DEATH IN HORSES FROM PARASITISMS

On the fourth day of May, I saw a four-year-old colt that had been out of condition all spring, gradually growing weaker under the heavy strain of field work until the day before I saw the animal, when it became exhausted, laid down and was unable to rise. The rough coat of hair and closely adherent skin, together with the emaciation, attracted attention to the chronicity of the case.

The colt was delirious; pulse was accelerated and weak; breathing short and rapid; temperature one degree above the normal and peristalsis was intermittent. An examination of the mouth revealed the fact that the first upper molar on the right side was an inch longer than it should have been. The apposing teeth were not normally developed, and there had been no wear on this tooth. The case seemed to be a hopeless one, and the horse was lost on the following day.

On autopsy, there was revealed the presence of an unusual number of bots near the duodenal orifice of the stomach, and two areas of mucosa of the stomach of about five by ten inches, were studded with these larvae. Inspection of the teeth revealed the fact that some of the molars were carious. The elongated first upper molar tooth was extracted but with great difficulty and not until the second had been removed. It was impossible to extract these teeth without fracturing the jaw because of the extensive odontitis.

Three other horses on the same farm were not doing as well as they should under the care they were receiving and were gradually failing in strength and vitality. These horses' teeth were examined, and it was found that they only needed floating. When all evidence at hand was taken into consideration, I suspected that these animals were suffering from parasitism. The treatment administered was as follows:

At the time of the first visit, each

horse received by drench a half pint of oil of turpentine in a quart of sweet milk, followed in two hours with a pint and a half of raw linseed oil. When I arrived the next day, the owner told me many bots were expelled and also a few round worms. Each horse was given a vermifuge bolus containing areca nut



Champion Evergreen-Evelyn III.

A Boston terrier, owned by Dr. Norman T. Harris, of Chelsea, Mass. This dog has taken down prizes at Boston, New York, Philadelphia, Chicago, St. Paul and others shows. Dr. Harris has been engaged in breeding pedigreed dogs for a number of years, and has one of the finest and largest collection of trophies in the country.

and antimony, followed in six hours with a purgative bolus. The results were that many *Ascaris megaloccephala* were expelled. Following this treatment, each horse was put on a week's tonic containing Fowler's solution and tincture of iron.

FRED M. MAXFIELD.

Tama, Iowa.

MEETING OF THE CONNECTICUT VETERINARY SOCIETY

The semi-annual meeting of the Connecticut State Veterinary Society was held at the office of Dr. E. Scofield at Greenwich, Conn., on July 25, 1916. A clambake had been arranged as one of the features of entertainment, and as we left the depot and were directed up through the village park, known as Bruce Park, we could not help but wonder just what the arrangements were; whether we were first to attend the clambake and then the scientific meeting or if we were simply taking a short cut to Dr. Scofield's office. Our curiosity was however appeased when we suddenly noticed the Doctor's sign on a neat little building amid rocks and trees and dogs of all breeds and voices, adorning the grounds and guarding the building. It was an ideal spot indeed for the poor dog to which fresh air and a bit of freedom is a luxury. We had heard much of aristocratic Greenwich, but after questioning Dr. Scofield as to why he built his house in the woods we gleaned that the Greenwich people were quite as easily disturbed by the howls in a veterinary hospital as they were elsewhere, and so the doctor was compelled to take his canine wards from the residential district where his father had so long kept his office and place them in the valley of the park where the hillsides dulled their echo.

The members began gathering as early as nine o'clock and the crowd continued to swell until about mid-day. The meeting was well attended in numbers and was conducted in rather an informal restful manner. The doctor had gathered several dogs and one horse for observation and diagnosis, also a tuberculin reacting cow to be autopsied. The examinations were made leisurely by the various members and in due time Dr. Gilyard operated on a small spaniel, removing a lipomatous growth involving the rectum and vagina. The growth was large and the character of the involve-

ment uncertain, but the operator removed it with creditable skill.

The horse to be examined was a polo pony with a history of two years lameness. Dr. Thos. Bland diagnosed it as foot lameness, with probable complication of a nerve tumor of the internal plantar nerve which had been previously operated on. He demonstrated that age and letting up of routine practice does not always steal dexterity from an able surgeon's hand. He performed planter neurectomy of both sides with as much ease, surgical dispatch and neatness and as coolly as if he were clipping the end of a favorite cigar.

Before taking up the literary program we were all invited to partake of a New England clambake where there was a generous serving of clams, fish, chicken, corn and all the good things that go with a well-planned feast of this kind.

Promptly following this pleasant function Dr. Cahill, Director of the Hog Cholera Division of the Bureau of Animal Industry of Massachusetts autopsied a pig that had been given virus eight days previously with the purpose of showing characteristic hog cholera lesions. This pig had been off feed for two days, and had a temperature now of 106.2. The carcass was opened on the median line and the kidneys the first organs examined. The capsules being stripped, both organs appeared normal. In examining the lymph glands those of the inguinal region were found normal. The mucous membrane of the bladder showed small ecchymotic areas. The bone marrow of the ribs showed darkness at some points; sub-cervical gland enlarged and darkened; spleen normal; liver darkened areas and some petechia. Bronchial and mediastinal glands slightly enlarged and darkened; mucous extravasation over pyloric mucous membrane of stomach; mesenteric glands slightly enlarged but normal in color and small reddened area slightly

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 Kansas City Veterinary Col.
 Late Veterinarian in U. S.
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ulcerative in character were located at the illeo-cecal valve.

Dr. Cahill explained that the subject had not proven a good one for his demonstration and that it was his opinion that the pig was an offspring of an immunized sow.

The same author followed with a demonstration of the simultaneous method of immunizing against hog cholera. He stated that after a pig has reached the age of 12 weeks and weighs 40 lbs. or over it may be immunized for life with potent virus and serum.

Some of the important points of technic are that the temperature should be taken—the serum should be injected with surgical cleanliness and is just as effective subcutaneously as intermuscularly when the precaution of not injecting too large quantity at one point is properly carried out.

The operator in his demonstration injected 10. c. c. of virus intermuscularly, dividing it between two points and using

30 c. c. of serum, making three divisions of the amount.

Dr. Cahill takes the attitude that virus infection is surer for controlling hog cholera than probable natural infection. He advocates in holding the inoculated pig in strict quarantine for six weeks after treatment and then thorough disinfection of the pen before introducing susceptible hogs. It is his opinion that the serum alone treatment will immunize for from two to twelve weeks.

In caring for serum and virus he cautioned against exposure to extreme heat or cold.

The next speaker was Mr. W. W. Otto of Parke, Davis Co. His subject being—Biologic Therapy. He briefly reviewed the history of biologics, referring particularly to Metchnikoff's theory and the resulting bacterial vaccine. He pointed out that important essentials to be recognized and practiced in bacterial therapy are the selection of the proper vaccine and the proper dose, not to use

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Veterinarian in Charge

Foot of South Street, Peoria, Ill.

a staphylococcic vaccine when a streptococci is indicated, etc., and similarly the error of using a vaccine when a serum is indicated. He emphasized the necessity of avoiding a severe reaction when possible and explained that the stages of a disease also have an important governing influence upon the selection of the biologic, believing that a bacterin is indicated in localized or early acute conditions and a serum is indicated when a condition becomes more general; arguing that a case that has advanced to a generalized condition is evidence in itself that the system is unable to produce its own anti-bodies and a serum containing them should be used. He has great faith in the future of phylacogens and believes they have accomplished much in rheumatic conditions already.

He touched on the necessity of reckoning with secondary invaders, also such maladies as white scours in calves and contagious abortion in cattle and believes that biologics will be the ultimate

solution of these plagues. Following this paper the meeting was closed with the postmortem examination of the cow which showed pronounced typical lesions of tuberculosis in the lungs and mediastinal glands.

Goshen, N. Y.

J. F. DEVINE.

**SEEN AND HEARD BY OUR STAFF
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Dr. R. D. Heller, of Oak Harbor, Ohio, the tallest man there—6 feet 4.

Dr. A. W. Ferry, of Sandusky, Ohio, the smallest man there—4 feet 5.

Dr. W. Runge, of Newark, N. J., the heaviest man there—275 pounds.

Dr. J. T. Hershheim, of Chicago, Ill., the jolliest man there.

Dr. T. F. Krey, of Detroit, Mich., the busiest man there.

Dr. Joseph Hughes, of Chicago, Ill., and Dr. J. F. Devine, of Goshen, N. Y., the bean brummels of the throng.

Dr. Charles E. Cotton, of Minneapolis, Minn., wearing that smile that won't come off.

Dr. J. S. Barber, of Princeton, Iowa, at

W. B. Welch, D. V. S., President

F. C. Streeter, B. S. A., Manager

A. Goodlee, D. V. S., Veterinarian

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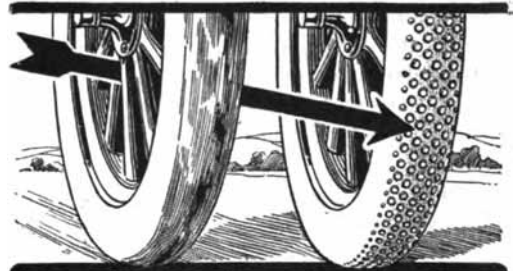
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Dr. T. B. Huff, of Sioux City, Iowa, hanging the latch string out at the Tuller.

Dr. John R. Mohler, of Washington, D. C., the handsomest man there.

Dr. R. A. Archibald, of Oakland, Cal., the quietest man there.

Dr. John Blattenberg, of Lima, Ohio, reading a letter postmarked "Ireland."

Dr. G. W. Cliffe, of Upper Sandusky, Ohio, seeking "The Fountain of Youth."

Dr. Adolph Eichhorn, of Washington, D. C. emulating Vernon Castle on the roof at the Tuller.

Dr. E. E. Patterson, of Detroit, Mich., entertainer de luxe, showing 'em how to "do things right."

Dr. Reuben Hilty, of Toledo, Ohio, nursing a sprained ankle. He sustained the injury in Toledo.

Dr. P. H. Browning, of San Jose, Cal., looking for a Ford at 2 a. m., Tuesday.

Dr. F. H. Schneider, of Philadelphia, Pa., out shopping, trying to find Sox and ties that match.

Dr. Pete Gillie, of Mansfield, Ohio, drinking lots of good old ice water.

Dr. E. A. Cahill, of Lowell, Mass., sporting a nifty silk Palm Beach.

Dr. C. C. Mix, of Battle Creek, Mich., buying books.

Dr. N. S. Mayo, of Chicago, Ill., just looking around.

Dr. W. R. O. Fowler, of Toronto, Canada, hesitating in the Parke Davis plant.

Dr. John Eagle, of Kansas City, Kansas, seeking information.

Dr. W. A. Brown, of Columbus, Ohio, looking up old acquaintances.

Dr. D. E. Buckingham, of Washington, D. C., taking things easy.

Dr. N. D. Backus, of Elyria, Ohio, willing to be entertained.

Dr. David Cochran, of New York city, having the time of his life.

Dr. Charles Dunphy, of Mason, Mich., down from the military camp, wearing his soldier suit of blue.

Dr. L. E. Day, of Chicago, Ill., wishing he "hadn't made the trade."

Dr. Charles Lamb, of Denver Colo., smoking his pipe of clay.

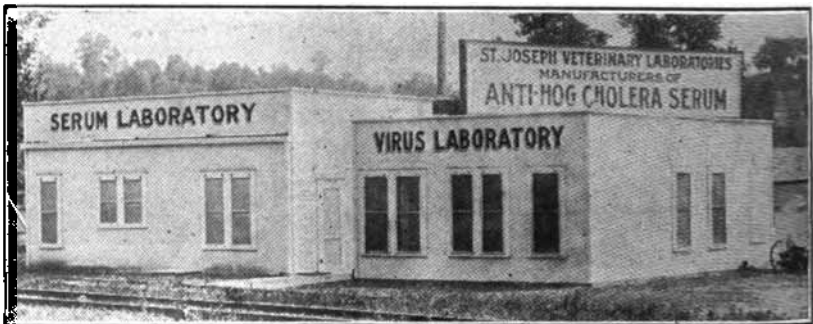
Dr. F. E. McClelland, of Buffalo, N. Y., asking about that box of candy.

Dr. C. J. Marshall, of Philadelphia, Pa., the most popular man there.

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Dr. G. A. Johnson, Veterinarian.

F. C. Whitmer, Secretary and Treasurer.

Dr. F. W. Cairy, Veterinarian.

Dr. Ben Pierce, of Springfield, Mass., the most widely acquainted man there.

Dr. J. D. Reardon, of Indianapolis, Ind., looking after his friends.

Dr. George Scott, of Waterloo, Iowa, enjoying himself.

Dr. W. F. Wise, of Medina, Ohio, the most cheerful fellow there.

Dr. H. A. Arpke, of Sheboygan, Wis., leading the band on the boat.

Dr. A. E. Morrow, of Liberty, Mo., the pleasantest man at the meeting.

Dr. R. D. Way, of Cleveland, Ohio, the happiest man there.

Dr. L. A. Merillat, of Chicago, Ill., trying

to convince Dr. A. T. Kinsley, of Kansas City, Mo.

Dr. E. L. Quitman, of Chicago, Ill., quizzing the guide at Parke-Davis'.

Dr. S. H. Ward, of St. Paul, Minn., being followed at the Parke-Davis plant.

Dr. R. F. Eagle, of Oklahoma City, Okla., declaring that "it can't be did."

Dr. W. Welsh, of Lexington, Ill., being installed as Exalted Ruler of the Blue Owls.

Dr. W. H. Simpson, of Malden, Mass., the noisiest man there.

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Firms and their representatives having displays at the meeting were as follows:

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 Dr. C. J. Norden.
 Beebe Laboratories, St. Paul, Minn.:
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 Detroit Veterinary Instrument Co., Detroit, Mich.:
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 Efficiency Sales Co., Chicago:
 Mr. C. I. Brush.
 Eucamphine Co., Chicago:
 Mr. Norman W. Kreuder.
 Iodum-Miller Co., Kansas City, Mo.:
 Dr. I. N. Miller.
 Jensen-Salsbery Laboratories, Kansas City, Mo.:
 Dr. C. E. Salsbery.
 Dr. H. Jensen.
 H. K. Mulford Co, Philadelphia, Pa.:

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 Mr. W. T. Ellis.
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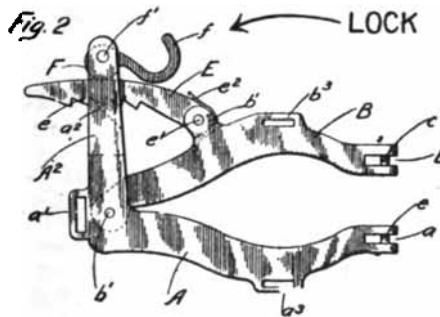
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Dr. J. F. Devine.
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Miss Mathilda Elsen.

Veterinary colleges officially represented at the meeting were:

University of Pennsylvania, Dr. Louis A. Klein.

New York State Veterinary College, Dr. V. A. Moore.

George Washington university, Dr. David Buckingham.

Ohio State university, Dr. D. S. White.

Indiana Veterinary college, Dr. W. B. Craig.

Chicago Veterinary college, Dr. E. L. Quitman.

McKillip Veterinary college, Dr. George B. McKillip.

Kansas City Veterinary college, Dr. S. Stewart.

Kansas State Agricultural College, Dr. R. R. Dykstra.

St. Joseph Veterinary college, Dr. R. C. Moore.

Alabama Polytechnic Institute, Dr. C. A. Cary.

Colorado Agricultural college, Dr. George H. Glover.

Iowa State college, Dr. H. E. Bemis.

Grand Rapids Veterinary college, Dr. H. L. Schuh.

Ontario Veterinary college, Dr. E. A. A. Grange.

Michigan Agricultural college, Dr. R. P. Lyman.

Former presidents of the American Veterinary Medical Association present at the meeting were:

Dr. S. Stewart, of Kansas City, Mo.; Dr. S. Brenton, of Detroit, Mich.; Dr. George H. Glover, of Fort Collins, Colo.; Dr. W. L. Williams, of Ithaca, N. Y.; Dr. Tait Butler, of Memphis, Tenn.; Dr. H. Horace Hoskins, of Philadelphia, Pa.; Dr. J. G. Rutherford, of Calgary, Alberta, Canada; Dr. Jno. R. Mohler, of Washington, D. C.; Dr. C. J. Marshall of Philadelphia, Pa., Dr. W. H. Dalrymple of Baton Rouge, La. and Dr. R. A. Archibald, of Oakland, Cal.

State veterinarians at the meeting were:

Dr. George Dunphy, of Michigan; Dr. O. H. Eliason, of Wisconsin; Dr. A. S. Cooley, of Ohio; Dr. Lester Howard, of Massachusetts; Dr. Ives, of Maryland; Dr. C. J. Marshall, of Pennsylvania; Dr. Wills, of New York; Dr. Lamb, of Colorado; Dr.

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- Relative Value of Metric and Apothecaries' Measure.
Relative Value of Apothecaries' and Metric Weight.
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Dairymen of Monroe, Wis., protested against the city's oiling of streets, alleging that oil saturated dust, carried by the wind, caused serious affliction to the eyes of their cattle.

Lee Schafer, Patoma, Cal., helped a veterinarian treat a horse belonging to Eg Levegood. The animal became frightened, threw Schafer and fractured his leg. Now Schafer is suing Levegood for damages.

The appointment of Dr. E. Lester Jones to the head of the United States coast and geodetic survey by President Wilson, is being criticized by Charles E. Hughes, Republican presidential nominee, in his campaign speeches. Dr. Jones took a correspondence course in the London Veterinary college. Hughes declares it is beyond his comprehension as to how a veterinarian happened to be appointed to the position held by Dr. Jones. Secretary Redfield says Mr. Jones never was a veterinarian, but is a gentleman of education and refinement.

The Louisiana Swine Breeder's association held their annual convention at the Chamber of Commerce in New Orleans August 1. One hundred and fifty-seven members attended. It was the largest and most successful session ever held by the association. Facts and figures were presented to prove that Louisiana is developing into one of the best hog producing states in the Union.

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ASSOCIATION MEETINGS

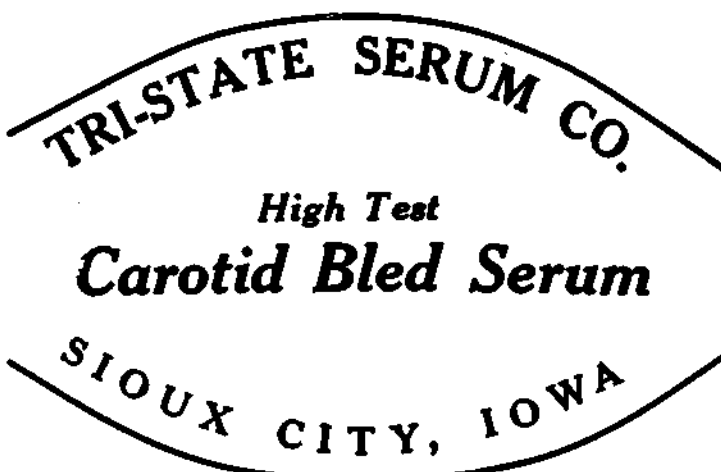
The information given below is up-to-date and has been furnished by the secretaries of the various associations listed. Secretaries are requested to supply us data regarding their associations after each meeting; otherwise, the association will necessarily be dropped from the list. We ask secretaries to kindly co-operate with us in keeping before the members of their association the date and place of the next meeting.

Name of Association	Date of Meeting	Place of Meeting	Secretary
Alabama Vet. Med. Assn.		Columbus, O.	C. A. Cary, Auburn, Ala.
Alumni Assn., Col. of Vet. Med., O. S. U.	Jan. 10, 1917.	New York	W. E. Hobbs, O. S. U., Columbus, O.
Alumni Assn., N. Y. State Vet. College	June 10, 1916.	Washington, D. C.	P. K. Nichols, Fort Richmond, N. Y.
Alumni Assn., U. S. Col. Vet. Surg.		Washington, D. C.	Chas. M. Mansfield, 1344 Newton St., Washington, D. C.
American Vet. Med. Assn.	Aug. 21, 25.	Detroit, Mich.	C. M. Haring, Berkeley, Cal.
Arkansas Vet. Med. Assn.	January, 1917.	Little Rock	R. M. Gow, Little Rock.
B. A. I. Vet. Assn. of So. Omaha.	3rd Monday of month.	So. Omaha, Neb.	J. W. Giffen, c/o B. A. I. So. Omaha
California State Vet. Med. Assn.	2nd Wed. in Mch., June, Sept., Dec.	San Francisco, Cal.	F. M. Hayes, Davis, Cal.
Central Canada Vet. Assn.	Jan. 19.	Ottawa, Ont.	H. D. Sparks, 448 Wellington St., Ottawa.
Central N. Y. Vet. Med. Assn.	Last week in June and Nov.	Syracuse, N. Y.	E. E. Tompkin, 2944 N. 18th, Philadelphia.
Chicago Vet. Society	2nd Tues. of month.	Chicago, Ill.	W. E. Switzer, Covage, N. Y.
Colorado Vet. Med. Assn.	Jan., 1917.	Denver, Colo.	Glean Brown, 2806 Lowell Ave., Chicago.
Connecticut Vet. Med. Assn.		Greenwich, Conn.	J. E. Newman, Ft. Collins, Colo.
Genesee Valley Vet. Med. Assn.	January 27.	Rochester, N. Y.	A. T. Giffard, Waterbury, Conn.
Georgia State Vet. Assn.	Aug. 23, 24, 1916.	Savannah, Ga.	O. B. Webber, 154 Andrew, Rochester.
Hudson Co. Vet. Practitioners' Club	Monthly	Jersey City, N. J.	Peter F. Bahnen, Capitol Bldg., Atlanta.
Idaho Assn. of Vet. Graduates	Feb. 4, 1917.	Boise, Idaho.	B. D. Blair, 123 Montgomery St., Jersey City, N. J.
Illinois State Vet. Med. Assn.	July 19, 1916.	Peoria, Ill.	C. V. Williams, Blackfoot, Idaho.
Illino Vet. Med. Assn.		St. Louis, Ill.	L. A. Merrill, 1827 Wabash Ave., Chicago.
Indiana Vet. Med. Assn.		Indianapolis, Ind.	L. R. McKinley, Freeburg, Ill.
Iowa Vet. Med. Assn.	Jan. 3, 4, 1917.	Ames and Des Moines.	A. F. Nelson, Indianapolis, Ind.
Kansas Vet. Med. Assn.	April	Wichita, Kan.	H. E. Truman, Rockwell City, Ia.
Kentucky Vet. Med. Assn.	2nd Tuesday of month.	Louisville, Ky.	J. H. Burt, Manhattan, Kan.
Knoxville Vet. Med. Assn.	2nd Wed. of month.	Philadelphia	Robt. Graham, Lexington, Ky.
Los Angeles Vet. Med. Assn.	July 12.	Los Angeles	L. B. Davis, 857 N. Garro, Philadelphia.
Maine Vet. Med. Assn.	Feb. 15.	Winnipeg, Man.	J. A. Dall, 16th & Pacific, Los Angeles.
Manitoba Vet. Assn.	6th Wed. each month.	Worcester in Sept.; Boston rest of year.	M. E. Maddocks, Augusta, Me.
Massachusetts Vet. Assn.			W. Hiltton, 275 James St., Winnipeg.
Michigan State Vet. Med. Assn.	1st Tues. & Wed. after 1st Mon. in February.	Lansing, Mich.	E. A. Cahill, Boston, Mass.
Minnesota State V. M. Assn.	2nd Tues. & Wed. Jan. Jan. 10, 11, 1917.	St. Paul	W. Austin Ewalt, Mt. Clemens, Mich.
Mississippi State Vet. Med. Assn.	July 7, 1916.	Charleada, Miss.	G. Ed. Leach, Winona, Minn.
Missouri Valley Vet. Assn.	July 10, 11, 12.	Galesburg, Ill.	R. S. Norton, Greenville, Miss.
Missouri Vet. Med. Assn.	Last week in July.	Omaha, Neb.	W. Lester Hollister, Avon, Ill.
Montana Vet. Med. Assn.	Jan. 28, 29.	Bozeman	R. F. Bourde, 1836 E. 18th, Kansas City.
Natl. Assn. B. A. I. Employees	2nd Mon. in Aug., 1916.	New York City	C. D. Poole, 1326 E. 18th St., Kansas City.
Nebraska Vet. Med. Assn.	1st Tues. & Wed. in Dec.	Lincoln, Neb.	A. D. Knowles, 303 S. 6th St., West Missoula, Mont.
New York State Vet. Med. Society	Aug. 2, 3, 4.	Ithaca, N. Y.	S. J. Walker, 185 N. W. Ave., Missoula.
			S. W. Alford, Lincoln, Neb.
			C. P. Fitch, Ithaca, N. Y.

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Name of Association	Date of Meeting	Place of Meeting	Secretary
North Carolina Vet. Med. Assn.	June 21, 22, 1916.	Wrightsville Beach, N. C.	J. P. Spoon, Burlington, N. C.
North Dakota Vet. Assn.	July 18, 19, 20.	Fargo, N. D.	W. J. Mulroony, Havana, N. D.
Northeastern Indiana Vet. Assn.	Sept. 12.		C. R. Baumgartner, Arcola, Ind.
Northwestern Ohio Vet. Med. Assn.	Feb. 16.	Toledo, O.	Paul E. Wood, Ottawa, Ohio.
Ohio State Vet. Med. Assn.	July 27, 1916.	O. S. U. Columbus, O.	F. A. Lambert, care O. S. U., Columbus
Ohio Valley Vet. Med. Assn.	July 27.	Oblong, Ill.	G. J. Behrens, Evansville, Ind.
Oklahoma Graduate Vet. Med. Assn.	July, 1916.	Oklahoma City.	R. C. Smith, Enid.
Oklahoma Vet. Med. Assn.	March 7, 8.	Oklahoma City.	S. H. Gillier, Norman, Okla.
Oregon Vet. Med. Society.	June, 1916.	Probably Corvallis, Ore.	B. T. Simms, Corvallis, Ore.
Pennsylvania State Vet. Med. Assn.		Pittsburgh, Pa.	E. H. Yunker, 2344 N. 18th, Philadelphia
Rhode Island Vet. Med. Assn.	2nd Tues. Jan.	Pt. Wayne, Ind.	U. S. Richards, Woonsocket, R. I.
Schuykill Valley Vet. Med. Assn.	Jan. 14, 1916.	Reading, Pa.	C. R. Pottelger, Reading, Pa.
South Dakota Vet. Med. Assn.	July 11, 1916.	Lake Madison.	S. W. Allers, Watertown, S. D.
Southern Aux. Cal. State Vet. Med. Assn.	June 21, 22.	Los Angeles.	J. A. Dell, 16th & Pacific, Los Angeles
Tenn. Vet. Med. Assn.	Nov. 8, 9, 1916.	Humboldt, Tenn.	F. W. Moran, Chattanooga, Tenn.
Texas Vet. Med. Assn.		Not decided.	Allen A. Foster, Marshall, Tex.
Twin City Vet. Med. Society.	Once a month.	St. Paul.	C. C. Palmer, St. Paul, Minn.
U. S. Live Stock Sanitary Assn.	Dec. 1916.	Chicago.	J. J. Ferguson, U. S. Yards, Chicago.
Utah Vet. Med. Assn.	Feb. 5.	Logan, Utah.	E. P. Coburn, Brighton City, Utah.
Veterinary Assn. of Saskatchewan.		Regina, Sask.	R. G. Chasmar, Hanley, Sask.
Vet. Med. Assn. of New Jersey.	2nd Thurs. in Jan.	Trenton, N. J.	E. L. Loblein, New Brunswick, N. J.
Vet. Med. Assn. of N. Y. City.	1st Wed. ea. mo. except July, Aug., Sept.	New York City.	R. S. MacKellar, 351 W. 11th St., N. Y.
Vet. Med. Assn. of Geo. Washington Univ.	1st Sat. each month.	Washington, D. C.	C. W. Rippon, 2115 14th St., N. W. Washington, D. C.
Vet. Med. Society Wash. State College.	1st and 2nd Tues. ea. mo.	Pullman, Wash.	Claude Holden.
Virginia State Vet. Med. Assn.	July 13, 14.	Ocean View, Va.	W. G. Chrisman, Blacksburg, Va.
Washington Vet. Med. Assn.	June, 1916.	Seattle, Wash.	Carl Cober, Bellingham, Wash.
Western N. Y. Vet. Med. Assn.	Last week in June.	Buffalo, N. Y.	F. F. Fehr, 38 Prospect Ave., Buffalo.
Wisconsin Vet. Med. Assn.	Jan. 16, 17, 18, 1917.	Menominee, Wis.	W. A. Wolcott, Madison, Wis.
York Co. Vet. Med. Society.	1st Tues. after 1st Mon. of each month.	York, Pa.	E. S. Bausticker, 325 Newberry, York, Pa.

SEPTEMBER VETERINARY MEETINGS

- Sept. 5, York County Veterinary Medical Society, York, Pa.
- Sept. 12, Northeastern Indiana Veterinary Association.
- Sept. 12, Keystone Veterinary Medical Association, Philadelphia, Pa.
- Sept. 12, Chicago Veterinary Society, Chicago.
- Sept. 13, California State Veterinary Medical Association, San Francisco.

- Sept. 18, B. A. I. Veterinary Association of South Omaha, South Omaha.
- Sept. 20, Los Angeles Veterinary Medical Association, Los Angeles, Cal.
- Sept. 27, Massachusetts Veterinary Association, Worcester, Mass.

Excessive heat killed over 300 horses, cows and pigs in Dubuque county, Iowa, during the first week in August.

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Missouri Veterinarians Hold Profitable Convention.

About sixty veterinarians of Missouri attended the meeting of the Missouri Veterinary Medical Association at Neosho, Mo., July 27 and 28, 1916. Two full days of absorbing program and most delightful entertainment made the time pass quickly and the visitors went home praising Neosho people and Drs. Morgan and Crumbaugh in particular.

All day Thursday was devoted to a business and literary session in the county court room and the following papers were rendered: "Atony of the Fore Stomach," by D. M. Howard, Appleton City; "Epizootic Cellulitis," Horace Bradley, Windsor; "My Experience with the Simultaneous Treatment of Hog Cholera," by Geo. F. Townsend, Sedalia; "Profitable Care of the Stallion and Jack," by H. J. MacCartney, Joplin; "Parasitic Diseases of Dogs," by J. C. Flynn, Kansas City; "Report of a Fatal Disease in Goats," by A. T. Kinsley, Kansas City; "Stangulated Inguinal Hernia in Geldings," by E. A. Shikles, Dearborn; "Infection and Immunity," by T. W. Churchill, St. Louis. Case reports were made by Drs. Horace Bradley, Arthur Trickett and A. D. Glover.

Thursday evening a banquet was served on the porch of the Big Spring Inn, followed by an interesting program. Dr. Luckey, state veterinarian, presented a plan for closer co-operation between veterinarians and stock producers which was discussed by Prof. E. A. Trobridge of Columbia and Dr. J. B. Misell of Louisiana and delegates from the Missouri Live Stock Producers' Association. This program was the beginning of a movement in Missouri for a better understanding between veterinarians and live stock producers.

All day Friday was given over to clinic at the hospital of Dr. D. B. Morgan. There was an array of good diagnostic, medical and surgical cases which gave everyone something to do. Some 25 or 30 cases were handled during the day and nearly half of them were surgical.

The election of officers resulted in the selection of the following: President, D. B. Morgan, Neosho; vice-president, E. A. Shikles, Dearborn; secretary-treasurer, Charles D. Folse, Kansas City. Three trustees were elected; for the district north of the Missouri River and west of Longitude 42, F. M. Cahill; for the district south of the Missouri River and west of Longitude 42, H. Bradley; for the district east of the Parallel 42, W. E. Martin.

The next meeting was set for July, 1917, to be held at Sedalia, Mo.

Secretary-Treasurer. CHAS. D. FOLSE,

A New and Complete Work on Lameness of the Horse

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This volume will contain about 400 pages and will be well illustrated. It deals specifically with diagnostic principles, symptomatology and treatment.

The following, which is abstracted from the table of contents, gives an idea of the range of subjects considered:

CONTENTS

SECTION ONE

Etiology and Occurrence of Lameness
Affections of Bones
Affections of Ligaments
Affections of Thecae and Bursae
Affections of Muscles and Tendons
Affections of Nerves
Affections of Blood Vessels
Affections of Lymph Vessels and Glands
Affections of the Feet

SECTION TWO

Diagnostic Principles

SECTION THREE

Lameness in the Fore Leg
Anatomo-physiological Review of parts of the Fore Leg
Shoulder Lameness
Fracture of the Scapula
Scapulohumeral Arthritis
Luxation of the Scapulohumeral Joint
Inflammation of the Bicipital Bursa
Contusions of the Triceps Brachii
Muscular Atrophy (Swinney)
Paralysis of the Suprascapular Nerve
Radial Paralysis
Thrombosis of the Brachial Artery
Fracture of the Humerus
Inflammation of the Elbow Joint
Fracture of the Ulna
Fracture of the Radius
Wounds of the Anterior Brachial Region
Inflammation and Contraction of the Carpal Flexors
Fracture and Luxation of the Carpal Bones
Carpitis
Open Carpal Joint
Thecitis and Bursitis of the Carpal Region
Fracture of the Metacarpus
Splints
Tendinitis
Chronic Tendinitis and Contraction of the Flexor Tendons
Contracted Tendons of Foals
Rupture of the Flexor Tendons and Suspensory Ligament
Thecitis and Bursitis of the Fetlock Region

Inflammation of the Fetlock Joint
Open Fetlock Joint
Open Tendon Sheaths of the Flexors of the Phalanges
Luxation of the Fetlock Joint
Sesamoiditis
Fracture of the Proximal Sesamoids
Inflammation of the Posterior Ligaments of the Pastern Joint
Fracture of the First and Second Phalanges
Ringbone
Sidebones
Navicular Disease
Laminitis
Calk Wounds
Corne
Cartilaginous Quitar
Nail Punctures

SECTION FOUR

Lameness in the Hind Leg
Anatomo-physiological Review of Parts of the Hind Leg
Hip Lameness
Fractures of the Pelvic Bones
Fractures of the Femur
Luxation of the Femur
Gluteal Tendo-Synovitis
Paralysis of the Hind Leg
Iliac Thrombosis
Fracture of the Patella
Luxation of the Patella
Chronic Gonitis
Open Stifle Joint
Fracture of the Tibia
Rupture and Wounds of the Tendo Achillis
Spring-halt
Open Tarsal Joint
Fracture of the Fibular Tarsal Bone (Calcaneum)
Tarsal Sprains
Curb
Spavin
Bog Spavin
Thorough Pin
Capped Hock
Rupture and Division of the Long Digital Extensor
Lameness from Interfering
Lymphangitis

The manuscript is now in the hands of the printer and the work will be ready for distribution soon. Price \$3.00. Advance orders received before the work is published will be filled for \$2.50.

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THE PAPERS SAY THAT—

Mouldy silage, fed to horses and cattle, has caused a great number of deaths in Illinois in the last few months. Professors Rusk and Grindley of the University of Illinois Agricultural Experimental Station are conducting a series of experiments with a view of determining, if possible what moulds or bacteria are causing the trouble.

South Dakota Veterinarians Meet.

The South Dakota Veterinary Medical Association met at Lake Madison, July 18th and 19th for its summer pleasure gathering. About forty attended the banquet, and the ladies, of whom an unusual number were present, organized themselves into an Association of Veterinary Dames.

Dr. Gould of Worthington, Minnesota, addressed one of the meetings upon some interesting surgical cases in his experience, and Professor Loren Atherton of the State Normal School presented a paper on parasites.

Several new applications for membership were accepted.

Very little attempt was made to transact business, and the doctors gave themselves wholeheartedly to swimming and the other attractions offered by the lake.

The next meeting of the association will be held at Sioux Falls in January.

The following query and answer appeared in Western Farm life:

Veterinary Services.

Western Farm Life Service Bureau:

A few days ago I had a horse cut on a barb wire very bad. The flesh on the front leg was torn off down to the knee. I wrapped a rag around the wound as well as I could and went with a neighbor for a veterinarian. It was midnight when the doctor came. I showed the doctor the horse, expecting he would take the rag off and take care of the wound. But this is what he said: "This has to be treated as an open wound. I will send you out some medicine." He never took his hands out of his overcoat to take the bandage off and look at the wound, charged \$12 for the trip and \$1.25 for medicine. Please let me know if I have to pay a charge like that.—E. J. M., Idaho.

The fact that the veterinarian did not examine or dress the wound does not release you from the obligation of paying for his advice and the medicine sent. However, you would not be required to pay an extortionate bill. Make inquiries in your neighborhood regarding the customary charges made by veterinarians, also write your State Agricultural College at Moscow, Idaho, regarding the customary charge made for such treatment, and offer the veterinarian the charges usually made for such a trip and the medicine supplied.

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A. T. Peters, D. V. M., Secy. & Gen. Mgr.

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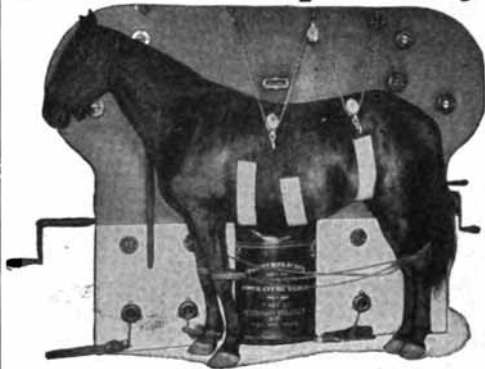
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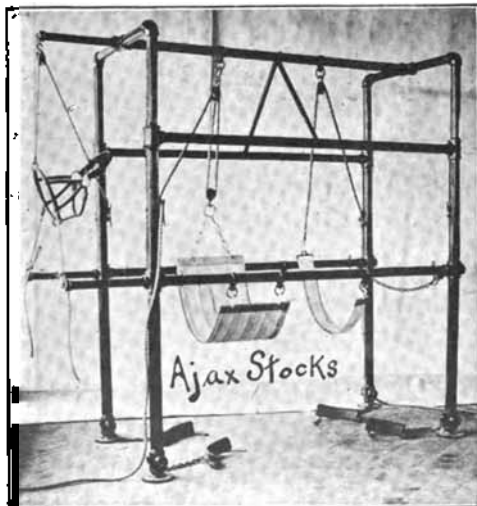


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tion, has been organized in New York. The purpose will be to establish hospitals for disabled horses in use in army in Mexico.

Louis Marshall, a farmer of East Aurora, New York, is in the hospital in Buffalo, N. Y., suffering with anthrax. It is believed he contracted the disease while skinning a cow that had died of anthrax.

Dr. Daniel W. Hurst, who is in the service of the Bureau of Animal Industry in Gage and Johnson counties, Nebraska, was married to Miss Julia Swan of Tecumseh, Nebraska, July 20th. The Journal extends best wishes.

Dr. W. H. Rockey, formerly of Punxsutawney, Pa., is now located in Dubois, Pa., having taken over the practice of Dr. F. A. Hamilton, who died recently.

The United States government bought 3,000 horses in the East St. Louis market in the four weeks prior to July 20. Uncle Sam is buying better stock than are the foreign nations.

In the will of a wealthy New York woman who died recently, \$25,000 is bequeathed for the care of a pet horse.

Dr. Quincy Dobbins of Bedford, Ind., suffered a severe attack of tetanus last month. The infection was contracted through a small cut on one of his hands while vaccinating hogs.

Dr. Matthew Barber of Roann, Ind., narrowly escaped death while swimming in a lake near his home. A companion rescued him.

Dr. Andrew Connell filed a petition in the Chicago courts last month to obtain possession of his 14 months' old son. He alleged that the mother and her parents were holding the child illegally.

Prompt and efficient work on the part of men under State Veterinarian Dunphy cleaned up an outbreak of hemorrhagic Septicemia at Grant, Michigan, several weeks ago.

Dr. J. A. Kiernen of the B. A. I., delivered an address on the subject of "Tick Eradication" before the Southern Cattle-men's Association at their annual session in Shreveport, La., last month.

The hot wave the first week in August killed more than 1,000 horses in the city of Chicago.

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Five cows on the farm of Eli Wineka in York township, Pennsylvania, died after eating bug poison. The lives of a number of others were saved by the veterinarian.

The mid-summer meeting of the Wisconsin Veterinary Medical Association was held in Menominee, Wis., July 26-27. It was one of the best sessions the association has ever had. About seventy-five attended.

The forenoon session was occupied by the reading of the reports of the various committees. Mayor J. R. Matthews of Menominee extended a greeting to the visiting veterinarians in behalf of the city. Dr. L. J. O'Rielly of Merrill, President of the Association, responded in behalf of the society. The afternoon was consumed in the reading of a number of excellent papers, among them being one by Dr. S. H. Ward, State Veterinarian of Minnesota. Dr. C. E. Cotton and State Veterinarian O. H. Eliason were among those who spoke at the evening session.

On the second day a splendid clinic was held at Dr. J. D. Lee's place.

The Commercial Club of Menominee aided materially to making the meeting a success.

Dr. Rufus Finley of Rockford, Ill., took a prominent part on the program at the Shriner's annual convention held in Buffalo, N. Y., in July.

Dr. S. H. Burgess, formerly of Morgan, Minn., has bought the practice and hospital of Dr. A. J. Murphy at Granite Falls, Minn.

The golden wedding anniversary of the parents of Dr. E. J. Netherton of St. Joseph, Mo., occurred August 2. Several hundred guests attended a celebration held at Galliton, Mo.

Dr. E. J. Williams, member of the 1916 class of the University of Pennsylvania, has engaged in practice at Huntingdon, Pa.

Dr. W. Lester Hollister of Avon, Ill., is conducting a campaign to bring the next meeting of the Mississippi Valley Veter-

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APPOINTMENT OF COMMITTEE ON LIVE STOCK SANITARY AFFAIRS.

The Secretary of Agriculture has appointed the following named members of the Bureau of Animal Industry as an advisory committee on Live Stock Sanitary Affairs:

Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, Chairman.

Mr. Geo. M. Rommel, Chief, Animal Husbandry Division, Bureau of Animal Industry.

Mr. B. H. Rawl, Chief, Dairy Division, Bureau of Animal Industry.

Dr. R. A. Ramsay, Chief, Field Inspection Division, Bureau of Animal Industry.

Dr. R. W. Hickman, Chief, Quarantine Division, Bureau of Animal Industry.

The committee will act in an advisory capacity on all live stock sanitary questions and will consider such matters as may be referred to it by the chairman or by the secretary. Also on its own initiative it will consider related questions, suggest means for the control and eradication of animal diseases, and recommend such measures as seem best suited for live stock sanitary control work and for the general welfare of the animal industry.

Heat killed twelve horses in a single day in the vicinity of Rochelle, Ill., according to the report of a veterinarian. The cutting of oats was retarded because of the intense suffering among horses.

Sixteen head of cattle died from forage poisoning at La Costa, Texas, recently.

The Wisconsin state serum plant at Madison was completed and put in full operation last month.

The owner of a Cleveland, Ohio, cat and dog hospital has filed suit against a neighbor, charging that the latter maintains a nuisance. In the complaint he alleges that the neighbor's constant rattling of cans and bottles disturbs his patients.

Dr. Richard Grossman of Columbia, Ill., recently built a new hospital.

The Louisiana Live Stock and Breeders' Association held their annual meeting at the Hotel Youree, Shreveport, August 15. The convention was well attended, many veterinarians being present.

Dr. C. A. Hanson of Kindred, N. D., received an appointment to the army veter-

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Inflamed Glands

Periostitis

Bog Spavin

Capped Knee

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Harness Galls

Bruises



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American Journal of Veterinary Medicine

9 South Clinton St

CHICAGO

inary corps last month. He was ordered to Ft. Sam Houston, Texas.

A recent mysterious outbreak among cattle at Goldendale, Wash., is being investigated by Dr. Arthur C. Brown of Vancouver.

\$5,000 has been raised by the Animal Protective Association of Cleveland, Ohio, and will be spent in building and equipping a hospital for cats and dogs.

Griswold, Iowa, had a real mad dog scare several weeks ago. A number of dogs, believed to be suffering from rabies, were killed.

Dr. Oscar Fleming, aged 30, a veterinarian of Vienna, Ill., was instantly killed when his automobile turned over on him.

The Southern Illinois Veterinary Medical and Surgical Association held its semi-annual meeting at Centralia, Ill., August 1st and 2nd.

Mrs. Lily Lewis of Sewall, Iowa, was bound over to the federal court by U. S. Commissioner J. C. Hunt, August 3rd, charged with a conspiracy extending over



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Iowa and several other states to fraudulently obtain money from insurance companies. It is claimed the organization insured blooded horses, poisoned worthless animals and substituted their bodies to get the insurance. The dead horses, it is alleged, were found under trees with the bark stripped off and the claim in each case was that lightning had killed the animals.

Dr. Williams of Plymouth, Ill., recently operated on the \$20,000 racing stallion, Axtein, for rupture. This horse belongs to Sam Harris of Plymouth and won the grand circuit race at Lexington, Ky., last year. Many rank him among the fastest horses that ever raced.

The dairy department of the Iowa State College will conduct a milk contest at the dairy cattle congress to be held at Waterloo, Ia., October 2nd to 8th. Milk inspectors in eighteen cities of the state will select milk from the wagons on the streets and send it to the laboratory at Waterloo. Samples will also be sent from the smaller towns by the state dairy inspectors. By selecting the milk in this manner at random, it will be representative of the product as it goes to the consumer. Heretofore, it has been the practice at these milk con-

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tests to have the dealer submit his own samples, which made it possible for him to use special precautions in selecting the particular specimens entered, and they did not represent the quality of milk he was delivering to his customers.

Thirty-one head of pure bred cattle dropped dead within a radius of five rods from the water tank on the farm of John Wieck, near Grand Mound, Iowa. Veterinarians are investigating the cause, and a sample of the water has been sent to the state chemist for analysis. The cattle were valued at \$3,000.

Dr. F. A. Wilson of Green Bay, assistant state veterinarian, recently discovered an outbreak of glanders on a farm in Brown County, Wisconsin. Two horses were condemned and disposed of.

Dr. Fred Wirt, in charge of tick eradication work in Assumption Parish, Louisiana, reports that over 2500 head of cattle were dipped in that parish during July.

In Greater New York, nearly 90,000 cats were destroyed by the Society for the Prevention of Cruelty of Animals since the

first day of July, as many as 6700 being killed in one day. This slaughter was due to the story which gained general circulation that cats were carriers of infantile paralysis. Mr. W. K. Horton, general manager of the society, states that the sacrifice was entirely unnecessary as there is no competent authority for the charge that cats communicate this disease.

Glanders killed only half as many horses in Boston during the last twelve months as it did in the preceding year, according to Dr. Lester H. Howard, commissioner of animal industry, who attributes this decrease in the prevalence of the disease to the closing of the public watering troughs. The public watering fountains for horses were closed and faucets were installed at the same locations, from which team drivers watered their animals by means of individual pails.

Dr. E. H. Agnew, formerly of Oregon, Ill., has moved to Madison, Wis., where he has secured a state appointment.

Dr. E. C. W. Schubel, formerly located at 811 Golden Ave., South Bend, Ind., is now with the Universal Serum Co., First St. and St. Clair Ave., East St. Louis, Ill.

Dr. E. Baughman, Pres. & Mgr.
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No. 10

Enterio-Hepatitis or Black Head in Turkeys*

By CHAS. H. HIGGINS, Ottawa, Canada

Pathologist, Biological Laboratory, Health of Animals Branch,
Department of Agriculture

IN presenting a paper before your organization, it is fitting that I mention very briefly the history of our connection with Enterio-hepatitis or Black-head in turkeys.

Our serious investigations were first undertaken in 1905, and there have since been identified with this work under my direction, Dr. E. A. Watson, until recently in charge of the Veterinary Research Laboratory, at Lethbridge, Alta., but at present overseas; Dr. S. Hadwen, in charge of Veterinary Research Laboratory, at Agassiz, B. C.; more recently Dr. A. B. Wickware, at present attached to the laboratory staff, and Mr. Norman Guiou, who is now completing his medical course at McGill University.

While we have been interested in the study of this affection for such an extended period, our work until 1913, was undertaken only at such intervals as our other laboratory duties permitted. We, and, in fact, the whole poultry industry, are indebted to the pioneer work of Theobald Smith, now Director

of Animal Research of the Rockefeller Institute of Medical Research, which was undertaken when he was pathologist of the United States Bureau of Animal Industry, published in 1895, this being the foundation upon which all research on this disease since undertaken has been based. Some individuals have not been in accord with his findings, but the work done at this laboratory has confirmed these. We have not been able to substantiate the data put forward by Hadley, that coccidia are responsible for the lesions observed. We have, however, seen coccidial diseases complicating many cases of enterio-hepatitis, and, on the other hand, we have studied many cases of enterio-hepatitis in which coccidia could not be demonstrated. I would lay particular stress upon these facts, as material for our studies has been secured from such widely different sources, extending from New Brunswick in the East, to British Columbia in the West. We have always been able to demonstrate the parasite recognized under the name of "Amebae meleagridis" and described by Theobald Smith.

*Presented at the convention of the American Association of Instructors and Investigators in Poultry Husbandry, at Columbus, O., August 1916.

So much has been written upon this disease, from the standpoint of the practical poultryman, that I will not endeavor to cover all of the ground, as such a course on my part would merely result in the repetition of data already familiar to you. In 1910 our investigations had progressed to such a point that we were of the opinion that the disease could be avoided, providing artificial methods of incubation and brooding were adopted. This was in direct opposition to the advice of the various turkey experts whom we consulted, they intimating that the natural method of incubation and brooding only would prove successful in the end. Notwithstanding the fact that the scheme which we proposed following was adversely considered by poultry experts, we knew that the technical points which we wished to study could be undertaken in no other manner, therefore, with the consent of the Veterinary Director General, our work progressed. Success in a minor degree attended our efforts, and in 1913 we were able to enlist the co-operation of the Poultry Division of the Experimental Farm System. In 1914, our experiments were repeated upon a somewhat larger scale. In 1915 the care of the young stock was taken over by the Poultry Division of the Experimental Farm System, as well as the entire number of eggs secured during that season.

From the experiments conducted we devised what is now termed the "Biological Laboratory System of Raising Turkeys," believing that this should prove of practical benefit to all who care to undertake turkey raising. The details of this method are available in Bulletin No. 19 of the Health of Animals Branch series, and can be secured by application to the Veterinary Director General, at Ottawa, Canada. When applying for this bulletin, Bulletin No. 17 should also be asked for, as this contains much of the prelim-

inary data upon which we based our detailed system.

During our experiments, which we have above very briefly outlined, many research problems have been taken up. We have studied the various parasites observed in the intestines of affected birds with a view to determining whether or not they were in any way concerned with the occurrence of the disease. Our results lead us to the belief that no parasites which we have observed are concerned in this affection, save the *Amebae meleagridis* described by Theobald Smith.

At one period of our experiments it seemed absolutely essential that we have a means for the accurate diagnosis of this disease. This being the case Mr. Guiou undertook, during the summer of 1913, an extended investigation upon this feature. He endeavored to perfect a method for the serum diagnosis of the affection. The results, while not altogether of as satisfactory a nature as we desired, did, however, indicate that providing one had ample time there would be little difficulty in perfecting the method upon which we were experimenting. This used what is known as the "serum test" or the complement fixation test as a basis. For an antigen Mr. Guiou perfected a liver extract made in much the same manner as is the extract used in the diagnosis of syphilis in the human being. The greatest difficulty which we experienced in this work was the securing of birds known to be free from infection to control our results. We had at this time but a single bird for this purpose, and Mr. Guiou found that the blood of this bird constantly failed to fix the complement, whereas the blood of birds known to be actively infected, on the other hand, gave us, at all times, positive results. We had in other birds, concerning which it was a question as to whether or not they were infected, variable results. After a season's work in this direction we decided that the purely technical knowledge to be se-

cured could add but little to the practical knowledge of the disease, which was held by all interested to be of first importance. Therefore, in our next season's work Mr. Guiou refrained from experimenting on similar lines, devoting his entire time to practical features, with the result that we now believe that further ravages of the disease may be controlled by the rigid adherence to the Biological Laboratory System of raising turkeys.

During the summer of 1913, in addition to our extensive blood work and parasitic investigations, we also undertook experiments with a view to securing a means of treating affected birds. We did this, as we were then of the opinion that if our efforts in raising healthy stock were unsuccessful, we should possess a means of treating birds actually affected in such a way that they could be carried to a marketable age without serious loss in flesh, and without representing lesions which could be considered dangerous to human health when the birds were consumed. Following the work done upon the control of human amebiasis, we experienced with emetin, both administered *per os* and hypodermically. When administering by the mouth we used keratine coated pills, with a view to carrying this pill beyond the point where its effectiveness would be destroyed by the digestive juices in the gizzard, our aim being to get them into the small intestine, where their full therapeutic action could be secured. The results from these pills were not very satisfactory. With our experiments in the hypodermic injections of emetin we were somewhat more successful. In a number of cases we believe that the course of the disease was checked or completely aborted, but we cannot leave the description of this method without mentioning the fact that in a number of cases death resulted from an overdose of emetin.

The labor and care entailed in the administration of emetin, either

through pills or hypodermic injection, were so great as to render treatment in this manner out of the question for ordinary application. The cost also was a factor that could not be wholly overlooked when considering the requirements of persons raising 100 or more turkeys. We have used extracts of diseased tissues after passing through fine filter with variable results. The detail required in all the work indicated that the cost of treatment would be greater than the value of the birds, therefore, it was discontinued.

In the progress of our investigations, which have been very superficially mentioned, we were endeavoring to eliminate such factors as could not readily be applied in the raising of turkeys by the intelligent poultryman whose first consideration is the profit which he may secure from the investment of his money, time and labor. We realize that unless his time were profitably employed he could not be expected to be enthusiastic about turkeys as a source of revenue. Unless labor, conducted as a result of scientific investigations, proves profitable to the man performing the actual routine duties, the results of the research cannot be looked upon as wholly satisfactory, even though they are but a step toward the ultimate success which may later be obtained.

We believe that we have by our research and practical experiments been able to present a sufficient amount of data, the results of which will be very far-reaching. The full details of our practical recommendations may be found in the bulletins above referred to.

Of particular interest to the veterinarian who is engaged in food inspection is the report of the Connecticut Agricultural Station on Food Products and Drugs. Therein is an analysis of canned fruit, infant foods, liquors and proprietary medicines.

Simultaneous Vaccination Against Blackleg*

By F. S. SCHOENLEBER, Manhattan, Kansas

THE veterinarian of today who is not seriously considering preventive medicine in all its phases is a back number. He who does not practice vaccination to the limit is treating neither his clients nor himself justly. Serum therapy today occupies a very unique position in veterinary medicine. Show me a man who is constantly looking for a vaccine or serum for the treatment of disease, and I will show you a successful practitioner.

The tendency of the present age has served as a stimulus to many investigators. As a consequence new vaccines and sera, some good, others bad, are appearing every little while, some, of course, disappearing just as rapidly as they appear.

A new serum recently announced has already saved many sleepless nights of a number of veterinarians. I refer to the Kansas blackleg serum.

To go into detail and enumerate the individual experiments carried out with this material would occupy too much of your time. Suffice to say that this serum has been used on over 25,000 head of calves with practically no loss whatever. When used in herds where the disease was present and in which from one to seven calves were lost daily from blackleg, there was not a single loss after twelve hours following administering the serum. Given intravenously in large quantities, 1500 to 3000 cubic centimeters, and also intra-muscularly around the point of infection, it has saved a number of valuable animals very sick with the disease. It has one drawback—the immunity conferred seems to last only a few days. It is, therefore, necessary to follow the administration of the serum with a strong dose of virus. This has, so

far as we know, imparted immunity for over twelve months. The serum is successfully used upon calves of all sizes and conditions, and following all kinds of other vaccinations and treatments.

There are still a few minor points unsolved in the use of these materials, but since time is the main factor involved, they will eventually clear up themselves. For instance, we do not know how long the immunity will last in a nursing calf. We do not know whether or not it will permanently immunize every calf.

We do know this, however, from our own laboratory and field tests that no blackleg vaccine upon the market today is in every case reliable and dependable. We know, furthermore, that no blackleg vaccine can be made which will at the same time not kill and still permanently protect every calf.

Kansas blackleg serum is the sterile filtered serum of animals highly immunized against blackleg by means of cultures of the blackleg organisms (*Bacillus Chauveauxi*). It is free from all organisms and can be safely used on the finest pure-bred animals. The serum not only will protect animals against blackleg, but when given in its early stages, will often check the disease.

It is used, first, when the disease has appeared in the herd. It will immediately check its progress.

Second, on calves which have access to badly infested premises, or where blackleg has recently appeared in the immediate vicinity or in the same pastures. This serum will protect for a short time, ten days to two weeks, and for a long period of immunity must be followed in three days with a very strong specially prepared dose of vaccine. This specially prepared vaccine is much stronger

*Presented at the Missouri Valley Veterinary Medical Association Meeting, Omaha, Neb., July, 1916.

than could be used safely on calves without the serum, as it would very likely produce blackleg in some of the calves that had not first received the serum three days previous. It is perfectly safe, however, when given according to directions, as we have demonstrated by using it on over 25,000 animals.

Third, the serum should be used on very valuable calves, as it protects the

animal against latent or undeveloped cases of blackleg which frequently show up in apparently perfectly healthy animals after an ordinarily safe dose of vaccine has been used.

As indicated above as much as 3000 cc have been given to one animal; an overdose seems to be impossible, acting somewhat upon the principle of the anti-hog-cholera serum and virus.

The Preparedness of Nature—Phagocytosis

By **W. H. BAILEY, D. V. M., St. Joseph, Missouri**
Instructor, St. Joseph Veterinary College

THIS subject has no doubt received the reader's attention elsewhere and on a more elaborate scale, however, it is a subject which we may rehearse to mutual advantage. No claim for originality is made.

Ehrlich, Metchnikoff, Wright, Noguchi, Ricketts and Dick, have been freely consulted.

Professor Eli Metchnikoff's great work concerning phagocytosis, remains a living monument to him; to us, a scientific insight to one of nature's most important methods in her marvelous defense against pathogenic infection.

Phagocytosis is a protective function of a specialized group of cells. Essentially, it consists of the diapedesis and migration of leukocytes into the tissues, furnishing protection to the body against various organisms, toxins and viruses, by ingestion, absorption and digestion of these injurious substances.

Primarily there are three kinds of phagocytosis; nutritional, resorptive, and protective, the latter being of most practical interest to us.

Nutritional Phagocytosis

Metchnikoff found nutritional phagocytosis most highly developed in the

unicellular animal and vegetable organisms.

The ameba and myxomycetes furnish typical examples. These organisms envelop suitable living or dead plant and animal substances by throwing around them protoplasmic arms (pseudopodia).

After envelopment, a vacuole, which may be either acid or alkaline in reaction, forms around the ingested material. Digestion is then accomplished through the action of intracellular ferments (enzymes).

The purpose of the acidity, or alkalinity, of the vacuole, is to furnish the necessary activator (kinase) to the intracellular ferments (enzymes).

Metchnikoff's study of low invertebrates, reveals that in them, digestion is accomplished by specialized epithelial cells (phagocytic in action).

In higher invertebrates and all vertebrates, phagocytic cells are abundant, but have no direct relation to nutrition of the body.

Chemotaxis

In the study of cell activity, Metchnikoff found a condition which has been termed chemotaxis. Myxomycetes move toward a weak salt solution,

(positive chemotaxis) and away from a strong solution (negative chemotaxis).

Thus, a cell will move toward and engulf a substance for which an affinity (chemism) exists; it likewise repulses toxic substances.

It will be noticed later that this positive chemotaxis (affinity, chemism) on the part of the leukocyte is due to a substance known as opsonin.

Resorptive—Phagocytosis

During the metamorphosis of certain invertebrates, the larval tissues are enveloped and digested by wandering phagocytes.

In old animals, the ganglionic cells are atrophied, due to the action of certain mononuclear phagocytes (neurophages).

Again, certain epithelial cells, (chromophages) phagocytic in nature, existing in the hair in a latent condition become active with old age and digest the hair cell pigment, leaving the hair white or grey.

Hence, the foregoing represents three common forms of resorptive phagocytosis.

Protective Phagocytosis

When foreign red blood cells are injected into an animal, an increase in phagocytes occurs which results in the ingestion and digestion of such foreign cells. Thus, leukocytes having the power of so destroying foreign red blood cells, may contain a special ferment (hemolysin). The lymphatic organs and tissues, particularly the lymph nodes and spleen are concerned in leukocyte production. Thus, if lymphatic tissue is macerated and an extract made from it and added to an inactivated hemolytic serum, the serum becomes actively hemolytic.

Thus, it may be reasoned that the complement (cytase) in hemolytic serum comes from the leukocytes. Accordingly, Metchnikoff believed that all cytolytins are produced by certain

phagocytes, (macrophages). Metchnikoff separates phagocytic cells into two kinds:

First, macrophages, which consist of large lymphocytes and mononuclear leucocytes. These destroy foreign cells of various kinds. They are cytolytic in function.

Second, microphages, consisting of polymorphonuclear leucocytes which have an anti-toxic function.

Each of these, (macrophages, microphages) possess a special ferment or enzyme which is contained within their protoplasm.

The enzyme of the macrophages is termed macro-cytase, it destroys foreign cells and therefore is a cytolytic enzyme.

The enzyme of the microphages is termed micro-cytase, it neutralizes toxins and thus is an antitoxic enzyme.

These two kinds of enzymes are liberated through injury to the phagocytes. The injury may be caused by the action of foreign cells (bacterial or otherwise) and certain toxins.

The macro- and micro-enzymes of the white cells are specific in their action; thus the normal and immune cytases in blood serum are analogous to the normal complements and specific (immune) antibodies of Ehrlich.

Opsonins, Normal and Specific Immune

Wright and Douglas in 1902 described valuable observations they had made concerning phagocytosis. It was observed that in most instances, the leukocytes would not destroy micro-organic (and some toxins) in the absence of serum. This proved that there was present in the serum something which rendered micro-organisms attractive for leukocytes (positive chemotaxis).

Wright and Douglas gave the name, opsonin, to this something which exists in the blood serum, seemingly for no other purpose than to prepare micro-organisms for phagocytosis.

All normal serums contain opsonin. Immune serums contain opsonin which may be considered as concentrated in quality, rather than increased in quantity. The opsonin of immune sera is specific.

The degree of phagocytosis, which depends upon the quality of the opsonic substance present in the serum, is known as the opsonic index.

If upon microscopic examination of a patient's blood, plus a suspension of the causative organisms, it is found that there is none, or only slight ingestion of micro-organisms by phagocytes, the patient is said to possess a low opsonic index. The blood of a normal individual is of course examined at the same time, so as to determine the relative degree of phagocytosis of the patient's blood, to that of normal blood.

If examination shows considerable or excessive ingestion (phagocytosis) of organisms, the patient possesses a high opsonic index.

Thus, in treating infections with bacterins, serums or vaccines, by determining the opsonic index from time to time, reliable information may be gained concerning the decrease or increase of the body's resisting power towards the existing infection. One is also able to give properly regulated doses of these biologicals.

Opsonins are thought to be of two kinds, a normal opsonin, and an immune opsonin. Example: Human serum contains normal opsonins for the organisms which produce pneumonia, pyogenic infections, etc. Immune opsonins are those produced as the result of infection (natural immunization) or by artificial immunization (vaccination).

Sometimes, organisms develop a certain degree of resistance to phagocytosis, sufficient to practically destroy nature's defense.

Wright's normal and specific immune opsonins are analogous to the

normal complements and specific immune substances (antibodies, etc.) of Ehrlich; also the microcytase of Metchnikoff which acts upon toxin is analogous to the antitoxic property in serum, while his macrocytase, which acts upon foreign cells by cytolysis is analogous to Ehrlich's hemolysin bacteriolysin, etc.

Summary

a. Animals of high resistance to a certain organism destroy the organism rapidly by phagocytosis.

b. Leukocytes ingest bacteria, though not in all cases do they destroy them, thus the leukocytes may become pernicious because they may carry the infection to other parts of the body.

c. Leukocytes may excrete their germicidal properties (cytases) into the blood serum.

d. They may absorb bacterial toxins and destroy them.

e. Sometimes, serum free leukocytes may possess antitoxic and anti-bactericidal properties. This is explained by Ehrlich's tissue-cell-antibody production (Ehrlich's side chain theory of immunity).

f. Leukocytes entirely separate from serum will not destroy micro-organisms, nor absorb and neutralize toxins. The substance in immune serum which prepares micro-organisms and their toxins for phagocytic action is termed opsonin; it is specific.

g. The polymorphonuclear leukocytes migrate to the site of an acute inflammatory process and manifest great phagocytic activity.

In general systemic febrile conditions, these leukocytes absorb toxic end-products.

In localized acute inflammatory processes, the semi-solid exudate which fills the intercellular spaces of the inflamed area is liquefied by the polymorphonuclear enzyme (micro-cytase), and the digested elements eliminated via the lymphatic route.

By the accumulation of polymorpho-

(Continued on page 806)

Relation of the Veterinarian to the Live Stock Industry*

BY R. FRED EAGLE, D. V. M., Oklahoma City, Okla.

IN HIS relation to the development and conservation of our live stock industry, the veterinarian occupies a most important and unique position. The attitude with which his importance is accepted by live stock owners, various legislative bodies and others is dependent entirely upon the veterinarian himself. It is he, and none other, that is responsible for the standing of himself and the profession he represents in any given community.

His standing professionally is entirely dependent first, upon his social standing, and next upon the scope of his scientific knowledge along with his ability to practically and successfully apply such knowledge to the best interests of the live stock industry.

Socially, he should command the respect of his fellow citizens, and his name should be esteemed among his acquaintances as a man who is an enemy of dishonesty, intemperance, indolence and immorality. It has been well said that "Habits make the man," and that "A man is judged by the company he keeps." He should cultivate the acquaintance and association of our best citizenship and hold at a distance those who do not possess the requisites necessary to such citizenship.

Professionally, he should be ethical and keep informed on all scientific matters necessary to make him thorough and efficient in the practice of his profession. He should not deceive himself by assuming that the empiric or commonly styled "horse doctor" is only a non-graduate veterinarian. The high esteem in which some empirics are held is due to their consideration for

their patrons. It is my personal opinion some graduate veterinarians place themselves upon a lower plane than the empiric by their gross indifference to the standards that are common to the honest, moral, sober business man. Failure to adhere to such standards brings criticism and disrespect not only to the individual, but upon the veterinary profession in general. It is sincerely hoped that you will religiously guard against any misconduct on the part of your members to the end that there will be a hastening of the veterinary millennium and we will soon awake to find ourselves in every way equal to the other scientific professions of America instead of being considered on the deplorable level of a bunch of horse doctors. The veterinary profession is an honorable one and a truly scientific one in every detail. If it is not so regarded in your various communities it is your fault and not that of the profession. You will not elevate yourselves or your profession to the point of commanding the respect due it from stockmen, live stock boards, legislative bodies and others by your constant knocking on fellow practitioners, either graduates or non-graduates. Neither will you obtain for it its proper standing by picturing high ideals at conventions and subsequently leaving such ideals behind when you return to your respective locations.

The veterinarian's knowledge of feeds and feeding and breeds and breeding, without consideration of his ability to successfully treat diseases and relieve injuries, and further to control or protect against infectious diseases, should place him in the en-

*Presented at annual meeting, Oklahoma State Veterinary Medical Association, Oklahoma City, July 19, 1916.

viable position of a constant advisor to the up-to-date live stock raisers. On the other hand, it appears to be a fact that the rank and file of veterinarians do not avail themselves of the many possibilities in their relation to the live stock industry by keeping well informed on the animal husbandry subjects. How often does the scientific breeder seek the advice of the veterinarian before mating his animals? I regret to state that my experience indicates it is very seldom. There must be a reason and I leave it to you to answer.

The most prosperous live stock owners in America fell heir to their prosperity through a pure-bred herd. Likewise we find the most prosperous veterinarians where the value of pure-bred herds makes it worth while to the owners to employ the best veterinary talent. It is therefore obvious that the veterinarian should develop a most important relation to the live stock industry of this state by availing himself of the many possibilities for both himself and the live stock owners in developing more pure-bred herds.

The relation of the scientific veterinarian to the live stock industry through his knowledge of feeds and feeding, should greatly increase the demand for his services. While many breeders and feeders have been thoroughly trained in the value of balanced rations, we find the uninformed constitute a major percentage of our live stock breeders and feeders.

In administering to the various diseases and injuries of live stock you bear a most important relation to the live stock industry. Your first thought and duty is to keep all individual animals or herds placed in your care in a healthy and thrifty condition. You should exhibit an interest equal to that of the owner in keeping his animals free from injury or disease. The veterinarian who limits his interests in the general welfare of his patrons to

monetary returns only is a hindrance rather than an asset to both the veterinary profession and live stock industry. Your relation to the live stock industry can easily be placed far below par by the lack of interest in matters of importance to live stock owners. Your services rendered should be of such a character that your bills will be met, with a spirit of true appreciation, rather than a reluctance on the part of the owners. Do not be afraid to enlighten your patrons relative to every detail as to the cause, remedy or prevention of animal diseases or affections. Familiarize them with the value of sanitation and preventive measures. In brief, discuss each case fully with them and make them know that their interests are your interests.

I would have you first get right with yourselves, and you will find that there is a wonderful future in this state for both the live stock industry and your profession. The live stock industry of this state will be in constant jeopardy if you are not right with yourselves as scientific veterinarians. The man who poses as a practicing scientific veterinarian and keeps himself only partially informed is placing in jeopardy the live stock dependent upon his services. The veterinarian who would for special discounts or other remunerative reasons, use in his practice inferior agents whether drugs or biological products, places himself in a position of accepting a bribe carrying with it the unquestionable savor of dishonorable and unprincipled dealings.

The State of Oklahoma owes to her live stock industry an unlimited and uninterrupted prosecution of any firm or individual who would be guilty of jeopardizing her live stock interests by giving or accepting such a bribe. Veterinarians in their relation to the live stock interests of this state are professionally and morally obligated to assist in apprehending and prosecuting such enemies of live stock conservation.

The stock owner is certainly entitled to this consideration if at any time it should come to your knowledge that such a practice actually exists.

This being a new state and the majority of our animals not being housed, there has arisen a mistaken idea that many of the animal plagues common in the Middle-West will not progress very rapidly among our herds. Regardless of this erroneous opinion we find that post-mortem records show bovine tuberculosis to be on the increase. The natural result will be that swine tuberculosis will increase due to the close association of the two species. To eliminate bovine tuberculosis, automatically eliminates swine tuberculosis. We find also that hemorrhagic septicemia is making inroads and that hog cholera is constantly present. Contagious abortion of cows is increasing and in one instance foot and mouth disease came very close to our borders. Glanders is present in some sections of this state and we find in other parts communicable parasitic diseases.

While the work of our state officials and others to effect a control and eradication of these diseases is commendable, yet I desire to sound the warning that unless each and every veterinarian is on the alert, we may find ourselves facing numerous losses from the ravages of animal plagues. Our aim should be to eradicate the small percentage of infective diseases that are now here rather than to confine ourselves to control work. If you are to bear your proper relation to the live stock industry of this state, you must keep yourselves familiar at all times with the symptoms and lesions of the various animal plagues common in the United States, thereby being in a position to recognize an outbreak at its beginning and give yourselves the advantage of immediate quarantine and rapid eradication. Our efforts should also be centered on re-

claiming the waste incident to those infectious animal diseases already in our midst. For example, we must control and eradicate contagious abortion as soon as possible.

Time will not permit going into the subject of infectious diseases and therefore a definite plan toward placing the veterinarian of this state in proper relation to live stock industry would not appear to be in order here.

As before stated, we do not seem to appreciate many of the facts relative to co-operation; co-operation among ourselves, co-operation with live stock owners, and co-operation with our state veterinarians, and state board of agriculture. I am familiar with the fact that you do not approve of some of the live stock sanitary regulations of the state board of agriculture, yet if you are justified in this disapproval it should not be carried to the point of jeopardizing our live stock industry by your failure to co-operate with the board to the point that will be found consistent with the ethics and practices of a recognized scientific association of veterinarians. I sincerely believe that when co-operation among ourselves indicates that the scientific veterinarians of this state have formed one solid powerful unit to develop and conserve our live stock industry, you will find not only the state board of agriculture but also our state legislature more than willing to not only accept your scientific views, but further, willing to place them in the form of laws and regulations that will mean prosperity to the live stock interests and proper recognition of the veterinary profession. The resources of this state are unlimited in the development of our live stock industry. Resources are unlimited for the development of your profession, when placed in the proper relation to the live stock industry. Will you take advantage of them?

Venereal Infections of Animals and Their Effects*

By DR. G. A. ROBERTS, Raleigh, North Carolina
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OUR observations, in various parts of the United States and numerous reports from this country and abroad, for a number of years, have indicated a rapid and extensive growth in the number of abortions in all classes of domestic animals, horses, cattle, sheep, swine, etc. But this is not all, for with the abortions, have likewise been noted a great number of retained after-births in cattle, due to the peculiar anatomical arrangement and a much greater number of sterilities in all classes of animals. Also, where the abortions have been most numerous in cattle, a granular inflammation of the mucous membrane of the vulva, and sometimes of the vagina, has appeared invariably. The fact that where any of the above troubles exist, the others being usually present, has led many investigators to look for a common cause for these phenomena.

The evidence points strongly to the possibility of a specific organism, the *Bacillus of Bang* (*B. abortus*), as the agent causing most of the abortions, early and late, in cattle, including premature births, still births and birth of weaklings; all retained after-births, with many inflammations of the uterus not attended by visible signs of retained after-birth, and a large percentage of all sterilities, both temporary and permanent.

The part played by this germ, if any, in the granular venereal disease, certain udder diseases, etc., has not been determined, but in any event, the term

"contagious abortion" is very inappropriate to indicate the total effects of this infection. Many other animals affected with venereal infection, neither abort nor show any other external evidence of infection, while, on the other hand, all of the above determined conditions may result from it.

Formerly, it was thought that the causes for abortion were almost as numerous as the abortions themselves, such, for instance, as fright, falls, injuries, green or moldy feed, cotton-seed meal, purgatives, etc. Also the so-called abortifacients as pituitrin, ergot, and gossypium had a like reputation, but none of these agents produce such results when desired, unless by coincidence the mouth of the uterus is mechanically opened or opened from result of uterine infection. In this way, some of the above agents may aid in precipitating an abortion, but it is doubtful if any one within itself is sufficient cause.

If one will visit an abattoir, after seeing the rough and excitable handling of cattle in loading, shipping, unloading, slaughtering, etc., and observe the number of pregnant cows killed, he will appreciate the necessity of other factors than fright and injuries for causing abortion. Again, if one will study the anatomy and physiology of the parts involved, he will note the wonderful provision nature has made for avoiding premature expulsion of fetus or embryo from the uterus. He will likewise observe difficulty in accounting for such accident on other grounds than infection or artificial opening of the mouth of the uterus. Abortions can be readily

*Paper read before the N. C. Academy of Science, April 28, 1916.

accounted for, however, from these latter causes.

The organism, *B. abortus*, may be found in the bodies of aborted fetuses and other infected ones, and in milk from many of the infected cows and in the abortion exudate within the uterus. Shroeder and Cotton found the organism in nearly 14 per cent of 217 samples of milk on the Washington, D. C., market, in 31 per cent of samples from 35 cows in one herd. In order that abortion shall occur, however, the organism must be within the uterus. It may get there possibly through the circulation, in the heifer infected prenatally or from contaminated raw milk, or get there through the vaginal route at the time, or before conception occurs. Even when lodged here, however, it may not be active enough or be specifically located so as to cause sufficient alterations near the mouth of the uterus to allow expulsion of the fetus.

The history of many herds shows as high as 50 per cent or more of heifers aborting during their first pregnancy, and often 50 per cent of all abortions in the herd are during first pregnancies. In most instances, the infected cow shows a growing tolerance so that there is less likelihood of aborting the second time, much less the third and rarely the fourth, although they continue to be carriers of the infection. The yearly number of abortions in many herds may be quite variable. Some years there may be no abortions or very few; the next year, all pregnant cattle may abort like a storm wave. The services of some bulls seem to be attended by more abortions than those of others, indicating a more virulent infection in some cases.

The recognition or diagnosis of this infection in a cow or herd is in most cases overlooked unless numerous abortions occur. As above indicated, however, many infected animals may never, or do not always abort. This lack of evidence of infection can readily be il-

lustrated in other infectious diseases, such as in many cases of tuberculosis, especially in cattle, where the infection may exist for a long time without showing any clinical symptoms. As yet, no satisfactory method for recognizing all infected cattle has been suggested, though many of them can be determined by subjecting the blood serum of such cattle to biological tests, as the agglutination and the complement fixation tests. If these tests are re-applied at frequent intervals, most cases of infection can sooner or later be detected.

Retained after-births are common only in cattle because of the peculiar anatomical connections between the maternal and fetal placentae. If abortions occur before about the fifth month of pregnancy, there will be little or no retention because of the slight development of the villous projections on the fetal placentae. On the other hand, the longer the fetus is carried, the more developed the villi, and with the resultant inflammatory products of the infection the greater will be the retention.

Sterility may be due to other causes than this infection, but investigators in this country and abroad, estimate ninety per cent or more of such due to venereal infection. In many herds, the losses are much greater from sterility than those resulting from abortions or retained after-births. The total losses from this infection to the cattle industry is unknown and difficult or impossible to determine, but it is perhaps safe to say that the losses in dairy herds are greater than from any other single infection.

The alterations resulting in sterility most often occur in the ovary, the uterus or vagina. In many cases of sterility, it is noted that a persistent yellow body (*corpus luteum*) exists in the ovary which probably produces an internal secretion inhibiting any egg production (ovulation). Again, many of these yellow bodies are observed in a state of cystic degeneration, which in

many cases, terminate in conspicuous cysts. Such animals are nearly always more or less continually in heat (nympromaniacs) and rarely conceive. Sterility of entire males is rare.

The mucous membrane of the uterus may be so altered as to prevent implantation of the fertilized ovum upon it or it may be dislodged and expelled at a very early period. This latter accident may not be noted by the herdsman and the case often be taken for one of sterility rather than abortion. Many cases of supposed sterility are, in fact, early aborters. The mucous membrane of the vagina may likewise be altered, or at least the secretions from it, so as to destroy the vitality of the male element. There is very little sterility of the male animal but many dairy men report 50 per cent of cows difficult to get with calf, and some report 75 per cent or more.

A personal investigation was made the past year of fifty herds in North Carolina, numbering 1,700 head of cattle, located at twenty-five points between the mountains and the coast. The results were similar to those obtained from like investigations in other states and countries, viz: that few herds are free from venereal infection. Laboratory tests were made of 203 samples of blood from cattle. The result was 65 per cent positive, 17 per cent negative and 18 per cent suspicious, making 83 per cent possible infection.

For comparison of a similar infection in the horse, the following history was obtained of the service of one stallion: During the year 1914, the horse was bred to 113 mares. Sixty-five of these mares became pregnant. Six of them were known to have aborted and it is possible that others did also. This number makes nearly 10 per cent abortions. Some foals were born dead, others lived only a short time. Forty-four of the mares were served two or more times and four of them were bred nu-

merous times during the summer and fall without result.

Likewise, observations and inquiries indicate similar trouble in hogs. The following letter was recently referred to the Veterinary Department of the Experiment Station: "I have had trouble with my hogs for more than a year. I have changed both sexes of my stock several times. They have free range of pasture, but my sows have trouble with their pigs. Some of them abort their pigs, others give birth to dead pigs and the pigs of others die when a few days or weeks old. Many sows I cannot get to 'catch' at all. I bought a male hog from the western part of the State some time ago and have had these troubles ever since."

Treatment for this infection and its manifold results is far from satisfactory, yet a few valuable facts have been determined both as to the fallacy of past suggestions and as to the agencies to be employed in the future. It may safely be stated that since the infection is so wide spread, and there is difficulty in recognizing the infection in many cases, it will be impossible to depend on purchasing only animals free from infection. It cannot, therefore, be eradicated by simply disposing of or isolating all aborting animals. Neither can the disease be controlled or eradicated by the use of the formerly advocated specifics, carbolic acid and methylene blue, administered as previously directed.

Its control will depend largely upon a knowledge of the sources of infection and other characteristics of the disease. In the first place, it must be borne in mind that the infection may occur in the animal before birth, or after birth from the ingestion of raw contaminated milk or from a service by an infected animal. Again, it must be borne in mind that abortions are usually confined to the first and second pregnancies and that after aborting once or twice, most of them seldom do so again

—a tolerance for the infection is assumed.

With our present knowledge, the control or partial control of abortions, retained after-births, and many of the sterilities will depend upon diligent flushings of the vaginas of the females and the sheaths of the males with mild antiseptics. The once popular "yeast culture" treatment for sterility was probably due to its antiseptic or neutralizing effect. Other agents, as milk curdled by the lactic acid organism, one-half of one per cent solution of Lugol's Solution and three-fourths of one per cent solution of lysol have been recently advocated for such purposes.

Diseases of the ovaries cannot be corrected, however, through vaginal

douches nor by internal administration of drugs. We have apparently obtained some good results, and others have made like reports, from surgical measures. These may consist, where only one ovary is involved, of removing the diseased ovary, or where one or both are affected, of the manipulation and massaging of the affected ovary through the rectum. This manipulation may effect an expression of a superficially located persistent corpus luteum from the ovary, the rupture of a thin walled cyst or the massaging may aid nature in making or hastening repair. If the animal remains sterile, following a reasonable number of treatments to correct the specific cause of the barrenness, then she should be disposed of for beef.

THE PREPAREDNESS OF NATURE.

(Continued from page 799)

nuclear leukocytes around the infected area, a limiting zone is formed, which prevents further invasion of the tissues.

Thus, the polymorphonuclear leukocytes constitute nature's "standing army" which attacks the invader (infection) immediately.

h. The mononuclear leukocytes constitute for the most part, nature's reserve army ("militia"). They are active in chronic infections and toxemias. As a weapon the mononuclear leukocytes are armed with the powerful enzyme, macrocytase. This enzyme is highly resistant to the effects of toxins, and it serves to bring about a rapid and complete digestion of the organized exudate.

The mononuclear leukocytes form a more resistant limiting zone to extensive invasion by the enemy (infection).

Thus, in acute infections, nature's soldiers are polymorphonuclear while in chronic infections, they are mononuclear.

In Conclusion

Sometimes, the therapist must assist nature in her defense; for although

nature always maintains an army for defense, her army is similar to that of nations, it is sometimes lacking either in munitions (enzyme quality) or in soldiers (leukocyte quantity).

Nature can only be assisted by the intelligent use of hyperimmune serums, vaccines, and bacterins, followed by a simple medication which will induce elimination, in connection with the provision of hygienic environment. Occasionally surgical procedure is beneficial, as in localized infections.

It is to be noted that the theories of Metchnikoff, Ehrlich, and Wright correlate each other, and since we are using successfully, specific serums, vaccines, bacterins and even glandular extracts, all of which were discovered by following the principles laid down by these scientists, we need no longer term them theories but call them by their proper names—facts!

The allies of nature's phagocytes, antibodies, etc., are sanitation and hygiene.

The state and federal law makers may some day put the production, distribution and administration of biologicals in the control of the medical and veterinary professions.

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The Influence of the Farm Tractor on the Number of Horses Kept on Farms

THE limitations of the self-propelled truck in urban transportation are fairly well determined, and unless decided improvement is made in these vehicles, we shall not expect to see the use of electric and gasoline driven trucks and light delivery wagons extend to very many lines of business in our cities in which they have not already proved profitable. Users and prospective users of these vehicles have come to know about what they may expect in up-keep cost and depreciation; how much wage a competent driver demands; cost of insurance and for incidental expense. They know also about what work the motor truck will accomplish in terms of wagons and horseflesh and in dollars and cents.

The use of motor delivery vehicles will, of course, increase as the business of a city extends and grows; but veterinarians who practice in cities have experienced the worst in inroads upon their practice from this source. In many instances the more careful attention which these city practitioners have given canine practice or the treatment of cattle diseases has more than offset the decrease in equine practice.

Under the title of "An Economic Study of the Farm Tractor in the Corn Belt," U. S. Department of Agriculture Farmers' Bulletin 719 summarizes the experience of nearly 200 farmers in using different sized tractors on farms of different acreage. The object of the bulletin is not to draw general conclusions from facts and figures, but to place before the farmer the experience of others and leave it to him to calculate the probable value of the tractor for use on his particular farm. Before citing the information, the investigators point out that data on the operation of tractors soon become obsolete because of the changes and improvements in these outfits as well as on account of change in prices and the cost of fuel and oil.

The chief advantages of the tractor for farm work, in the opinion of the operators, are (1) its ability to do the heavy work and do it rapidly, thus covering the desired acreage within the proper season; (2) the saving of man labor, and the consequent doing away with some hired help; and (3) the ability to plow to a good depth, especially in hot weather.

The chief disadvantages are difficulties of efficient operation and the packing of the soil when damp.

The purchase of a tractor seldom lowers the actual cost of operating a farm and its purchase must usually be justified by increased returns.

A tractor displaces on an average about one-fourth of the horses on the farm where it is used.

On a large number of Illinois farms brood mares constituted 33 per cent of the work

stock before the purchase of the tractor. The use of the tractor increased this proportion only 3 per cent.

The veterinarian who is practicing in the country should not experience any diminution in the volume of his practice because of the purchase of tractors by his clients, because of the ever-increasing demand for his services in treating cattle, sheep and swine. In fact, it is largely up to the country practitioner to anticipate a change in the character of his practice sooner or later, regardless of the

advent of the farm tractor, and if he is qualified to meet this demand, he will not only be prepared to broaden the scope of his work but will welcome such a change because of the opportunities to increase his earning capacity. It is not enough in this age that he be a "horse doctor" or "cow doctor" or both. He must be a doctor of comparative medicine and whether his patient be a horse or a hen, a sheep or a shoat he must possess accurate information regarding its ailments.

Rabies

THE following, which has been abstracted from a report of D. Konradi by the *Tropical Veterinary Bulletin* (London), is of considerable interest because of the substantiation of some startling theories which have been set forth from time to time by pathologists and investigators on the subject of rabies, especially those pertaining to the period of incubation of this disease:

(116) Konradi (D.). *Hérédité de la Rage. (Deuxième Note.)* [Transmission of Rabies by Heredity. (Second Note.)]—*Ann. Inst. Pasteur.* 1916. Jan. Vol. 30. No. 1. pp. 33-48.

The previous communications in connection with this subject were published by the author in 1904 and 1908. The present paper is published because since the latter date a number of authors have expressed views contrary to those held by Konradi, who brings forward further observations in support of his views.

In May, 1908, a child which had been bitten died after having shown symptoms of rabies in the Pasteur Institute at Budapest. The author received some "virus" from this case in carbolised glycerin. The sterility of the virus was tested by sowing it on agar, and it was then used for the subdural inoculation of a rabbit. Two guinea-pigs were also inoculated deeply beside the dorsal spine. The guinea-pigs died of rabies in 23 and 26 days. On the 12th and 13th days the rabbit showed an elevation of temperature, and after an interval of 20 days its temperature rose again. On the following day it gave birth

to three young ones which died on the fourth day. The rabbit died of rabies thirteen months later. Negri bodies were not discoverable in the brains of the young rabbits, but all three were used for the subdural inoculation of rabbits and guinea-pigs.

One of the guinea-pigs died of rabies on the 23rd day. The rabbit inoculated from the same brain survived for fourteen months without showing symptoms and was then used for another experiment.

Similar results were obtained with the animals inoculated from the brain of the second young rabbit, the guinea-pig dying from rabies and the rabbit surviving for six months and then dying of another disease.

The guinea-pig inoculated from the third rabbit died on the 26th day of rabies, and the rabbit died on the 725th day. Numerous Negri bodies were found in its brain.

The brain of the guinea-pig inoculated from the second young rabbit was used for the further inoculation of a guinea-pig and a rabbit. The guinea-pig died on the 28th day, and it was noted that symptoms appeared only on the day before death. The guinea-pig from which it was inoculated showed symptoms for five days. The rabbit died on the 529th day.

The author publishes a number of observations on similar lines.

Special interest attaches to a case related by the author in which a dog in apparent good health bit a child. Eleven days later it bit another dog while it was under the author's observation. The following day it showed furious symptoms and died. It was subsequently learned that it had bitten another dog fourteen days before its death. This dog died while under the author's ob-

servation on the 39th day with all the characteristic symptoms of rabies.

Upon this evidence the author points out that it is an error to suppose that if a dog lives for ten days after biting some one there is risk of rabies developing.

The author's conclusions may be summarised as follows:—

The virus of rabies is transmitted from mother to foetus, but if this occurs in series the virulence gradually diminishes. This appears to hold good for many species of animals:—dogs, rabbits, guinea-pigs, and probably other animals.

Guinea-pigs are preferable to rabbits for experiments of this kind, as they are more susceptible to rabies, and more rapid and certain results are thereby obtained. The late development of the disease in the rabbit probably explains the negative results obtained by other authors.

In any case the animals must be kept under observation for long periods.

The virus is present in the blood when the temperature rises. This is the first symptom in experimental rabies. The bites of dogs may be dangerous fourteen days before the appearance of clinical symptoms.

Our Statement Challenged

I HAVE been asked to cite something specific to justify the statement last month in the report of the Detroit meeting of the A. V. M. A. where we said of the plan of reorganization adopted by the association. "While acknowledged to be far from perfection, it represents a marked improvement over the old constitution and will constitute a basis for further improvement." The easiest way to justify this statement would be to cite the words of Chairman Cary when he presented the plan to the association and stated that he realized that it was not perfection nor anywhere near it but that he believed it an improvement on the old plan and susceptible of changes, in time, that would better it.

For a more detailed reply our inquirer might be cited the remarks of the writer in the discussion of this plan during its consideration. Since space will scarcely permit of reproducing these, we shall mention very briefly a few of the shortcomings of the new plan.

First; it does not democratize the organization. It leaves the control of the A. V. M. A. in the hands of the fortunate few, perhaps ten per cent of the membership; on an average, who are so situated as to be able to attend the annual meetings, while at the same time it depends upon the disfranchised ninety per cent of the association for financial, moral and political support.

Lesser objections may be cited from

the annual address of the president and the report of the secretary at the Detroit meeting. For example, no permanent headquarters is selected for the association; the association is not incorporated, and we understand cannot be under the plan of organization adopted; the president is not elected a sufficient time in advance of his installation into office to enable him to prepare to the best advantage for the duties that devolve upon him, particularly the appointment of committees; the term of office of the secretary is made one year, when the duties of the office are so multitudinous that no man can systematize the work of secretary and prosecute it to the best advantage during a single year; no effective co-operation between the office of secretary and editor is provided for. This is to mention only a few fundamental weaknesses.

Another weakness is incorporating the requirements for matriculation at the veterinary colleges and graduates from veterinary colleges in the by-laws. Past experience shows that the association has deemed it wise to make at least some changes in entrance requirements every year and to make frequent changes in graduation requirements. Heretofore these changes have been made on the recommendation of a committee appointed for the purpose of inquiring into the matter and furnished with funds sufficient to justify their making per-

sonal visits to the colleges for this purpose. Under the new plan, the whole matter is thrown upon the association to settle each year without the painstaking study of any committee into the actual requirements.

To cite one further matter pertaining to the veterinary schools, the association adopted as a standard a course consisting of four years of seven months each, beginning with the present college year. This notwithstanding practically all of the veterinary colleges had already issued their catalogs for the coming year to comply with a different standard and could not at this time change their schedule. This merely means that the association will have to "back up" on this matter at its next meeting or declare more than half of those matriculating in the freshman class of the various accredited colleges this year as ineligible for membership upon their graduation.

Of perhaps less importance than the general plan is the form of the new constitution. Its wordings and its provisions are obscure and ambiguous and must lead to endless controversy. To cite the single matter of election of members of the executive board, it was provided that a notice of the election should be sent each member six months before the annual meeting; that four months before the annual meeting, he shall send in his nominations; and that two months before the annual meeting, he shall send in his vote upon the nominee. No provision is made as to when the secretary shall send out the list of nominees, nor is the secretary authorized to use his discretion in the matter.

Again, six vacancies now exist on the Executive Board, and the By-laws provide that the secretary shall "at once" take the necessary steps for the election of the Executive Board. So far, well and good, but it provides that he shall take these steps in compliance with the provisions for the regular election, which provides that the first step shall

be taken six months before the next annual meeting. This would leave the association without an executive board for a period of ten months.

The constitution also provides that the president shall fill vacancies on the Executive Board until a special election can be held. Let us assume that President Cotton will appoint the six members of the Executive Board immediately. Then, what follows? The constitution says that they shall hold their office until a special election is called to fill the vacancy, but in this instance, it provides that the secretary shall not hold a special election but a regular election, and if he did hold a special election, it would take at least four months to hold it in accordance with the constitution and then it would be exactly time to issue the call for the regular election.

Still another contradiction—the constitution provides that the secretary shall at once proceed with the election of an Executive Board, and at the same time it provides that the sixth member of the executive board shall be elected at the annual meetings. How can the secretary proceed "at once" to carry out this provision of the by-laws?

These things and many others like them may not be vital, probably are not vital, but they could easily have been avoided. They are cited merely to support the writer's contention that the constitution was hurriedly and imperfectly drafted. It was the best that could be done under the circumstances, but a work of this kind should be prepared months in advance, weighed, considered and perfected before being presented to the Association for adoption.

As stated in the original article, the constitution marks a step in advance, but a longer and more precise step might easily have been made. Through the slow process of amending, it may take several years to get what easily might have been procured by a single action.

Department of Surgery

By L. A. MERILLAT, Chicago,
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Diagnosis of Dental Disorders

IT HAS always seemed to the writer that disorders of the teeth were not diagnosed as intelligently as those of other organs. It has been the practice of veterinarians to make a few more or less prefatory excursions into the mouth with the hands and then without ceremony pronounce the teeth to be all right. It is only when the hands bumped against something of a conspicuous character like a long molar, a large cavity or exceedingly sharp longitudinal ridged that the teeth were incriminated. This is not as it should be. The mouth of animals is a long, dark inaccessible cavity that is capable of effectually hiding away very grave conditions, not easily accessible to ordinary inspection or casual palpations.

A horse is often driven up to a veterinarian's office with a request that its teeth be examined because as the owner says, "He hasn't been eat'n very well lately." The veterinarian proceeds to make the customary examination, possibly without even removing the bit. First he thrusts the thumbs to the palate and lifting the mouth up to his range of vision takes a look. With the horse objecting somewhat and the darkness of the recess of the mouth of course nothing is discovered. He will then pass the hand up one side of the cheek and then the other and possibly if more dextrous than others he may even make a more or less skillful palpation between

the arcades. With this he pronounces the teeth sharp and advises floating. If perchance the indisposition which brought the patient to the hospital is of a transient character very often the patient is improved in a few days and the dental operation is given credit it does not deserve. Should, however, the illness actually be caused by disordered teeth as is often the case such an examination does not disclose its nature and the treatment does not modify its course. In short, the patient is not improved and the veterinarian is often puzzled for a plan of action. A course of tonic treatment affording only retreat is often made to serve as a cloak for the lacking diagnosis, and sometimes, as luck will have it, the patient passes through the aching stage successfully enough to satisfy every one except the puzzled practitioner, who is still unable to tell what part of his treatment, if any, is responsible for the improvement.

The truth about dental disorders that actually produce clinical symptoms is that we do not diagnose them at a very early stage. The development of the disease must be advanced before it can be disclosed by our conventional system of examinations. The incipient, hidden, obscure disease goes on undiscovered unless a more searching examination is made than that usually made in the average veterinary practice.

A proper examination includes first the determination of the age. Knowing the age is always important in diagnosis; in dentistry it is indispensable, for here are organs that undergo remarkable changes, both normal and abnormal, from youth to old age which must be taken into account in every deliberation over a suspected disorder. It is not only essential to be able to recognize age but the diagnostician's ability must include a perfect knowledge of the anatomical variations at the different periods of life. This is the knowledge that veterinarians lack today, and that makes the major dental operations such a puzzle to them. Unless we have an accurate knowledge of the position of every tooth at the different ages we shall always lack accuracy in diagnosis and in operative treatment.

The development of the teeth from birth to old age; their dimensions at the different periods of life, their relations to one another, and to the land-marks at the surface of the skull, all are matters which should mean much to the surgeon in his consideration of dental disorders, and unless he possesses a working knowledge of these physiological and anatomical studies and adds to this information a considerable degree of experience I know of no place in animal surgery where costly errors are so numerous. A lack of such knowledge leads the diagnostician to wrong conclusions and the surgeon to very serious operative blunders. Decayed teeth go unnoticed, deformations and swellings of the jaws are misjudged, the source and nature of nasal issues are unrecognized, damaging operations are performed and in fact little success is encountered, with any serious dental operation, where the surgeon does not possess a good working knowledge of the anatomy of the structures he invades. And the anatomy of the teeth differs from that of other organs in that it is constantly changing. Knowledge that applies to one age does not apply to another and unless a good

mental calculation is made with this in mind before every invasion of the skull to correct dental disorders, the operation always ends in disappointment.

It is not the purpose of these chapters to enter into the study of this important part of dental surgery; space would not permit it, but attention is drawn to these facts to emphasize the necessity of undertaking a more serious study of anatomy before attempting the domain of dental surgery.

With the matter of age out of the way and every anatomical, physical, and pathological condition common to that age in mind a systematic examination of the mouth may then be undertaken.

The first step in a systematic physical examination of the mouth and teeth is that of placing the subject under proper and advantageous restraint. cursory examinations of horses hitched or brought out into the open with the halter are worthless. The diagnostician learns nothing he could not have guessed just as well. And besides the practitioner must consider that a careless examination will give little confidence to his conclusions.

A good way to make a fairly good examination of the mouth by inspection is to back a horse into a short stall, loop a rope around the maxillary incisors, pass it through a pulley or over a beam at the ceiling, and then draw the nose upward so that the mouth will come in range of the line of vision. A horse will not object much to this and it will keep its mouth open better than in any other position in which it can be placed. By drawing the tongue first to one side and then to the other, with the aid of an electric flash light, a very good view of all of the teeth may be had. To detect black spots that might prove to be of consequence the arcades may be washed with pledgets of cotton soaked in water. By this system, without even placing the hand into the mouth a very good idea of the condition of the molars may be gained. One may locate lost

teeth, short and elongated teeth, cavities, incriminating spots, sharpness, supernumerary teeth growths of the palate, swelling of the tongue ranulae, abrasions of the cheek and tongue will be brought out into view in the manner never thought of by one who has not tried this simple system of inspecting the mouths of horses. When a molar is found to exhibit a rather conspicuous infundibulum this can even be searched with a steel pick (tooth searcher) to determine its depths. The essential here is to have good light and a stall of the proper length to prevent the horse from backing into an uncomfortable position. This plan offers the best opportunity to make fruitful examinations in the standing position and when no decision can be made the only alternative is to secure the patient in the recumbent position, open the mouth with the speculum and then begin a patient search, tooth after tooth. The horse placed recumbent for such an examination should have the head held upward at an angle of thirty degrees. On the operating table a padded beveled box that can be fixed to the surface of the table with projecting bolts which pass into holes provided to receive them. With a head fixed firmly upon such a contrivance and the mouth opened with the spaculum the patient is in a good position for an examination of every part of the oral cavity. The first requisite is to clean the teeth of all feed particles which are always found lodged about, by sponging. They may first be wiped with the dry sponge to bring out the large particles and accumulated masses of food and then polished clean by sponging with a wet sponge. Liberal ablutions will not do because the waste might be aspirated into the trachea with the organs of deglutition handicapped by the stretched position of the jaws. The saliva that accumulates must be baled out with the sponge to avert the same accident with this fluid. Examination of the gums is now made on both the buccal and

lingual surfaces of the arcades. By passing a pointed but not sharp pick between the gingival margin and the lingual surface of the crown it will be easy to find where the gums are detached. In this examination note is made of receding gums which like loose gums indicate disease. The buccal gums are more difficult to examine as the cheek is stretched tight against them with the speculum. To overcome this when we desire to make a careful examination of this face of the molars and their gums we remove the blade from a common float, and pass it back between the molar arcade and the cheek and thus prize the cheek outward enough to give the rays of the flash light a chance to penetrate to the very depth of the arcade. After a little practice it will be found possible to examine both by inspection and palpation with the pick, even the buccal face of last molar. The posterior part of the molar alone is hidden because it curves inward and out of sight in the upper jaw. The inferior third (sixth) molar can be easily examined everywhere.

This examination of the external face of molars often disclose depression from broken plates that are not found in any other examination. It may even disclose loose plates that were not discovered by digital palpation. (Such a case was found at the surgical clinic of the Missouri Valley Association at Omaha, July, 1916. In spite of an ordinary inspection and digital palpation nothing abnormal was found but when the examination as above described was made of the buccal face of the molars a loose plate was found).

The attention may now be directed to the table surface. Beginning with the first (fourth) molar which is more often decayed than the others a careful search is made for uncemented infundibula. These appear in the form of conspicuous dots larger and more open than the dots of normal infundibula. There are two on each molar. All of them must be examined and while too much dependence

must not be placed upon open infundibula as evidence of decay, they may be regarded as especially incriminating when one stands alone wide open admitting the steel pick with great facility and the adjacent ones are ceiled shut. Such evidence coupled with the other symptoms which lead to the examination, possibly a fetid emanation from one nostril, has always during recent years been regarded by us as conclusive evidence of decay and it is indeed very rare that the dissection of the tooth after extraction did not prove the wisdom of the diagnosis. When on examinations of the fable surface it is found that all or many of the infundibula are wide open it would not be safe to base a diagnosis entirely upon this symptom. Unceiled teeth are not always decayed.

The following are the more common disorders one seeks in dental examinations:

1. Sharpness that wounds the mucous membrane.
2. Elongations of the molars from decayed or absent opponents.
3. Depressions on the molars that indicate decay-cavities.
4. Broken plates or the fissuring that precedes the fracture.
5. Loosened or receded gums.
6. Wide interdientia that admit food particles.
7. Open infundibula on the molars especially the first fourth.
8. New growths on the palate which are usually cancers.
9. Swelling of the tongue indicating foreign bodies.
10. Ranula.
11. Shedding caps.
12. Loosened molars of old age.

Unusual Results from Roaring Operation

CASE 1.—A delivery wagon horse of exceptional quality and splendid carriage, prized very highly for advertising purposes, gradually began to show signs of laryngeal hemiplegia by making a loud sound during exercise. The driver reported the condition had been gradually accentuating during a period of several months prior to the time of examination, which was in June, 1914. In August of the same year the horse had become worthless, the slightest trotting exercise being sufficient to bring on a serious state of dyspnea. The first operation was performed August 14, 1914. The ventricle was stripped after the method of Blattenberg. Convalescence was normal and at the end of forty days the horse was returned to work. During the first few days the driver reported the horse much improved but not entirely well, and later acknowledged a complete recovery. During March, 1916, the horse rather suddenly became a roarer again and was so bad that he could not be worked even

at very slow exercise. The second operation was performed March 17, 1916, about nineteen months after the first one. On opening the larynx nothing abnormal was found to which the remarkable incapacity of the horse could be attributed. The left side, whose ventricle had been stripped nineteen months before, was found to have cicatrized in a perfectly usual manner, entirely obliterating the ventricle and without any evidence of reaction upon the surrounding structures. The arytenoid of the right side and its vocal cord were highly motile, showing no evidence whatever of paralysis. There being nothing else to do, however, the right ventricle was treated by McKillip's method of cauterization. The convalescence from this operation, like the first, was uneventful except for a somewhat threatening dyspnea while eating during the first four days. At the end of forty days he was put in the harness again and at this writing (July 8, 1916) is reported perfectly sound.

WORLD'S WORK
 in Veterinary Science
 Dr. Adolph Eichhorn
 Washington, D. C.

Adigest
 of all the Current
 Literature of
 Comparative
 Medicine

The Significance of the Ophthalmic Mallein Test for Diagnostic Purposes in the Control of Glanders

By Prof. J. Bungart (Monats. f. Prakt. Tierheilk)

The author describes in detail the results which have been obtained from the ophthalmic mallein test in the control of glanders in the army during the present war, and comes to the following conclusions:

1. The ophthalmic mallein test is as reliable as the blood test for diagnostic purposes; at the same time, however, it is much simpler and more easily judged, and is especially adapted for the testing of great numbers of horses.

2. For the eradication of glanders in practice the combined use of the eye test and the serological blood test is recommendable. This method leads most rapidly and with the greatest certainty to results and the unnecessary destruction of healthy horses is thereby avoided.

3. In order to avoid further spread of the disease in cases of acute outbreaks of glanders, the regulation which prescribes a retesting of the blood after 14 days following the last case of glanders, should be amended in so far as to also include testing with ophthalmic mallein in such a way that the blood examination should alternate every eight days with the eye test.

In the first application of the biological test on infected premises the blood examination should be carried out simultaneously with the ophthalmic eye test. In consideration of the fact that in the presence of farcy the results of the oph-

thalmic test, as well as the blood test, may be negative, it should be insisted that a careful clinical examination be made, together with the application of the specific diagnostic methods. Without a thorough veterinary examination and supervision an effective eradication of glanders is not possible.

Substitute for Glycerin

By Unna (Fortsch. d. Med. No. 6, 1916)

Unna undertook experiments for the purpose of eliminating glycerin from prescriptions, since that preparation has now soared to such a high price. As a substitution for the same may be employed Sir. simplex, Sir. communis, or a concentrated solution of calc. chlorat. cryst.

The active principle of glycerin in all of its forms of application lies in its dehydrating properties, which may also be attained by sugar, and more so by calcium chlorid. For lubrication purposes of instruments or operating hands the latter may also be satisfactorily employed.

According to the conditions, pure or raw solutions of sugar with the calcium chlorid solution, in different proportions, may be employed for the substitution of glycerin. Thoroughly tested and recommendable formulas are:

Instead of 100 gms. glycerin :	Calc.
chloride cryst.	40.0
	Aq. dest. 40.0
	Sir. simpl. 20.0
Instead of 80 gms. glycerin :	Calc.
chloride	40.0
	Aq. dest. 15.0
	Sir. simpl. 25.0

Internally, the mentioned substitutions possess an action similar to glycerin.

The Treatment of Large Wound Cavities.

By Dr. H. Martin (Med. Klinik No. 48, 1915)

The method of the author for treating large wound cavities is very simple and consists in first cleaning the same from possible bony or tissue shreds, and then in the introduction into the cavity of the wound of a piece of gauze, or, even better, sterilized linen, over which a layer of vaseline has been spread, in such a way that the wall of the wound comes in contact in all of its parts with the salve. The gauze or linen sack formed in this manner is then loosely filled with gauze and then covered with a dry bandage. The change of the bandage is at first undertaken daily; later, after the diminution of the secretion, less frequently. The author describes a great number of cases in which this method has given very favorable results.

He claims that the tamponage of large wound cavities with dry gauze acts destructively on the developing granulations, whereas the preserving vaseline treatment allows the free progress of the healing process. Furthermore, the removal of a dry gauze tampon from a wound cavity is usually very painful, whereas the removal of the vaseline-coated linen may be undertaken without causing the slightest pain, a condition which in itself appears to favor this form of treatment for large wounds.

The Salivary Glands in Rabies

(*Zentralbl. für Bakteriologie, etc.*, Bd. 76, 6, S.)

The symptomology of rabies directed primarily attention towards the histopathological lesions of the nervous system, whereas our knowledge on the more minute changes of the organs is relatively slight.

It is true that special attention has been given by investigators to the salivary glands, but exhaustive investiga-

tions of the changes have not yet been undertaken.

Amato confined his investigations exclusively to the parotid and submaxillary glands in rabbits, which received subdural injections of fixed virus. In these instances he constantly found a hyperemia of the mentioned glands, accompanied by several small hemorrhages, especially in the connective tissue surrounding the glands, edematous infiltration of the connective tissue, destructive lesions of the elastic fibres, separation and disquamation of the lining epithelia of the excretory ducts in the lumen of the tubules.

The author is inclined to associate with these degenerative and secretory conditions of the glandular epithelia the appearance of peculiar bodies in the cells, which morphologically and in their staining characteristic show analogy with the Negri bodies.

The parasitic nature of the bodies observed in the cells is disputed by the author, the same as has already been done by others.

Extensive Outbreaks of Sarcoptic Mange in Cattle

By Dr. K. Presler

(*Archiv für wiss. u. prakt. Tierh.* 1916.)

Cattle usually are affected only by dermatophagis or dermatocoptic mange. Marked disturbances in health are usually absent in these affections.

According to the report of the author, sarcoptic mange may also appear in cattle, in which case it may cause severe disturbances, which may even result in death. Thus for instance, a stock owner lost 11 cattle from sarcoptic mange within one and one-half years.

The mites show a predilection for the skin of the orbital arch, sides of the neck, and on the skin covering the sides of the masseter muscles. The skin becomes hairless, dry, covered with brown scabs, and forms thick folds. The scabs, which may attain a thickness of 1 cm., consist of epidermis, dried blood, hair, dried mites, larvae and eggs of mites.

The continued itching prevents the animal eating a sufficient quantity, the affected animal becomes apathetic and emaciated. Death results from exhaustion.

Presler designated these mites as *sarcoptes scabiei* Latr., which are not identical with the *sarcoptes* of other domestic animals.

Preventive Treatment of Bursatti of the Horse (Filariosis)

(*Revue Generale de Med. Vet.* 1915.)

Stimulated by the investigations of Hugues on the toxic action of permanganate of potash on the *filaria irritans*, Mombet tried a remedy as a preventive against bursatti of a horse, which for the last four summers had recurrences of this affection.

All methods of treatment suggested for this disease failed to give results. The author then attempted to cure the animal by subcutaneous injections of a 1 to 1000 solution of potassium permanganate around the cicatrices. The injections were undertaken during the winter; in order to determine the value of this procedure to a single cicatrice.

He injected a solution around the cicatrice at six points, a total of 60 c. c. being utilized, and in order to effect a penetration of the permanganate of potassium the points of injection were massaged.

The results obtained were striking in the following summer. Lesions developed from all of the old scars, but the treated parts remained normal.

By extending the treatment the following winter to all of the points without exception, good results were uniformly obtained with the exception of the very old cicatrices from which lesions again developed.

The author is of the opinion that this condition may be attributed to the fact that the remedy could not penetrate to the encapsulated *filaria* on account of the hardening of the old scars. These

results should stimulate others towards continuing these experiments.

Destruction of Lice in Horses

(*Berliner Tier Worchensch.* 1915.)

Lice are blood sucking parasites; they propagate by the medium of eggs, which are supplied with a sticky covering, by which they are attached to the hair of the horses as small whitish nodules. They occur in all species of animals, but each species is infested by a particular variety of lice. Lice of a certain species of animal will not permanently infest other species. A lasting transmission of horse lice to man does not occur.

Lice infest animals especially in winter, when their propagation is favored by the longer hair. In young, poorly nourished animals, and especially in animals improperly cared for, the parasites find especially favorable conditions for propagation.

In larger stables the lice frequently attack all animals within several months and once they are well established their eradication is difficult. It frequently occurs that few lice may be harbored by an animal, from one winter to another, especially so under the mane and in the vicinity of the tail. In such instances the parasites rapidly multiply in the winter coat.

Manifestations: Severe itching; as a result of it the horses rub, bite, and snap the various parts of the body. Sometimes they quiver their lips, and turn their heads, or they take hold of utensils with the incisors, while the affected parts of the skin are continuously rubbed, especially at night the horses stamp with their feet, so that in infested stables animals very frequently become entangled in their halter straps, the coat becomes rough, lusterless, and worn off. The hairless skin in such cases appears moist, frequently showing inflammatory swelling and exudate. Nodules, vesicles or pustular eruptions may develop on the hairless places. At times the animals emit a disagreeable odor.

The lice favor especially those parts of the body which are less likely to cool off, both sides of the neck under the main, flanks, inside of the thigh, around the tail and the hock joints, and especially around the fetlock. In an advanced case lice may infest the entire body.

On careful examination the whitish nits adhere to the hair, and usually several lice may be readily found. Horse lice are larger than fleas, and have a bluish-gray color.

Treatment: Eradication of the lice in large stables is difficult. The result of the treatment depends to a great extent on its careful execution. Especial emphasis should be placed on the cleaning and currying of the animal. If possible it is advisable to clip the animals, by which the parasites are deprived of an important necessity for their existence.

The following remedies proved most valuable for the destruction of lice:

1. Gray mercury ointment (ung. hydrarg). Not more than 10 grams should be rubbed in at one time, either in itself or with oil, or with green soap. Care should be taken especially around the eyes.

2. Washing with tobacco solution 1:25, with or without the addition of vinegar. Care should be taken to prevent the animal from licking, otherwise poisoning may result.

3. Kerosene 1 part, denatured alcohol 10 parts.

4. Washing with a two to three per cent. creolin solution, or a three per cent. watery solution of liquor cresolis saponatus, to be applied with the aid of brushes.

5. Application of fish oil.

6. In emergency washing with soap water, and while the hairs are still somewhat wet sprinkling with finely sieved oak or turf ash, or rubbing in the same with brushes.

If it is not desired to await the development of the eggs it is advisable to wash the parts preferred by the lice repeatedly with vinegar by which the eggs

are destroyed by dissolving their lime capsules.

Each of the mentioned remedies are sufficient for the destruction of the lice, but in persistent cases it is advisable to change the remedy.

Good results may be expected only when the remedy is repeatedly applied every five or six days. The treatment should be continued until viable eggs are no longer found. Living eggs make a crackling sound on crushing under the finger nail.

The treatment must be further supported by adopting scrupulous cleanliness, and also proper cleaning of the harness and all other material which may come in contact with the animals. It is further advisable during the summer to wash the manes and tails of all horses from time to time with a three percent creolin solution, or a three percent aqueous solution of liquor cresolis saponatus.

COMMENT: A pediculicide popular among many of the very old practitioners of human medicine is prepared by boiling one quart of potato parings in three quarts of water straining and using the liquid, when cold, freely on infested surfaces. It is said to be equally destructive to the vermin or their nits—
EDITOR.

The Differentiation of Pneumococci And Streptococci By Optochin

(G. Nachmann, *Zbl. f. Bakt., Bd. 77, H. 2, 1915.*)

Pneumococci and streptococci mucosi are inhibited in their growth by high dilutions of Optochin (1 to 200,000 and 1 to 500,000). Streptococci meningococci, gonococci, and meningococci-like strains are inhibited only by higher concentration (1 to 10,000, or 1 to 5,000).

"Optochin" therefore in dilutions of 1 to 100,000 may be utilized for the differentiation of pneumococci and streptococci.

Queries and Answers

The editor will reply to queries appearing here, as he is able and as opportunity permits, but he does not want, nor cannot undertake to monopolize this portion of the department. Any reader who can furnish further and better information in reply to any query is urgently requested to do so. Where the treatments advised in these replies is adopted it is hoped that those employing them will report their results whether good or bad. In all cases give the number of the query when writing anything concerning it.

QUERY No. 248—On the night of July 17th, I was called out of town to see a two-year-old colt that had been cut on a wire fence across the throat at the junction of the upper and middle thirds. The wound had been sewn up when inflicted, which was about a week before I saw it, but something had caused a necrosis and everything, skin and all, had sloughed out to the depth of one-half to one inch, exposing both juglars and the trachea. The left vein was open and it is not necessary to estimate the amount of blood lost, but by plugging with cotton soaked in Monsel's solution and tying his head up the colt seemed safe for the night.

The next day I opened up the wound and found the right jugular also open. I passed a soft ligature around it and tied it. The left vein was closed by a clot but three days later it broke open again and was ligated. Both jugulars were now ligated and their function destroyed. The colt's head became about the size of a salt barrel but by keeping him tied up and using hot packs he recovered slowly but nicely and is today doing his work all right. I drove him last week and he traveled well. He is now ten years old. I have been waiting for eight years for him to die so I can find out how his circulation was re-established but he is still here. This horse's head swells yet if he is turned to pasture. He has been kept stabled during the past eight years. What becomes of the blood that goes to this horse's head?—W. B. C., D. V. M.

REPLY BY DR. R. F. BOURNE—Dr. S. L. Stewart informs me that he has experimentally ligated both jugulars and such animals have lived for several days without any very unusual disturbances. A return circulation from the head can be found through the spinal veins which traverse the neural canal and attain considerable size. Compensatory enlargement of these vessels would readily provide for the return of all blood going to the head if assisted by gravitation. If the horse's head were depressed and gravity were operating against the return flow, there would be some difficulty experienced.

QUERY No. 249—A five-year-old mare weighing 1200 pounds manifests the following symptoms: After taking her out and working her for about ten minutes or so and then stopping, she trembles all over; no undue accelerated breathing; no excess perspiration or rise in temperature. After months of continued rest, she is no better. These symptoms were first noticed when she was broke, two years ago. History on either side is negative. What is it?—J. A. G.

REPLY—It is reasonable to suppose there exists in this case a mitral insufficiency. It is hard to conceive of another affection which would provoke the symptoms you describe. We suggest a careful examination of the heart by auscultation and, as well, that you make a study of the character of the pulse in this case. If you find that the characteristic post-systolic heart bruits are present, you should be

able to recognize also the peculiar rapidly receding pulse which is typical of this affection.

There may be present in this instance a hypertrophy of the heart resulting from Nature's attempt to compensate for the valvular insufficiency. If so, you will find upon percussion that the heart has materially increased in size.

These cases are interesting ones from the viewpoint of the diagnostician, and we should be pleased to hear from you concerning your findings should it be convenient for you to make a further study of this case.

QUERY No. 250—I would appreciate information about handling two cases of hernia. It is accidental I guess, but I have two cases of hernia of the flank in colts. The herniae can be reduced and the hole outlined the same as in umbilical hernia. Would you handle them the same?—I. M., D. V. M.

REPLY—As a rule in mature animals one is not so successful with the ventral herniae as with the umbilical variety.

You fail to state the ages of the subjects also the exact location of the herniae; neither do you give the approximate size of the opening in the abdominal wall, all of which needs be taken into account before deciding upon a plan of operation. If the subjects are young (not over eighteen months) and the ruptured tissues located rather high up in the flank region and if the opening in the abdominal wall is not too large you will be successful in the treatment by employing the same methods as are used in umbilical hernia. However, it would be better to make a skin incision, expose the ruptured tissues and close the opening by means of sutures of heavy chromic gut. The skin and fascia may be sutured with linen or other heavy material—this, of course, after employing the usual means for anesthesia and restraint and having due regard for asepsis.

QUERY No. 251—Do you consider bichlorid of mercury or any caustic of

much value in the treatment of fistulous withers?—I. M., D. V. M.

REPLY—Bichlorid of mercury and other caustics in the treatment of fistulous withers have not given satisfactory results in my experience. However, some practitioners recommend the use of such agents, and I refer you to the work "Special Veterinary Therapy" by Steffen. He recommends the employment of chromium dioxid.

QUERY No. 252. What is the procedure employed in filling dimples in the backs of show cattle?
A. B. C.

REPLY: These conditions in show cattle are due to a non-yielding fibrous connection between the subcutaneous fascia and the skeleton. The better herdsmen who have had much experience in finishing cattle for show purposes, operate upon such animals very successfully, and of course veterinarians are so employed in many instances. Briefly, the technic of the procedure consists in making an incision through the skin at some pendent point suitable for drainage, and by means of blunt dissection, all areolar attachment between the fascia and underlying tissue is severed. The fibrous connecting communication itself is then cut by means of suitable scissors or a special knife for this purpose. Great care should be taken to avoid the introduction of infectious material; yet, if infection follows, no serious results should occur. The essential points in the successful performance of this operation, are avoidance of hemorrhage, a small and well situated incision through the skin and the prompt and heroic employment of a blunt instrument for breaking down all subfascial adhesions. In some few cases where the condition exists directly over the loins, after dividing the fibrous attachments, the intramuscular injection of oxygen, (observing aseptic precautions), every ten days or two weeks for a period, is of very material benefit.

POINTED OPINIONS by Readers ON LIVE TOPICS of **Veterinary Medicine**

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

Scabies in Wyoming Elk

COMPLYING with your recent request, I give you herewith the facts concerning an investigation of disease among the elk in the Jackson Hole Country, this state.

On February 12, 1916, Mr. N. P. Wilson, State Game Warden of Wyom-

Jackson Hole. It may be interesting to Easterners to learn that the five hundred mile trip, from Cheyenne to Jackson, took three days,—the last thirty miles being made in sleds, over the mountains, and through snow, three feet on the level and ten to twelve feet



The Man with Knife in Hand is Dr. French.

ing, reported to this office that a great many of the elk calves were dying, and asked me to come and investigate. Accompanied by Dr. R. E. Naylor, Federal Veterinarian, stationed at Cheyenne, Wyoming, I left immediately for the

where it had drifted. During the sled trip, we heard many thrilling tales of snow slides, but we were fortunate enough to escape the thrill of really seeing one.

A short distance from the little town

of Jackson, are the feed grounds for the elk. Last winter it was estimated that there were about 12,000 elk fed at four ranches (where the government and state, co-operating, provide hay for all the elk that come down from the hills). Dr. Naylor and myself arrived at the busiest time of the feeding season and saw about 10,000 elk.

People not accustomed to habits of the elk naturally think that the bull elk are the leaders of bands when they become frightened; but nearly always it is a cow that starts the stampede. They raise their heads and point their noses at about a 45-degree angle, and they can trot at about a 2:40 clip. One can imagine that if he had two of these cow elk broken to harness, and a nice sleigh, it would beat auto riding. He could challenge Santa Claus with his reindeer outfit. The way some of these elk rear up on their hind feet and fight their battles with their front feet make Jess Willard and Jack Johnson look like amateurs. They are comparatively tame in the winter time, when their hunger drives them to the feed grounds, but in the summer they are back to the hills and as wild as any deer. The last game census shows that there are approximately 30,000 head of elk in Wyoming.

Upon arrival at the feed grounds Dr. Naylor and myself held post-mortem examinations on three or four head of the young elk which had been dying, and found that musty or mouldy feed had caused deaths. About 200 young elk had died from this cause. The picture which I enclose, shows the post-mortem examination of one of the animals. Dr. Naylor and myself occupy the center of the picture with the dead elk; and the other four gentlemen are state game wardens.

After our investigation as to the cause of deaths among the young elk, we were watching the herd feeding and noticed that many of the animals were rather rough looking and were losing hair from around their heads and shoulders. Upon

investigation it was found that these animals (mostly bull elk) were infected with psoroptic mange, or ordinary cattle scabies. Now, our law requires that all animals found to be infected with mange, be quarantined and dipped twice; those exposed to the disease must be dipped once. All the elk in the state (about 30,000) would be classified as exposed to or infected with this disease. Ever since our findings, we have been wondering how we could comply with the law and dip these infected and exposed elk. We have had many suggestions but none has proved practicable. We would, however, appreciate any other suggestions as to how to handle this situation. Many of the old-time game wardens of the locality state that there have been scabby elk in the Jackson Hole Country for the past ten or fifteen years; and as the disease has not yet been communicated to cattle, it is not considered dangerous.

Let me again call your attention to the enclosed photograph. The snow-covered mountains in the background are the Teton Mountains—second to none in the world for beauty. At the foot of these mountains runs a little creek which is fed by hot springs; it never freezes—even in the coldest weather. While we were there the temperature was at zero; but the water in this creek was at nice swimming temperature, and hundreds of ducks were taking advantage of it.

A. W. FRENCH,
State Veterinarian.

Cheyenne, Wyoming.

A SCHISTOCORMUS REFLEXUS DELIVERED WITHOUT SECTIONING

I have read many articles and seen many cuts in *VETERINARY MEDICINE* that have been of interest and value to me in my practice. There came to my attention, recently, a case the like of which I think does not happen often. I was called to see a young heifer in the throes of difficult parturition. I

made an examination and decided the case was more unusual than anything I had ever before met. I couldn't locate any head or legs despite my greatest ef-



As Pulled Away from the Cow.

forts. So I attached my obstetrical hook and brought quite a liberal amount of tension to bear on the rope fastened to the hook, but I could not bring anything



After Incising the Mass.

out. Then I turned the fetus, attached the hook again, and with help succeeded in pulling the whole mass out.

After I had finished the job and

examined the fetus, it looked as puzzling as when I had explored it *in utero*. The heart, liver and intestines were attached on the outside. There was no sign of a head or tail, but there was what I thought to be one front foot attached to the mass, which was covered with hair, the rest being like a piece of raw steak. I wanted to see what was inside of this mass and cut into it, when to my surprise, I discovered a well developed head, and three more legs, all covered with hair.

I never met nor heard of anything like this before, so I had some snapshots taken before opening and after cutting through this mass, which is shown herewith, although the cuts do not show up as plainly as I saw it at first hand.

R. ARBEITER, D. V. M.

Marion, S. D.

THREE CASES OF PARTURIENT PARESIS NOT "ACCORDING TO HOYLE"

Case No. I

A large Jersey cow, aged twelve years, had not calved for thirteen months; she was found in an unconscious condition at milking time in the morning. The cow had apparently lain in lateral recumbency all night and when rolled upon the sternum, the head was at once turned in toward the flank. It seemed that the cow was dying; there was no ocular reflex; a green nasal discharge was present and some blood was issuing from a partly prolapsed rectum. An unfavorable prognosis was given.

The treatment given consisted in the hypodermic administration of one-half grain of strychnin sulphate and inflation of the udder. The cow was covered with a blanket, and as the condition seemed a hopeless one, she was left for the night. On the following morning, the owner informed me that the cow had gone about a half mile from where she was left on the previous evening and that he had found her in an apparently healthy condition.

Case No. II

A six-year-old Jersey cow aborted in the sixth month of pregnancy; placenta retained. Four hours later, the owner called and said his cow was very ill, down, couldn't rise and was weak across the spine. I called and found that symptoms of parturient paresis were evident. The cow was given one-half grain of strychnin sulphate hypodermically and covered with a blanket; the udder was inflated, and I told him to call me if she didn't get up in six hours. He did so, informing me that she was in the same condition as when I treated her. I called again and repeated treatment, telling him to call me in the morning. He called in the morning saying there had been no change during the night. I called again, repeated the treatment and became very distrustful of the various textbooks dealing with this subject of veterinary medicine. The owner informed me three hours later that the cow was up and doing nicely.

Case No. III

I was called to a case of bovine dystocia, which was due to an abnormally large calf in a Holstein cow, five years of age. The calf was delivered and the owner told to call me in twenty-four hours if she hadn't "cleaned." He called in twenty-four hours saying she still retained the placenta. I removed the placenta and flushed the uterus. Six hours later the owner informed me by phone that the cow staggered when she walked and he thought she was injured across the spine. I called again and found the patient apparently suffering from milk fever. I gave one-half grain strychnin sulphate and inflated the udder. Three hours later, the owner phoned and said the animal was apparently in a normal condition.

Conclusion

Inflate the udder in all conditions where there is a seeming unconscious condition in animals which assume positions characteristic of milk fever.

In case No. I, note the cow had not calved for thirteen months; there was

partial prolapse of the rectum; and the temperature was 106.

In case No. II, note the abortion and not being able to rise until after three treatments had been given over a period of thirty-six hours from time she was found in this condition.

In case No. III, note dystocia was present and the placental membranes were retained.

I might add also that in case No. II, after inflating the udder for the third time, I gave 10 c. c. hypodermically of thirty grains gum camphor in pure olive oil. I don't know whether I can claim any good results from its action or not. She did not rise until after being treated with air three times. The oil and camphor were given after the third inflation.

The findings in case No. I and III are absolutely contrary to all teachings in our modern textbooks.

T. B. HINKLE, D. V. M.

Mt. Vernon, Ohio.

RUPTURE OF RECTUM DUE TO "FALSE ENTRY"—RECOVERY

On June 21 I was called to see a sixteen-year-old bay mare weighing about 1700 pounds that was exhibiting considerable pain. The history of the case as given me by the owner, was as follows:

The animal was worked at ordinary farm work the preceding day, and after the evening meal was driven about three miles and served by a stallion, in a dark basement. Before reaching home she began to exhibit symptoms of abdominal pain and continued to lie down and get up at frequent intervals during the night. Upon my arrival the next morning, I found the following conditions:

Temperature 104; pulse 82. Accelerated respirations and anorexia. I explored the vagina, finding nothing abnormal; but on passing my hand through the anus, I found the pelvic cavity to be firmly impacted, the rectum being displaced to one side making it very difficult to insert the hand up to the point of

rupture, which proved to be in the rectum about twenty inches from the anus.

After carefully removing the feces, and emptying the bladder, which was greatly distended, the mare appeared to rest easier and remained standing. I then made a closer examination of the laceration and found that two thirds of the circumference of the bowel had been divided; leaving only about one-third intact.

I told the owner the mare would die, basing my prognosis on the limited number of cases of this kind that I had observed and read of. He said if there was a possibility of saving her not to consider the expense. I told him the chances for recovery were very slight even with an operation, but if he wished to call a veterinarian to assist me we would try and suture the bowel. To this he consented and the operation was performed in the following manner.

The distal torn end of the gut was firmly plugged with absorbent cotton, to which a strong cord was attached for its removal. Then using a hose and pump, the pelvic cavity was thoroughly irrigated with several gallons of warm water, after which it was wiped clean or until no trace of feces could be seen on the cotton.

A half-curved needle was threaded with catgut and a knot tied in the eye to prevent it from becoming unthreaded. A cord was passed through the handles of a heavy pair of vulcellum forceps and tied to form a loop about a foot in length. The torn edges of the rupture were seized between the thumb and index finger, and drawn near enough to the anus to admit of the forceps being passed in and snapped in place with the other hand; thus holding the serous membranes in apposition. With a slight amount of traction on the loop fastened to the forceps, the lips of the wound were brought back into the lumen of the bowel and several continuous sutures placed before adjusting the forceps again.

During the whole procedure, the rectum remained in a ballooned condition;

and after the first half hour the sphincter ani muscle became exhausted, so that both hands could be introduced easily. The work was done in the standing position, without restraint or anesthetic, and consumed about an hour's time.

After treatment consisted of bacterins and tonics. The attendant was instructed to throw a few syringefuls of water into the rectum several times daily for a few days, after which all treatment was discontinued, no attention being paid to diet.

The mare has made a good recovery, evacuates normally, and appears as sound as ever.

D. E. Miller, D. V. M.

Nashville, Mich.

A "PERFECT" FREAK

I take the liberty to send you for publication in your journal a photo of a freak of nature it is my good fortune to possess, a double headed calf, perfect in every way, in body as well as the heads. They are attached at the crown as you can see and form a perfect right angle to the neck. The attachment to



the neck was directly behind the ears, on other side of photo, four eyes, four ears and had it lived it could feed and breathe from either head as the internal parts were perfect, forming a Y. I con-

sider it a great curiosity because it is all so perfect. I have practiced for twenty-seven years in a dairy district and have seen a great many freaks, but for perfection this beats them all.

A. E. LAMBERT.

New Windsor, Maryland.

TRISMUS

This is a peculiar disease and like parturient paresis in the cow, the cause is not known. I don't remember reading anything in *VETERINARY MEDICINE* of this disease. It is a condition most commonly brought on by suddenly taking the horses from pasture to stable and putting them into harness.

It affects mares principally but when geldings are attacked the condition is always brought on by hard work in hot weather. I have never seen it develop in geldings merely from taking them out of pasture to be stabled over night. Nine-tenths of cases occur in mares with colts under four months of age and the condition is apparently brought on by stabling over night. The disease is rarely met with in mares that are not suckling colts and when met with in these subjects, the condition is less likely to terminate fatally than it is in suckling mares.

The most noticeable symptoms are the spasmodic contraction of the diaphragm with twitching or creeping of the muscles, especially of the head, neck and shoulders, and the jaws will lock as the disease progresses.

The treatment is what I wish to call to the attention of readers. For some years, I tried to bring about a cure by bleeding and by the use of morphine, belladonna, cannabis indica and other drugs, but without good results. I lost possibly seventy-five or eighty per cent of cases with this treatment.

I was called about two years ago to see a mare affected in this manner. She was down; the jaws locked; all muscles were contracted to the utmost and violent diaphragmatic spasms existed. I

decided I would try cold water from a well nearby. With the assistance of three or four men, we began drawing water and dashing it on the mare and this was continued for three hours. In about two hours the mare was on her feet, and at the end of the third hour, she was eating grass, but with some little difficulty. I stopped the baths for thirty minutes and then they were repeated for thirty minutes more. Little evidence of the disease remained at this time other than a slight thumping. At the expiration of another hour (without treatment) the mare was in a normal condition.

I have used this treatment for two years, treating 103 cases without a death, and I wish to state that I have no bad after effects.

Hypodermic medication may be used with your baths—perhaps it will meet with the approval of your client. I have used pond, creek and also ice water, but I find that water drawn from a well, spring or hydrant answers best. Creek water is too warm and ice water, too cold. I think God's pure free water is more of a specific in the treatment of trismus in the mare than God's pure free air is in the treatment of milk fever in the cow.

When these baths are used, the bystanders will remark that pneumonia is sure to follow, but there is no danger, for as I have said, I have treated 103 cases without pneumonia. Just to indicate what may happen if cases are not closely watched—last week in treating a case of this kind and being in a hurry, I used the water baths for one hour and left, giving instructions for them to keep up the treatment until the jaws relaxed sufficiently for the horse to eat; then to skip one-half hour and repeat as necessary. After I left, the owner was told that pneumonia was sure to follow, and he stopped the baths. The next morning a "hoss doctor" who lived nearby, was called. He told them he thought my diagnosis was wrong, that the mare

was poisoned and would die. Consequently, I was again called from about eighteen miles distant and informed as to what the "hoss doctor" said. I told them I would be there in forty-five minutes. When I arrived, I found the mare much worse than she had been the day before. We began dashing the water on again, bucketful after bucketful for three hours and thirty minutes. At the expiration of this time, the mare was practically well, and I left, telling them to let her graze for one-half hour and then repeat the baths for one hour, which they did and complete recovery followed.

This specific is not like the one for periodic ophthalmia—we don't have to wait for six months or a year to tell whether or not it cures. I shall be glad to hear from some of the readers of *VETERINARY MEDICINE* after they have employed this treatment.

W. B. ROBINSON.

Mt. Sterling, Ky.

TO RAISE A FALLEN HORSE WITH A ROPE

At the recent Detroit meeting of the A. V. M. A., in the discussion among a number of veterinarians, there was much interest expressed in a method which I have devised for raising a horse from the recumbent position without the use of a sling, but with only the rope to be found in any barn or on any farm. This method may have been used and described by others, but I am unaware of the fact, so I thought that the profession might be interested in the method.

The only articles required are a block and tackle of sufficient strength to raise the horse, and thirty feet or more of rope, one-half inch or more in thickness. These items can be easily procured anywhere. The block is fastened to the ceiling or any other place above the horse in the usual manner.

The rope is handled as follows, first being doubled:

1. Pass the doubled end of the rope

over the head backward to where the collar rests on the neck.

2. Pass free ends of the rope between the front legs, crossing it once, just before it goes between the legs.

3. Pass lower rope under body, so that it emerges just posterior to the withers.

4. Lay upper rope over thorax, so as to cross lower rope at this point.

5. Bring lower rope over body and between hind legs.

6. Pass upper rope under body in a position to correspond to the other rope, bringing it back between the hind legs. Cross the ropes at this point.

7. Bring both ropes up over buttocks, one on each side of the tail.

8. Pass forward along the spinal column under the ropes where they cross on the back, and tie to point where the rope lies on the top of the neck.

9. Insert hook of block at point where the ropes passing over the back cross, being careful to engage all the ropes at this point, namely, the single strands crossing to go between the hind limbs and the double strand coming from each side of the tail to the neck.

All ropes should be drawn as tightly as possible before the knot is tied, so that all slack is taken up.

This sling is very easily applied (one man can do it in a pinch) and the horse in his struggles cannot fall out of it. The body is always right side up, neither end higher than the other, and the feet are always in a position so that they can be utilized to the best advantage. Contrary to this, a sling is hard to apply, it requiring considerable strength to pass a canvas under a horse; the accessory harness cannot be easily adjusted; in the process of raising, the horse will lunge and fall out or turn on his side; and, furthermore, as is not the case with the rope sling, the broad belly-band of canvas so constricts the thorax that in case the horse does not at once attempt to use his

legs, he must be let down for fear of suffocation. This fear of suffocation is one objection to the use of the chain block, which is slow in its action, whereas with the rope sling, this feature can be disregarded, as the ropes do not constrict the lungs sufficiently to produce suffocation. I had one horse which hung for forty minutes before he decided to stand up, without appreciable discomfort to the respiration.

Once the practitioner tries this method, he will nevermore use his sling for this procedure, but will raise the horse in half the time, and with a minimum of discomfort, both to the horse and to himself.

Carnegie, Pa. A. C. WIGHT.

USES FOR ETHER AS AN ANTI-SEPTIC

An antiseptic for infected wounds, and especially for infected joints and for infected peritoneal cavities that I want to call your attention to, is ordinary ether, sulphuric ether. I suggest that you bear this in mind, as it will give good results in infected wounds and infected joints. Some of you may hesitate to use ether when the wound is closed, for fear it will burn. I will tell you it is freely used in human surgery in the infection of the peritoneum. When the appendix bursts, liberating pus, and septic peritonitis sets in, good results have been obtained from the use of ether. They will put in two to four ounces of ether and sew it up, or to prevent its rapid evaporation, when about to put in the last stitch, they will inject it with a syringe, because ether evaporates rapidly at peritoneal temperature, and if poured into the abdomen evaporates almost immediately. It does not cause any pain or smarting, and it sets up an intense leukocytosis. Those of you who have not read or heard of ether as an antiseptic, bear it in mind, and in open joint, after washing the joint freely with full strength sulphuric ether. I

should suggest to give one filling of the joint with ether, containing a little tincture of iodine, perhaps tincture of iodine one part to seven parts of ether. Now, you can get a completely aseptic condition of the joint in that way without any danger of destroying the synovial membranes, because ether will not act as a caustic. I use it in deep punctured wounds, in fact, in any infected wounds, with the most happy results.

E. L. QUITMAN.

Chicago, Ill.

HEMORRHAGIC ENTERITIS FROM EATING CALF MEAL

A call over the telephone, a man's hurried voice and a request to come in a hurry to treat a sick calf, constituted a portion of a Sunday's veterinary program. But alas! even after a hurried assembling of medicine cases and paraphernalia, my hurried walk for several blocks proved to be of no advantage to the owner as the patient had died shortly after the call had been put in. So I decided to hold a post-mortem examination to ascertain if possible the cause of death.

The history given was that the calf had been in good health until a short time before death, when the first symptom of illness that the owner noticed was the bellowing of the calf. Upon investigation, the animal was found in a fence corner moving in a circle. Thinking the animal was choked and through advice from his neighbors, the owner used a broomstick as a probang. After introducing it several feet and failing to find any foreign body but seeing the calf getting worse quite rapidly, he hurried to call me.

On my arrival, I found the animal lying on its sternum, the front feet to one side and the hind feet on the other, but no bloating and no symptoms of disease were visible. The trachea contained a small amount of food material; the esophagus, normal; lungs and lymphatics, normal; heart muscle showed num-

erous ecchymoses but was normal in color and texture; liver and spleen, normal; rumen and reticulum, normal. The omasum and abomasum contained a few petechiae and ecchymoses on the mucous membrane. The small intestine was slightly congested. The large bowels contained a semi-fluid mass of yellowish material frequently intermixed with blotches of blood. In these blotches, there appeared to be seeds of millet hay, but the owner stated that the calf was only two months old and did not eat hay but was fed calf meal. On close examination, it was found that wherever one of these indigestible particles came in contact with the bowel, irritation and congestion had resulted.

In opening the abdominal cavity, a great increase of body temperature was noticed, probably due to the great irritation. All abdominal lymphatics were slightly congested. The mucous membrane of the large bowels could be scraped away with ease and was congested in spots or patches. After making a closer examination, I concluded that death resulted from acute hemorrhagic enteritis due to feeding the indigestible meal with large quantities of milk. The brain was examined and found to be congested considerably, this in my opinion being due to the high internal temperature, causing the circling movements of the calf before death.

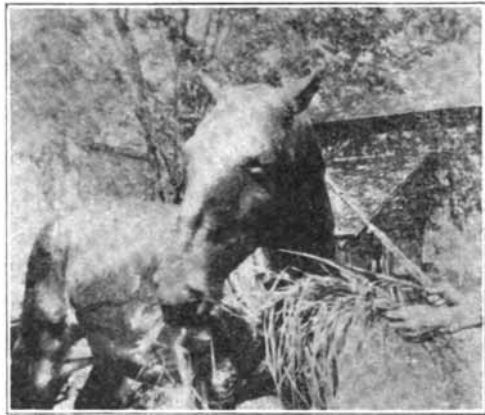
W. P. ROSENBERGER, D. V. M.
Williams, Ia.

SEVERE BURNING RELIEVED BY AN OLD TREATMENT

Early one Sunday morning the telephone rang and the man at my uptown office called, saying that Mr. D's barn was afire and also the horses. Of course I did not wait long to get up there. On arriving at the office I found nine horses that had been burned. Six were not in a very bad condition but three were badly burned. I had them taken to my stable after giving first aid. The others were treated at the uptown stable and went to work in a few days.

The news of the fire spread rapidly and I had a hard time keeping inquisitive people out of the yard.

The three horses were burned from the nose to the tail, although not on the legs and abdomen. The eyes bulged out and the lids were much swollen. Accompanying illustration shows one of the animals. It was necessary for my man to stay up with them at night and apply the oil for it soaked in like rain does in sand. During the first twenty-four hours we applied four gallons of carron oil and I kept them under morphine. The eyes of the worst horse were bathed with a solution of boric acid every three hours and at night I applied yellow oxide of mercury. In four days the animals started to peel and then it took



a great deal of care to keep them clean and the loose skin cut away. I was anxious about the worst one for I did not want to have all the skin come off at once as the area was so large. I was afraid the shock would be too much for him to stand. I had him washed with a solution of creolin to help the healing and also to help keep the flies away. At the end of three weeks they had healed considerably and the following week one of the horses went to work. The one that looked the best at the beginning took the longest to heal but at the end of two months was able to go to work and is working now, none the worse for its experience except that the hair is not all

out yet. Their appetites continued good during all the period.

F. G. RUDER, V. M. D.
Amherst, Mass.

AN EIGHT-LEGGED CALF

The accompanying picture is of an eight-legged calf which I delivered on



May 15, 1916, from a two-year-old heifer. The calf had one head, two bodies and eight legs. The inside fore-leg of each half was somewhat shorter than the outer one. The calf lived about fifteen minutes. I was not able to hold



The above illustration is of a premature colt, eight months along. This specimen I have embalmed and it is in a very good state of preservation and shows the single nostril, but the typical dog eyes are gone. The mare is said to have been frightened by a dog soon after conception and of course the neighbors think that accounts for the monstrosity.
Tuscumbia, Ala. Geo. W. Brown, D. V. M.

an autopsy but my client did, and as far as he could tell, the intestines were not fully developed. It had but one heart. The heifer made a speedy recovery.

C. L. JONES, D. V. M.
Delta, Colo.

FAVORS ANTITOXIN AND BACTERINS FOR INFLUENZA

We are having quite an enzootic of influenza out here, which is of a very virulent nature, killing quite a number of horses. One rancher came to my hospital the other day, telling me that he had lost thirty head of his best horses and wanted to know if I could do anything to save the balance of this herd. I informed him that I could use anti-influenza serum as a prophylactic. I was very busy at the time, so he said he would return later and take me to the ranch. I have not seen him since, but I was informed later that he had a druggist here, a very unscrupulous fellow, order enough anti-influenza serum to treat the remainder of his herd.

When called to a case, I find the usual symptoms—high temperature, great debility, slow staggering gait, great mental depression, head usually rested on manger, eyelids and conjunctiva swollen, photophobia, loss of appetite, diarrhea; the latter usually commencing in about three days. In later stages there is a cold painless edematous swelling of the extremities.

My treatment is 20 c.c. to 30 c.c. anti-influenza serum intravenously with fluid extract of nux vomica, one dram, on the tongue every two hours to support the heart. For a weak and rapid heart, I give hypodermically spartein sulphate, twenty grains, every five hours, with most agreeable results. For reducing temperature, I use fluid extract of aconite (Lilly) fifteen drops in two ounces of water per os every thirty minutes until the desired effect is produced. I rather like the effect of aconite; I believe it helps neutralize the

toxins. For the diarrhea that usually follows, I give the following:

R
 Tr. Opii..... $\frac{3}{4}$ II
 Beechwood creosoteMXX
 Oleum liniqs. $\frac{3}{4}$ V

Mix and give at one dose. Repeat this dose, with the exception of the beechwood creosote, which I reduce to ten drops and the tincture of opium to one ounce, until relief is obtained. This mixture quiets the bowels and acts as an intestinal antiseptic.

I have injected two hundred horses intravenously in the last month with anti-influenza serum, using from 10 c.c. to 30 c.c. as a prophylactic, gauging the dose in accordance with the size and general condition of the animal. I have used Parke, Davis & Co.'s serum, also Cutter's and Kinsley's bacterins. Where I have used the prophylactic treatment on these two hundred head of horses, I have never had one to show the least symptom of the disease, so I urge every farmer and rancher to have his horses injected. When I am called out to a case of influenza, I advise the owner to have all animals that have not taken it, injected at once. I believe it is right. However, I shall appreciate any criticism of my treatment that other practitioners may have to offer.

W. R. MORGAN.

Baker, Mont.

DALRYMPLE FATHERS MUNICIPAL ABBATOIR AT BATON ROUGE

The July number of the official organ of the League of Louisiana Municipalities discusses at length the municipal abbatoir at Baton Rouge and considers the institution as "a monument to the constant, earnest, intelligent recommendations of Dr. W. H. Dalrymple of Louisiana State University, strongly seconded by Dr. Oscar Dowling, President of the Louisiana State Board of Health." Attention of officials who contemplate the building of abbatoirs is invited, and

Mayor Alexander Grouchy, Jr., of Baton Rouge invites inspection of the plant. The commission council of Baton Rouge not only advocates the building of municipal abbatoirs, but offers all assistance possible to those who are considering the construction of such buildings. It is to be hoped that the building of municipal abbatoirs will soon become general in this country.

A CONVENIENT FLY EXTERMINATOR FOR STABLES

On a recent visit to a large herd of registered Holsteins, I noticed the freedom from flies throughout the stables—even the calf stables were free. Upon inquiry, I learned that they were using a fly exterminator throughout the stables and that by evening the floors resembled a place where buckwheat had been scattered. So many flies were killed as the result of placing this preparation on the cement floors in the gangways between the cattle that it looked as if someone had walked through with a bucket of water and slopped some every few steps.

The aisles behind the cattle were dusted with air slaked lime. This I think caused the flies to keep in and around the feeding aisle. The preparation contained about 40 per cent of arsenic and 20 per cent molasses, the balance water. One quart mixed with fifty gallons of warm water and well stirred before using, was the strength in which it was used.

It can be used as mentioned on cement floors, but on board or ground floors, it should be placed in pans or plates. Of course, dogs, cats and poultry must be kept away from it. The preparation can be made up, kept in barrels and used as needed, only thoroughly stirring before using. In the proper hands this preparation is of great value to the dairyman and stockraiser, and I should like to see it reach our intelligent and progressive clients.

G. G. BLANK.

Allentown, Pa.

EXTREME DORSAL FLEXION OF THE CARPUS IN A COLT

The accompanying illustration shows a colt I was called to see May 16th. Note the dorsal flexion of the carpal and



fetlock joints. The legs could also be put back against the body, making a complete volar flexion of the knee joint possible. This colt was all right otherwise, but was destroyed. No autopsy was held.

J. D. WOLF, D. V. S.

Bronson, Kans.



This illustration shows a six weeks old calf, a pure bred Shorthorn. It is in normal condition, except the neck, which is turned to one side. The heart is located anterior to the sternum in the lower part of the neck. The calf is healthy and doing fine.

Long Prairie Minn.

W. A. Elver, D. V. M.

A GRADUATE VETERINARY COLLEGE

To Chicago, undoubtedly in greater numbers than to any other city, come doctors for advanced work in medicine. There is no hospital of note in the city at which there are not continually at least a few doctors from smaller towns endeavoring to improve their methods in general or to qualify for the ranks of the specialists. During the summer season the total number of those who are taking advanced work in medicine in the hospitals, laboratories, medical schools and universities of this city, amounts to many thousands. The good that these men accomplish as a result of this better training both to themselves and to the communities to which they return, is incalculable. So thoroughly are the advantages to be gained by such graduate work recognized, even in the smaller communities, that doctors find it financially profitable to leave their practices for a few weeks for work of this kind at some of the famous medical centers.

The custom of continuing college work after graduation has never been popular with veterinarians; it may be said to be almost unknown except where there has been the incentive of qualifying for a license to practice in some state or province requiring qualifications not possessed by the applicant, or the desire to "brush up" for a civil service or other examination.

No graduate courses analogous to those open to doctors of human medicine have been available for veterinarians heretofore. The graduate courses offered by a number of the veterinary colleges have been excellent ones of their kind, but they have thrown the practitioner in classes with undergraduates and compelled him to listen to much instruction uninteresting because of its (to him) primary nature. Further, in some cases the instructors in these courses have been men of less experience in the lines they are teaching than the graduate students.

This issue of VETERINARY MEDICINE contains the initial announcement of a graduate veterinary school conducted on a different plan. We understand this is to be an independent institution not connected with any other veterinary college and that the instructors are to be men of extraordinary experience and international reputation in the subjects they undertake.

Beyond doubt there is a field for one or more institutions of this kind, and if the one now starting measures up to its opportunities, we predict a successful and most useful career for it.

INEXPENSIVE LOTION FOR WIRE CUTS

There is a wound dressing that I believe if some of our enterprising veterinary supply houses would put it up properly colored and disguised as to odor they could easily get \$1.00 a pint for it; it would of course have to have a high-sounding name. To me this is very old, I refer to castor oil as a wound dressing. I want to tell those of you who have not used castor oil as a wound dressing or as a base for a wound dressing, you are missing a very cheap and efficacious substance. There must be some powerful antiseptic virtue about castor oil. There is something peculiarly stimulating about it. Some of you may fear it will keep a wound soft and soggy and mushy, but it doesn't. You can keep a wound saturated with castor oil and you will find it in perfect condition for healing, neither too dry nor too moist.

To disguise castor oil, and if you care to make it still more stimulating, use a couple of ounces of oil of tar. Oil of tar as you know, is a good antiseptic and a good stimulant. This mixture will give you a good black barb-wire lotion, and it will not stimulate horny growths like so many other and for that reason less desirable barb-wire lotions. If you wish to give it an odor, and to make it

still more antiseptic, add oil of eucalyptus, oil of wintergreen, oil of peppermint, or other essential oils, anywhere from a couple of drams to a couple of ounces to the pint of the lotion; but you will find you can get along splendidly with the straight castor oil or the castor oil and oil of tar. You know castor oil is cheap, and you will find that simple castor oil and oil of tar will make a splendid barb-wire application and a splendid application for wounds.—E. L. Quitman in a discussion at the Missouri Valley Veterinary Association, Omaha, July, 1916.

THYROID GLAND IN THE TREATMENT OF GOITRE

One can promise almost positive cures in the treatment of goitre in dogs under two years of age when extract of thyroid gland is used. With older animals the results will vary with the age of the subject until the animal is ten years of age.

In a dog under two years, goitre should yield in from two to six, possibly eight weeks' treatment with desiccated thyroid gland in tablet form, given three times daily, and usually in larger doses than most veterinarians give. I have known canine specialists to give only one grain of the thyroid pill, but I give two grains. Where they give two grains, I give three or four. The older the dog the longer will be the treatment required. A dog from five to ten years old will require anywhere from three to five months' treatment.

There is another thing beside goitre in the dog that desiccated thyroid gland is useful for, and that is in the reduction of fat in the overfat dog, when he commences to show decrepitude and old age.

In many instances the old, overfat dog, on the verge of decrepitude, put on thyroid tablets, will be rejuvenated to quite an extent. So there is some-

thing in the thyroid gland besides acting as an agent for the general distribution of nourishment. There is something in it that tends to prevent, I should say, premature old age, if the gland is functioning properly, and to prevent the excessive formation of fat, which is a diseased condition. These are features that have not been studied as they deserve to be.—E. L. Quitman, Chicago, in reply to a question at the Missouri Valley Veterinary Association, Omaha, July, 1916.

LOBAR PNEUMONIA

By Lobar Pneumonia we comprehend an acute specific disease, characterized anatomically by an inflammation of the lungs, followed by a rapid infiltration of their alveoli, and manifested clinically by high fever, cough, dyspnea, "rusty" sputum, and physical signs indicative of consolidation. A lowered vitality is required in order that the etiological organism, usually the Pneumococcus, may gain a foothold. The symptoms of the disease are so well known to the practitioner that their enumeration is unnecessary. However the treatment, if to be carried out from a standpoint of logic, is more complex, at least that has been my experience. While I am not a "therapeutic nihilist," I have nevertheless convinced myself during my limited sojourn in the field of medicine that our curative ability when dealing with infectious diseases is extremely limited, and that our drug armamentarium provides us with but three routes of procedure: stimulation, depression, and elimination.

When confronted with a typical case of lobar pneumonia, one is often at a loss as to what course to pursue. That elimination of metabolic products must be religiously carried out stands for itself, when it comes to the time to administer depressants, or the proper time for the use of stimulants one will often discover that he is confronted with a proposition requiring consider-

able thought and deliberation before action is taken. By a careful comparison of the normal physiology with the pathological action of our drugs, it would appear that when a case of lobar pneumonia in the first or congestive stage is presented, with its high temperature, rapid tumultuous pulse, and rapid gasping respiration, that depressants would be indicated. For this aconite or *veatrum veride* have been my favorite drugs. They decrease both the force and the rate of the heart beat, and at the same time produce a marked vascular dilatation, thereby favoring the removal of blood from the lungs; in other words, they equalize circulation.

However, in the next stage they are surely contra-indicated. During the process of consolidation we have a terrific strain of the right ventricle, together with a mild or severe cardiac toxemia. In this condition stimulants are indicated. I have experienced very good results from the use of camphorated oil, given sub-cutaneously, together with strychnin and digitalin. Instead of using the usual nauseating fever mixtures. The administration per rectum, of three gallons of normal saline solution at a temperature of 44 degrees Fahrenheit, when allowed to run in slowly, will be absorbed in part and the most gratifying results together with a marked fall in temperature occurs.

During the stage of yellow hepatization and resolution, the strychnin together with iron may be given, while if resolution is delayed one will often get remarkable results from a few doses of potassium iodid.

While I have only enumerated a few of the drugs that may be used, there are, nevertheless, many of them; but it was not my intention to go into a discussion of the drugs used in the treatment of pneumonia, but to point out the indications for the different classes of drugs. The use of the proper drug at the proper time was forcefully im-

pressed upon me the other day, when being called as counsel with an empiric competitor. I found a five-year-old stallion in the second stage of pneumonia; examination revealed a unilateral lobar pneumonia, well consolidated, and the usual tubular breathing was present. The pulse aroused my attention at once, on account of its weakness. Questioning the "Doctor" as to what he was giving the patient, I learned to my horror that the poor brute was being slowly poisoned by 20 minim doses of fluid extract of aconite, every hour. This treatment would have been indicated during the initial stage, but at this time, when there already was a marked depression resulting from the bacteril toxemia, the use of a powerful depressent like aconite is almost criminal. Of course this "stunt" was pulled off by a quack, yet I'll venture to say that a good many graduates unthinkingly do things as foolish.

Now a word on the abortion of pneumonia: What do the readers think of this phase of the subject? If I may be allowed to express my opinion on the vernacular, I would say that it is all "bunk". Viewed from a standpoint of bacteriology and pathology, it would seem that once the Pneumococcus had gained a foothold, nothing could stop the process short of raising the opsonic index, increased phagocytosis, and a production of the so-called alexins of anti-bodies.

It is my opinion that the reports of aborting pneumonia are in reality not cases where an infectious condition exists, but a non-bacterial congestion.

G. E. JORGENSEN, M. D. V.

Clermont, Iowa.

WARNING AGAINST SHIPPING DEAD AND LIVE ANIMALS TOGETHER

It has come to the attention of the Department of Agriculture that in some instances shippers of live stock have violated the regulation of the de-

partment prohibiting the shipment of dead animals in the same car with live animals. The regulation which was adopted February 10, 1915, and amended July 1, 1916, is as follows:

"No dead animal shall be transported, offered, or accepted for transportation in the same car with live animals from the original point of shipment in any State or Territory or the District of Columbia to or through any other State, Territory, or the District of Columbia."

WISCONSIN VETERINARY MEDICAL ASSOCIATION

The semi-annual meeting of the Wisconsin Veterinary Medical Association was held at Menomonie, Wis., July 26-27, 1916. It was one of the largest and most instructive meetings our association ever held. The forenoon of the first day was taken up by a general business session, and the program consisted of the reports of several standing and special committees.

Torsion of the Uterus in the Mare, Cow and Sheep, Ed. Boesewetter; Necroforus Infection in Colts, O. A. Rabe; Dourine (Maladie du coit), S. H. Ward, State Veterinarian of Minnesota; Azoturia, H. Gutschenritter; The Bull as a Desseminator of Contagious Abortion, F. B. Hadley and H. Lothe; An Indication Signified by Bowel Palpation, J. W. Beckwith; An Interesting Case Report on Sterility in a Stallion, C. W. Brown; Paresis in Swine due to Constipation, A. E. Fabian; A question box, creating a prolonged discussion on questions of vital importance.

We were exceedingly fortunate in having Drs. C. E. Cotton and S. H. Ward of Minnesota with us, the part they took on our program and in the general discussions was greatly enjoyed by all present, to show their appreciation, the association elected them to Honorary Fellowship in our Society.

One half day of the session was given over to a clinic, which was arranged for by Dr. J. D. Lee, and held at his Infirmary.

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ary. The amount of material, and kind of subjects selected surely did credit to Dr. Lee and his assistant. Out of the ordinary was a stock judging demonstration by Prof. Pickford of the College of Agriculture.

The meeting closed with a smoker tendered by the Menomonie Chamber of Commerce.

The next meeting will be held at Madison January 16, 17 and 18, 1917.

W. A. WOLCOTT,
Secretary.

Madison, Wis.

STOCK FOOD FROM FISH WASTE

The Office of Information, United States Department of Agriculture, publish information regarding the use of fish meal as a stock and poultry food. This treatise is contained in the United States Department of Agriculture, Professional Paper No. 378, and is issued jointly by the Bureau of Chemistry and the Bureau of Animal Industry, after they had completed experiments in making a stock feed from fish waste, and had tested it at the government farm at Beltsville, Md., as a food for dairy cattle, pigs and chickens.

According to the conclusions reached by the investigators, a vast amount of fish waste, which now is being used wholly for fertilizer, and fish oil, can readily be made to yield a better quality of fish oil and a vast tonnage of a highly concentrated feedstuff. They point out that there will be little loss of fertilizing resources, because most of the valuable fertilizing elements in fish, which are retained in the fish meal, will be available in the manure of the animals fed on this form of concentrate.

In addition to the experiments actually conducted on the government farm, the investigators cite the results of many other experiments conducted by other investigators, particularly in Germany and Great Britain, where fish meal has long been recognized as a valuable supplementary food for ani-

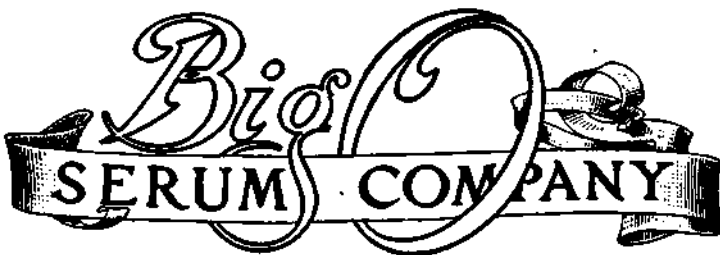
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mals. They point out that in this country, in spite of favorable reports of investigations conducted as early as 1877, fish meal never has been manufactured on a large scale, nor has it been used extensively, largely, they believe, because of an unwarranted prejudice that fish meal would add an objectionable flavor to the meat or milk of animals and to eggs. This opinion, the investigators state, is not warranted. While, in some cases, the fish meal if fed very heavily might give a flavor to the meat of poultry, withdrawing them from this diet for a short period before they are killed would remove all suggestion of unusual flavor arising from this cause.

A bill creating county live stock sanitary boards in each county in the state has been drawn up by Dr. O. E. Dyson, State Veterinarian of Illinois, for presentation to the next legislature. The board is to consist of three members appointed by the governor. Quarterly meetings will be held and

the members will receive \$5.00 a day for their services on the board.

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Kalium nitrate 5ii
Ammon. chlorid 5iii
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M.

Give every four hours.

Excellent results may be obtained in sprains, bruises and also in rheumatism, by covering the joints with absorbent cotton, applying a bandage and keeping the joint wet with a hot saturated solution of sulphate of magnesium.

Pain is relieved and swelling reduced in acute lymphangitis more quickly (and more economically) by wrapping the limb in absorbent cotton and keeping the cotton wet with a hot solution of magnesium sulphate than by almost any other treatment.

Beneficial results are obtained in catarrhal

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mammitis in cows by administering the following:

℞
Sodium bicarb. ℥i
Magnesium sulph. ℥iii-iv
M.

Sig. Give as a drench three or four times daily.

The aforementioned powder will also prove of value in urticaria in the horse.

Magnesium sulphate given in the drinking water to patients suffering with tetanus will prove useful as a laxative; when given in concentrated solution is of value in the treatment of phenol poisoning by converting the acid into a sulpho-carbolate and also in the elimination of the poison.

Good results have been observed in treating chronic gastro-intestinal catarrh in the horse with the following mixture:

℞
Sodium bicarb.
Pulv. nucis vom. ℥iv
Magnesium sulphatis. ā ā ℥xvi
M.

Dose: a heaping tablespoonful in dampened feed T. I. D.

A useful febrifuge powder can be prepared as follows:

℞
Quinin sulph. grs. XXX
Pot. nitrate ℥ii
Magnesium sulphate ℥iiss-iii

M. Give at one dose; repeat every three or four hours.

A useful laxative mixture (mistura alba) for dogs is prepared from the following:

℞
Magn. carb. ℥i
Magn. sulph. ℥vi
Aquae menth. pip. grs. ad. ℥vi
M.

Dose: from two teaspoonfuls to two tablespoonfuls as required.

When a thorough purge is desired in cattle, the following will prove useful:

℞
Pulv. ginger ℥iiss
Sodium chlorid ℥iv-vi
Pulv. nux. vom. ℥i
Magnesium sulph. ℥xvi-xxiv
M.

Administer in at least three quarts of warm water at one dose.

Four ounce doses of sulphate of magnesium combined with one and one-half to two pints raw linseed oil has proved of value in impaction of the colon in horses when given three or four times in twenty-

W. B. Welch, D. V. S., President

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four hours. One to two drachms of fluid-extract of nux vomica should be added to each dose of the above.

Magnesium sulphate in warm solution is worthy of trial in impaction of the cecum. It should be injected directly into the cecum by means of a small trocar and rubber hose attached to a pump.

R. F. REEDS.

CAUTION TO PROSPECTIVE DRUG GROWERS

The Office of Information, U. S. Department of Agriculture, sends the following letter to prospective drug growers:

"Interruption of importations of many drugs, spices and oils made from plants has resulted in certain cases in abnormally high prices for the raw materials and the products derived from them. As a result, many people are looking into the possibility of profit in growing these crops in the United States. Many letters are received each week at the U. S. Department of Agriculture asking how to raise this or that drug plant.

"In almost every case, the drug plant specialists reply that it is doubtful whether the inexperienced grower can grow these plants successfully, or, if he succeeds, will find a satisfactory market for his crop. The raising of such plants, they point out, is a distinct

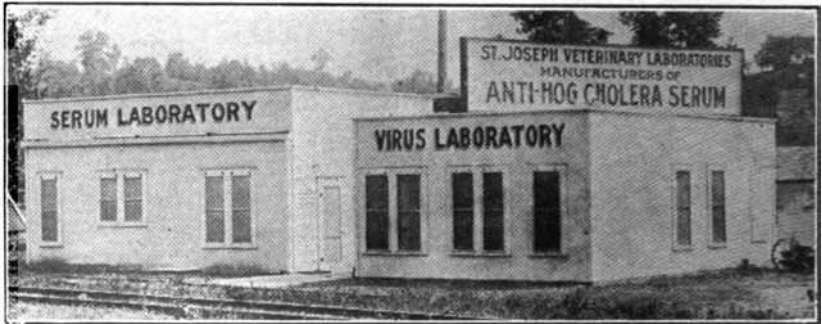
specialty and calls for exact knowledge and skill comparable to that needed by the florist who, to satisfy his market, not only must raise flowers but must produce blooms at certain seasons and with unusual characteristics. Of even greater importance, however, is the fact that the total amount of drug plants that can be consumed in this country in any year is very small compared with our consumption of any of the staple crops. Overproduction in the case of drugs is more serious than in the case of staple crops because staple crops, such as corn and grain, if not sold can be used for food at home for feeding stock or chickens. The drug plant, however, is profitless to the grower unless a drug manufacturer will buy it for use in medicine.

"It is entirely possible, for example, to grow belladonna from which is derived atropine and other alkaloids very valuable in medicine. The total amount of belladonna plants the entire country uses, however, could all be grown on a few hundred acres. Because of the present interruption in the supply of belladonna, a few domestic growers have made a profit recently from this crop. A slight expansion of the industry would quickly increase the supply beyond the demand and this, together with importation, when resumed, might soon glut the local market and leave little or no profit to the

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Dr. G. A. Johnson, Vice-President.	Dr. G. A. Johnson, Veterinarian.
F. G. Whitmer, Secretary and Treasurer.	Dr. F. W. Cairy, Veterinarian.

raiser, unless an export market were developed.

"Digitalis, although one of the most important and valuable of heart tonics, as a crop has relatively small monetary value. The drug plant specialists who have been developing this plant and testing possibilities of its culture in this country have done so, not merely with the idea of fostering an industry, but because this plant is so important in saving human lives that should all supplies be cut off a serious calamity would result. For the same reason the specialists have been working with many other drug plants. It was believed that the drug specialists should be ready to

raise these plants in this country if for any reason the foreign supply should be entirely cut off.

"For years, therefore, the department has been producing many of these plants experimentally, but when the supply of certain of these drugs failed or their prices reached prohibitive figures, a few skilled growers, with the advice of the department, were able to raise small quantities of some of the more important drugs needed in the present emergency. Thymol, widely used for antiseptic purposes, is a drug manufactured in Germany from a seed grown in India. A few days after the interruption of imports the price

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American Journal of Veterinary Medicine
9 South Clinton Street

Chicago, Illinois

leaped from \$2 to \$17 a pound. The department, however, had been experimenting with a common weed known as horsemint, which grows readily in the South, and yields this substance. This horsemint was brought into cultivation, its drug-bearing quality improved, and a simple process for manufacturing thymol from it developed, with the result last year that there was produced commercially a small quantity of this drug. The industry, however, can not be widely extended because the total consumption, as indicated by previous reports, is only about 17,000 pounds a year, an amount which can be produced probably on less than 1,000 acres.

"Lemon grass, producing lemon grass oil used widely by soap and perfume makers, can be grown in Florida on land not suitable for citrus fruits. At most, however, only about \$100,000 worth of this oil is used per year in this country, and even if none were imported, only 2,000 or 3,000 acres of the grass could be raised without overproduction.

"Red pepper, used both as a drug and as a condiment, seems to offer one of the most promising fields for replacing an imported by a domestic article. In 1915 in South Carolina 118 acres, yielding 152,000 pounds, were harvested. There is indication that this year nearly 500 acres may be devoted to this crop. As 1 acre produces nearly 1,300 pounds and our total imports in 1914 were only 8,829,487

pounds, it readily can be seen that a limited acreage would provide all the pepper this country ordinarily consumes.

"Camphor trees, years of experiment have established, can be grown successfully in Florida, along the Gulf Coast and in some coast regions as far north as Charleston. Only within the last seven or eight years, however, have the department specialists considered it at all feasible to grow these trees as a source of camphor. The specialists have discovered that instead of being able to take camphor from trees only once in fifty years, as has been the rule, it is possible to produce camphor each year by pruning the leaves from the trees and distilling them. The possibilities offered by this discovery led to the planting of camphor trees and there are at present 1,000 acres of trees growing in Florida. A second tract of some 18 square miles is being cleared rapidly and planted. Importations of camphor in 1914 were only about 3,500,000 pounds, valued at \$929,000. A limited area in addition to that projected, should supply all the domestic camphor for which there would be a profitable demand. The specialists point out that the domestic product, when produced in any volume, must compete in price with imported camphor. It is impossible, therefore, to estimate what prices growers could obtain for their product after full importations are resumed. This is



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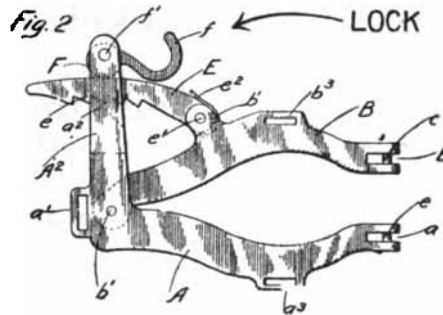
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especially true because prices for imported camphor in the past have been regulated more or less by foreign control which, in the face of domestic competition, might make important reductions in the prices heretofore charged for the imported article, unless an export market be developed.

"In addition to the products mentioned, there are hundreds of other drugs, oils and spices which are imported and which it is possible for this country to produce for itself. In the aggregate, the value of these imported articles is rather imposing, as the figures indicate that this country has been bringing in and using about \$25,000,000 annually of the various drugs, oils and condiments. Much of this money undoubtedly can be kept at home. The mistake made by most people who consider raising these crops is that they are inclined to consider them as staple crops, whereas the domestic demand for them is relatively small, and no foreign market has been developed for them by Americans.

"At the same time those in charge of the work realize that here and there in our agriculture, where soil and climatic and other conditions are right, there is room for certain small industries. For many years there has been a distinct tendency for agriculturists to direct their energies along limited lines. This is indicated most clearly by certain types

of agriculture prevailing in the South, where the farmers have confined their efforts very largely to the cultivation of a single crop. These small crops may therefore offer to a few of our farmers opportunities in highly specialized lines of production which will divert to a certain degree the activities of capital and labor from some of the crowded industries and also supply peculiar products for which the country has been spending money abroad. The drug specialists point out, however, that prices of these articles prevailing under the present disturbed conditions are abnormal and therefore should not be regarded as a safe basis on which to estimate regular returns from such activities.

DR. EICHORN SAYS: The abstract of the paper he presented on shipping fever should state the paper was written by Dr. James Gregg of the British Remounts at Newport News, Virginia, and that it is a record of investigations by Dr. Gregg with which the B. A. I. has no connection.

And also in the report of his discussion on abortion given on page 725 of the September issue, the numbers should be 1 to 500 and 1 to 1000 instead of 1 to 5 and 1 to 2000.

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"R. C. MILLEB, M. D."

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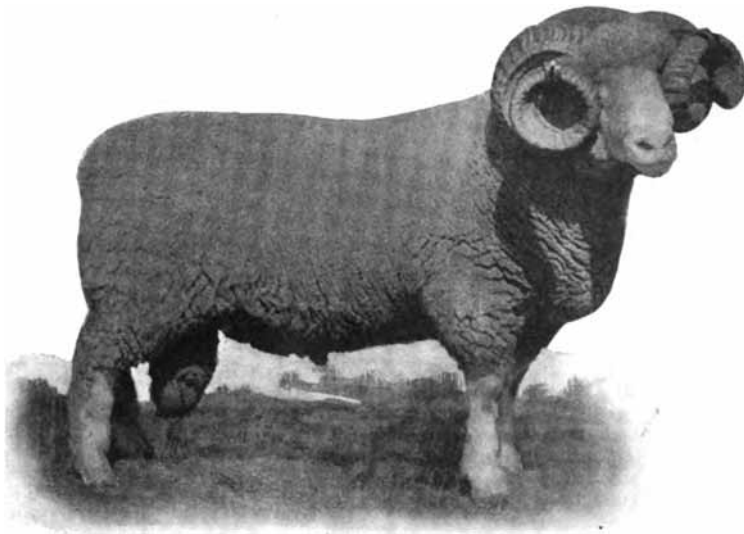
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CONNECTICUT VETERINARY MEDICAL ASSOCIATION

The semi-annual meeting of the Connecticut Veterinary Medical Association was held at the hospital of Dr. E. F. Schofield, at Greenwich, Conn., on Tuesday, July 25th.

There were thirty-eight members and visitors in attendance at the time of the clam bake which was served at about 2 p. m. and was apparently greatly enjoyed by all.

Dr. Schofield's establishment is situated in the midst of a beautiful city park and its surroundings were highly conducive to the enjoyment of those present. The day was devoted to the reading of papers and discussions and to clinics.

At its business meeting the association voted to go on record as being in favor of the adoption of the blue cross, as the National Veterinary Emblem and directed the treasurer to draw a check for \$50 as the C. V. M. A.'s contribution to the Salmon Memorial Fund.

A. T. GILYARD,
Secretary.

OCTOBER VETERINARY MEETINGS

October 4—Veterinary Medical Association of New York City, New York.

October 10—Chicago Veterinary Society, Chicago.

October 10—Keystone Veterinary Medical Association, Philadelphia.

October 11—Maine Veterinary Medical Association, Waterville, Me.

October 18—Los Angeles Veterinary Medical Association, Los Angeles.

October 25—Massachusetts Veterinary Association, Boston.

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ASSOCIATION MEETINGS

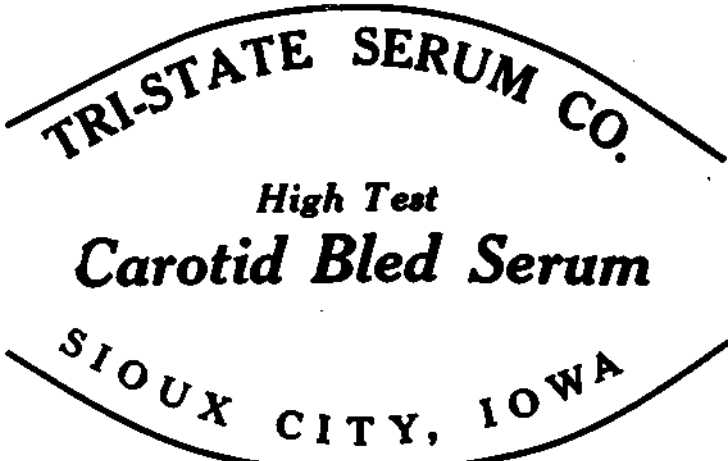
The information given below is up-to-date and has been furnished by the secretaries of the various associations listed. Secretaries are requested to supply us with data regarding their associations after each meeting; otherwise, the association will necessarily be dropped from the list. We ask secretaries to kindly co-operate with us in keeping before the members of their associations the date and place of the next meeting.

Name of Association	Date of Meeting	Place of Meeting	Secretary
Alabama Vet. Med. Assn.	.....	.....	C. A. Cary, Auburn, Ala.
Alumni Assn., Col. of Vet. Med., O. S. U.	Jan. 10, 1917.	Columbus, O.	W. R. Hobbs, O. S. U., Columbus, O.
Alumni Assn., N. Y. State Vet. College	June 10, 1916.	New York.	P. K. Nichols, Port Richmond, N. Y.
Alumni Assn., U. S. Col. Vet. Surg.	.....	Washington, D. C.	Chas. M. Mansfield, 1344 Newton St., Washington, D. C.
American Vet. Med. Assn.	Aug. 21, 25.	Detroit, Mich.	C. M. Haring, Berkeley, Cal.
Arkansas Vet. Med. Assn.	January, 1917.	Little Rock.	R. M. Gow, Little Rock.
B. A. I. Vet. Assn. of So. Omaha.	3rd Monday of month.	So. Omaha, Neb.	J. W. Giffes, c/o B. A. I., So. Omaha
California State Vet. Med. Assn.	2nd Wed. in Mch., June, Sept., Dec.	San Francisco, Cal.	F. M. Hayes, Davis, Cal.
Central Canada Vet. Assn.	Jan. 19.	Ottawa, Ont.	H. D. Sparks, 443 Wellington St., Ottawa.
Central N. Y. Vet. Med. Assn.	Last week in June and Nov.	Syracuse, N. Y.	E. H. Yumken, 2344 N. 18th, Philadelphia.
Chicago Vet. Society	2nd Tues. of month.	Chicago, Ill.	W. B. Switzer, Oswego, N. Y.
Colorado Vet. Med. Assn.	Jan., 1917.	Denver, Colo.	Glenn Brown, 3896 Lowell Ave., Chicago.
Connecticut Vet. Med. Assn.	.....	Greenwich, Conn.	J. E. Newsom, Ft. Collins, Colo.
Genesee Valley Vet. Med. Assn.	January 27.	Rochester, N. Y.	A. T. Gilyard, Waterbury, Conn.
Georgia State Vet. Assn.	Aug. 23, 24, 1916.	Savannah, Ga.	O. B. Webber, 154 Andrews, Rochester.
Hudson Co. Vet. Practitioners' Club.	Monthly	Jersey City, N. J.	Peter F. Bahnsen, Capitol Bldg., Atlanta.
Idaho Assn. of Vet. Graduates.	Feb. 4, 1917.	Boise, Idaho.	B. D. Blair, 782 Montgomery St., Jersey City, N. J.
Illinois State Vet. Med. Assn.	July 19, 1916.	Peoria, Ill.	C. V. Williams, Blackfoot, Idaho.
Illmo Vet. Med. Assn.	.....	E. St. Louis, Ill.	L. A. Merrillat, 1827 Wabash Ave., Chicago.
Indiana Vet. Med. Assn.	.....	Indianapolis, Ind.	L. R. McKinley, Freeburg, Ill.
Iowa Vet. Med. Assn.	.....	Ames and Des Moines.	A. F. Nelson, Indianapolis, Ind.
Kansas Vet. Med. Assn.	Jan. 3, 4, 1917.	Wichita, Kan.	H. B. Truman, Rockwell City, Ia.
Kentucky Vet. Med. Assn.	April	Louisville, Ky.	J. H. Burt, Manhattan, Kan.
Keystone Vet. Med. Assn.	2nd Tuesday of month.	Philadelphia	Robt. Graham, Lexington, Ky.
Los Angeles Vet. Med. Assn.	3rd Wed. of month.	Los Angeles	L. B. Davis, 857 E. Girard, Philadelphia.
Maine Vet. Med. Assn.	Oct. 11.	Waterville, Me.	J. A. Dell, 16th & Pacific, Los Angeles.
Manitoba Vet. Assn.	Feb. 15.	Winnipeg, Man.	M. E. Maddocks, Augusta, Ma.
Massachusetts Vet. Assn.	4th Wed. each month.	Worcester in Sept.; Boston rest of year.	W. Hilton, 275 James St., Winnipeg.
Michigan State Vet. Med. Assn.	1st Tues. & Wed. after 1st Mon. in February.	Lansing, Mich.	E. A. Cahill, Boston, Mass.
Minnesota State V. M. Assn.	2nd Tues. & Wed. Jan.	St. Paul.	W. Austin Ewalt, Mt. Clemens, Mich.
Mississippi State Vet. Med. Assn.	Jan. 10, 11, 1917.	Clarksdale, Miss.	G. Ed. Leech, Winona, Minn.
Mississippi Valley Vet. Med. Assn.	July 7, 1916.	Galesburg, Ill.	E. S. Norton, Greenville, Miss.
Missouri Valley Vet. Assn.	July 10, 11, 12.	Omaha, Neb.	W. Lester Hollister, Avon, Ill.
Missouri Vet. Med. Assn.	Last week in July.	Neosho, Mo.	R. F. Bourne, 1336 E. 15th, Kansas City.
Montana Vet. Med. Assn.	Jan. 28, 29.	Bozeman	C. D. Folse, 1336 E. 15th St., Kansas City.
Nat'l Assn. B. A. I. Employees	2nd Mon. in Aug., 1916.	New York City	A. D. Knowles, 302 S. 4th St., West Missoula, Mont.
Nebraska Vet. Med. Assn.	1st Tues. & Wed. in Dec.	Lincoln, Neb.	S. J. Walkley, 185 N. W. Ave., Milwaukee.
New York State Vet. Med. Society	Aug. 2, 3, 4.	Ithaca, N. Y.	S. W. Alford, Lincoln, Neb.
			C. P. Fitch, Ithaca, N. Y.

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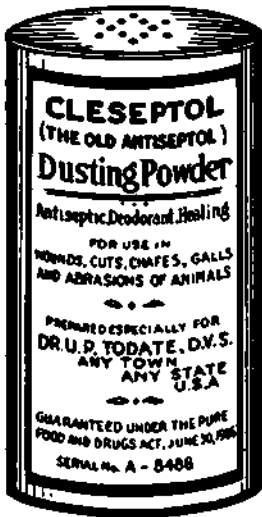


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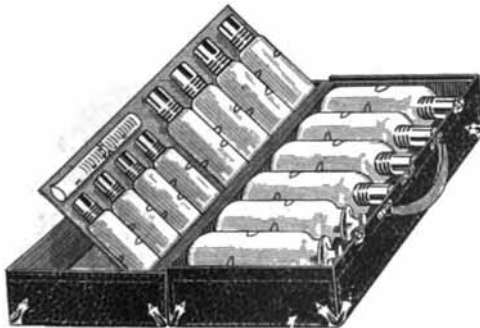
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Name of Association	Date of Meeting	Place of Meeting	Secretary
North Carolina Vet. Med. Assn.	June 21, 22, 1916.	Wrightsville Beach, N. C.	J. P. Spoon, Burlington, N. C.
North Dakota Vet. Assn.	July 18, 19, 20.	Fargo, N. D.	W. J. Mulroony, Havana, N. D.
Northeastern Indiana Vet. Assn.	Sept. 12.	.....	C. R. Baumgartner, Arcola, Ind.
Northwestern Ohio Vet. Med. Assn.	Feb. 16.	Toledo, O.	Paul E. Wood, Ottawa, Ohio.
Ohio State Vet. Med. Assn.	Jan. 11, 12, 1917.	O. S. U. Columbus, O.	F. A. Lambert, care O. S. U., Columbus
Ohio Valley Vet. Med. Assn.	July 27.	Oblong, Ill.	G. J. Behrens, Evansville, Ind.
Oklahoma Graduate Vet. Med. Assn.	July, 1916.	Oklahoma City	R. C. Smith, Enid.
Oklahoma Vet. Med. Assn.	March 7, 8.	Oklahoma City	S. H. Gillier, Norman, Okla.
Oregon Vet. Med. Society	June, 1916.	Probably Corvallis, Ore.	B. T. Simms, Corvallis, Ore.
Pennsylvania State Vet. Med. Assn.	.....	Pittsburgh, Pa.	E. H. Yunker, 2344 N. 18th, Philadelphia
Rhode Island Vet. Med. Assn.	2nd Tues. Jan.	Wayne, Ind.	U. S. Richards, Woonsocket, R. I.
Schuykill Valley Vet. Med. Assn.	June 14, 1916.	Reading, Pa.	C. R. Pottelger, Reading, Pa.
South Dakota Vet. Med. Assn.	July 11, 1916.	Lake Madison.	S. W. Allers, Watertown, S. D.
Southern Aux. Cal. State Vet. Med. Assn.	June 21, 22.	Los Angeles.	J. A. Dell, 16th & Pacific, Los Angeles
Tenn. Vet. Med. Assn.	Nov. 8, 9, 1916.	Humboldt, Tenn.	F. W. Morgan, Chattanooga, Tenn.
Texas Vet. Med. Assn.	.....	Not decided.	Allen A. Foster, Marshall, Tex.
Twin City Vet. Med. Society	Once a month.	St. Paul.	C. C. Palmer, St. Paul, Minn.
U. S. Live Stock Sanitary Assn.	Dec., 1916.	Chicago.	J. J. Ferguson, U. S. Yards, Chicago.
Utah Vet. Med. Assn.	Feb. 5.	Logan, Utah.	E. P. Coburn, Brighton City, Utah.
Veterinary Assn. of Saskatchewan.	.....	Regina, Sask.	R. G. Chasmar, Hanley, Sask.
Vet. Med. Assn. of New Jersey	2nd Thurs. in Jan.	Trenton, N. J.	E. L. Loblein, New Brunswick, N. J.
Vet. Med. Assn. of N. Y. City	1st Wed. ea. mo. except July, Aug., Sept.	New York City.	R. S. MacKellar, 351 W. 11th St., N. Y.
Vet. Med. Assn. of Geo. Washington Univ.	1st Sat. each month.	Washington, D. C.	C. W. Rippon, 2115 14th St., N. W., Washington, D. C.
Vet. Med. Society Wash. State College	1st and 2nd Tues. ea. mo.	Pullman, Wash.	Claude Holden.
Virginia State Vet. Med. Assn.	July 13, 14.	Ocean View, Va.	W. G. Chrisman, Blacksburg, Va.
Washington Vet. Med. Assn.	June, 1916.	Seattle, Wash.	Carl Conder, Bellingham, Wash.
Western N. Y. Vet. Med. Assn.	Last week in June.	Buffalo, N. Y.	F. F. Fehr, 36 Prospect Ave., Buffalo.
Wisconsin Vet. Med. Assn.	Jan. 18, 17, 15, 1917.	Menominee, Wis.	W. A. Wolcott, Madison, Wis.
York Co. Vet. Med. Society	1st Tues. after 1st. Mon. of each month.	York, Pa.	E. S. Bausticker, 325 Newberry, York, Pa.

THE STATE VETERINARIAN

Health Notes, published by the Florida State Board of Health, gives the following as the qualifications of a state veterinarian.

The office of state veterinarian is becoming correspondingly important as medical science progresses. As each new veterinary medical or sanitary discovery is put upon a practical basis, the state veterinarian should become acquainted with it and give his state the accruing advantages.

A state veterinarian is to the health of the live stock what a state health officer is to the public health. Each of the two positions should be filled by men specially fitted and adapted to the work of his office. There is as much reason for a state veterinarian being specially fitted and equipped in what goes to make up a practical and scientific medical education as there is for a state health officer to know these things.

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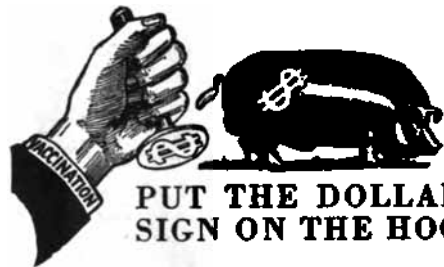
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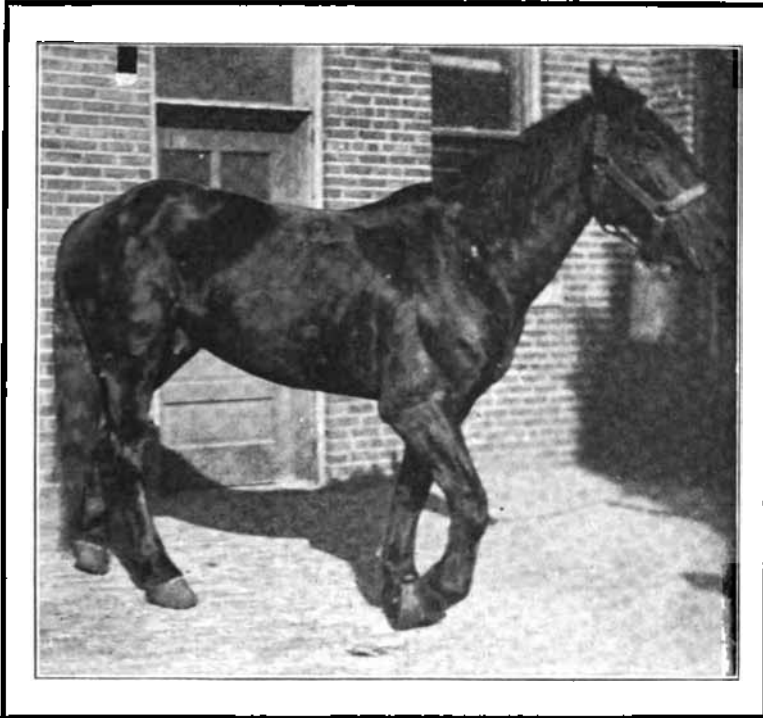
state veterinarian are fast changing. The time is now here when he is appointed for what he has done in the past, and what that past promises for the future, in scientific work, and not for the work he has done, or may do at the polls. The live stock industry is advancing so rapidly that more than mere ability to dress well and be a good "mixer" is demanded. Both these attributes are pleasant and to be desired, but the times demand, principally, a man of ability. He should have a thorough knowledge of all the contagious and infectious diseases of animals. He should be sufficiently well grounded in bacteriological and pathological technique to make an investigation, in a laboratory. He must also be a practical veterinarian, so as to be able to differentiate the diseases, and thus save much valuable time and expense. The man who would require a week to determine the nature of a disease by bacteriological methods, when, were he a practical veterinarian of experience, he could have made a diagnosis at his first visit, would be of little use to the state.

The state veterinarian should be a man who could inspire the confidence of the veterinary profession in his state, as there are times when he is called to act as referee, or in consultation, or has to pass upon the correctness of the diagnosis of other veterinarians.

The times, especially in the southern states, are demanding state veterinarians with executive ability, a knowledge of men, and how to handle them with the least friction, in order to expedite work. Many sanitary laws are lacking in elements of strength. Hence, there are times when public opinion can be enlisted for or against a condition. The veterinarian must be a man of sufficient breadth of view to recognize the situation and make the most of it for all concerned. For instance, it is no easy matter, in a state where there is no law to compel an owner to destroy a glandered animal, without compensation, to get the owner to do so. He may admit the animal is a menace to his neighbors, but fails to see any justice in being asked to sacrifice his property, in what he considers, their interest.

The modern veterinary profession is still so young that there are few, even in the profession, who fully understand the scope of the work of state veterinarian, and it is especially important, therefore, they should be men of wide experience in veterinary work, and thoroughly posted in the latest developments in sanitary, medical subjects, so as to be able to take advantage of the best work that is being done in all parts

RADIAL PARALYSIS



EVERY practitioner who has made a success of the treatment of lameness, has mastered the principles of diagnosis. Successful treatment follows when the veterinarian knows the whys and wherefores of diagnosis and employs rational measures.

In section two of "Lameness of the Horse," diagnostic principles are presented in a clear and understandable manner. Therein, a systematic method of examination is described in detail and, if read with care, will prove decidedly instructive. The book contains in addition, a complete treatise on other phases of the subject of lameness. Treatment is given particular attention.

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of the world. He should also be able to originate and enforce new methods that may be indicated by local conditions.

It is generally admitted nowadays, that where a state veterinarian has been only a local practitioner without the opportunity for development along the line of state veterinary work, he has either failed as a state veterinarian, or has acquired the necessary experience to do the work of his position at the expense of the taxpayers of his state.

In order for the state to get the position of state veterinarian properly filled, the salary should be commensurate with the importance of the position, so that the incumbent may give his entire time to the duties of his office.

HAUSSMANN & DUNN'S EXHIBIT OVERLOOKED

Through an unaccountable oversight, mention of the exhibit of Haussmann & Dunn Co., at the Detroit meeting of the A. V. M. A., was omitted last month. This firm had the usual extensive display of veterinary instruments and surgical appliances in a room on the exhibit floor of the Hotel Statler and as is always the case, attracted their full share of visitors, who made purchases of satisfactory amounts. The following new things attracted particular attention:

Dunn's Safety Emasculator.

Dunn's Safety Mouth Speculum.

Prof. F. Brown's Ruminant Outfit.

Prof. William's Sterility Instruments.

Prof. G. B. McKillip's Roaring Irons.

Dunn's Casting Harness.

FOR THE HUMANE SLAUGHTERING OF ANIMALS

W. W. Greener, an English gun, rifle and cartridge manufacturer, having a showroom in New York, has issued a pamphlet on the humane slaughtering of animals. The weapon for slaughtering consists of a neat and compact instrument which is fashioned to fit against the cranium of any animal. A cartridge, which is contained within the instrument, is fired in a manner similar to that of the pistol, and as in shooting when this is properly done, death results instantaneously.

Dr. W. H. Dalrymple, of the Louisiana State University, before a gathering of the parish demonstration agents, stated that Louisiana is an ideal section for sheep raising. He said that farmers must get rid of the notion that sheep are outcasts from the society of our farm animals and fit only to be employed as scavengers and weed destroyers. He stated that sheep if intelli-

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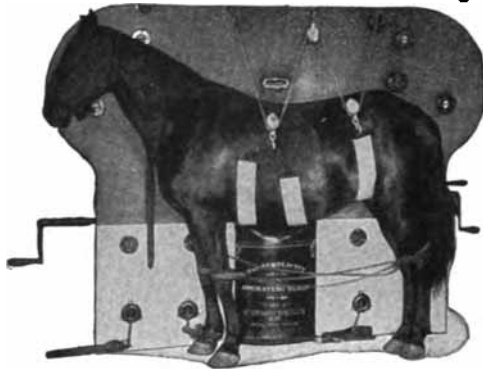
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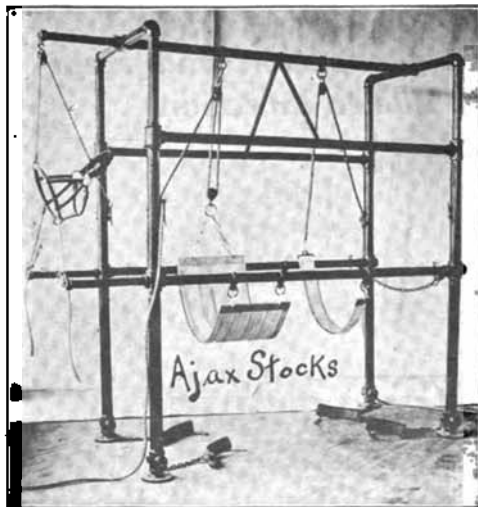
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gently handled and cared for to the same extent as other farm stock, can be made one of the most profitable branches of animal husbandry. He referred to the fact that in Great Britain, where all of our breeds of sheep originated, with the exception of the Merino, a flock of high-grade or pure-bred sheep were to be found on every farm, and largely rented farms, and on the highest priced lands, and looked upon as one of the most profitable of the live stock investments. He hoped it would not be very long before there would be sheep on every farm in Louisiana; not merely a dozen or so, but enough to warrant some attention being given to them and making the industry worth while. It was the opinion of Dr. Dalrymple that the climate of Louisiana was most favorable to the medium-wool breeds, especially the Shropshire.

THE NEWSPAPERS SAY—

The wool car of the Department of Agriculture, which left Livingston, Mont., on January 19th, has given demonstrations in more than 50 towns of the important sheep-growing States, to at least 6,000 persons interested in wool growing. Since leaving Livingston, the car has toured Montana, Idaho, Wyoming and Utah.

Ranchers in the Centennial valley have lost thousands of sheep lately because of poisonous vegetation. It is said to be the largest loss from poisoning in several years.

Dr. David Smith of Sheperdsville, Ky., has been undergoing the Pasture treatment. He feared he might have been infected while treating a cow that later developed rabies.

Dr. A. A. Zinkgraf has transferred his office from Pulaski to Plymouth, Wis.

Dr. A. T. Peters of Peoria was one of the speakers at the Illinois Live Stock Breeders' association convention held at Taylorville, Ill. on August 22, 23 and 24. Dr. Peters is secretary of the association.

The members of the Kentucky state veterinary board met at Frankfort, August 15th, and effected an organization. The members are Dr. C. H. Tiffin, Frankfort; Dr. E. Caldemeier, Louisville; Dr. L. E. Westmoreland, Owensboro; and Dr. L. H. Crissler, Covington.

Dr. L. A. Ringo of Bellflower, Ill. recently sold his practice to Dr. Bratton of Fisher, Ill.

Dr. O. N. Smith of Waukegan, Ill., is the owner of a pacing mare, Lady I Must, that has created a sensation in the Eastern Illi-

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- 6 You do not have to guess at the outcome.
- 7 You will win yourself more business by the results.



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SAINT PAUL U.S.A.

nois circuit. Dr. Smith purchased the mare at a stock sale in Chicago last year without knowing her ability as a racer. In July, she captured third prize at Mendota, Ill. and second at Aurora, while racing against a large field.

The American demand for wool was the most conspicuous feature of the Australian wool market during the year 1915-16. As a result prices for certain grades of the product reached figures never before known in Australia. In the Sydney market alone the United States more than doubled the quantity of wool taken during the previous year. The total shipments jumped from 92,000 bales in 1914-15 to 273,600 bales in 1915-16.

Dr. John H. Scott, assistant state veterinarian for twenty-seven years, died at his home in Peoria, Ill., August 5th. Dr. Scott, besides being well known as a veterinarian, was also one of the most efficient race starters. He officiated at the Great Western circuit meet recently. He was formerly a member of the board of supervisors and of the city council at Peoria. He was fifty-four

years old, having been born in Canada, February 16, 1862, and came to Peoria twenty-seven years ago. He was a graduate of the Ontario Veterinary College and for fifteen years chairman of the Illinois Board of Veterinary Examiners. He leaves a widow, whom he married in London, Ontario, August 19, 1889.

Vincil Deakin attained highest honors in biology in the St. Joseph Mo., Central High school, this and by so doing won a half year free scholarship in the St. Joseph Veterinary college. Deakin will likely enter the 1916 freshman class at St. Joseph.

Dr. George P. Frost, a popular Chicago bachelor, married Miss Lucille Ritchie at Valparaiso, Ind., August 9th. Miss Ritchie met the doctor when she brought a cat to his hospital at 4527 Ravenswood Ave., Chicago. After the ceremony at Valparaiso, the couple started East on their honeymoon, via automobile. When they return to Chicago they will live at 4725 Sheridan Road.

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Dr. A. S. Alexander of the Wisconsin University college of agriculture demonstrated the effects of bovine tuberculosis before the 22nd annual convention of the Wisconsin Bankers' association, August 9th, Dr. O. H. Eliason, state veterinarian, discussed the Economic Importance of a Healthy Herd.

An investigation into the origin of the recent outbreak of anthrax north of Boston has been made by the Massachusetts State Department of Health, and a single shipment of hides from Hankow, China, was held responsible for the introduction of the disease.

Dr. John Matyas, formerly of Lakefield, Minn., has located at Charles City, Iowa.

Dr. Charles C. Lyford, 62 years old, of Minneapolis, Minn., was severely injured when a buggy in which he was riding was struck by an automobile, August 8th.

The Cleveland Animal Protective association has raised a fund of \$5,000 for a home for domestic animal waifs. There will be a hospital for cats and dogs, an ambulance and an electric chair to end the miseries of the incurable.

James Price of Onalaska, Wis., recently sold a Hereford bull at an auction sale in Kansas City for \$11,100, the highest price ever paid for such an animal. Fifteen years ago, Price worked as a farm-hand on a stock farm in Indiana. He saved a few hundred dollars, bought some cheap land in Wisconsin and began breeding Hereford cattle. He now has one of the finest Hereford herds in the world.

Dr. J. A. McDonald of Galt, Ontario, while treating a sick dog was bitten by the animal on the thumb. The dog was afterwards found to have rabies and Dr. McDonald took the Pasteur treatment.

Dr. Richard Whiteside Braithwaite died at his home at Champaign, Ill., August 7. He was born in England January 25, 1854, educated at the Weeton common school, the Kirkham grammar school and the Blackpool agricultural college. He later served his apprenticeship under a government veterinarian. In 1881 he came to the United States with an importation of horses. He moved to Champaign in 1894 and established the first veterinary hospital there in partnership with J. W. Cleveland. He retired from active practice seven years ago.

A kitten with eight legs, two tails and three ears, was recently born at Athens, Tenn.



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No. 11

The Value of Urine Examination in Dog and Cat Practice

By DR. CARL A. ZELL, Chicago, Ill.

URINE examination, as all know, is extensively employed in medical practice, where it plays an important role in diagnosis. In fact, in many cases this affords the only means of establishing a diagnosis. Veterinarians neglect this important work to the extent that they are at times seriously handicapped in diagnosis. Unlike the physician who is able to obtain a complete history of many cases that he is called upon to treat, the veterinarian is frequently obliged to arrive at his conclusions in the examination of his patients without the aid of history of cases. Because of the fact that dogs are by instinct foragers, anamnesis is not dependable in many acute digestive disturbances.

In many cases when dogs that are apparently anemic and that frequently vomit and gradually lose flesh until they become almost emaciated, veterinarians are apt to conclude at once that gastric disturbances are the cause of the trouble. Acting upon this belief, they treat subjects along lines calculated to correct the supposed gastric disorders, but no improvement results. In about fifty per cent of such cases urine analysis would reveal the existence of some

kidney disturbance and proper treatment would result in saving many animals which are otherwise lost.

"Indicanuria" will show that absorption of putrefactive products from the intestine is in progress; as, for example, in obstruction of the bowels, intestinal catarrh and fermentation. These instances serve to illustrate the importance of urine analysis.

In making numerous autopsies on dogs and cats, I have found so many cases in which there existed disease of the kidneys, bladder and liver that were unsuspected because of no urine analysis having been made, that I decided to compare pathological lesions found in autopsy with diagnosis made as the result of urine analysis. In a number of cases where such comparison was made, microscopic examination of sections taken from the kidney, bladder, liver and other diseased organs was made. The accompanying table shows the results of such examination.

The routine work of making urine analysis is to be found in textbooks on this subject, but if the practitioner has insufficient time to devote to this work, any up-to-date laboratory can attend to

this for him. It is, of course, essential that the proper interpretation be given findings in such diagnostic work, and likewise the manner of obtaining and transporting samples of urine is important.

Catheterization is the best means of obtaining urine for examination, and in this way it may be immediately transferred into a sterile bottle. However, urine may be collected by means of a suitable basin which is attached to a long handle, and when dogs are taken out on a leash for exercise, one may catch the urine as it is voided when the animal micturates. This method requires the employment of care so as not to frighten the subject when the utensil is placed in position to receive the urine.

For the preservation of urine so obtained, the addition of a little chloroform or thymol or camphor is necessary. Ten minims of chloroform added to three ounces of urine is sufficient to preserve the sample.

The report of a urine analysis should be arranged in a regular order, and the following method is practical:

THE URINARY REPORT.

- I. Number of Specimen.
- II. Source.
- III. Appearance of the Urine: Normally the urine of dogs appears clear, and practically without sediment.
- IV. Color: Normally the urine of the dog has a pale yellow or amber color. In pathological conditions the color changes to a reddish or brownish color; sometimes it is a greenish color.
- V. Sediment: A trace of sediment forming in the standing urine is considered normal.
- VI. Specific Gravity: The specific gravity of urine of the dog ranges from 1,016 to 1,060, depending upon the diet; that of the cat from 1,020 to 1,040.
- VII. Total Solids: It is important to keep track of the elimination of the urinary solids. Many disease conditions depend upon a decreased output of solids, a consequent autotoxemia resulting from the retained waste products. A decided increase in the solids is of considerable diagnostic value.

The estimation of the total solids is an

easy matter. In employing the metric system, Haesers coefficient is used. Multiply the last two figures of the specific gravity by 2.33 and the resulting figure is the amount of solids in grammes per 1,000 Cc.

Increased Solids Indicate: Hearty diet, diabetes mellitus.

Decreased Solids Indicate: Meager diet, renal insufficiency due to kidney disease, and almost all chronic diseases.

VIII. Total Acidity: Normally 40,000 to 50,000 units (40 to 50 degrees).

Increased Acidity Occurs in: Starvation, proteid diet, excessive exercise, rheumatism, autotoxemia, intestinal fermentation, and putrefaction, suboxidation, acid drugs such as benzoic, boric, or free fatty acids.

Decreased Acidity Occurs in: Chronic cystitis, pyelitis, pyelonephritis, the ingestion of alkalies (carbonates, citrates, acetates, phosphates, etc.).

IX. Urea: Normally: 2 to 3.5 per cent.

Increased Urea Occurs in: Exercise; hearty mixed diet; the beginning and the end of febrile states; diabetes, goiter, leukemia, pernicious anaemia and during the administration of such drugs as boldin, colchicin, morphin, codein, iron, lithium carbonate, potassium, sodium and ammonium chlorid.

Decreased Urea Occurs in: Starvation, vegetable non-nitrogenous diet, fatigue, acute yellow atrophy, carcinoma or cirrhosis of the liver, chronic nephritis, paralysis, chronic rheumatism, tuberculosis, anaemia, excessive dropsy, excessive vomiting and diarrhea, obesity, small doses of quinin, resorcin and phenol.

X. Uric Acid: Normally 0.5 grams per day.

Increased: Suboxidation, diet rich in extractives, increased metabolism, acute disease (as pneumonia), circulatory interference, diseases of the spleen and liver, leukemia, drugs as nuclein, caffeine and theobromin.

Decreased: Low proteid diet, hepatic inactivity, chronic kidney disease, most chronic general diseases, after large doses of quinin and after sodium benzoate.

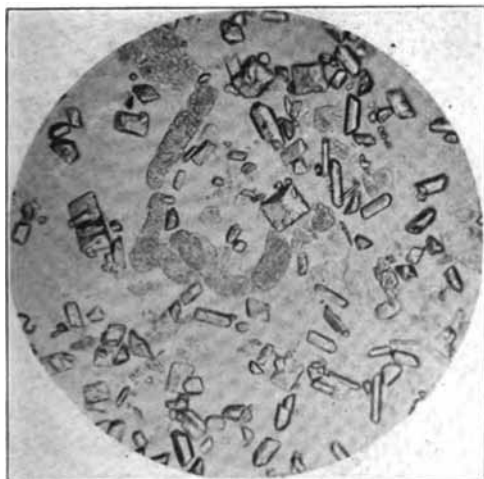
XI. Indican: Normally a trace only.

Increased: Found as a characteristic in fecal putrifaction in small intestine, diarrhea, chronic diffuse nephritis, chronic interstitial nephritis, gastritis, carcinoma of the stomach, acute peritonitis, enteritis, carcinoma of the mesentery, diseases of the liver and pancreas, in-

testinal intussusception, pneumonia, pleurisy, meningitis, acute articular rheumatism, emphysema, gangrene of the lungs and tuberculosis.

Decreased: Constipation with hard non-absorbable feces and in some diseases of the large intestine.

XII. Blood: Blood in the urine may be



Sediment of urine. Crystals and casts.

due to acute or chronic renal congestion, acute nephritis, malignant type of contagious diseases, and to severe infections, blood dyscrasias, hemophilia, purpura, leukemia, renal abscess, aneurism, infarcts or thrombosis. Also to renal or vesical calculi, ruptured vessels, malignant growths, cystic degeneration, and injuries or inflammatory affections of the urinary tract.

XIII. Bile: The bile pigments occur in the urine in every type of jaundice, cirrhosis of the liver, gallstones, hepatic cancer and also from severe infections.

XIV. Albumin: An abnormal constituent of the urine, very frequently indicating nephritis. It may occur occasionally without essential organic changes of the kidney. It is present in large amount in acute nephritis. In moderate amount in chronic parenchymatous nephritis; and little or none is present in chronic interstitial nephritis and amyloid kidney.

XV. Sugar: Glucose in the urine is a cardinal symptom of diabetes mellitus. Yet it may appear temporarily after the digestion of excessive quantities of sugar or starch. It may also occur during convalescence from acute febrile diseases, also as a result of injuries and diseases of the nervous system. Tran-

sient glycosuria is observed in the obese, in suffocation; carbon dioxide poisoning and following the use of curare, amyl nitrate, ether, chloroform, strychnin, morphin, cocain, and adrenalin. Lactosuria occurs in pregnancy.

XVI. Squamous epithelium: Bladder-epithelium is occasionally found normally, but generally indicate cystitis.

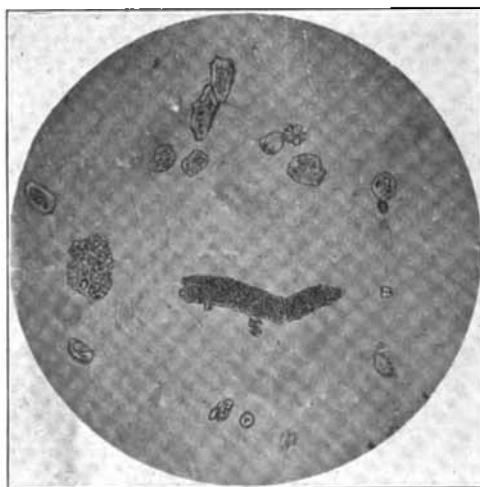
XVII. Renal epithelium: Renal cells in degenerative diseases of the kidney, especially in chronic interstitial nephritis. Fatty renal cells in acute nephritis, subacute glomerular nephritis and chronic diffuse nephritis.

XVIII. Pus-cells: When present indicate suppurative process along urinary tract.

XIX. Red-blood-corpuscles: (See XII. Blood.)

XX. Casts: 1. Hyaline casts, the most common casts are found in diseases of the kidney, circulatory, toxic, or inflammatory; they are habitually present in chronic interstitial and chronic diffuse nephritis, and in amyloid infiltration. They may be temporary or occur in passive or active hyperemia and in acute nephritis; very many are to be observed just before coma in diabetes.

2. Granular casts occur in all severe diseases of the kidney. If many are pres-



Granular casts and epithelial cells. (Urine sediment.)

ent a chronic degenerative process obtains.

3. Epithelial casts, when present, indicate a desquamative renal affection, acute nephritis; if granular or fatty degeneration occurs, a chronic nephritis is present.

4. Blood casts are indicative of a hemorrhage and may be observed in acute nephritis. When found in hematuria they indicate a renal affection.
5. Pus casts are observed in amyloid degeneration of the kidney, but may occur in other renal diseases especially in pyonephritis.
6. Fatty casts are usually significant of subacute or chronic nephritis with fatty degeneration, large white kidney.

XXI. MUCIN: Cystitis and urethritis.

XXII. Fat: Lipuria and chyluria.

XXIII. Spermatozoa: Constipation, cystitis, prostatitis, sexual excess and vertebral fractures.

XXIV. Bacteria: Bacillus coli communis, Staphylococci and Streptococci are very often found.

XXV. Uric acid crystals: (See X., Uric acid) abundant sediment of uric acid-

crystals may be due to too great concentration or too great acidity of the urine, rather than to so called uric-acid-diathesis.

XXVI. Urates: Amorphous sodium or potassium, are found only in an acid urine.

XXVII. Triple phosphates: There are usually arranged in coffin-lid or fern-like form.

XXVIII. Amorphous phosphates: These are found in neutral and alkaline urine.

XXIX. Calcium oxalate: Is found in diseases of nervous system, heart and lungs; with pus in calculi and in sub-oxidation.

This outline is confessedly incomplete, for more extended discussion the reader is referred to the standard text-books, but I hope, it will be helpful in the interpretation of the findings in the analysis of samples of urine mentioned in the table below:

1 No.	2 Source	3 Appear	4 Color	5 Sediment	6 Spec. Grav.	7 Tot. Solids	8 Acidity	9 Urea
123.	Dog	sl. cloudy	deep amber	trace	1.008	18.64	40	0.9
136.	"	"	"	"	1.027	62.91	70	3.2
137.	"	"	amber	"	1.012	27.96	30	1.6
139.	"	"	"	"	1.029	67.57	40	4.3
140.	Cat	"	"	"	1.056	13.48	120	1.1
145.	"	"	reddish	mod. amt.	1.023	53.59	neutral	2.8
156.	Dog	"	deep amber	trace	1.048	111.84	74	5.6
158.	"	"	"	"	1.023	53.59	65	1.6
160.	"	"	"	"	1.040	93.28	88	6.2
161.	"	"	amber	"	1.020	46.60	38	3.3
164.	"	"	deep amber	mod. amt.	1.038	88.54	90	3.4
165.	Cat	"	"	trace	1.022	51.26	20	3.0
167.	Dog	very cloudy	"	mod. amt.	1.022	51.26	75	1.9
168.	"	"	"	much	1.046	107.18	105	5.0
173.	"	cloudy	"	trace	1.052	121.16	83	3.0
174.	"	"	"	mod. amt.	1.024	56.92	33	2.4
202.	"	very cloudy	"	"	1.039	70.37	94	5.3
234.	"	cloudy	"	much	1.023	53.59	42	2.8
I.96	"	very cloudy	"	"	1.028	65.24	160	2.8
I.97	"	cloudy	greenish	trace	1.046	107.18	125	4.0

1 No.	2 Source	10 Uric Acid	11 Indican	12 Blood	13 Bile	14 Albumen	15 Sugar	16 Squamous-Epithelium
123.	Dog	increased	much	none	much	trace	none	many
136.	"	"	"	"	none	"	"	"
137.	"	decreased	mod. amt.	"	"	0.3%	"	"
139.	"	increased	"	"	sl. trace	0.6%	"	mod. amt.
140.	Cat	"	very much	trace	trace	0.4%	"	many
145.	"	none	much	mod. amt.	"	1.4%	"	"
156.	Dog	much	very much	sl. trace	sl. trace	0.7%	"	very many
158.	"	increased	trace	"	"	0.2%	"	"
160.	"	"	much	none	"	1.0%	"	mod. amt.
161.	"	"	"	"	"	none	"	"
164.	"	much incr.	"	"	"	0.1%	"	"
165.	Cat	decreased	sl. trace	mod. amt.	trace	1.1%	"	many
167.	Dog	much. incr.	very much	trace	"	0.6%	"	"
168.	"	"	mod. amt.	"	"	0.6%	"	very many
173.	"	increased	"	none	"	0.1%	1.6%	mod. amt.
174.	"	"	"	trace	sl. trace	0.6%	none	"
202.	"	"	very much	sl. trace	mod. amt.	0.2%	"	"
234.	"	"	"	trace	trace	0.3%	"	very many
I.96	"	"	much	"	"	0.4%	"	many
I.97	"	much incr.	trace	sl. trace	much	0.3%	"	"

1 No.	2 Source	17 Renal- Epithelium	18 Pus Cells	19 Red Blood Corpuscles	20 Casts	21 Mucin	22 Fat	23 Spermatozoa
123.	Dog	mod. amt.	few	none	hyal. gran.	mod. amt.	none	many
136.	"	"	mod. amt.	few	hyal.	trace	"	"
137.	"	very many	much	mod. amt.	hyal. gran.	mod. amt.	"	mod. amt.
139.	"	many	few	few	hyal.	trace	trace	none
140.	Cat	mod. amt.	mod. amt.	mod. amt.	hyal. gran.	mod. amt.	none	many
145.	"	"	very much	many	"	"	many	none
156.	Dog	few	few	few	none	trace	none	very many
158.	"	"	"	"	"	mod. amt.	"	none
160.	"	mod. amt.	"	"	hyal. gran.	trace	"	"
161.	"	few	"	none	none	none	"	"
164.	"	mod. amt.	mod. amt.	very few	gran.	trace	"	very many
165.	Cat	few	much	mod. amt.	none	"	"	none
167.	Dog	very many	mod. amt.	few	hyal. gran.	much	"	very many
168.	"	"	many	many	gran.	"	"	none
173.	"	mod. amt.	few	few	hyal. cylind.	trace	"	many
174.	"	"	"	mod. amt.	gran.	"	"	"
202.	"	"	"	few	"	much	"	very many
234.	"	many	mod. amt.	mod. amt.	hyal. gran.	"	"	many
I.96	"	mod. amt.	"	few	"	mod. amt.	"	"
I.97	"	many	"	"	"	"	"	"

1 No.	2 Source	24 Bacteria	25 Uric Acid Cryst.	26 Urates	27 Trip. Phosphates	28 Amorph. Phosphates	29 Calate
123.	Dog	none	mod. amt.	mod. amt.	none	none	none
136.	"	coli. staph.	many	"	"	"	"
137.	"	"	few	none	"	"	"
139.	"	coli	many	very many	"	"	"
140.	Cat	"	few	mod. amt.	"	"	many
145.	"	coli. st.	none	few	very many	trace	few
156.	Dog	coli	few	mod. amt.	none	none	none
158.	"	none	"	few	"	"	"
160.	"	coli	mod. amt.	many	"	"	"
161.	"	"	"	"	"	"	"
164.	"	"	"	mod. amt.	"	"	"
165.	Cat	coli. staph.	none	few	"	"	"
167.	Dog	coli	many	very many	"	"	"
168.	"	"	very many	many	"	"	"
173.	"	"	mod. amt.	mod. amt.	"	"	few
174.	"	"	few	few	"	"	"
202.	"	none	mod. amt.	mod. amt.	"	"	none
234.	"	coli. st.	many	many	"	"	"
I.96	"	coli	very many	"	"	"	few
I.97	"	"	"	very many	"	"	none

CLINICAL—DIAGNOSIS

1 No.	2 Source	
123.	Dog	Chron. parench. nephritis; hyperacidity; poor elimination; intest. fermentation; alb. Hyperacidity; intestin. fermentation; cystitis; many uric-acid crystals.
136.	"	Chron. parench. nephritis; cystitis; prostatitis; albuminuria; intest. fermentation.
137.	"	Acute interstitial nephritis; very many crystals; albuminuria; intest. fermentation.
139.	"	Chron. parench. nephritis; cystitis; intestin. fermentation.
140.	Cat	Chron. parench. nephritis; albuminuria; intest. fermentation.
145.	"	Hyperacidity; intest. fermentation; albuminuria.
156.	Dog	Hyperacidity; albuminuria.
158.	"	Chron. parench. nephritis; intest. fermentation.
160.	"	Intest. fermentation.
161.	"	Chron. parench. nephritis; renal calculi; hyperacidity; intest. fermentation.
164.	"	Cystitis; albuminuria.
165.	Cat	Chron. parench. nephritis; albuminuria; intest. fermentation.
167.	Dog	Chron. parench. nephritis; hyperacidity; intest. fermentation; cystitis.
168.	"	Diabetes mellitus; hyperacidity; albuminuria; intest. fermentation.
173.	"	Chron. parench. nephritis; intest. fermentation; prostatitis; albuminuria.
174.	"	Chron. parench. nephritis; intest. fermentation; albuminuria.
202.	"	Chron. parench. nephritis; intest. fermentation; prostatitis; albuminuria.
234.	"	Advanced chron. parench. nephritis; hyperacidity; albuminuria; intest. fermentation.
I.96	"	Parench. nephritis; hyperacidity; albuminuria.
I.97	"	

PATHOLOGICAL—DIAGNOSIS

1 No.	2 Source	
123.	Dog	Chron. parench. nephritis; gastro-enteritis.
136.	"	Cystitis; stomatitis; gastro-enteritis; congestion of the kidney and liver.
137.	"	Chron. parench. nephritis; cystitis; prostatitis; hemorrhagic enteritis.
139.	"	Interstitial nephritis; hyperemic bladder and intestine; cachexia.
140.	Cat	Chron. parench. nephritis; cystitis; chron. hepatitis.
145.	"	Chron. parench. nephritis; cystitis; endometritis.
156.	Dog	Gastro-enteritis; cystitis; prostatitis.

No.	Source	
158.	Dog	Hemorrhagic gastro-enteritis, hemorrhagic congestion of liver and kidney.
160.	"	Chron. parench. nephritis; pneumonia; enteritis. (Distemper.)
161.	"	Gastro-enteritis.
164.	"	Chron. parench. nephritis; cystitis; chron. hepatitis.
165.	Cat	Cystitis, endo-metritis.
167.	Dog	Chron. parench. nephritis; smaller intestine inflamed; spleen enlarged.
168.	"	Chron. parench. nephritis; endometritis, vaginitis, diffuse enteritis; lipoma.
173.	"	Cloudy swelling of kidney and liver; chron. catarrh of the smaller intestine.
174.	"	Chron. parench. nephritis; prostratitis; liver and spleen congested.
202.	"	Chron. parench. nephritis; prostatic tumor (hyperplasia); cystitis; fat liver.
234.	"	Chron. parench. nephritis; endotheliomas in lungs, prostate, and spleen.
I.96	"	Parench. nephritis; cystitis; liver and intestine inflamed. (Rabies.)
I.97	"	Parench. nephritis; cystitis; liver congested; intestine hyperemic. (Rabies.)

In the above table thirteen animals (Nos. 123, 137, 140, 145, 160, 164, 167, 168, 174, 202, 234, I.96, I.97) showed in the urine examination all the symptoms of a parenchymatous nephritis, which diagnosis proved to be absolutely correct by the pathological findings on post-mortem examination.

In the case of No. 39 an interstitial nephritis was diagnosed in the urine analysis and corroborated through the pathological sectioning of the kidney.

In ten cases (Nos. 136, 137, 140, 145, 156, 164, 165, 202, 234, I.97) cystitis was found in the urine examination as well as by the pathological diagnosis.

Prostatitis was observed in five cases (137, 156, 174, 202, 234) and proven correct on the post-mortem examination.

With the "indican-test" all disturbances of the intestinal tract were manifested in sixteen cases (123, 136, 137, 140, 145, 156, 158, 160, 161, 164, 167, 168, 173, 202, 234, I.96) and found correct at the autopsy.

One distemper case (160) was very interesting; this dog died in spite of every possible attention. The urine analysis showed a typical case of a chronic parenchymatous nephritis and the indican test gave a strong reaction. The autopsy proved not only that the kidneys were affected but also that gastro-enteritis and pneumonia existed. This dog did not die from distemper, but from the results of the kidney complication.

Cattle Scabies Bulletin No. 1—second edition, revised, by Dr. A. W. French, State Veterinarian of Wyoming, contains extracts from a law in reference to the duties of the state veterinarian, concerning contagious diseases. The

Two cases (I.96, I.97) were rabies cases. Both subjects gave in the urine, as well in the pathological sections, typical symptoms of a parenchymatous nephritis. We know that the rabies virus is passing through the kidney and is often eliminated in the urine. This accounts for the irritation of the kidneys. The indican test indicated that intestinal fermentation was present. This was due to the great amount of indigestible material in the stomach and small intestines, such as is usually found in rabies cases.

Conclusions: When the above stated facts are carefully considered there can be no doubt that urine analysis is of great importance in the dog and cat practice.

Urine analysis is of great help to the practicing veterinarian in establishing diagnosis and enables the practitioner to save many cases which would otherwise be lost.

I hope that these suggestions will encourage other veterinarians to study this matter more carefully, for I believe that a great improvement in the handling of small animal practice will result.

I want to express my thanks to Dr. R. F. Bisanz of the Abbott Laboratories, who assisted me so kindly in making the urine analyses and to the Drs. D. M. Campbell, W. Repmann and G. P. Frost for furnishing me the cases for this investigation.

publication also contains regulations for the eradication of cattle scabies in Wyoming. Plans and drawings with specification for dipping-vats, are given and likewise formulae for dips together with some good advice to the stock-owner constitute a part of the bulletin.

Distension of the Tarsal Joint Capsule*

By J. V. LACROIX, Kansas City

DISTENSION of the capsular ligament of the tibial tarsal (tibioastragular) joint with synovia is commonly known as bog spavin. This condition is separate and distinct from that of distension of the sheath of the deep flexor tendon (perforans) though not infrequently the two conditions coexist.

Etiology and Occurrence

Following strains from work in the harness or under the saddle, horses develop an acute synovitis of the hock joint, which often results in chronic synovial distension. Debilitating diseases favor the production of this affection in some animals. It is also frequently met with in young horses and in draft colts of twelve to eighteen month of age. This condition occurs while the subjects are at pasture and often spontaneous recovery results by the time the animals are two years of age.

Symptomatology

Bog spavin is recognized by the distended condition of the joint capsule which is prominent just below the internal tibial malleolus and this affection is characterized by a fluctuating swelling which varies considerably in size in different subjects. Except in cases of acute synovitis, lameness is not present and in chronic distension of the capsule of the tarsal joint, no interference with the subject's usefulness occurs. In the majority of instances, the disfigurement which attends bog spavin is the principal objectionable feature. The condition is bilateral in many instances, and in such cases the subjects have a predisposi-

tion to this condition or it follows attacks of strangles or other debilitating ailments. In some animals because of a rapid and unusual growth, bilateral affections are of frequent occurrence.

Treatment

The most practical method of handling bog spavin consists of aspiration of synovia and injection of tincture of iodine. Discretion needs to be employed in selecting subjects for treatment, regardless of the manner in which such cases are to be handled. Where there exists chronic distension of the joint capsule of several years' standing in old or weak subjects, needless to say, recovery is not likely to result. When animals are vigorous and two or three months' time is available, treatment may be begun with reasonable hope for success.

The average subject is handled standing and can be restrained with a twitch, sideline and hood. Aspirating needles and all necessary equipment must be in readiness (sterile and wrapped in sterile cotton or gauze) so that no delay will occur from this cause when the operation has been started. The central or most prominent part of the distended portion of the capsule is chosen for perforation and an area of an inch and a half in diameter is shaved. The skin is cleansed and then painted with tincture of iodine. The sterile aspirating needle is pushed through the tissues and into the capsule with a sudden thrust. With a large and sharp needle (fourteen gauge), synovia can be drawn from the cavity in most instances and the subject usually offers no resistance. By compressing the distended capsule and surrounding structures with the fingers, considerable synovia may be

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evacuated. In singular instances, no synovia is to be aspirated with such a needle, and in these cases the amount of iodine injected needs to be increased, possibly twenty-five per cent, as experience will indicate. From two to five cubic centimeters of U. S. P. tincture of iodine is injected through the aspirating needle into the synovial cavity of the joint, and the exterior of the parts are vigorously massaged immediately after injection to stimulate distribution of the iodine throughout the synovial cavity. Where a bilateral affection exists, two or three weeks' time should intervene between the treatments of the different legs. A sterile metal syringe equipped with a slip joint for the needle is well adapted to this operation. Lubrication of the plunger with heavy sterile vaseline will prevent the syringe from being ruined by the iodine.

Following the injection, the subject is kept in a stall or in a suitable paddock, so that conditions may be observed for four or five days. The object sought by the introduction of iodine is not only a local effect upon the synovial membranes in checking secretions, but the production of an active inflammation and great swelling, which will remain from four weeks to three months subsequent to the injection. This peri-articular swelling is sufficient to produce and maintain a constant pressure over the entire affected parts for a sufficient length of time that normal tone is re-established.

In some cases, swelling does not develop as the result of a single injection of iodine. When marked swelling has not taken place within five days, none will occur and a repetition of the injection may be made within ten days after the first treatment has been given. One may safely increase the amount of iodine at the second injection in such cases by one-fourth to one-third.

In Europe this method of treating bog spavin has been employed by

Leblanc, Abadie, Dupont and others according to Cadiot; but Bouley, Rey, Lafosse and Varrier have met with bad results. Where a perfect technic is executed (and no other is excusable in this operation), no infection will succeed when a reasonable amount of iodine is injected. The dilution of iodine with an equal amount of alcohol has been practised by the writer in many cases, but later this was found unnecessary, though not undesirable.

Other methods of treatment have been used with success. Perhaps the most heroic consists in opening the joint capsule with a bistoury or with the actual cautery. Such practice is too hazardous for general use and is not to be recommended, although good results should follow the employment of such methods in every favorable instance, if infectious arthritis does not occur.

Line firing over the distended capsule is a practical method of treatment, which is attended with good results in young animals in many cases, but considerable blemish is caused when sufficient irritation is produced to stimulate resolution.

Vesication also is successfully employed in some instances. However, only cases of recent origin and in young animals, yield to blistering, and in some affected animals no doubt recovery would have been spontaneous had no treatment been instituted—this in colts of two years of age or in younger animals.

Ligation of the saphenous vein at two points, one above and the other below the distended ligamentous capsule, is an old operation, which has undoubtedly given good results in some cases; although it does not seem to be a rational procedure.

After-Care

After swelling has fully developed—which occurs within a week—the subject is turned to pasture and no attention is necessary thereafter. A

gradual subsidence of the swelling occurs and in the average instance, it has completely resolved within six or eight weeks.

Complete recovery succeeds in about

seventy-five per cent of cases as the result of one treatment, and subjects may be gradually and carefully returned to work in about sixty days after treatment has been instituted.

When and How to Perform Rumenotomy*

By C. G. GLENDINNING, Clinton, Illinois

I DO not remember of ever having heard a paper given on this subject at this association or any other place, but I do remember very clearly of Prof. Andrew Smith's description of rumenotomy during my college days, and I assure you that description was of some value to me when I had the real article presented to me by an old cow one night in a muddy barn lot, in language so eloquent that I have never forgotten the minutest detail of that operation.

The operation of rumenotomy consists in removing of all or part of the ingesta of the rumen through an artificial opening in the side. This operation is not so formidable as it sounds and if performed with half the skill of a surgeon, very favorable results will follow. The unfavorable results reported following this operation are largely due to the delay, waiting until the animal is all but dead before operating. When auto-intoxication has taken place to such an extent that the brain and nerve centers are so affected that the animal is in a paralyzed, or a delirious condition, it is most unwise to try to save its life by rumenotomy.

I am not quite as much of an enthusiast for the old method of operating as I was years ago, although I have not discarded it entirely. Experience has taught me a better way to handle most cases in which I once thought the radi-

cal operation necessary. What I bring you today are methods and treatment that I have used in diseases of the rumen with some degree of success.

Indications for rumenotomy: It is a most difficult task to tell how I know when to operate. There are a good many things to be considered in making such a decision. First, your own reputation. Second, your client's profit and loss. Third, the suffering animal. Your knowledge of the case presented must be such as to give all parties interested the best results.

The following conditions will come under the observation of every veterinarian with a cattle practice. Impaction of the rumen presented by the dull appearance, suspension of rumination, cessation of milk secretion, appetite impaired, a little short grunt, the left side distended, and palpitation presents a solid feeling, something like a sack of grain or shorts. There may be some tympanites. In other cases, the distension of the left side is absent. The animal is gaunt and with some diarrhea present. The contents of the rumen in these cases may be as solid and sticky as a lump of putty or as dry as a crust of bread. The rumen may not be more than half full, yet death will follow just as surely as when the rumen is distended. Then we have another condition where the rumen is filled with a semi-solid sour mass, too thick to be relieved through the trocar, and threatening sudden death. Then the next and

*Presented at the semi-annual meeting of the Illinois Veterinary Medical Association, Peoria, July 19 and 20, 1916.

most simple condition of tympanites is where the rumen is filled with gas and the insertion of the trocar relieves all the trouble.

You rightly ask, "Do all these cases presenting the above symptoms indicate rumenotomy?" I would answer, no. Especially not the old radical method of making the opening large enough to remove the ingesta with the hand. But removal of part of the contents of the rumen in most cases is necessary, and this can be done through the cannula of the trocar by flooding the rumen with water until some of the ingesta is washed out.

In some cases the plunging of a butcher knife into the rumen will allow the semi-fluid fermenting contents to escape in a stream. This should be done when the cannula will not allow its escape, and asphyxiation is threatening, thus saving the life of the animal when there is not time for any other kind of an operation. It is surprising how such wounds will heal. The following rules may be followed indicating the immediate radical operation of making the opening large enough to remove the contents of the rumen with the hand:

First: When the rumen is packed with solid, dry food causing the animal great distress.

Second: When the rumen is filled with a semi-solid, fermenting mass too thick to escape through a small opening such as made by the blade of a butcher knife with sudden asphyxiation threatening.

Third: When the case is of several days' standing with toxemia already setting in.

All other cases with no indications of sudden fatality may with profit be given twenty-four to forty-eight hours' medicinal treatment in the following manner, and the radical operation may not be necessary.

Insert the trocar into the rumen; then take a metal tube fifteen inches long and small enough to pass through the large cannula. Put this tube down through

the cannula into the solid mass. Attach the injection pump to this pipe by means of the stomach tube or other hose and pump in from three to six gallons of the following solution, changing the position of the pipe with every few strokes of the pump to insure the breaking up of the solid mass: six gallons of water, two pounds of magnesium sulphate, one-half pound of sodium sulphate and one pound of sodium chlorid, with a liberal amount of some good antiferment and antiseptic such as salicylic acid, carbo-campho, etc. Drench three times a day with nux vomica and aromatic spirits of ammonia. In some cases of severe impaction I have repeated the above treatment in thirty-six hours with beneficial results. In some cases where the mass in the rumen is thick and frothy, I pump in a few gallons of water containing some antiseptic, allowing it to wash as much of the contents out as will come. This will relieve the animal of the severe symptoms. I then pump in the formerly described fluid. With this line of treatment, the radical operation of rumenotomy is seldom necessary. Your case should be noted carefully and the contents removed, if it becomes necessary, in the following manner:

Operative Technic

Secure the animal in a standing position against some solid fence or wall with the left side exposed. You will in the country have to arrange your subject according to place and condition. I have operated in a recumbent position when the animal could not stand. The seat of operation, between the rib and the external angle of the ileum on the left side, should be washed with some good antiseptic. Cut boldly through the skin and muscles from above downward, six to eight inches long, exposing the rumen. Then cut the opening into the rumen somewhat smaller but large enough to admit the hand and arm without friction. Put a good strong stitch on each side of the lower end of the opening in the

(Continued on page 888)

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The Federal Aid Road Act

INFORMATION regarding the Federal Aid Road Act passed by the recent congress is not exactly news, for the measure is now some months old; but it has received surprisingly little mention by the press, and its importance to the welfare of the country is not generally recognized.

The general advantages of better roads, decreased cost of marketing farm products, lessened waste of food materials, the bringing of greater attractions to rural life, and the many things that have been cited so often as tending to make the production of food products more pleasurable and profitable for those engaged in that business, while they at the same time render the cost of those products less prohibitive to the consumer are well understood. Aside from our interest in good roads as conservers and consumers of the products of the farm, as veterinarians we have a particular interest in the condition of country roads as affecting the number and the length of professional calls that we may make—in other words, the amount of practice we may do and the cost of doing it.

The writer recently spent a half day with a veterinarian who was just wearing out his eighth automobile and doing it with considerable dispatch if I could judge by what I saw (and felt) that day. There are veterinarians who have

purchased more than eight automobiles, perhaps many of them, but they have been in part for the use of assistants. For one man to have worn out eight automobiles and in addition to have found time and strength to do a more than average practice, seems exceptional.

This doctor practices in a section where the roads are not good, nor yet can they be called bad, judged by existing standards; perhaps they are about average. Compute the cost of, let us say poor, roads to him in time, which means practice—money to him, in original cost of the cars (easily four of them would have been unnecessary had the roads been really good); in added cost of upkeep because of the rough usage; and perhaps greatest of all in the wear and tear upon the man himself. It makes a tidy sum and represents a loss from the *net* income from his practice—just so much less in his savings account. Reduce this amount to the average and multiply it by 8,000 (the number of veterinarians that it is estimated use automobiles), and one gets some idea of the enormous direct tax upon the veterinary profession that bad roads constitute and something of the importance of the Federal Aid Road Act to us as veterinarians.

This measure provides for co-opera-

tion between the Federal and State governments. Congress has appropriated the sum of eighty-five million dollars for the improvement of roads. It is parcelled among the several states, which must raise an equal amount for the same purpose to be expended under the joint supervision of the Federal and State governments according to regulations prescribed by the Secretary of the United States Department of Agriculture.

Veterinarians can help their communities and themselves to benefit from this liberal appropriation by doing all in their power to arouse public sentiment in

their respective communities in favor of this road improvement. The appropriation or the help of the Federal road experts will not be forced upon any one, but communities that desire the benefits of the Federal Aid Road Act and are willing to appropriate a sum for the improvement of their roads equivalent to that which the Department of Agriculture deems it expedient to expend there, may participate in this well directed effort for road improvement.

Let every veterinarian be a booster for better roads; his opportunities for proselyting in this cause are many, and his influence should have weight.

The Coming Meeting of the Illinois State Veterinary Medical Association

THE annual meeting of the Illinois State Veterinary Medical Association, held at Chicago the first week in December, is of far more than state-wide importance. This meeting is always held during the International Live Stock Show in Chicago and immediately following the meeting of the U. S. Live Stock Sanitary Association. At this time Chicago is the mecca for the leaders in animal husbandry the country over—one might almost say the world over, for many distinguished representatives of foreign livestock interests are always present. Nearly all the state veterinarians are in Chicago during that week, and representatives from a majority of the state livestock commissions in the country are here. Representatives from the Bureau of Animal Industry at Washington present at this time usually number more than a dozen, while Inspectors-in-Charge from various stations and Federal veterinarians engaged in hog cholera control work, more than double this number of Bureau representatives. Representatives of the state and private veterinary colleges are always here in numbers at that time.

At some time during the meeting of the Illinois State Veterinary Medical Association nearly all these veterinarians arrange to attend, making the number of visiting veterinarians to this meeting from out of the state very large. Many of them contribute to the program of the Illinois meeting, and this, with the papers furnished by Illinois practitioners, makes a program such as attracts a very large attendance from the state.

The meeting of the Illinois State Veterinary Medical Association this year will be held Wednesday, Thursday and Friday, December 6th, 7th and 8th. The meeting will convene at one o'clock Wednesday at the Fort Dearborn Hotel, where the annual address of the President, report of the Secretary and various standing committees will be received; officers for the ensuing year elected, and such business as is before the association transacted. No evening meeting will be held on Wednesday.

Thursday morning, the association will convene at the LaSalle Hotel and hold a joint meeting with the U. S. Live Stock Sanitary Association. The pro-

gram for that meeting will be arranged to be of especial interest to the practitioner.

Thursday afternoon, the meeting will reconvene at the Ft. Dearborn Hotel. Thursday evening, the association will have a dinner at the Ft. Dearborn and a session known as the "State Veterinarians' Session" afterwards. At this session, the state veterinarians from all states bordering on Illinois will address the meeting on subjects pertaining to the interstate shipment of livestock and the control of infectious diseases. It is expected that many other state veterinarians will attend this meeting, and if time permits, they will be called upon to discuss the papers presented by Drs. Eliason, Gibson, Luckey, Graham, Nelson and Dunphy.

Friday morning, the association will

convene in the horse sales pavillion at the stock yards, where the program will be entirely in charge of the University of Illinois and will consist in part of lectures on breeds and demonstrations in horse judging and dairy cattle judging. It is expected that a number of noted livestock judges and officers of the various breeders' associations will attend this meeting and contribute to the program. Friday afternoon, the association will hold no session, but the members will spend the time inspecting the livestock exhibits that the International Live Stock Show has to offer. If the need arises, a short business session will be held at the Ft. Dearborn Hotel at 7 o'clock Friday evening. Otherwise, the association will adjourn at the conclusion of the Friday morning meeting.

The Executive Board of the A. V. M. A.

AS MANY of our readers know, the new constitution and by-laws adopted by the A. V. M. A. at its recent meeting at Detroit, provides for the division of the United States and Canada and foreign countries in which members of the association reside, into five executive board districts, as follows:

District No. 1 consists of the Dominion of Canada.

District No. 2 consists of Wisconsin, Illinois, Michigan, Indiana, Ohio, Pennsylvania, New York, New Jersey, Delaware and the New England states.

District No. 3 consists of Kentucky, West Virginia, Virginia, Maryland, District of Columbia, Tennessee, North and South Carolina, Georgia, Alabama, Mississippi, Florida, Cuba and South America.

District No. 4 consists of Alaska, Washington, Montana, North and South Dakota, Minnesota, Iowa, Nebraska, Wyoming, Idaho, Oregon, the Philippine Islands and the Hawaiian Island.

District No. 5 consists of California, Nevada, Utah, Colorado, Kansas, Missouri, Arkansas, Oklahoma, Louisiana, Texas, New Mexico, Arizona, Mexico and Central America.

The constitution provides that a member of the executive board shall be elected for each district to serve for a period of five years, except that at the first election members shall be elected from all districts—the one from District No. 1, to serve for one year; from District No. 2, two years; from District No. 3, three years; from District No. 4, four years; and from District No. 5, five years. After the first year, only one member of the board will be elected annually. The executive board is to have a sixth member known as the member-at-large, who it is provided shall be elected at the annual meetings of the association.

It is provided that the members of the executive board from the various districts shall be elected by a mail ballot. The secretary of the association sends to all members of the association living in the districts in which the election is to be held a blank, on which each member is expected to indicate his choice for nomination for member of the executive board and return to

the secretary in sixty days. These ballots for nomination are counted and the five members in the district receiving the greatest number of votes are selected as nominees. Blank ballots containing these names are then sent to all members of the association to be returned within sixty days with the members' choice for member of the executive board. The one in each district receiving a plurality of the votes in that district is elected.

At the present time a special election is being held in all districts, Secretary Merillat having mailed blank ballots for the nomination to all members of the association on September 27th. These ballots must be returned and be in his hands not later than November 27th to be counted.

While at this time one could probably foretell most of the nominees in each of the districts, it is not possible to say with certainty just who any of them will be, except in the case of District No. 5, where California veterinarians have made a concerted effort for Dr. R. A. Archibald of Oakland, that has already made certain his nomination from that district.

A Temporary Board Appointed

The adoption of the new constitution, of course, automatically abrogated the rules of procedure that had been followed under the old constitution, and it being imperative that new rules be formed as early as possible, President Cotton has wisely decided to appoint members of the executive board to act until the special election can be held and the elected board take over the management of the affairs of the association, or until January 27, 1917, that being the date when all ballots for the election of members of the executive board must be in the hands of the Secretary. He has, therefore, made the following temporary appointees on the executive board:

District No. 1, Frederick Torrance of Ottawa, Veterinary Director General of Canada.

District No. 2, Joseph Hughes, Chi-

cago, President of the Chicago Veterinary College.

District No. 3, John R. Mohler, Washington, D. C., Assistant Chief of the Bureau of Animal Industry.

District No. 4, H. E. Bemis, Ames, Iowa, Acting Dean of the Veterinary Dept., Iowa State College.

District No. 5, R. A. Archibald, Oakland, Cal., President, Western Laboratories.

Member-at-large, V. A. Moore, Ithaca, N. Y., Dean of the New York State Veterinary College, Cornell University.

At this writing the appointees for Districts 1 and 2 have neither accepted nor declined the appointment.

This board will probably hold their first session at the Secretary's office, 1827 S. Wabash Ave., Chicago, during the week of the International Livestock Show, which is also the week of the meeting of the U. S. Live Stock Sanitary Association and of the Illinois State Veterinary Medical Association. They will need to fix a salary for the editor of the journal of the association and to decide upon such assistants as it is deemed advisable to give him; to fix a salary for the secretary and decide upon assistants and equipment for the secretary's office; and to consider a number of important problems connected with the management of the association, particularly those bearing upon the duties of secretary.

It is unnecessary to say that the caliber of the men appointed on this board is such that no assurance is needed that they will act wisely upon these matters.

Don't Neglect to Vote

A considerable number have not yet indicated their choice for this important governing board of the A. V. M. A. A majority of the votes, however, being in, we cannot be accused of endeavoring to influence the choice of nominees if members of particular worth are mentioned at this time, for the benefit of new members of the association and others who by reason of not having attended meet-

ings are not familiar with records of those who have been workers in the A. V. M. A. While this list by no means comprises all nor more than a small portion of those meriting the confidence of your votes, the list comprises none but workers for the A. V. M. A. of broad vision and high qualifications for membership on the executive board.

Canadian veterinarians (District No. 1) will make no mistake in voting for Frederick Torrence or C. H. Higgins of Ottawa, E. A. A. Grange of Toronto, or C. D. McGilvray of Winnipeg.

In District No. 2, veterinarians in the New England States will probably favor Lester Howard of Boston. New York veterinarians would have a splendid representative on the board in the person of Geo. H. Berns of Brooklyn. W. Horace Hoskins and C. J. Marshall of Philadelphia, have had long experience in the affairs of the association and the loyal support of Pennsylvania veterinarians. It is supposed that Michigan veterinarians will pretty largely back S. Brenton of Detroit, and that those from the Buckeye State will vote for A. S. Cooley, state veterinarian, as their favorite. The Hoosiers may well support A. F. Nelson, their state veterinarian. Members in Illinois will make no mistake in voting for either E. L. Quitman or Geo. B. McKillip. Wisconsin will probably favor L. S. Heer. New Jersey and Delaware will probably be as satisfactorily represented by either New York and Pennsylvania men, as by men from their own numbers.

District No. 3, while containing a large number of active and valuable members of the A. V. M. A., lies much of it so inaccessible to points where meetings are held that relatively few from that section have been represented at meetings or conspicuous in the deliberations of the association. John R. Mohler, of Washington, probably stands first from that section in services to the association. G. H. Roberts, of Raleigh, N. C., Tait Butler of Memphis, Tenn., Peter Bahnsen of Georgia, Adolph

Eichhorn, of Washington, D. C. and others, however, will make creditable members of the executive board.

District No. 4, like the other districts, has an abundance of good material. E. T. Baker of Moscow, Idaho, A. D. Knowles of Helena, Mont., M. H. Reynolds of St. Paul, H. E. Bemis of Ames, are men who will fulfill the office with credit to themselves and honor to the district that selects them.

District No. 5 is so situated geographically that sectional strife is likely to affect the choice of nominees from that district, if not in this election, surely in elections to follow. As mentioned heretofore, R. A. Archibald of Oakland will be a representative of the Pacific Coast. The Rocky Mountain region cannot do better than to select Geo. H. Glover of Ft. Collins. The Missouri Valley region may be expected to scatter their votes over a considerable number, including S. Stewart, and A. T. Kinsley of Kansas City; R. C. Moore of St. Joseph, Mo.; R. F. Eagle of Oklahoma City, Okla., and perhaps some others.

We recommend any of the foregoing to members who are undecided as to whom to vote for. One thing is essential. Vote; don't be a blank in the affairs of the A. V. M. A. It has taken hard work on the part of a few members to bring this opportunity to be heard in the affairs of the association to every man's door, and now that the opportunity is yours don't slight it. If your ballot blank has been misplaced write the secretary, Dr. L. A. Merillat, 1827 Wabash Avenue, Chicago, for another and have all ballots in his hands before November 27th.

Dr. John E. Virden, New York, says that while the general belief seems to be that boiling injures cocain solutions, he is convinced that frequent and even prolonged boiling does not affect the anaesthetic value of such solutions. He bases his conviction on practical experience with boiled cocain solutions.

Another Official Veterinary Journal

THE executive committee of the National Association of Bureau of Animal Industry Employees have arranged for the publication of an official organ of the association to be known as "The Inspector." It is to be published monthly, without cost to the association, by H. M. Dupont of Chicago. The association has made a contract with Mr. Dupont by which it is to receive the returns from subscriptions from Bureau of Animal Industry employees for a period of five years, and he is to receive all funds derived from advertising in the journal for the same period.

The association has employed Dr. H. B. Raffensperger, a veterinary inspector at the U. S. Yards, Chicago, as editor, with a salary of \$120 per year.

A subscription price of 50 cents per year is to be charged all Bureau of Animal Industry employees and others subscribing for "The Inspector." The magazine will contain news items regarding Bureau employees, report of progress of the Lobeck Bill and other legislation of vital interest to civil service employees and "from time to time certain extracts from various civil service publications and leading veterinary and livestock journals." The association has no control over the advertising policy of its official journal.

Bureau employees are urged to send their subscriptions to Dr. S. J. Walkley, Secretary, 185 Northwestern Ave., Milwaukee, Wis. The first issue of "The Inspector" will appear about December 1st.

United States Live Stock Sanitary Association

THE twentieth annual meeting of the United States Live Stock Sanitary Association will be held at the La Salle Hotel, Chicago, December 5, 6, and 7, 1916. So much has been written in this Journal about the program rendered at previous meetings of this association that it seems that nothing need be said to convince every reader that he should attend the coming meeting if he possibly can.

Keep in mind that it is the highest class scientific veterinary meeting held in the United States at any time during the year and that the program is not, as some seem to think, designed to interest only the veterinarians and livestock authorities in official positions, but that no inconsiderable part of it is of direct and practical interest to the practitioner. It was not always

so. Many readers will remember when this association's deliberations began and ended with the consideration of Southern or tick fever in cattle and the effect of the tick upon the cattle industry of the South and regulations affecting the marketing of such cattle outside of the tick infested area.

While the consideration of tick fever and quarantine regulations still holds a place in the discussions of the association, influenza or shipping fever of horses, hemorrhagic septicemia, hog cholera and other veterinary problems, have come to receive considerably greater attention.

At no other meeting in the country is the hog cholera problem given so thorough a discussion. This year as last, an entire half day will be devoted to

the consideration of hog cholera. This meeting will be in charge of Dr. Marion Dorset, of Washington, D. C. The interest that those attending this meeting take in hog cholera is probably in no way better shown than by the exhibit of the Joe Timmer Hardware Company of Kansas City. This firm's exhibit at La Salle Hotel during these meetings is remarkable for its completeness. It contains the entire equipment for a serum laboratory, even to the enamel for the walls. In fact, the only things that go into a serum laboratory not shown in Timmer's ex-

hibit, are lumber, brick and mortar. Each year dozens of new devices are shown which tend to improve the sanitary conditions under which serum is produced or reduce the expense of producing it. A large sign over the doorway informs all visitors that this company does business with ninety-eight per cent of the state and commercial serum plants.

The program for the next meeting of the United States Live Stock Sanitary Association is not yet ready for publication. We shall probably announce it in the December issue.

Infectious Stomatitis of Horses

A DISEASE of horses, new to this section of the country, has appeared among the animals in the foreign remount station at Calumet, just south of Chicago. The ailment is essentially a glossitis and is mildly infectious. At this writing, about 450 are affected out of a total of about 4,000 horses at the remount station, and of this number perhaps less than 10 per cent show any lesions other than on the tongue, the lesions other than those on the tongue being confined to rather trivial ulcers on the inside and in some cases on the skin surface of the lips. Blebs appear at the commissures. There is in all cases an intense inflammation of the tongue, with much swelling of the organ and frequently necrotic areas. The condition has been tentatively diagnosed as a necrobacillosis, but as no bacteriologic study of the cases has as yet been made, the bacillus necrophorus cannot positively be incriminated. The condition is not traumatic. The feet are not affected as in lip and leg ulceration of sheep.

Affected horses have reached the Calumet remount station from at least

three points—Lathrop, Mo., Grand Island, Neb., and Denver, Colo. The disease is known to have existed at the latter place some two or three weeks.

The disease runs a mild course; there are no fatalities; improvement begins in from three to six days after the first symptoms are shown; and recovery is complete in from one to two weeks. During the active stages of the disease there is an entire inability to eat, with the temperature about 102° and 102½° Fah. There is, of course, a marked loss in condition during the attack, and this with the delay in the shipment of the animals constitutes the principal loss.

Dr. L. A. Merillat of this city, editor of the Surgical Department of VETERINARY MEDICINE, has the matter in charge for the State of Illinois, and the horses have been quarantined. Dr. E. B. Ackerman of Brooklyn, N. Y., is on the ground representing the exporters. As the disease is only mildly infectious, it is expected that there will be no difficulty in stopping its spread by segregation measures. It is not expected that the shipment of unaffected horses will be held up more than a few days.

BOOK REVIEWS

"Rhymes for Kindly Children" is the title of a new and unique book for big and little children. The specific purpose of this attractive work is teaching kindness to animals and general thoughtfulness. The lines are written in the simple direct language of children and open the heart to the love of all living things. The author, Fairmont Snyder, has had long and practical experience in the humane field and is especially qualified to present this lesson in a delightful and convincing style.

"Rhymes for Kindly Children" conveys a message that cannot fail to further the cause of the veterinarian. The little book has 96 pages, 60 charming illustrations in full colors, and a striking color design. P. F. Volland, publisher, Chicago. Price, boxed, \$1.00.

Veterinary Bacteriology, by Robert Earle Buchanan, Ph. D. and Chas. H. Murray, B. Sc., D. V. M. This is the second edition and a revision of the work of the senior author. Several new chapters have been added in this edition and the text has been brought down to date in every respect. The subject matter is presented in excellent form. In addition the volume is pleasing and attractive in mechanical make-up. Published by W. B. Saunders Co., Philadelphia; 590 pages with 290 illustrations; cloth \$3.50.

BULLETINS OF INTEREST TO VETERINARIANS

The Abridged Report of the Twenty-second Annual Session of the Association of Veterinary Faculties and State Examining Boards of North America deals chiefly with matters pertaining to state board examinations and laws regulating veterinary practice.

The Annual Report of the New York State Veterinary College for the year

1914-1915, contains 224 pages and includes the reports of the director and a tabulated summary of clinics; a treatise on swamp fever by D. H. Udall and C. P. Fitch; Researches Upon Contagious Abortion of Cattle by W. L. Williams; Report on the Conglutination Test with Special Reference to the Diagnosis of Glanders by C. P. Fitch; The Structural Changes that Occur in Certain Non-Specific Inflammations of Joints, by S. A. Goldberg. Other interesting articles, together with many illustrations, go to make up a record that constitutes a valuable contribution to veterinary science.

Bulletin No. 361 U. S. Dept. of Agriculture is a Professional Paper entitled "Comparison of the Bacterial Count of Milk with the Sediment or Dirt Test." The author is H. C. Campbell, expert in milk hygiene. This bulletin discusses the utility of the sediment test and sets forth the value of passing milk through cotton disks as an indicator of the hygienic conditions under which it has been produced. This, however, is no guide to the bacteria contained in any given sample.

Bulletin No. 20 of the Health of Animals Branch of the Department of Agriculture of the Dominion of Canada, contains a detailed description of the care, sanitation and feeding of foxes in captivity. When one considers that each individual silver fox from good stock is worth from one thousand to five thousand dollars, it is evident that this industry merits such attention. This bulletin is carefully prepared and does credit to its author, Dr. Chas. H. Higgins, of Ottawa.

An abridged report of the 22nd annual session of the Association of Faculties and State Examining Boards of North America, held at Oakland,

(Continued on page 886)

Department of Surgery

By L. A. MERILLAT, Chicago,
Professor of Surgery in the McKillip Veterinary College

Restraint of Patients for Dentistry

THE control of surgical patients about to be subjected to dental operations is of enough special importance to attract some attention in a detailed discussion of dental surgery. There are features about restraint for this class of surgery even that need very careful consideration. For the simple operation of filing the teeth, molars or incisors, it has always been thought sufficient to back a horse into a narrow stall and then tie the head at a comfortable height with the side ropes of the now well-known dental halter. If the halter is large enough and the operator a little timid about scratching the hand on the sharp teeth a mouth speculum is adjusted to hold the mouth open. With a horse thus secured and positioned almost every ordinary filing or cutting operation can be performed upon the tractable subject. Twitching is never helpful. The tension on the nose not only prevents free access to the mouth but the helper holding it is always in the way and besides twitching seems to aggravate a patient more than to control it. Always when twitching is practiced, either with or without a speculum, the patient will twist the head and work the jaws in a way to actually prevent any kind of accurate instrumentation of the interior of the mouth, and so far as putting the hand in the mouth of a twitched horse is concerned, it is always dangerous, because the patient in its discomfort chews hard with the jaws upon anything placed into the mouth—instrument or hand. The secret of successful management of subjects for simple oral manipulations is in the gentleness of the movements of the hands and instruments. The jaws must never be forced open even with an ounce of pressure because such force is always immediately opposed by a counter

force that no hand can counteract, and when force is used the subject always evades it by other movements of the head that are positively dangerous.

A horse will usually tolerate the hand in the mouth when no force is used to open it. The mouth must open because of the presence of the hand in it and not from force. Thus a man experienced in the art of horse dentistry seems to the bystander to exert almost a charm over his patient, from the little opposition he arouses. It is this apparent charm over patients—the "old guard" of the profession will remember—that actually drew the attention of the old horsemen to dentistry, and certainly among the old "hoss dentists" their qualifications were judged in large part by the control they were able to exert over their subjects. The one who fought with his subjects was no artist, while the skillful fellow who was able to take a horse out on the floor and file its teeth with no other restraint than a boy holding its nose steady with the hand was pronounced an artisan of the highest order. This system of classifying hoss dentists into good, bad and mediocre was not so very unreasonable after all in that it indicated the quality of their horsemanship and the actual amount of deliberate dentistry they were able to do in a horse's mouth. Whether or not it was really necessary to be so accurate in floating the teeth is not the question here. The point is that whatever work on a mouth is undertaken just that much should be done in a perfectly sensible manner and finished as deliberately as any other operation should be. Tearing into a mouth with the float and working overtime upon places because the float works well without causing any opposition and then omitting parts difficult

of access is the common enough practice, that arises from failure to develop skillful restraint. And when a practitioner is called upon to make an oral examination in the open by palpation as is often necessary in field work the lack of skill in passing the hand well into the oral cavity and the fingers between the dentures will prevent the making of a diagnosis that is even a good guess. It is, therefore, a prerequisite of good oral surgery to develop a high degree of dexterity in making patients stand well for examinations and minor forms of instrumentation.

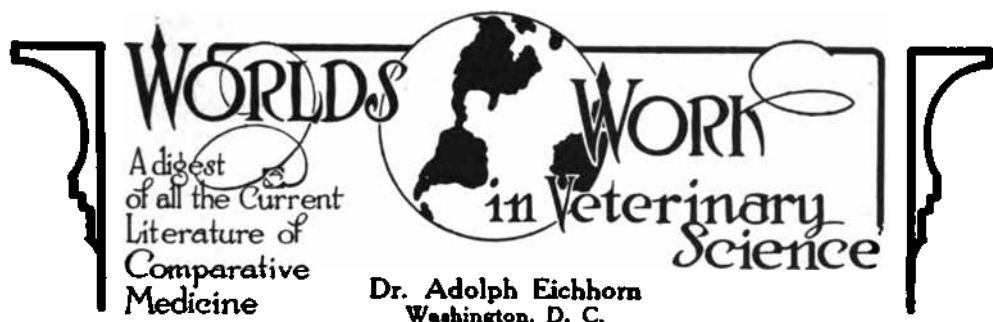
The mouth speculum is needed to control the forcible movements of the jaws, however, in the extraction of partially loosened molars or in cutting off elongations. The speculum should never be opened too wide, as the discomfort will bring its full toll of fighting that in turn will interfere with the work. With instruments of the proper pattern, that is, extractors with short jaws and cutter with flat heads, it is not necessary to open the mouth so wide as to cause much discomfort to the subject. But the only speculum of any use for instrumentation of the mouth is one whose arms extend well back behind the commissures of the mouth. The ordinary small affairs that cross the diastema at the level of the commissure or in front of it are useless because instruments can not be opened wide enough to attach them to the molars—the handles are obstructed laterally. I notice that manufacturers recently have taken this hint to make mouth speculums more universally useful for oral surgery by making them much longer than formerly. With the old mouth speculum the mouth of a horse to which one was adjusted was about as inaccessible a cavity as could be imagined. No instrument could be put into it and opened wide enough to grasp a tooth or even part of a tooth. The mouth speculum as an instrument of restraint in dental work is invaluable. It should be a strong, powerful affair capable of resisting the stress of the strongest jaw-movements. It should have a perfectly safe device against accidental closure and its arms should by all means extend back far enough to enable one to open up a forcep or cutter to its fullest capacity. Such an instrument will give a veterinarian more confidence in his ability to cope with hard dental operations. It will enable him to do work that would otherwise have been impossible to negotiate.

Standing restraint in addition to the minor operations, may also prove adequate, in fairly tractable subjects, for major opera-

tions. The extraction of a whole molar of the young or middle aged horse is always a difficult feat which we prefer to do in the recumbent position, but with a patient in stocks or single stall, buttocks against the manger, head secured with a dental halter and the mouth opened safely with a mouth speculum, extractions can be successfully done if some care is taken throughout to avert fracture from sudden unexpected movements of the head. And with the aid of Bemis's nerve blocking anesthesia it is possible to repulse superior molars in a very deliberate manner. The same can not, however, be said of the inferior molars because the halter, the speculum and the awkward position prevent good work. As a general proposition recumbent restraint is better for repulsing operations but where conditions mitigate against such control it is perfectly feasible to do high class dental work on the standing patient, and at least a veterinarian is perfectly justifiable in making the attempt. Besides there are always old horses, spavined horses, horses affected with osteoporosis, melanosis and other infirmities that so increase the hazard of recumbent restraint, it is strictly pardonable to select the safer method, even though there may be some annoyance from movements of the partially controlled head. Furthermore, in standing restraint the danger of pneumonia from the aspiration of blood and other products into the lungs is almost always averted, although it may sometimes occur from hindering the deglutition of blood with the wide-opened speculum.

Recumbent restraint on the operating table or with ropes is however more nearly perfect for the deliberate execution of complicated procedure. The operating table is preferable to ropes because it brings the head up to a comfortable level for instrumentation of the mouth. We use as a supplement to the flat top of the table a beveled head rest that is padded with upholstering materials. This adjunct seems so indispensable to our work that we have often wondered why it had never been imitated by others or why it does not become a part of the standard equipment of operating tables in general. Without this dental operations on the operating table are difficult to perform. The surgeon must either bend down in an uncomfortable, stooping position in which accurate work could hardly be done or else an assistant must by main strength hold up the nose towards the operator—a feat that is tiresome and imperfectly done

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The Relation of the Different Types of Tubercle Bacilli

(A. Eber, *Zeitsch, Fleisch and Milchw*, 1916)

Based on his extensive investigations the author came to the following conclusions:

Pure cultures cultivated directly from man or cattle show certain biological peculiarities which permit in most cases a distinguishing of the human or bovine type. The occurrence of transition forms of these types in nature (atypical strains) and the possibilities of changing the bacillus of the human type by systematic animal passage to such an extent that with our present methods they cannot be distinguished from the bovine type, proved that the mentioned peculiarities developed by adaptation in the body of the host, and by changing the host, may again be changed under certain conditions.

The two types of mammalian tubercle bacilli, as designated by Kossel, Weber & Heuss, the human and the bovine types, are therefore not to be considered as types with constant characteristics, but as varieties of one and the same species of bacilli, with relatively variable properties.

Fatal Pulmonary Hemorrhage with Thrombosis of the Pulmonary Artery

(Dr. E. Wysmann, *Schweizer Arch. F. Tierheilk*, 57 Band, 2 Heft)

Several minutes after drinking, a cow emitted great quantities of foamy blood from the mouth and nose, with symptoms

of severe dyspnea, which soon resulted in death. The autopsy revealed the following:

Lungs greatly enlarged, dense, showing numerous subpleural hemorrhages. Trachea and bronchi contained numerous plugs or pale red, coagulated blood. Distributed over the entire lung there were numerous purulent foci, containing firm yellowish or fluid material (embolis). The right lung revealed a necrotic discolored focus of the size of a hen's egg. The right pulmonary artery was obstructed by a fungus-like, thrombosis, 15 cm. long at its base, and 7 cm. broad, which appeared discolored yellowish-red, and partly jagged. It was connected with the central layer of the arterial wall; laterally and dorsally it bordered a putrid, grayish discolored purulent mass, which was lodged between the thrombus and the arterial wall. The bronchial lymph glands were swollen, containing yellowish purulent foci. The epicardium showed isolated ecchymoci.

The author, who two years previously treated this cow for traumatic gastritis, is inclined to connect this affection with the resulting thrombosis.

Acarus Mange of the Ears of the Dog and Cat

(Prof. Cadiot, *Recueil de Med. Vet.*)

A setter dog which showed moist, fetid, hairless spots on the head and back was locked up with other dogs. Shortly after several of these animals disclosed hairless spots, besides wounds

on the carpal and hock joints, which were soon followed by the appearance of nervous attacks, which resulted in emaciation and death of the animals.

One day a bitch, after returning from the hunt, became also attacked by similar symptoms, although she had never come in direct contact with the affected dogs, her kennel was separated from those of the affected dogs by a tight wire fence. She also soon manifested hairless spots on the carpal and hock joints. Since a treatment with copper sulphate had no results she was brought to the clinic at Alfort.

The animal was badly emaciated, and in various regions of the rump and the extremities the skin manifested eczematous eruptions and wounds, which developed as a result of rubbings. She very frequently shook her head and ears, and continually attempted to rub herself on the walls of the kennel.

On examining the ears at the base of the conchae and in the auditory canal a profuse quantity of ear wax of firm consistence and brownish color was observed, which somewhat resembled soot. The microscopic examination of the same showed the presence of acarus mites.

After cleansing the ears with soap water the treatment consisted in the application of potassium sulphate solution, 10 gms. to 1 liter of water. The first day two injections were given, and after the subsidence of the excitement and the itching the injection of the ear was given only once daily. A slight massage at the base of the ears favored the penetration of the fluid into the external auditory passage. After this was absorbed by cotton several drops of glycerinated iodine in a mixture of 1 to 20 were dropped into the ear. Besides the affected parts of the skin were washed with a 1 per cent carbolic acid solution, followed by the application of powdered sulphur. Two grains of sulphur were given five days a week in food.

The animal disclosed no symptoms of

dizziness or epilepsy. On the fourth day the itching in the ears was greatly reduced, the eruptions became dry, and the animal no longer showed an inclination for rubbing. The improvement continued in the second week to such an extent that the bitch recovered entirely of the eczema. She gained in flesh, and the hair again assumed a normal appearance.

In cats the disease manifests itself in the same manner. The acarus mange of the ears may be readily diagnosed if the animals are carefully examined, and the symptoms properly interpreted, and if it is further assumed that the affection may be present even though the ears contain only a moderate amount of ear wax.

BULLETINS

(Continued from page 882)

California, August 30, 31 and September 1, 1915, has just been published. It contains in addition to an address by the president, Dr. S. Stewart, of Kansas City, papers by members of the association and state veterinary examining boards. A feature of the report is the discussion of reciprocity between state examining boards.

Proceedings of the Twentieth Annual Meeting of the Indiana Veterinary Medical Association, has just been issued by Dr. A. F. Nelson, secretary. This meeting was held at Indianapolis, December 8 and 9, 1915.

Internal Revenue Regulations. Revised May, 1916, relating to the production, importation, manufacture, compounding, sale, dispensing, or giving away of opium or coca leaves, their salts, derivatives or preparations. Government Printing Office, Washington, D. C.

Therapeutic Digest

By MART R. STEFFEN, Milwaukee, Wisconsin

Oppenheimer, in the *International Journal of Surgery*, says that one per cent of picric acid is fifty times more antiseptic than the same strength carbolic acid and is practically non-toxic. He says that he has used it for many years for many kinds of wounds and has never seen a case of poisoning from it. Stains caused by it may be removed with alkalis. He gives the following as a standard solution:

Picric acid20 grs.
Alum 1 gr.
Alcohol 1 drm.
Water qs ad..... 1 oz.

For cleansing dirty, greasy wounds he recommends two per cent tincture of rodin in gasoline. A solution of this kind should always be carried in the emergency satchel, he says.

A case of foot-and-mouth disease in a man has been under study by a number of physicians. A hemolytic streptococcus was the only form of bacterial life that could be isolated. Experiments with this germ are being considered.

A substitute has been found for morphin, veronal, trional, chloral hydrate and other narcotics. Tests made with it have shown it to be fully as potent and much safer than narcotics. It is non-narcotic and is not under the restrictions of the Federal narcotic act.

These features, and the fact that it can be made very cheaply in the laboratory, make it one of the most important

discoveries in the history of medicine.

The originator is a veterinarian.

Medical Council Items

An emulsion of sulphur in glycerin is a good antiseptic.

Tincture of ferric chlorid is recommended by Slack in the treatment of burns.

A combination of kaolin and calomel is claimed by Wiener to be effective in the treatment of infectious dysentery.

The growth-controlling principle from the anterior lobe of the pituitary body is called tethelin. It is said to have a remarkable effect in stimulating tissue repair.

Wm. J. Gillette, of Toledo, has obtained some exceptionally good results with the use of superheated steam in the treatment of cancer. He says: "In a number of cases treated, far advanced and with most offensive odor, the odor has at once disappeared and the area subjected to steam has shortly presented the appearance of a normal, healthy, granulating, sweet wound. If steam had no other value than this, converting a disgusting, stinking mass into a perfect odorless clean wound, its use would be entirely justified.

Another very valuable property is its power of destroying the sensory nerves

involved in the disease, so that patients who, prior to its employment, have suffered such intense pain that large doses of morphin would hardly control it, find immediate relief, and morphin no longer necessary. It is well known that radium and the X-ray do, in a measure, control the pain of cancer; but in comparison with steam their power for this purpose is exceedingly feeble.

The penetration of steam (I employ it at from 50 to 55 pounds boiler pressure) is another of its most valuable characteristics.

Cancer tissue usually presents a texture of little firmness with lessened resistance, and by reason of this fact steam often follows its ramifications without doing material damage to other near structures. It is well known that the cancer cell is destroyed at a much lower temperature than the normal, so that cancer cells deeply situated may be promptly destroyed by steam, with small damage to the tissue invaded."

Dr. Gillette has had an apparatus made specially for this purpose. It consists of a metal shell or cylinder in which are contained numbers of small tubes which emit the steam. The object of the cylinder is to prevent the steam from injuring parts not under treatment.

A proceeding that is almost unfor-
givable on the part of a practitioner is to remove the descended testicle in a monorchid or single ridgling.

If there is no intention of doing a ridgling operation, the testicle which is down should never be removed. It accomplishes nothing and, especially when the castration is in the standing position, the scar may confuse the operator who is later called to remove the hidden testicle. Only recently I encountered such a scar directly in the median line, on the raphe testes.

The hidden testicle should always be removed first. In the event that it can not be removed, the normal testicle should not be molested.

RUMENOTOMY

(Continued from page 874)

rumen, securing it to the skin. Then proceed to empty the rumen of its contents with your hand. Take out from two-thirds to four-fifths of the contents; then pour in from two to three gallons of the formerly described solution. It may be necessary to use some lubricant on the hand to keep from irritating the inner surface of the rumen as it collapses against your hand as you pass it in and out so often.

Cleanse the wound, taking precaution against washing solids into the abdominal cavity. Stitch up the opening in the rumen, starting at the inferior commissure. Use linen or silk thread as gut dissolves too rapidly. Put stitches about three-fourths to one inch apart, being careful not to draw them too tight. Tie so that the knot will come on the inside of the rumen. I leave one side of the rumen attached to the skin until I get the opening stitched up.

The opening in the abdominal wall should be closed with strong linen sutures. I stitch through skin and muscle; the inner part of the stitch just brings the internal edge of the wound together. A small opening for drainage should be left at the lower end of the wound.

After treatment: Cleanse the wound daily with some good antiseptic and if in fly season, protect it from the flies. Keep the animal on soft rations for ten days, not more than half quantity. No hay or straw should be allowed. If the patient gets too large a quantity of solid food, the act of ruminating will rupture the stitches. If the escape of food into the abdominal cavity during the operation is permitted, peritonitis will follow. If one be careless with the wounds, infection may set in. If all the contents of the rumen be taken out collapse of the organ may occur. My experience is, that from a timely operation followed with careful dieting and cleanliness, excellent results may be expected.

Queries and Answers

The editor will reply to queries appearing here, as he is able and as opportunity permits, but he does not want, nor cannot undertake to monopolize this portion of the department. Any reader who can furnish further and better information in reply to any query is urgently requested to do so. Where the treatments advised in these replies is adopted it is hoped that those employing them will report their results whether good or bad. In all cases give the number of the query when writing anything concerning it.

QUERY No. 253—I was called to see a white mule, nine years old, that has a swelling or rather an enlargement on each side of the neck up near the mane and beginning about four inches behind the ears, extending back for about seven or eight inches. On palpation, it seems soft and flabby but does not feel as if there was any pus. When pressure is exerted on one side, it seems as if the other side is a little more tense than usual. The owner says this has been that way for over a year and does not get any larger or smaller and does not seem to affect the mule any except for looks. What is it and what can be done for it? Would you advise cutting into it? It surely cannot be a poll-evil and go that long without any change one way or another. I am only a few months in practice and am entirely at sea as to what this is or how to treat it.—C. C. W.

REPLY—Probably there is in this case a necrotic involvement of some portion of the ligamentum nuchae. In other words, the case is quite likely one of poll-evil. Yet one must not lose sight of the fact that melanotic tumors which so frequently affect white animals, may exist here.

The fact that the condition has remained about stationary for a year does not disprove the existence of poll-evil. However, since no aggravation of the condition is manifested, I should advise against interference. If on the other hand, enlargement seems to cause trouble in any way, the radical operation of Williams for poll-evil is the treatment indicated.

QUERY No. 254—I should like to have advice on a disease that has been giving me trouble for the last month or so. The horse refuses to eat and is weak, shifting his weight from one leg to another, especially the fore-legs. He will run over anything. He has a dull appearance; head down; temperature varies from normal to 104° F.; pulse about 60 to 70, irregular; respiration from 24 to 30; uneasy, usually walking around; constipated, in most cases total absence of peristaltic sounds; lips hanging down and tongue out of mouth. The course of the disease is from a few hours to one week. The animal falls, is unable to rise, has difficulty in swallowing, lies quiet on his side, straining occasionally and moving one fore-leg at intervals. The eyes appear normal, but the sight is impaired, and the horse is unable to raise or move his head. He usually dies from the second to the fifth day. Heroic doses of arecolin and aloes have no effect. The animal does not respond to stimulants and usually dies from suffocation. In cattle, I have had four or five cases where the symptoms were similar, but the course was shorter, lasting only a few hours. As far as I can see, I believe it to be forage poisoning. This is a low country subject to overflows when it rains hard. This year has been a very wet one. Farmers are feeding new corn and pea vine hay, rather green. Most animals are out in the field grazing. It is peculiar, however, that only one case occurs on each farm, the rest of the live stock appearing O. K. Can you suggest a preventative? What about treatment?

R. B. F.

REPLY—That the cases you describe are a form of forage poisoning seems certain, and I am inclined to think that sooner or later you will have more than one case on the same farm. I do not believe that any treatment has ever affected the course of this disease where the animals are dull and stupid. In the types of forage poisoning where the animals are excited, where they are maniacal, profuse bleeding from the jugular will quiet

them, and barium chlorid in seven to ten grain doses every half hour until not more than three, or better only two, doses have been given, will usually cause an active purgation. Where this purgation is obtained early in the course of the disease, the chances of recovery are fair.

In sections of the South West, where this trouble is common, the use of one to two ounces of magnesium sulphate daily in the feed has seemed to act as an effective preventive. This amount of magnesium sulphate given regularly will keep the bowels very loose, and as far as I know, no attack of forage poisoning has occurred in an animal that was not constipated. The classic preventive, of course, is change of feed, but I realize how impractical this often is when a farmer has no other kind of feed and is unable to purchase it.

QUERY No. 255. Is it advisable to give salt or water or both to horses or cattle that are gorged on grain?

REPLY: Water in cases of this kind should be given in small quantities. Salt tends to stimulate the secretion of gastric juices and is somewhat effective as an anti-ferment. Much depends upon the character of the grain eaten and its effect. It follows naturally that in cases where fermentation was present little if any thirst would exist, and in such cases salt would need to be given, and the affected animals would be unlikely to relish anything to eat or drink. In cases where much dry food is consumed, excessive thirst is caused, and in such cases drinking large quantities of water usually causes acute digestive disturbances and often laminitis.

QUERY No. 256. In March, 1913, a client brought to me for treatment a bay mare, 1,300 lbs., five years old, in good working order, with quite a pronounced swelling on her cheek near the ramus of the inferior maxilla. There was some drooling of saliva and a temperature of 102° F. Next day the mare was much worse, and I found the swelling had extended to the angle of the jaw and throat, so that she was unable to eat, but the temperature was not much higher. She appeared to be very dull and dejected. Treatment—counterirritant and echinacea, belladonna and tincture of veratrum every three hours. The mare was found dead in her stall next morning. Was it a case of malignant strangles?
D. K. B.

REPLY: Probably strangulation due to edema of the glottis caused death in this instance. The rapid development of the swelling and sudden death suggests laryngeal occlusion and asphyxiation.

RESTRAINT OF PATIENTS FOR DENTISTRY

(Continued from page 884)

under all circumstances. Without a head rest to fix the head I actually believe standing restraint would be better than an operating table. On the ground with ropes to secure the legs the head can be held better by a helper than on the operating table, for here he sits straddle of the neck in a comfortable position and holds the nose up with both hands, while the operator kneels or stoops to his work with fair comfort.

The one danger to avert on every recumbent dental operation is the aspiration of blood into the lungs. With the blood and saliva flowing into the fauces freely, the mouth propped open with the speculum the struggling patient often draws an appalling quantity of such products right into the trachea. It is important to keep this in mind constantly and to prevent the occurrence by frequent sponging out the back of the mouth.

General anesthesia is always contra-indicated in horse dentistry for the same reason; the unconscious patient will, despite every precaution, aspirate a certain amount of the liquids that flow into and towards the pharynx. As some of these operations are complicated, difficult, delicate, prolonged and often exceedingly painful, and general anesthesia so entirely out of the question, the system of at least partially controlling the pain improvised by Prof. H. E. Bemis of the Iowa State College, is hailed with delight by all those who indulge in major surgical work about the jaws. The system will be appreciated most by those who have encountered these difficulties and will finally be adversely criticised only by those who will expect it to make a horse stand well while floating its teeth. The inspiration for this remark comes from a little side discussion of Bemis's operation at Detroit. A veterinarian was heard (by the writer) to say that the system is worthless because the opposition of horses to dentistry is largely the opposition against restraint, which is a fact only so far as minor operations are concerned. When, however, we begin digging about the maxillary and mandibular nerves and their branches, twist molars out of their sockets, pound them out with a maul and punch or tear at the jaws with forceps, our poor brute patients are opposing something more than restraint. It is such remarks as above that show only too painfully clear that some veterinarians are still looking upon anesthesia as a means of restraint and not as a means of preventing the inhuman torture of surgical procedure.

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary — — Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

Report of the Surgery Committee*

By R. R. DYKSTRA

PART I. Regarding the use of blisters in the treatment of chronic inflammation of tendons and tendon sheaths:

In Frohner's general veterinary surgery, the statement is made that in the treatment of chronic tendinitis the use of the actual cautery is unnecessary if the affected parts are treated as follows: "The hair is clipped previous to the application, the skin is thoroughly washed and disinfected, then apply biniodid of mercury ointment, (one to five); this is rubbed in thoroughly for fifteen minutes, covered with an ordinary bandage over absorbent cotton, and allowed to remain in position for two weeks. After twenty-four hours the bandage becomes moistened with an extensive exudate which soon dries; the horse's head is tied up for the first few days."

During the past year I have had occasion to use this line of treatment on several patients. I was somewhat dubious regarding the outcome, but these fears were groundless.

The following case report is of interest in this connection: A two year old gelding weighing about 1,000 pounds, lame

for some time past, was presented at the Kansas State Agricultural College clinic. On examination considerable thickening of the tendons and sheath posterior to the left metacarpo-phalangeal articulation was detected; at the trot the animal was very lame in this member. A diagnosis of chronic tendo-vaginitis was made.

The following treatment was adopted: The hair over the enlarged region was clipped as short as possible; this was followed by a vigorous scrubbing with soap and water, and after drying, painted with tincture of iodine. The entire area was then covered with a blistering ointment consisting of four drams of biniodid of mercury and two ounce of petrolatum; in order to increase its action it was thoroughly rubbed into the parts for at least fifteen minutes. A layer of absorbent cotton was applied, being retained in position with a muslin bandage, and the animal's head "tied up" to prevent gnawing of the bandage. In twenty-four hours the bandage was moist with wound exudate, though this dried up in a few days. At the end of two weeks the dressing was removed, the swelling was much reduced and all signs of lameness had

*Presented at meeting of the Missouri Valley Veterinary Association.

disappeared. A layer of dried exudate, through which the hair was growing vigorously, was peeled from the blistered part. In order to prevent a relapse a muslin bandage was applied for another week, and rest in a single stall enforced, after which the animal was turned out to pasture.

The foregoing case report is fairly representative of our results following the use of strong counterirritants continuously applied for fourteen-day periods. On account of its comparative simplicity, excellence of results, and absence of unfavorable sequelae, it is in our opinion to be preferred to the use of the firing iron.

PART II. A notable advance in veterinary dentistry is announced by Dr. Bemis of the Veterinary Division Iowa State College. This consists in the use of local anesthesia during dental operations. The technic is described as follows: "The writer (Dr. Bemis) has recently employed nerve blocking by the injection of a local anesthetic directly upon the maxillary or mandibular nerves at their points of entrance into the maxilla or mandible. For this purpose an ordinary hypodermic syringe equipped with a needle four inches in length is all that is necessary. The superior nerve can be reached by a puncture opposite the middle of the lower border of the orbital cavity and about one inch from it. The inferior nerve can be reached by a puncture forward from the posterior border of the mandible along its inner surface. Four mil. of a five per cent solution of cocain or alypin will anesthetize the entire half of the maxilla or mandible including the mucosa. During the injecting the needle should be moved to and fro slightly to distribute the fluid. After a period of ten to twenty minutes, the operation can be performed with little or no pain."

On account of the danger of aspiration of blood and other substances during dental operations, it has not been practical to employ a general anesthetic. By

the foregoing method this danger is removed, and what was a very painful and many times a barbarous operation becomes painless and humane.

DISCUSSION

Dr. Merillat: One point about surgery as it appears to me concerning the veterinarian today, is the new anatomical nomenclature that is rapidly replacing the old. All of you who are practicing through this central country have studied the old map, and considerable material reaches you through journals and text-books that has been becoming more and more like Greek to you because of the old nomenclature such as Strangeways differing from that used by Sisson. It behooves you, therefore, to acquaint yourselves with the new nomenclature as soon as you can. Otherwise in a very short time you will be unable to comprehensively read the literature of the profession. The transition is not difficult if you will only make a systematic effort, taking a few of the principal structures with which you are familiar and learn the new appellations that are given to them now by the scientific anatomists today. A few years ago, I had occasion to change schools, and when I began to lecture to the new class of students, I was astonished to find that they didn't understand what I was talking about—my lectures were worse than Greek to them. They had been studying the new nomenclature, and I found it a duty I owed myself and my own enterprise to change, which I found difficult but not impossible. I believe this concerns veterinarians as much as any other problem that can be named. I am not making any attempt to justify one nomenclature as against another but simply mentioning a condition that confronts you.

The new anesthesia of Dr. Bemis for dentistry has been before us, I think, since about a year ago, when Dr. Bemis announced to a few of us privately that he was anesthetizing his patients for dental operations perhaps more effectively than

were the human species by cocainization, and as mentioned in his paper, it is a very serviceable operation and a very effective one. It is one of the innovations of this year in veterinary surgery. On first attempt to perform this operation according to the instructions of Dr. Bemis, I found it to be a very simple procedure and as effective as simple. I had a little trouble at first in cocainizing the inferior dental foramen, but soon found it just as simple to place a hypodermic to the mandibular foramen as it is to the maxilla. I use a weaker solution than Dr. Bemis recommends, being satisfied with a two per cent solution and find that the superior molars particularly can be extracted from animals without any pain to speak of. The cocainization does not seem to remove the sensibility of the gum, but the rotating motion of the forceps and the traction upon it incite no resistance whatever.

Another thing I should like to draw your attention to is McKillip's cauterization for roaring. I have now performed six operations with this method, being very reluctant to accept it as a routine method in our practice, but I have had five recoveries. With these five cases of complete recoveries from the procedure, I am getting a great deal of confidence in it and predict that it will probably supplant the dissection of the mucous membrane. It is a very simple operation and requires only the exposure of the anterior larynx, the heating of a specially shaped iron, which is thrust very easily into the depths of the cavity and kept there only an instant, and when removed, the operation is over.

Dr. R. C. Moore: I should like to offer a word or two on the doctor's recommendation on cocainization in dental surgery. Dr. Merillat says he gets along with a two per cent solution. The drug is one that often excites the animal rendering it somewhat difficult to control if used in concentrated solution. A number of years ago, perhaps ten, I happened to be at a hospital where operations on

the human were performed and one of these operations was for inguinal hernia. The surgeon called my attention to the fact that he was going to operate on this man with local anesthesia. I was present during the entire operation. The inguinal region was laid bare, in fact, the incision extended almost from the tuberosity of the iliac spine to the pubis; the peritoneal cavity was opened; the intestines laid back out of the way; the parts overlapped and sutured one by one, inward and outward, occupying about three-fourths of an hour, and he performed that operation with cocain solution of one to one thousand, and I was very much impressed with the complete anesthesia he got from the weak solution. The cocain, however, was dissolved in a normal salt solution. I thought I would try it on animals, and from that time to the present, I have never used a solution of cocain stronger than one per cent. There is practically no pain occasioned with a one per cent solution, and I think we get as good results as with the solutions of four or five per cent.

I should like to ask Dr. Merillat for information, if he has found it to be dangerous at all or if he has had any difficulty in getting the cocain into the blood vessels in cocainizing those parts, or if he has taken any special pains to know that he did not get the cocain into the vessels.

Dr. Merillat: There is no way to avoid striking the internal maxillary vein or the internal maxillary artery. My plan is to use a pretty dull needle. I make a little slit with a scalpel and use a dull needle and push instead of puncture. Of course, if the needle is located in the spot desired, it is located among a large number of blood vessels.

Dr. Mayo: Speaking of ingenious surgical procedures, a friend of mine in Richmond performed one of the most unique that I have ever heard of. A woman was bothered with rats and she baited a fish-hook with some meat and tied it to a string, and her pet dog got

the meat and the fish-hook. She brought the dog to my friend, who was a veterinarian. The string fortunately was hanging out of the dog's mouth. He drew that through a cork, an ordinary cork, which he had perforated. Then he used a tube or canula and passed the string through that and pushed the cork with the tube clear down to the dog's stomach, hooked the fish-hook in the cork and drew the whole thing out.

Dr. D. M. Campbell: Recently Dr. Merillat wrote an article which was published in the AMERICAN JOURNAL OF VETERINARY MEDICINE on the treatment of what he termed "bull's eye shoulder" in horses; most of you have read the article. He means those fibrous tumors that occur just under the skin, well up on the shoulder, and not what has often been called "cold abscesses" or levator humeri abscesses. He advised that these tumors be excised and the skin sutured and left sutured for two or three days, the sutures then taken out and the skin allowed to pull apart and the raw wound permitted to heal by granulation. When I read Dr. Merillat's article, I didn't believe any veterinarian would charge a client for that operation or that his client would pay him for it. I soon saw my error, however, because subscribers began to write me immediately after the article was published, telling me what a fine operation it was. I haven't done a lot of these operations but what I have done I have tried to do a little better than that. I clean these shoulders, shave them and render them as nearly sterile as possible; catch up the tumor through the skin with one hand and quickly excise it, taking with the tumor an elliptical piece of skin. The edges of the skin are then sutured with great care, leaving an opening probably not more than half an inch in length at the lower commissure of the wound. Then, I put in retaining or mattress sutures well back from the margins of the wound, being very careful in putting in these reinforcing sutures not to catch any of the fibrous tissue or any of the flesh

underneath the skin at all, so that when I am through suturing I can take a dressing forceps and sweep it all around over the area that has been loosened from the skin—probably an area eight inches up and down and five inches wide, or even larger in the case of large tumors. That area must not be "tacked" down to the underlying tissues at any point; failure will result if it is.

As for treatment, the shoulder is stroked several times each day to work out all secretion. Healing without scar results. The wound underneath, of course, has to fill up by granulation, but the skin is close to the underlying tissue and it does it quickly. We have had every one of these horses working within twenty-eight days; some of them in twenty days. This operation has been very successful with horses that pulled the heaviest of loads and nothing but a sound shoulder would stand the work they did. These horses were worth from \$2.50 to \$3.00 every day to their owners, and I assure you they were willing to pay a splendid price for an operation that could get the horses back into work, as we have done in several cases, in three weeks.

I wonder how many of you are trying to get healing of the skin in these cases by first intention and work out the wound secretion by rubbing? It can be done and it rewards the operator well for the effort. To my mind such an operation at twenty-five dollars gives the owner of the horse better value for his money than the "open wound" operation gives him at three dollars; at least I have done the operation at both prices and found those who paid the higher price, but got their horses to work in the shorter time, were far the better satisfied. I never use any local anesthetic because I fear interference with healing, but give the patient a full dose of chloral hydrate, one to two ounces, an hour before the operation. It is an operation that can be very quickly done and with but little pain—pay no attention to the bleeding.

If the tumor is brought to one in a state of active inflammation from service and he can't put off the operation until the inflammation subsides, the matter becomes more difficult; it is harder to make all of the stitches hold, but even then it pays well to try. I neglected to say that in suturing the wound, the skin needs to be "ridged up" so that the under surfaces of the margins are brought in contact.

With regard to the continuously applied biniodid blistering agent described by Dr. Dykstra, I am inclined to think that results paralleling those he has described may be had from rest and a pressure bandage and this is just what he used plus the blistering. Long ago I learned the great efficacy of pressure in the treatment of tendon strain, from the effect of tight-bands on my own wrists lamed by shucking corn. I need not speak of the value of rest to strained tendons and ligaments. My usual treatment of strains is so exactly like that described by Dr. Dykstra, except that I use an elastic bandage for the pressure which he gets from the swelling occasioned by the blistering, and the results of this treatment are so satisfactory that I question whether the blistering agent that he uses does enough good to justify the pain and discomfort that it causes.

TETANUS FROM A STONE BRUISE

On September 11th, 1916, I was called to see a horse that was stiff in her gait, according to the statement of the owner. I found that there were marked symptoms of tetanus. The horse had been driven about 40 miles the day before, and had been noticed to be walking stiffly. On examination I found the frog was bruised, and sand and dirt had collected under it. I removed the insensitive frog and cleaned the foot. I also used 23,000 units antitetanic serum (Parke, Davis & Co.) and the horse made a good recovery.

W. A. ELVER, D. V. M.

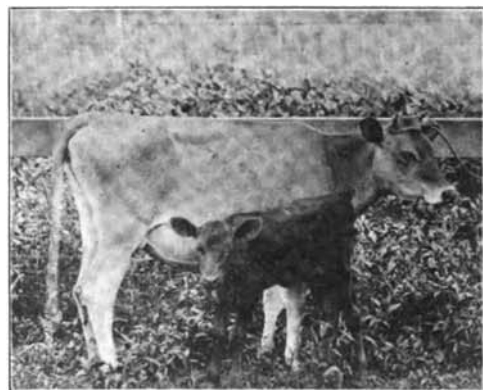
Long Prairie, Minn.

GOOD RESULTS FROM SERUM IN THE TREATMENT OF TETANUS

I have had considerable tetanus this summer and am glad to report good success. The treatment followed was antitoxin in three to six thousand unit doses daily for three to five days in conjunction with one to two-dram doses of fluid extract of passiflora, three to five times daily as required and favorable conditions, viz., quiet, darkness and freedom from flies. G. G. B.

A THIRTEEN-MONTH-OLD PARTURIENT COW THAT LIVED

The accompanying illustration shows a Jersey cow and her calf, which I delivered on May 13, 1916. The cow was thirteen months and eleven days old when the calf was born. She crawled or walked under a three-barb wire fence into a field where an Angus bull served her. The owner said he had forgotten the date of her intercourse. This is a four-foot woven wire fence near which the cow is standing as shown in the pic-



ture. She weighed about 350 or 375 pounds. When the calf was born, I did not weigh either the cow or calf as there were no scales near at hand; but I did stand astride of her and raised her to her feet just after the calf was delivered as she was too weak to raise herself. The calf was delivered about 8 p. m. on the 13th and it could not stand by itself until the next morning.

I might say that this is a fine heifer

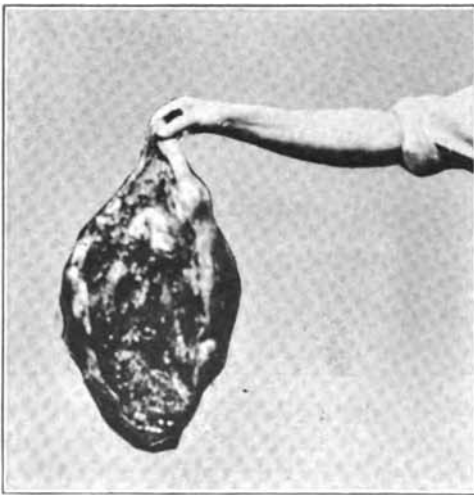
calf as the photo shows, which was taken about the middle of June. The owner of the cow is S. E. Riegel, living about six miles west of Harrisburg and six and one-half miles north of Carriers-mills, Illinois. Both the cow and calf are doing well at the present time and have had plenty of visitors as people come from far and near to see them, so the owner says. I have not seen any record of a female of the bovine species giving birth to a living calf as young and both living. What do you say, brothers of the veterinary profession?

Any one wishing a photograph of this cow and calf may receive the same by writing me.

Galatia, Ill. R. C. RIEGEL, D. V. M.

ADENOMA FROM MAMMARY GLAND OF SOW

The accompanying illustration shows an adenoma weighing 28 lbs. removed from the mammary gland of a sow. From the history of the case, I think it resulted from a bruise which the sow received in dragging the udder over a six-inch plank at the entrance to the pen.



On inspection, the mass appeared grayish white, lobulated, with necrotic centers throughout and a limited blood supply. The sow was removed from the hospital one week after the operation and is doing nicely.

Cayuga, Ind. I. W. ALLEN, D. V. M.

COWS INFESTED WITH DISTOMA HEPATICUM (?)

I was called a short time ago to see a couple of Holstein cows which were not eating nor giving any milk. When I arrived at the client's place, I noticed that these two cows had a swelling between the inferior maxilla. The swelling went the whole length of the maxilla. I told the client that the cows were infested with *Distoma hepaticum*. I made an incision the whole length of the swelling; put the cows on Fowler's solution of arsenic, and they made a rapid recovery in a few days.

W. A. ELVER, D. V. M.

Long Prairie, Minn.

VETERINARIAN ADVISES FARMERS TO TREAT EMERGENCY CASES—ILLNESS AND INJURIES

The following appeared in a recent issue of the *Kansas Industrialist*, the official publication of the Kansas State Agricultural College. I want to ask if it is not an imposition upon the veterinary profession of Kansas and of the whole country for anyone connected with the state college or with anything other than a proprietary medicine concern to propose a thing like this:

Every stockman should have a well equipped but not necessarily expensive medicine chest in the opinion of Dr. C. W. McCampbell, assistant professor of animal husbandry in the Kansas State Agricultural College.

This chest may be made out of a goods box, points out Dr. McCampbell, and should be sufficiently well supplied with instruments and drugs to meet emergencies likely to arise.

Some of the articles that should be included are a sharp knife, pair of artery forceps, scissors, metal dose syringe, three or four thermometers, balling gun for giving physic balls, gallon can with hose attachment for giving injections, hoof knife, nippers, rasp, hoof hook, hypodermic syringe, needle and thread, bandages and absorbent cotton.

These are all articles which may be used by any farmer, and should be supplemented by some simple remedies, according to Dr. McCampbell, which may be purchased at any drug store. A good antiseptic is im-



Illinois State Veterinary Medical Association, Semi-annual Meeting, Peoria, Ill., July 19-20, 1916.

portant. Creolin probably is the best and safest and is used in a two to five per cent solution. For a milder antiseptic, potassium permanganate—one teaspoonful to two gallons of water—is recommended.

For physic, linseed oil is good, but cathartic balls are safer and more convenient to give. Epsom salt may be used for cattle, but is not recommended for horses. In case a quick physic is desired the hypodermic syringe should be used and an injection of one grain of arecalin is given.

Two liniments may be recommended. One, which is mild, is composed of one ounce of turpentine, one ounce of strong ammonia, 48 grains of camphor gum, one or two ounces of iodine and alcohol to make a pint mixture. A stronger liniment may

be made from two ounces of camphor, two ounces of turpentine, four ounces tincture of iodine, 16 grains bichlorid of mercury and eight ounces of alcohol. This should not be rubbed unless a blister is desired. In that case use two ounces of cerate cantharides and one dram of bichlorid of mercury or cantharides one part and eight parts of lard.

Dr. McCampbell does not say so, but it is plainly implied that he intends for the farmer to diagnose the cases of illness of his animals as well as to prescribe for them and administer the treatment, including, as he explains, the use of arecalin hypodermically when a quick physic is desired.

I am informed that Dr. McCampbell has never practiced a day in his life, and I can readily believe it when I see the kind of advice he gives. What veterinarian with experience in practice would use "a sharp knife, a pair of artery forceps, hypodermic syringe, needle, thread, bandages and absorbent cotton" kept in a chest made out of a goods box and nailed on the wall behind the horses' stalls subject to all the contamination that such a location implies? Yet Dr. McCampbell glibly advises the farmer to use these articles without the slightest instruction or caution regarding matters of cleanliness for his hands or the field of his operations.

Again, you will note that he advises the farmer to use a high priced proprietary antiseptic in preference to the official preparation of the same agent. That there is a "best and safest" antiseptic for all conditions will be news to practicing veterinarians, whose experience has taught them that different antiseptics are required under different conditions and that there is no one that is applicable for all.

His direction for the use of cathartics is almost funny, or would be if it were not for the sympathy which we are all supposed to have for the horse. His direction to use turpentine on the horse's skin is only less tragic. Note his instructions regarding the use of bichlorid of mercury—not a word of caution regarding the handling of this dangerous poison!

Unfortunately, this advice appeared in a publication that because of its official connection has standing with Kansas papers, and it has been very widely published throughout the state and even in some publications outside of Kansas. How much harm it may do is conjectural. Kansas farmers are credited with being pretty intelligent, and it may be that few of them will have so little sense as to accept this advice; but what shall we say of the veterinarian who would resort to measures such as these to attract passing attention? Some quacks

of a type now happily almost forgotten, formerly resorted to the means of spreading misinformation of this and similar kinds for the purpose of attracting attention and adding to their incomes; but what shall we say of a veterinarian educated at public expense by the State of Kansas and supplied with the means of livelihood by the institution from which he graduated, who has so little conception of veterinary ethics or so little regard for the opinions of his professional brethren that he will resort to such procedure to get himself into the limelight?

The veterinary profession of this state would not stand for such methods for a minute. A member of our state association violating the proprieties so flagrantly would be expelled without ado. I wonder that the Kansas association can condone it. Perhaps it won't.

A. H. KRAUS, D. V. M.,
Deep River, Ia.

When asked for a statement concerning the foregoing protest Doctor McCampbell replied as follows:

Permit me to say that when veterinary columns are maintained by all the best agricultural publications, and when men ranking high in the veterinary profession write books especially for farmers upon the subject of treatment of diseases of live stock, the absurdity of a protest against an article such as appeared in the *Industrialist* is very apparent. Anyone who would protest against the simple suggestions offered in this article is simply showing marked symptoms of an acute case of narrow mindedness. There are at present 295 non-graduates and 262 graduates practicing in Kansas. Twelve counties in the state have no graduates, 14 have but one each, and 21 but two each. In my opinion, 90 per cent of the non-graduates and at least 25 per cent of the graduates are a positive detriment to the state. Such being the case, I cannot see where anyone has been done an injustice when a few simple suggestions are offered which might help the farmer give first aid to the injured or treat such simple ailments as wire cut, thrush, distemper and so forth.

If the veterinarians are protesting against the article in the *Industrialist*, they will probably have heart failure when a little circular entitled "Home remedies for com-

mon farm horse ailments" is ready for distribution.

No one appreciates more than I the need for and value of the competent graduate veterinarian, and no one has more contempt than I for the unscrupulous "singlefooter" or the disreputable graduate, and as long as we have such a large percentage of the latter, the farmer is entitled to any suggestions that may help him protect and save his live stock. The right kind of a graduate veterinarian has no fear of such suggestions. In fact, one of the most successful graduate practitioners of my state suggested the circular mentioned above.

AMPUTATION OF ONE QUARTER OF THE UDDER

During July, 1916, I was called to see a cow that had mammitis in one quarter of the udder and found that gangrene had developed. I told the client that the best treatment would be to amputate the quarter. So I administered H-M-C, cleaned the field of operation and removed the gangrenous part of the udder. When this was done, I used a hot iron to stop the hemorrhage. After-care consisted in keeping the wound clean until it was healed. The cow is doing fine and is to be sold for beef.

W. A. ELVER, D. V. M.
Long Praire, Minn.

MORE ATYPICAL CASES OF MILK FEVER

Case I. A heifer eight months old that had never been bred, was found down in her stall one morning. Upon my arrival I found typical symptoms of milk fever. I treated her by inflating the udder and administering one ampule of camphorated oil subcutaneously. Recovery followed in about three hours.

Case II. I was called one morning to see a cow which was slightly bloated with fermentation of food in the rumen. I gave one and one-half pounds of epsom salt. In about an hour, the owner telephoned me to come at once, saying that the cow was down and looked like she was dying. Upon my arrival I found typical symptoms of milk fever. She made a rapid recovery with the usual

treatment. I have had several typical cases of milk fever following the administration of a dose of epsom salts.

Concord, N. C. T. N. S.

A TWO LEGGED COLT

The accompanying photograph shows a colt which I was called to deliver on the morning of May the second. The owner said that "the front legs were not coming right" and he was unable to find them.

On arrival I found that the man had



delivered the colt without any particular trouble, but the fetus was a monstrosity. Normal front legs were absent and in their stead there was one small, undeveloped front leg which was attached by muscular structures. The colt was otherwise perfectly formed and unusually strong.

O. F. WEST, M. D. C.
Sheldon, Illinois.

MULE COLT BORN WITH FISTULA

July 15th, I was called to see a new born colt. I found the colt still wet and discharging pus from both sides of the withers. I had the mare and colt brought to my hospital, where I immediately injected one-half dose (800 millions) of Cutter's Polyvalent Mixed Bacterins. I gave the proper drainage to both sinuses and continued with irrigation of the sinuses and the use of the bacterins at three-day intervals for three weeks, at which time the patient was discharged. Results could not have been any more satisfactory to either the owner or myself.

WM. C. STORCH, D. V. M.

Jefferson, Ohio.

TETANUS IN MARE AND COLT

I was called early one morning to see a suckling colt, two months old, which the owner said seemed stiff. When I arrived, I found a well developed case of tetanus but could find no wound of any kind on the colt. The mare and colt were in the pasture, and after fixing a stall for the patient, I walked over to the mare to lead her in and found that she also showed well marked symptoms of tetanus.

The mare had several warts on her body, some being very raw. I am satisfied that she became infected through the warts and the colt through the mother's milk. Both died in a few days.

T. N. S.

Concord, N. C.

Comment: How did the tetanus germs get into the milk, tetanus being a disease in which the germs are localized at the point of development, and even if the colt did inject them why should it cause tetanus, since horses constantly harbor great numbers of tetanus germs in the intestinal canal, and finally, why did the disease appear in approximately the same stages in both animals if one contracted it from the other? More likely dam and foal acquired the infection from similar

sources and the simultaneous appearance of the disease in both was simply a coincidence.—Editors.

EXPERIENCE WITH A TUBE IN PERSONAL USE

I noticed an article in the July issue of *VETERINARY MEDICINE* in which Dr. Knisely replies to E. Willis Hoare of London regarding the use of the stomach tube, and he certainly explained it. But why not warrant, guarantee, gamble money or marbles that the tube will cure any case that is curable? Furthermore it is the best diagnostic agent outside of opening the abdominal cavity? I have lost clients and made clients by the tube, and the only way when a patient dies is to autopsy and show the owner why there was no cure. Give me plenty of sodium chlorid and water (hot if it can be gotten) and I will guarantee a cure if curable; and I can soon tell if the stomach or bowels is at fault.

If there is a rupture, which occurs with me in 90% of double colon cases, no water returns from the stomach and the cases get worse. They look bloated and soon die. Gastritis is soon relieved by the tube; tympanitis also if not too bloated to interfere with the swallowing of the tube. I have yet to see the first horse that I can't get to swallow the tube, but through the mouth always.

I like to treat impaction cases at the hospital. After cleansing the stomach, I keep pumping in five gallons of hot water and leaving. I tie the tube up on top of the halter for two or three hours without taking it out. I use a stomach tube myself very often for indigestion and, of course, know why we get results. If a person swallows a poison, what do the M. D.'s do first? Use the tube.

I treat cows the same way. Medicine can't move an inflamed, weak, strained gut. But water will soften its contents and put it in normal condition if it can be done. I commenced using the Phillip's tubes in 1908, then one of Knisely's, then the double one of Betz. The fault I find with the double tubes

is that the inlet tube is too small. I should like to have one with both bores the same size and the tube more stiff. I have used Knisely's on a yearling colt.

The only pressure is on the epiglottis. I can talk with a tube in my stomach; just place it on one side of my mouth, and for a few minutes I notice pressure on the epiglottis, but it soon leaves and the epiglottis seems to adjust itself to the pressure. I am a tube user and know what effect it has on myself. There is nothing better and it is so harmless!

WALTER LAWSON, D. V. S.

Hollister, Cal.

SUBSTITUTES FOR HIGH-PRICED DRUGS

Regarding substituting drugs as suggested on page 756 of the September issue. The bark of cottonwood and willow trees take the place of quinin. Fluid extract of lobelia is often better than the iodids. Sulphuric acid, ten drops to a pint of water, is sometimes as good as salicylic acid.

Tryon, Okla. C. C. MASHETER.

CONSTIPATION RESULTING FROM RECTAL MELANOMA

A white gelding fourteen years old came into our hands because of symptoms of colic, with the history that the attack began ten or twelve hours previously. He had had no other attacks than one six or seven months before, but for the past two or three weeks he had apparently had difficulty in defecation. The act during this period had been accomplished only after much straining and unusual effort.

For the past twenty-four hours no feces had been passed. The pulse a trifle fast and somewhat thready. The mucous membranes showed no injection or petechiae. Peristaltic sounds were excessive and to be plainly heard over all parts of the abdomen; temperature, 103° F.

The butt of the tail and the anal borders were covered with melanotic

tumors varying in size from a pea to a walnut. At intervals of a few minutes the gelding strained severely in attempts at defecation, but no feces were passed. He then assumed the recumbent position in apparently quite severe pain, rising to chest position and straining again for a minute or two.

Everything pointed to an obstruction in the terminal portion of the intestinal canal and rectal exploration was suggested. When we attempted this we had some difficulty in entering even one finger. Spasm of the sphincter ani was aroused to such a degree that the anal region had the feeling of solid rubber, and it took several minutes of steady pressure and rotary movements before we were successful in entering the hand. When it had gone to the knuckles it met an obstruction which seemed to be of the size and shape of a large pear, lying solidly in the roof of the rectum and forcing the tissues around it to meet with the floor of the rectum.

At first only one or two fingers could be passed farther into the bowel under this tumor, but by slow and steady pressure the entire hand was later forced through.

The rectum was balloon-shaped in front of the tumor and packed solidly full of dry feces, so solid and dry that considerable digging was required for its removal. Nearly a bushel of feces was removed manually by the expenditure of much effort and at least a half-hour of time.

The gelding was immediately relieved and stopped straining.

Treatment having a laxative effect was given and the attendant instructed to remove accumulations of feces from the rectum at certain intervals.

Forty-eight hours later as a result of laxative treatment and sloppy feed the feces had become semi-liquid and defecation was possible, although considerable straining accompanied each evacuation.

On account of the patient's age and

the great size of the tumor in an inaccessible region all treatment given this case from now on will be palliative only, until the tumor either breaks down and thus relieves the condition automatically, or until it assumes such size that it completely blocks the rectal canal. We may then attempt some sort of surgical interference.

MART. R. STEFFEN.

Potter, Wis.

I wish to thank Dr. A. C. Wight for the article in the October issue of VETERINARY MEDICINE entitled "To Raise a Fallen Horse With a Rope." I have used it several times since reading about it, and never again will I try to put slings under a horse to raise him when I can do it so easily with a rope. One advantage, and a big one, that Dr. Wight did not mention, is you do not tear your slings to pieces trying to stand your patient. Instead of a troublesome sling, I now carry only thirty-five feet of one-inch cotton rope when called to raise a horse.

DR. S. G. HENDREN.

Lewistown, Pa.

TWO CASES OF INGUINAL HERNIA OF STALLIONS

Case 1. On May 22, 1916, I was called to see a nine-year-old Percheron stallion that had been in service all season and had never been sick before to the knowledge of the owner, who had owned him two years. The animal was rolling very violently, perspiring freely, and the heart and respiration were accelerated. There was a wild expression on his face; the abdominal muscles were tense and rigid; he would get up occasionally but soon go down, roll a few times and rest on his left side for a minute or two.

Examination of the scrotum revealed nothing abnormal except that the right side was dry and cold, the left being moist and wet with perspiration.

I gave a sedative orally and a half-grain arecolin and one-fourth grain

strychnin sulphate subcutaneously. I repeated the sedative (one ounce of chloro-camph-anodyne) in fifteen minutes, and by this time another veterinarian had arrived. He made a rectal examination but did not recognize anything abnormal. He stated that the bowel was in a spasmodic condition. The treatment was continued (arecalin, one-half grain, and strychnin, one-fourth grain, subcutaneously) until four grains arecalin had been given. I also gave four modified Reeks' capsules.

At no time was the animal any better, but he continued rolling. The heart became weaker and finally imperceptible about a half-hour before death, which occurred at seven o'clock of the same day. A post mortem examination was held immediately, and about eight inches of the ileum was found strangulated in the inguinal canal. The portion of intestine that was strangulated was eighteen inches from the illeocecal valve and was as large as a pint measure, showing marked venous stasis. No other lesions were found and what caused this condition is not clear to me.

Case 2. July 30, 1916. This was a nine-year-old Belgian stallion in good condition that had been in service all season without history of previous illness. The horse had been sick about two hours when I arrived. I found the animal rolling violently and sweating. The respiration and heart were accelerated; temperature normal. The left side of the scrotum was dry and cold; the right side was of normal temperature and moist with perspiration; abdominal muscles spasmodic. A rectal examination was made with considerable difficulty while the animal was down, and I found a section of intestine through the inner inguinal ring on the left side. Several unsuccessful attempts at reduction were made while the stallion was in a recumbent position.

The animal was then gotten on his feet and a twitch applied. By introducing my right hand into the rectum and

with the left hand pressing on the left side of the scrotum, the hernia was reduced by taxis and without difficulty. I stayed at this stable until four a. m., and during this time the animal did not lie down nor evince any symptoms of pain. I saw him again at 10:30 a. m., and he was eating and apparently feeling as well as usual, except for being quite nervous. This was due, I think, in part to the action of the Reeks capsules given the night before.

The stallion was again put into service on Thursday, August 3rd, about eleven a. m. At one p. m. I was called again. When I arrived, the animal was showing the same symptoms that were manifested during the first attack. Upon examination per rectum, I found a loop of small intestine protruding through the inner inguinal ring on the left side. Repeated attempts were made to reduce the hernia, both while the animal was in the standing position and when he was recumbent, but reposition of the intestine could not be done.

I called for another veterinarian, who arrived at 2:30 p. m. The animal was put in position as for cryptorchid castration, and again several attempts were made at reduction of the hernia, but we were unsuccessful. We decided to operate, which was done by the following method:

An incision was made over the left testicle down to the tunica vaginalis; then by blunt dissection, the tissues were separated until about eight inches of cord were exposed. We then again tried to reduce the hernia by taxis and pressure but failed in the attempt. The inner inguinal ring was, consequently, enlarged with a probe pointed bistoury, and the intestine was replaced, there having been fully ten or twelve inches of it in the canal. The testicle was ablated with an emasculator, and the consulting veterinarian held his hand over the inner ring while two sutures were placed over the ring to close the opening made. The canal was then packed with gauze and interrupted sutures were placed in

the scrotum. The animal was released and he got up apparently feeling much better. Stimulants were given hourly, but at 12 o'clock I was again called, the owner stating that some of the horse's intestines were coming out between the stitches. When I arrived a half-hour later, practically all of his small intestines were out, and the animal was immediately destroyed.

E. A. Downs, D. V. M.

Mt. Sterling, Ohio.

Comment: Was the hernia in the first instance (as it was in the second) on the same side on which the scrotum was dry and cold?

Have others noticed one half of the scrotum dry and cold the other half covered with perspiration in cases of inguinal hernia in stallions?—Editor.

FIRST REPORT ON "SHEEP DISEASES."

I just got through looking over Baker's "Sheep Diseases," No. 12 of the VETERINARY MEDICINE SERIES. It makes the rest of the series look like thirty cents. The cuts are more than fine, and I was surprised to see that it included chapters on breeds and also on anatomy, hygiene, etc. Just what we need. It fills a real vacancy in the practitioner's library, and I feel proud of my copy.

I am anxiously awaiting a copy of Lacroix's "Lameness." There is nothing worth while in print on lameness, and Dr Lacroix's book ought to go like hot cakes.

M. R. Steffen, D.V.M.
Potter, Wis.

Dr. Melvin H. Kyle and Florence D. Graham were married at Chicago, October 19th, and will make their home at Chatsworth, Ill., after November 15th.

IMPORTS OF FOOD ANIMALS AND OF MEATS AND MEAT FOOD PRODUCTS

The statements following show the imports of food animals and of meats and meat food products inspected by the Bureau of Animal Industry during July, 1916, with figures for other periods for comparison.

Imports of food animals.

Country of Export.	Cattle	Swine	Sheep	Goats
Mexico	6,115	17	4,437	.....
Canada	10,878	415	233	5
Great Britain	133	.....	129	1
Total:	17,126	432	4,799	6
July, 1916	17,126	432	4,799	6
July, 1915	56,988	3,108	21,202	21,294

Imports of meats and meat food products.

Fresh and Refrigerated

Country of export	Beef Pounds	Other Pounds	Canned and Cured Pounds	Other Products Pounds	Total Weight Pounds
Argentina	.....	.....	108,000	3,111	111,111
Australia	.....	.....	.....	15,008	15,008
Brazil	2,398,543	.....	.....	.....	2,398,543
Canada	947,169	74,205	44,762	.....	1,066,136
Uruguay	.....	.....	4,703	.....	4,703
Other countries	5,673	.....	14,269	.....	21,382
Total:	3,351,385	74,205	177,734	19,859	3,613,283
July, 1916	3,351,385	74,205	177,734	19,859	3,613,283
July, 1915	4,359,987	614,493	251,493	36,982	5,262,955
7 months ending July, 1916	32,895,988	15,714,736	865,222	514,418	49,990,364
7 months ending July, 1915	84,373,892	10,440,964	3,080,019	1,397,519	99,292,394

Condemned in July, 1916: Beef, 40,184 pounds; veal, 2,076 pounds; mutton, 373 pounds; total, 42,633 pounds. Refused entry: Pork, 232 pounds.

ANIMALS SLAUGHTERED UNDER FEDERAL MEAT INSPECTION, JULY, 1916.

Station	Cattle	Calves	Sheep	Goats	Swine
Chicago	121,242	28,361	267,415	357	488,718
Fort Worth	34,505	13,954	8,865	1,428	46,819
Kansas City	84,437	9,463	60,634	3,125	182,075
National Stock Yards	45,850	7,122	54,872	988	113,074
Omaha	41,372	1,268	137,719	23	188,680
Sioux City	9,113	601	15,220	.....	94,847
South St. Joseph	20,486	1,225	33,687	2	128,661
All other establishments	205,443	115,611	351,757	1,318	1,287,375
Total:	562,448	177,605	930,169	7,645	2,530,249
July, 1916	562,448	177,605	930,169	7,645	2,530,249
July, 1915	596,142	161,587	983,684	7,594	2,648,907
7 months ending July, 1916	4,019,952	1,368,884	6,284,332	95,608	24,914,132
7 months ending July, 1915	3,802,753	1,123,956	6,563,686	68,547	22,775,695

CHANGE OF ADDRESS

Name.	Old Address.	New Address.
Adams, C. W.	Morganville, Kans.	St. Joseph Vet. College, St. Joseph, Mo.
Adamson, Geo. W.	Gainesville, Tex.	Box 131, Graham, Tex.
Ahlgren, Chas.	2754 Harvey St.	2654 Harvey St., Fresno, Cal.
Alfred, W. B.	Weston, W. Va.	1369 Avon Pl., Cincinnati, O.
Allen, I. W.	Covington, Ind.	..... Cayuga, Ind.
Amador, R. S.	Fargo N. D.	Wimbleton, N. D.
Anderson, A. R.	Johnstown, Pa.	Herried, S. D.
Appel, L. C.	Gillette, Wyo.	..... Marine, Ill.
Arburua, Jos. M.	Healdsburg, Cal.	Hanford, Cal.
Augsburger, E. S.	5600 Prairie Ave.	129 E. 55th St., Chicago, Ill.
Babb, Geo. F.	Kansas City, Kans.	1838 Hickory St., Oklahoma, Okla.
Babenk, C. W.	North Fairfield, O.	..... Plymouth, O.
Baker, E. L.	Oneda, Ill.	..... Annawan, Ill.
Baldwin, F. M.	Horton, Kans.	1517 Jule St., St. Joseph, Mo.
Barbee, Jas. C.	Oxford, Neb.	300 S. Hamilton Ave., Chicago, Ill.
Barrett, James M.	Klein, Mont.	..... Washoe, Carbon Co., Mont.
Barth, O. E.	Washington, D. C.	3724 Nebraska Ave., St. Louis, Mo.
Baxter, J. M.	Chicago, Ill.	..... Middlebury, Ind.
Beard, W. A.	Hiawatha, Kans.	..... Petersburg, Ill.
Bedwell, G. E.	Toronto, Ontario	..... Earl, Colo.
Beggs, R. E.	Ferndale, Cal.	..... Youngstown, Alberta
Bonnikson, Harry P.	Ash Grove, Mo.	2226 Parker St., Berkeley, Cal.
Booth, T. O.	502 Grant St.	..... Amarillo, Tex.
Boe, R. T.	St. Joseph, Mo.	414 Grand St., Troy, N. Y.
Boyd, W. H.	Auburn, Ala.	..... St. John, Kans.
Boylston, J. W.	.....	..... Springfield, S. C.

Dr. L. K. Knighton of Murray, Utah, recently discovered anthrax in a dairy herd of fifteen cows in that city. Five cows had already died when Dr. Knighton was called. A quarantine was instituted immediately.

I have received the book "Essentials of Veterinary Law," and find it to be well worth the price.

S. M. LANGFORD.

Martinsburg, W. Va.

Wm. F. Staniforth, proprietor of a dog and cat hospital, 10510 Cedar Ave., Cleveland, O., was arrested September 20th, charged with practicing veterinary medicine without a license.

CHANGE OF ADDRESS

Name.	Old Address.	New Address.
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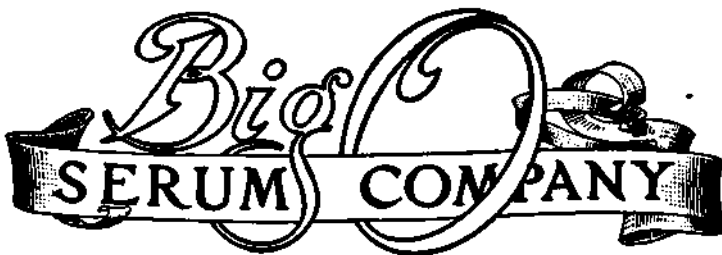
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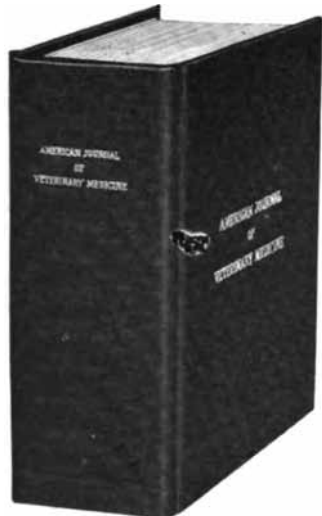
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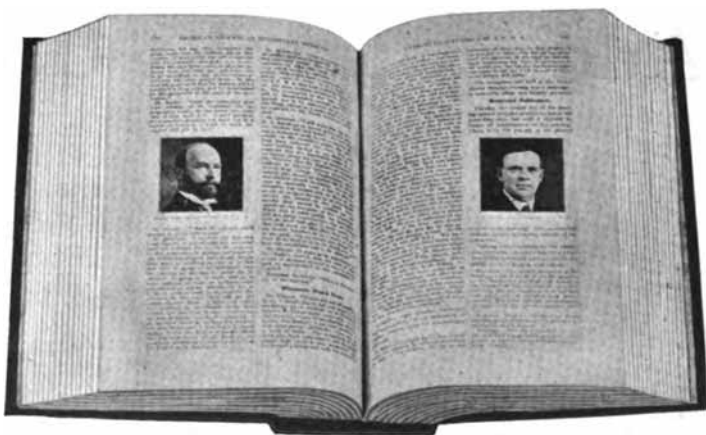
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Van Tuyl, H. E.	Manhattan, Kans.	Basehor, Kans.
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BOOK REVIEWS

The Itinerant Horse Physician.—By Mart R. Steffen, M. D. C. Cloth, 192 pages. AMERICAN JOURNAL OF VETERINARY MEDICINE, Chicago, 1916. Price, \$1.50.

The experiences of a wandering horse physician in the United States in the days when the evolution of farriery into the profession of veterinary medicine was taking place. The evil of the charlatan veterinarian is tellingly portrayed. The book contains considerable information of a scientific nature.

Bulletin of Foreign Agricultural Intelligence, Department of Agriculture, Ottawa, Canada.

CONGRESS IS LIBERAL WITH THE AGRICULTURAL DEPARTMENT

The Agricultural Appropriation act for the fiscal year ending June 30, 1917, appropriates \$24,948,852 for continuing the work of the department, for carrying out new legislation, and for developing new agricultural projects. This is an increase of \$1,977,070 over the appropriation for the fiscal year 1916. This total, however, does not include \$600,000 for printing and binding, \$3,000,000 for carrying out the provisions of the meat-inspection act, \$1,580,000 for extension work in agriculture

and home economics under the co-operative agricultural extension act, \$5,000,000 for the co-operative construction of rural post roads, and \$1,000,000 for roads and trails in the national forests under the Federal-aid road act. If these additional items, are included, it will be seen that the sum of \$36,128,852, an increase of \$8,124,770, will be available to the department for all purposes. This figure, however, does not include the \$70,000,000 made available, under the Federal-aid road act, for rural post roads during the next four years, the \$9,000,000 for roads and trails in the national forests available under the same act during the next nine years, or the \$2,000,000 appropriated for continuing the purchase of eastern forest lands under the terms of the Weeks law during the fiscal year 1918. It does not show sums which will be available in successive years for agricultural extension work under the co-operative agricultural extension act. The appropriation carried by the act will be increased by \$500,000 each year, until the fiscal year 1922-23. For that year, and annually thereafter, there will be available to the states from this source \$4,580,000, and the states themselves must contribute at least \$4,100,000.

It must be borne in mind in considering these various totals that the item of \$1,250,000 for the eradication of foot-and-mouth and

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BRIEF TABLE OF CONTENTS

Chapter	Chapter
I Introduction.	XIII The Common House Fly.
II Parasites and Parasitism.	XIV Horse Fly Control.
III Insect Anatomy and Classification.	XV Blood-sucking Insects, Ticks, Fleas, Stable Flies, Horn Flies.
IV Insect Mouth Parts.	XVI Myriapods.
V How Insects Carry and Cause Disease.	XVII Fleas and Lice.
VI Cockroaches, Beetles, Trips.	XVIII Ticks.
VII The Lice.	XIX Mites.
VIII Bedbugs and Collembola.	XX Venomous Insects and Arachnids — Bees, Wasps, Spiders, Scorpions, etc.
IX Mosquitoes.	Appendix General Classification of Bacteria and Protozoa.
X Mosquitoes as Disease Bearers.	
XI Mosquito Control.	
XII Buffalo Gnats and Horseflies.	

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other contagious diseases of animals is an emergency fund and will not be expended unless there is an outbreak. The foot-and-mouth disease has now been eradicated.

Bureau of Animal Industry

For the eradication of the Texas-fever tick and for promoting live-stock production and dairying in areas freed of ticks, \$632,400, an increase of \$194,500, is included in the bill. This increase permits the enlargement of the work in Louisiana, Mississippi, Georgia, Alabama, and Texas. These states and many counties therein are providing funds for the building of dipping vats and for the em-

ployment of local helpers, and it is the desire of the department to co-operate actively in as many counties as possible with the funds available. The department's representatives feel that the educational and demonstration work now has been practically completed and that the people in the quarantined areas apparently are ready to take up systematic eradication as rapidly as the necessary co-operation can be accorded.

In the item for tick eradication is included \$50,000 which may be used for livestock and dairy demonstration work in areas freed of ticks, in co-operation with the States Relations Service.

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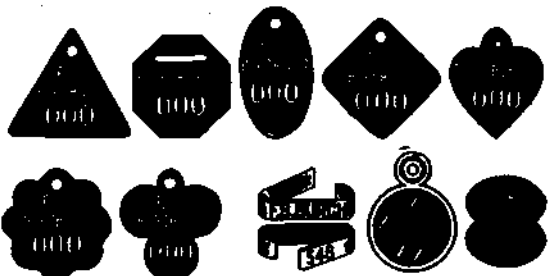
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Contagious abortion.—To develop means of controlling contagious abortion in cattle, which is prevalent throughout the United States, a new item of \$50,000 is made available. This sum will be used for experiments concerning the cause, modes of dissemination, and methods of treatment and prevention. The preparation of vaccines and protective serum also will be undertaken with a view to devising a method by which animals may be immunized.

Dourine.—For the investigation, treatment, and eradication of dourine, \$75,000 is allowed.

Poisonous plants.—An increase of \$5,000 is granted for the purpose of extending investigations of plants poisonous to live stock. The eating of poisonous plants has caused great losses in live stock. Profitable results have followed the work already done in establishing the poisonous effect of various plants on different species of animals and in determining means of preventing such losses.

Hog cholera.—For hog-cholera work, including the inspection of hog-cholera serum plants and the enforcement of the virus-serum-toxin act, there is made available approximately \$360,000, of which \$35,000 is to be devoted to researches concerning causes, methods of spread, and methods of treatment of the disease. A considerable part of the appropriation will be used in demonstrating

means of controlling hog cholera in selected areas. Taking into consideration the unexpended balance from the special appropriation of \$600,000, under the act of February 23, 1913, there will be available for hog-cholera work during the coming year a total of \$405,000, an increase of \$59,000.

Contagious diseases.—For the inspection of cattle for contagious diseases and the carrying out of the quarantine regulations and the acts governing the transportation of live stock and the importation of cattle, for the eradication of scabies in sheep and cattle, and for the tuberculin and mallein testing of animals, a total of \$532,780 is allowed. This item shows a decrease of \$75,000. This is due to the fact that the work of eradicating sheep and cattle scabies, which heretofore consumed an important part of this item, has been so successful that there remain under quarantine for sheep scabies only Texas and parts of Colorado and California, and for cattle scabies only a few counties in Texas. In all, 317,510 square miles have been cleared of sheep scabies and 242,196 square miles have been released from the cattle-scabies quarantine.

Emergency fund.—The various items do not include the appropriation of \$1,250,000 which is made available for coping with any future outbreak of foot-and-mouth disease, rinder-



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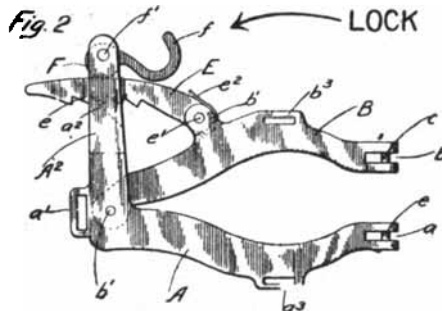
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pest, contagious pleuropneumonia, or other contagious disease which threatens the livestock industry. This sum will be expended only in case an outbreak of any of these diseases makes such action necessary.

Appraisal of animals.—An important amendment to this section provides that hereafter payment for animals destroyed in coping with such diseases may be made "on appraisal based on the meat, dairy, or breeding value, but in such cases no appraisal of any animal should exceed three times its meat or dairy value, and except in cases of an extraordinary emergency, a payment by the United States Government for any such animal shall not exceed one-half of any such appraisalment." This amendment will enable the department hereafter to take breeding value into consideration in paying for purebred animals purchased and destroyed in combating foot-and-mouth disease.

Investigational Work

The funds for dairy work have been increased \$27,620. With this sum a number of projects already under way will be extended. The cheese-factory investigations, and especially the demonstrations of the practicability of establishing cheese factories in states and communities in the southern mountains and irrigated sections of the West, where such factories do not now exist, will be enlarged. Increased activity is planned also in the establishment of cow-testing associations, in laboratory investigations pertaining to butter and condensed milk, and in the sanitary production of milk for market.

Animal husbandry.—In the appropriation for animal husbandry, an increase of \$19,260 makes possible some new experiments and the enlargement of existing lines of activity. One of the new experiments has for its object the development of a double-purpose strain of shorthorn cattle. Foundation stock has been secured for breeding experiments, and the inheritance of beef and milking characteristics will be studied. This project will be carried on in co-operation with the Kansas Experiment Station. In pork-production work it is planned to enlarge research work on the effects of forage crops on the quality of pork. The remainder of the increase will be used in extending the scope of the range sheep-breeding work, in carrying out trap-nest experiments with poultry, and in investigations regarding the classification of American wools with a view to assisting the farmer in the production of this product by a study of wools in relation to natural grease, amount, fineness, length, and strength as affected by soil, climate, feed, type, and breed.

Meat inspection.—The act includes \$344,500 for carrying out the provisions of the meat-inspection act. This sum is in addition to the permanent annual appropriation of

Section XXII—PARASITIC DISEASES

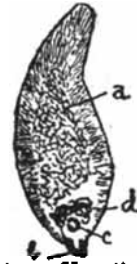
More sheep are lost from invasions of parasites than from all other causes combined, with the possible exception of digestive disorders. Before the days when scab was under control parasites were, even more than at present, the scourge of the sheep business.—“Sheep Diseases” by E. T. Baker.



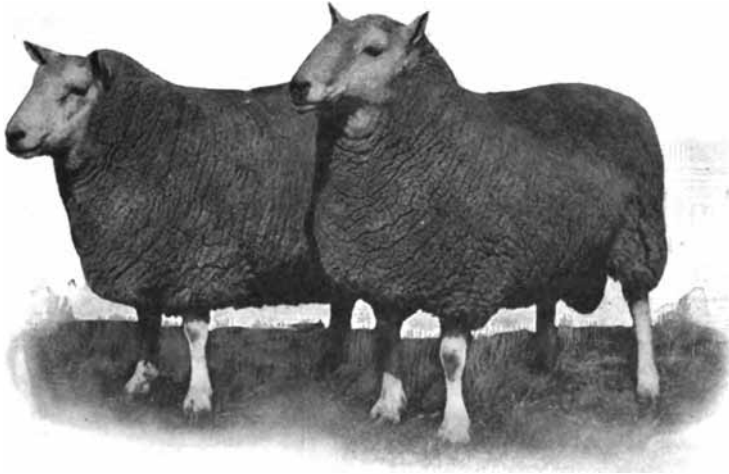
Eustrus Ovis
Adult male



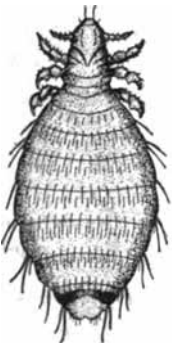
Eustrus Ovis
Adult female



Distoma Hepaticum



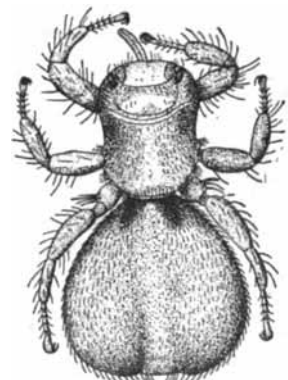
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Sheep Louse



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\$3,000,000 provided by the meat-inspection act.

Miscellaneous.—The act grants an appropriation of \$37,000 for experiments in poultry feeding and breeding, including the work with ostriches. Twenty-five thousand dollars is made available for experiments in connection with the breeding and maintenance of horses for military purposes, and the usual appropriations for the maintenance of the Government experimental farms at Beltsville and Bethesda, Md., and for the carrying on of experiments in animal feeding and breeding in co-operation with State agricultural experiment stations are made.

Live-stock experiments.—The act also contains an item of \$60,000 for experiments and demonstrations in live-stock production in cane-sugar and cotton districts, and an item of \$40,000 for experiments in dairying and live-stock production in semiarid and irrigated districts in western United States.

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Members subject to suspension.....	232
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Total membership.....2,560

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Resolved, By the Illinois State Veterinary Medical Association, that we extend our hearty thanks to the Elmore Live Stock Company for the enjoyable boat trip, generous hospitality at the Automobile Club, the splendid educational opportunities afforded us by the visit to their serum plant and the altogether delightful picnic accorded us on yesterday, and we beg to extend this expression of appreciation to them and their representative, Dr. A. T. Peters.

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JOHN SCOTT, *Chairman,*

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G. D. GLENDENING.

Adopted by the Association July 20th,
1916. L. A. MERRILLAT, *Secretary.*

F. H. BURT, *President.*

July 20, 1916.

IMPORTANT

Due to the many inquiries we are receiving regarding our ability to supply **PASTEUR'S ANTHRAX VACCINE**, Single and Double, Etc., during this season, we take this means to notify the trade that we are in a position to supply all demands for this vaccine and all other **PASTEUR** products, including Profs. LeClainche and Vallee's

Liquid Blackleg Vaccine

Single Vaccination

After extended experiments in Europe, Prof. LeClainche, chief of the Sanitary Bureau of the French Department of Agriculture, and Prof. Vallee, Director of the Veterinary School at Alfort, France, have perfected the first improvement made in more than a decade in the prevention of blackleg.

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which we also have the pleasure of supplying, all outbreaks of Blackleg may be controlled immediately and many animals saved.

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ASSOCIATION MEETINGS

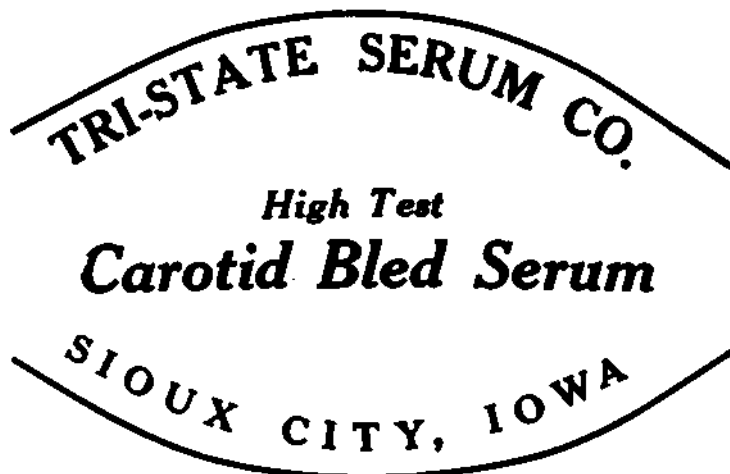
The information given below is up-to-date and has been furnished by the secretaries of the various associations listed. Secretaries are requested to supply us data regarding their associations after each meeting; otherwise, the associations will necessarily be dropped from the list. We ask secretaries to kindly co-operate with us in keeping before the members of their associations the date and place of the next meeting.

Name of Association	Date of Meeting	Place of Meeting	Secretary
Alabama Vet. Med. Assn.			C. A. Cary, Auburn, Ala.
Alumni Assn., Col. of Vet. Med., O. S. U.	Jan. 19, 1917.	Columbus, O.	W. R. Hobbs, O. S. U., Columbus, O.
Alumni Assn., N. Y. State Vet. College	June 19, 1919.	New York.	F. K. Nichols, Fort Rensselaer, N. Y.
Alumni Assn., U. S. Col. Vet. Surg.		Washington, D. C.	Chas. M. Mansfield, 1844 Newton St., Washington, D. C.
American Vet. Med. Assn.			L. A. Merrill, 1537 E. Webster Av., Chicago, Ill.
Arkansas Vet. Med. Assn.	January, 1917.	Little Rock.	R. M. Gow, Little Rock.
B. A. I. Vet. Assn. of So. Omaha	2nd Monday of month.	So. Omaha, Neb.	J. W. Coffey, c/o B. A. I., So. Omaha
California State Vet. Med. Assn.	2nd Wed. in Mch., June.		
	Best, Dec.	San Francisco, Cal.	F. M. Hayes, Davis, Cal.
Central Canada Vet. Assn.	Jan. 19.	Ottawa, Ont.	H. D. Spartin, 646 Wellington St., Ottawa
Central N. Y. Vet. Med. Assn.	Last week in June and Nov.		E. H. Foulton, 2244 N. 15th, Philadelphia
Chicago Vet. Society	2nd Tues. of month.	Syracuse, N. Y.	W. B. Switzer, Oswego, N. Y.
Colorado Vet. Med. Assn.	Jan., 1917.	Chicago, Ill.	Glenn Brown, 2808 Laurel Ave., Chicago
Connecticut Vet. Med. Assn.	January 21.	Denver, Colo.	I. E. Newsum, Ft. Collins, Colo.
Genesee Valley Vet. Med. Assn.	Monthly.	Greenwich, Conn.	A. T. Giffard, Waterbury, Conn.
Georgia State Vet. Assn.	Aug. 23, 24, 1916.	Rochester, N. Y.	O. S. Webber, 124 Andrews, Rochester
Hudson Co. Vet. Practitioners' Club	Monthly.	Savannah, Ga.	Peter F. Babson, Capital Bldg., Atlanta
		Jersey City, N. J.	B. D. Blair, 723 Montgomery St., Jersey City, N. J.
Idaho Assn. of Vet. Graduates	Feb. 4, 1917.	Boise, Idaho.	C. V. Williams, Blackfoot, Idaho
Illinois State Vet. Med. Assn.	Dec. 6, 7, 8.	Chicago, Ill.	L. A. Merrill, 1537 Webster Ave., Chicago
Illino Vet. Med. Assn.		E. St. Louis, Ill.	L. E. McKinley, Freeburg, Ill.
Indiana Vet. Med. Assn.		Indianapolis, Ind.	A. F. Nelson, Indianapolis, Ind.
Iowa Vet. Med. Assn.	Jan. 3, 4, 1917.	Agass and Des Moines.	H. B. Truman, Rockwell City, Ia.
Kansas Vet. Med. Assn.	April.	Wichita, Kan.	J. H. Burr, Manhattan, Kan.
Kentucky Vet. Med. Assn.	2nd Tuesday of month.	Louisville, Ky.	Reed Graham, Lexington, Ky.
Keystone Vet. Med. Assn.	3rd Wed. of month.	Philadelphia.	L. E. Davis, 257 E. Girard, Philadelphia
Los Angeles Vet. Med. Assn.	Oct. 11.	Los Angeles.	J. A. Dell, 1624 E. Pacific, Los Angeles
Maine Vet. Med. Assn.	Feb. 18.	Waterville, Me.	M. E. Maddocke, Augusta, Me.
Manitoba Vet. Assn.	6th Wed. each month.	Winnipeg, Man.	W. Eldon, 375 James St., Winnipeg
Massachusetts Vet. Assn.		Worcester in Sept.; Boston rest of year.	E. A. Cahill, Boston, Mass.
		Springfield, Mass.	
Michigan State Vet. Med. Assn.	Oct. 18, 1916.	Lansing, Mich.	W. Austin Deak, Mt. Clemens, Mich.
Minnesota State V. M. Assn.	1st Tues. & Wed. after.	St. Paul.	G. Ed. Leach, Winona, Minn.
Mississippi State Vet. Med. Assn.	1st Mon. in February.	Clarksdale, Miss.	E. S. Norton, Greenville, Miss.
Missouri Valley Vet. Med. Assn.	Jan. 19, 11, 1917.	Galesburg, Ill.	W. Lester Hollister, Avon, Ill.
Missouri Valley Vet. Assn.	July 7, 1916.	Omaha, Neb.	R. F. Soarna, 1236 E. 15th, Kansas City
Montana Vet. Med. Assn.	July 10, 11, 12.	Neosho, Mo.	C. D. Faise, 1224 E. 15th St., Kansas City
Nebraska Vet. Med. Assn.	Last week in July.	Bozeman.	A. D. Knowles, 243 E. 4th St., West
	Jan. 23, 29.	New York City.	Missoula, Mont.
Natl. Assn. B. A. I. Employees	2nd Mon. in Aug., 1916.	Lincoln, Neb.	S. J. Walker, 125 N. W. Ave., Missoula
Nebraska Vet. Med. Assn.	1st Tues. & Wed. in Dec.		G. W. Alford, Lincoln, Neb.

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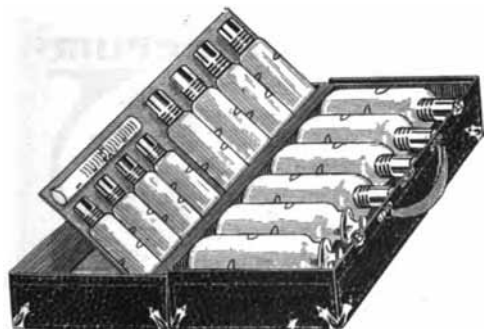
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Name of Association	Date of Meeting	Place of Meeting	Secretary
New York State Vet. Med. Society	Aug. 2, 3, 4	Ithaca, N. Y.	C. F. Fitch, Ithaca, N. Y.
North Carolina Vet. Med. Assn.	June 21, 22, 1916	Wrightsville Beach, N. C.	F. P. Spoon, Burlington, N. C.
North Dakota Vet. Assn.	July 13, 19, 20	Fargo, N. D.	W. J. Kuhnert, 224 N. 14th, Philadelphia
Northeastern Indiana Vet. Assn.	Sept. 13		C. E. Baumgartner, Arcola, Ind.
Northwestern Ohio Vet. Med. Assn.	Feb. 18	Toledo, O.	Paul E. Wood, Ottawa, Ohio
Ohio State Vet. Med. Assn.	Jan. 11, 12, 1917	O. S. U. Columbus, O.	F. A. Lambert, care O. S. U., Columbus
Ohio Valley Vet. Med. Assn.	July 27	Ohlberg, Ill.	G. J. Behrens, Evansville, Ind.
Oklahoma State Vet. Med. Assn.	Oct. 23, 24, 25	Oklahoma City	B. T. Stuman, Corvallis, Ore.
Oregon Vet. Med. Society	June, 1916	Prosser, Corvallis, Ore.	W. E. Taylor, 224 N. 14th, Philadelphia
Pennsylvania State Vet. Med. Assn.	2nd Tues. Jan.	Pittsburgh, Pa.	D. S. Richards, Woodstock, R. I.
Rhode Island Vet. Med. Assn.	June 14, 1916	Providence, R. I.	C. E. Fittzinger, Reading, Pa.
Schuylkill Valley Vet. Med. Assn.	June 14, 1916	Reading, Pa.	C. W. Allers, Watertown, S. D.
South Dakota Vet. Med. Assn.	July 11, 1916	Leas Medicine	J. A. Dell, 16th & Pacific, Los Angeles
Southern Aux. Cal. State Vet. Med. Assn.	June 21, 22	Los Angeles	F. W. Morgan, Chattanooga, Tenn.
Tenn. Vet. Med. Assn.	Nov. 2, 9, 1916	Humboldt, Tenn.	Allen A. Foster, Marshall, Tenn.
Texas Vet. Med. Assn.	Not decided	Not decided	C. C. Palmer, St. Paul, Minn.
Twin City Vet. Med. Society	Once a month	St. Paul	J. J. Hanson, U. S. Yard, Chicago
U. S. Live Stock Sanitary Assn.	Dec. 5, 6, 7	Chicago	E. P. Oburn, Brighton City, Utah
Utah Vet. Med. Assn.	Feb. 5	Logan, Utah	E. G. Chasmar, Hanley, Mo.
Veterinary Assn. of Saskatchewan	2nd Thurs. in Jan.	Regina, Sask.	H. L. Lobelin, New Brunswick, N. J.
Vet. Med. Assn. of New Jersey	1st Wed. ea. mo. except July, Aug., Sept.	Trouton, N. J.	R. S. MacKellar, 361 W. 11th St., N. Y.
Vet. Med. Assn. of N. Y. City	1st Sat. each month	New York City	C. W. Ripper, 2115 14th St., N. W., Washington, D. C.
Vet. Med. Assn. of Geo. Washington Univ.	1st and 2nd Tues. ea. mo.	Washington, D. C.	George Holden
Vet. Med. Society Wash. State College	July 15, 14	Pullman, Wash.	W. G. Christmas, Hoodsburg, Va.
Virginia State Vet. Med. Assn.	June, 1917	Green View, Va.	Carl Oster, Bellingham, Wash.
Washington State Vet. Med. Assn.	Jan. 16, 17, 18, 1917	Pullman, Wash.	F. F. Fuhr, 26 Fremont Ave., Buffalo
Western N. Y. Vet. Med. Assn.	1st Tues. after 1st. Mon. of each month	Buffalo, N. Y.	W. A. Wolcott, Madison, Wis.
Wisconsin Vet. Med. Assn.		Manomonia, Wis.	
York Co. Vet. Med. Society		York, Pa.	R. S. Beuticher, 226 Newbury, York, Pa.

Kindly allow me to give you my humble but enthusiastic word of encouragement and at the same time let me congratulate you for the importance of your interesting periodical.

Eduardo G. Queral, D. V. M.
Puerto-Padre, Cuba.

I am pleased with Hemenway's "Essentials of Veterinary Law." I see many court cases concerning horses and mules, especially street car accidents and sales.

Pittsburgh, Pa. JAMES A. WAUGH.

BOOK REVIEWS.

Essentials of Veterinary Law, by H. B. Hemenway, A. M., M. D. Cloth, 340 pages. Published by AMERICAN JOURNAL OF VETERINARY MEDICINE, Chicago, Ill., 1916. Price, \$3, postpaid.

This book, which may be used as a textbook in veterinary schools and agricultural colleges, should prove of great value to practicing veterinarians. It contains useful information as to their duties and responsibilities. Scientific farmers will find

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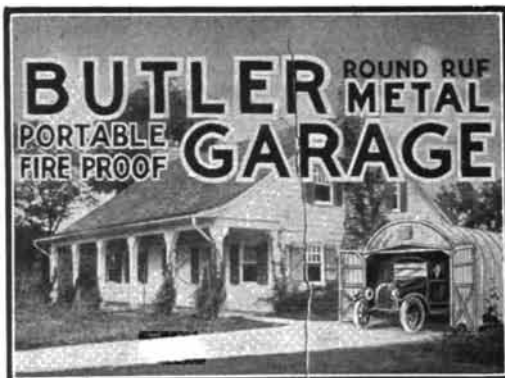
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in it a knowledge of their legal rights and liabilities. The best insurance against claims for damages is found in a knowledge of the requirements of the law. Part I deals with general principles, police power and nuisances. Part II treats of regulation of the practice of veterinary surgery, liabilities and compensation. Part III describes government services, government inspection and executive organization. Part IV deals with the ownership of animals and the liability of persons in temporary possession of animals. **BULLETIN OF FOREIGN AGRICULTURAL INTELLIGENCE.** Department of Agriculture, Ottawa, Canada.

RESOLUTIONS OF RESPECT

To the Officers and Members of the Illinois Veterinary Medical and Surgical Association:

Whereas, God in his wisdom has seen fit to take from us, one who was greatly respected as a fellow practitioner, a useful citizen and a loving husband and father, therefore be it

Resolved, that the sincere sympathy of this association is extended to the companion, son and other relatives of Doctor Braithwaite, and that all in a measure share with them in the feeling of their great loss and deep sorrow; that we, like them will, ever hold his memory dear and profit by the example of his good life.

Resolved, that a copy of these resolutions be furnished the family of Doctor Braithwaite, that they be written in the association records and copies supplied the Veterinary Journals for publication.

L. G. RITTENHOUSE,
W. A. SWAIN,
I. M. LUZADER,
Committee

WATCH FOR BANDS ON WILD DUCKS

If you kill or capture a wild duck bearing an aluminum band around one leg, having a number on one side, and on the other a statement requesting that the United States Department of Agriculture, or the Biological Survey, be notified, you are requested to send this band at once to the Bureau of Biological Survey, United States Department of Agriculture, Washington, D. C. This band, if accompanied by a statement as to date, place and circumstances under which the bird was taken, will be of service to the Survey in its efforts to determine the longevity of individual ducks and the routes of migration of the species. The bands are being attached to considerable numbers of wild ducks of several species which have been cured of the duck sickness prevalent around Great Salt Lake, Utah, and there released. The Department of Agriculture is particularly anxious to see

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cure reports from these birds, to determine their complete recovery from this malady, which has killed hundreds of thousands of ducks in Utah.

NOVEMBER VETERINARY MEETINGS

Nov. 7, Veterinary Medical Association of New York City, New York.

Nov. 7, York County Veterinary Medical Society, York, Pa.

Nov. 8-9, Tennessee Veterinary Medical Association, Humboldt, Tenn.

Nov. 14, Chicago Veterinary Society, Chicago.

Nov. 14, Keystone Veterinary Medical Association, Philadelphia.

Nov. 15, Los Angeles Veterinary Medical Association, Los Angeles, Cal.

Nov. 22, Massachusetts Veterinary Association, Boston.

Last week in November, Central New York Veterinary Medical Association, Syracuse, N. Y.

SERUM PRODUCERS

If you are interested in the sale of serum and virus in the state of New York write Dr. J. G. Wills, Chief Veterinarian, Department of Agriculture, Albany, N. Y., for copies of The Commissioner of Agriculture Order No. 6 and Circular No. 7, which give the regulations with which it is necessary to comply.

GERMAN RESTRICTIONS

A number of interesting regulations have been established for its members by the Munich Medical Society. These regulations became necessary because of the exigencies of war, and among them are the following: First. Only limited quantities of medicinal agents should be prescribed or furnished at one time, thus obviating the usual waste. Second. Perfumed soaps, cold cream, hair tonics and hair washes must not be furnished. An exception is made in the case of spirit of resorcin, which may be used in limited quantity. Third. All fixed oils, such as olive and sesamum oils are intended for internal use exclusively. Their use in liniments, such as soap liniment, chloroform liniment and ammonia liniment, is strictly forbidden. Fourth. A decree issued by the government in January, 1916, makes the use of lard as an ointment illegal. If a vehicle of soft consistence is required it is recommended that eucerin and water be employed. If a firm consistence is required, anhydrous wool-fat is to be used. Fifth. Talcum is to be used in place of starch. Sixth. The use of glycerin for external purposes is forbidden. In its place lanolin creams are recommended, which are claimed to be more efficient and at the



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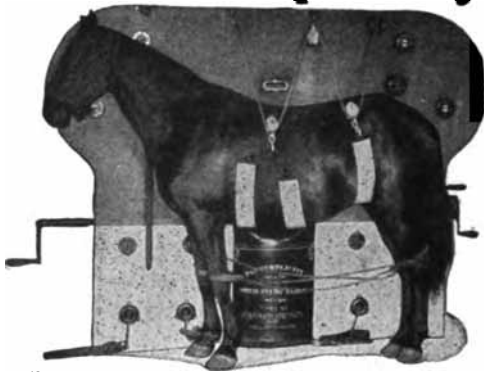
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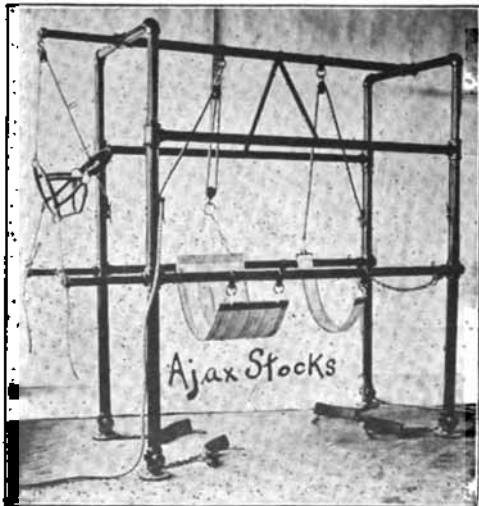


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same time much cheaper. Seventh. Potassium chlorate cannot be obtained for medicinal purposes. In its place, if to be used as a mouth wash or gargle, tincture of myrrh, alum or sodium bicarbonate with a trace of sodium chlorid are recommended. Eighth. Boric acid and borates may be used medicinally in eye and ear practices only. For other purposes they may be replaced by hydrogen peroxide or by sodium bicarbonate. Ninth. Absorbent cotton and like articles must in all cases be replaced by one of the various forms of cellulose of domestic origin. Tenth. The sale of rubber goods in any form is absolutely prohibited. Syringes should be made of glass wherever this is possible.—*The Pharm. Zentrh.*

THE NEWSPAPERS SAY

Dr. William L. Roswell, of Corry, Pa., died at his home September 9th, from an infection in the hand, incurred through treating an ailing cow. He was a member of the A. V. M. A. and inspector in the Pennsylvania State Live Stock Bureau.

Dr. Fred Moran, formerly of Paterson, N. J., has located for practice at Fairfield, Mont.

Dr. Charles A. Bruce, a veterinarian, of Camden, S. C., died September 16th. He was 77 years old, a veteran of the Civil War, having served in the Confederate army.

England is contemplating a special war tax of 12 cents per gallon on gasoline. The amount will be reduced to 6 cents per gallon in the case of doctors and veterinarians.

The Wicks legislative investigating committee of New York held a hearing at Hornell, N. Y., October 4th, where it was brought out that vagrant dogs have practically driven the sheep industry out of Steuben county. Farmers testified that there is more money in sheep raising than in dairying, but that dogs make the former impossible. It is believed that the result of the investigation will be legislation to encourage the sheep industry in the state.

The International Live Stock Show at the stock yards in Chicago will be revived this year. The show was abandoned in 1914, on account of the foot-and-mouth disease.

More than 100 practitioners attended the veterinary short course given by the Iowa State College at Ames, commencing September 4th. Among the instructors were

THE VETERINARIAN'S Improved Account System

The Card Ledger is the up-to-date book-keeping system; it is used for all kinds of accounts.

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The Veterinarian's Improved Account System

consists of a handsome quarter-sawed dust proof oak box (like the illustration shown), 5 x 6 x 9 inches, with a hinged lid, 600 buff cards, 3 x 5 inches, ruled on both sides, and two sets (A to Z) of alphabet guide cards, one set for the open accounts, the other, of a different color, for the closed accounts, and a movable metal partition to separate the open from the closed accounts.

Additional cards for the outfit may be secured at low cost and as dead accounts may after a time be filed away, it constitutes a perpetual and very inexpensive ledger or account system.

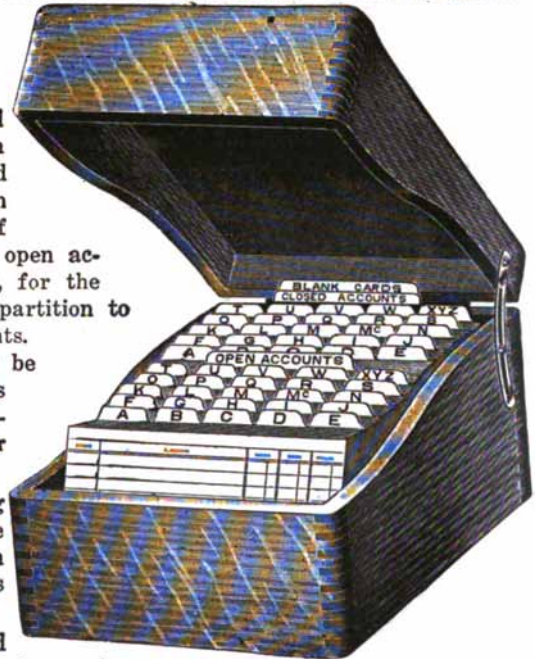
Hundreds of veterinarians are using this system and have nothing but praise for it, not one has raised an objection to it. Here is what a few of the users say of it.

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Dr. D. S. White, of the Ohio State University, and Dr. J. W. Adams, of the University of Pennsylvania.

Dr. C. W. Lynn, of West Point, Iowa, and Miss Fay Allison Scott, of Middletown, Iowa, were married on September 8th, at the home of the bride's parents at Middletown. The couple have made their home at West Point, where Dr. Lynn has been in practice for four years.

A. A. Callister, secretary of the state board of sheep commissioners, issued dipping and quarantine orders, making it imperative that every ram in Utah must be dipped for eradication of ticks between August 15th and October 15th. No buck herds may be disbanded until the rams have been dipped.

The Ohio state board of health reports that for the first six months of the current year there has been a marked increase in the number of requests made for examination for suspected rabies. In Cleveland, between January 1st and July 1st, this year, 603 persons were bitten by dogs, and in 94 of the cases it was positively determined that the dogs were mad. Few of the other cities have kept complete records.

Dr. Walter J. Schmidt and Miss Frieda L. Boemmer, both of Millstadt, Ill., were married September 5th.

The Western Pennsylvania Humane Society has classed the sport of catching greased pigs as cruelty to animals, and the ruling was enforced for the first time at a picnic of the Associated Bible Classes, of McKeesport, where a greased pig catching contest had been scheduled.

Dr. Louis Griessman, of New York, claims to have found a dog suffering from a condition similar to that of infantile paralysis. The hospital where Dr. Griessman has been doing research work, has issued a notice to all veterinarians to send their paralyzed dogs to the laboratory for examination.

The fortieth annual meeting of the American Humane Association was held at Cincinnati, Ohio, October 18th to 19th. There are 562 anti-cruelty societies represented in the association. Latest statistics show 212,215 children and 2,394,721 animals were cared for in the United States.

Dr. William Dixon, of Peoria, Ill., was kicked by a horse and sustained a com-

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pound fracture of the skull, September 11th. The latest reports indicated that the doctor's condition was serious.

New York's first theater kennel was opened September 13th at the Hippodrome. It was provided in response to requests from theatergoers, who want to keep their pets near them. The dogs are fed on biscuits, for which no charge is made.

The Humane Society, of Rochester, N. Y., destroyed 1,716 cats in that city during August.

A big circus elephant which killed her trainer was hanged at Erwin, Tenn., September 14th. A railroad derrick car was used in the execution, and heavy chains were tied around her neck. She was valued at \$20,000 by her owners.

Improvement of marketing conditions was discussed at the conference of the marketing committee of the American National Live Stock Association, at Denver, Colo., September 15th.

William Hayes, a stock breeder, of Louis-



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ville, Ky., is experimenting at breeding the Missouri mule with the South African zebra, and declares he is confident that the result will be a stronger draft animal than has thus far been produced.

An ordinance prohibiting the barking of dogs has been passed by the city trustees of Burlingame, Cal. The new law forbids every noise "which may cause physical discomfort to persons of ordinary sensitiveness."

The Georgia State College of Agriculture opened its fall term September 30th, and this year a veterinary course is given for the first time. Among the instructors in the new department are Dr. J. E. Severin, of the Ohio State University, and Dr. W. B. Massie, of the Michigan Agricultural College.

The Southwestern Dairy Association held its annual convention and cattle show at Kansas City Mo., during the week commencing September 18th. The secretary of the Missouri board of agriculture stated that Kansas City, instead of Springfield, Mass., is the logical place to hold the national dairy show which has been held at Chicago, and efforts will be made by breeders of the Southwest to hold the show at Kansas City in the future.

Dr. Adam Zeigler, retired veterinarian, of Lincoln, Ill., died of heart failure on September 21st.

At a recent meeting of county agents at Huron, Iowa, resolutions were adopted protesting against the county agent being looked upon as a sort of county veterinarian. While willing to do all in their power to suppress outbreaks of contagious diseases among live stock, the county agents expressed the belief that it was outside of their province to do general veterinary work.

Holland has prohibited the exportation of cattle.

Dr. William T. Vilott, formerly of Louisville, Ky., has succeeded Dr. A. T. Ayres in the Bureau of Animal Industry at Oklahoma City, Okla. Dr. Ayres has been transferred to Louisville.

The members of the Illinois state live stock commission have been cited for contempt of court in disposing of "lumpy jaw" cattle to the Peerless Packing Co. On the contention made by the National Live Stock

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Commission Company, that condemned cattle should be disposed of to such rendering plants as the owner might select, instead of being invariably sent to the Peerless company, the court issued a restraining order against the commission, which they ignored. The case against the commission was dismissed by the court Oct. 16th.

By next December the area of territory in the South freed from the cattle tick since the government began this work, ten years ago, will have reached 344,000 square miles, which is one-half the total area originally infested. It is estimated that within five years the tick will have been eradicated in the United States. The two states holding the record for the largest number of cattle dippings in a single month are Texas and Mississippi. Texas showed 760,846 dippings in July, and 740,751 in August, while Mississippi had 705,424 dippings during August. It is estimated that the entire state of Alabama will be free from the tick by the end of 1918. According to government experts, cattle in the tick-free states and counties of the South have improved 70 to 100 per cent. The activity against the tick



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in Mississippi has increased remarkably, although the compulsory tick eradication law does not become effective in the state until after January 1st.

According to the *Popular Science Monthly* for October, a German veterinarian has made observations as to the effect on animals of the firing of big guns. Soon after battles began to take place in the war zone, it was noticed that large numbers of horses and especially dogs migrated into countries beyond the seat of hostilities. The wild boar, the badger, bear, red deer and roebuck followed, but the hare refused to leave its home. Birds that remained unfrightened were owls, falcons, sparrow-hawks and crows.

Joseph Hoeing Kastle, director of the experiment station of the University of Kentucky, died at Lexington, Ky., September 25th. His principal work at the experiment station was his research into the diseases of stock and experiments in treating stock diseases. He was chief of the division of chemistry in the hygienic laboratory of the United States health and marine service from 1905 to 1909. He was born at Lexington, January 25, 1864.

Dr. J. I. Gibson, Iowa state veterinarian, favors asking the next general assembly of his state for an appropriation of \$100,000 to fight hog cholera and tuberculosis in cattle.

The Northwest Iowa Veterinary Association held its annual meeting at Sioux City, September 29th, with a good attendance. Several veterinarians from Nebraska and South Dakota, who are also members of the association, were present. A clinic was held at the hospital of Dr. G. P. Statter.

The board of health at Philadelphia, Pa., has come to the conclusion that piggeries within the city may be responsible for the spread of infantile paralysis, and hog raisers have been notified that they will not be permitted to keep hogs within the city limits.

Outbreaks of glanders have been reported recently near Cincinnati, Ohio, Des Moines, Iowa, and Morton county, North Dakota. Ohio is said to have been practically clear of this disease for nearly three years. Dr.

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A. S. Cooley ordered the infected animals found at Glendale near Cincinnati, killed, and the owners will be compensated by the state. Dr. J. I. Gibson, state veterinarian of Iowa, found the disease on a farm north of Des Moines and the place was quarantined and three horses were shot. The outbreak in the vicinity of St. Vincent, North Dakota, is the most serious, as hundreds of horses are said to be affected. More than 200 were quarantined. It is believed that a St. Vincent farmer, who died last spring, was affected with the disease. The people in that district said he died of blood poisoning. Twenty-two animals on his farm were found to have the disease.

Anthrax outbreaks were reported in Texas and Nebraska during September. Several head of stock around Evant and Beehouse in Coryell county, Texas, died from the disease. Outbreaks were reported among cattle at three Nebraska points. At Madison, Neb., it broke out in a herd of 350 cattle, and it also appeared in herds at Newman Grove and Albion. State Veterinarian Anderson stated that up to September 19th, eight steers, 23 hogs and two dogs had died at Madison. He ordered all dogs

tied up or shot and the cattle vaccinated. It is said that rats on the infected farm were dying by the hundreds.

Cato Sells, commissioner of Indian affairs of the United States, visited Chicago September 26th, to supervise the sale of thirty-four carloads of Indian cattle from the Crow reservation, Montana, seventeen carloads having been sold at Omaha on the 25th. Altogether the cattle brought \$87,993.43. It is only two years ago that the Crow Indians started to raise cattle, at which time 7,000 heifers, 2,000 steers and 350 bulls were purchased for them with funds derived from the sale of part of their lands. Including the increase of the herd, the profit of the Indians on the original purchase in twenty-seven months, after paying all expenses, has been \$350,000. The first year after the purchase of these cattle the Indians cut and stacked 5,000 tons of hay to winter their herd, and last winter cut and stacked nearly 7,000 tons. The winter loss during each of the two years has been only about two per cent. Commissioner Sells stated that the Indians have taken great interest in their stock.



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Immobilization Dressings

By **GEORGE B. McKILLIP**, Chicago, Illinois. Professor of Medicine and Surgery.
McKillop Veterinary College.

APPPLICATION of dressings for the purpose of immobilization of parts has been used in the treatment of fractures and dislocations since the time of Hippocrates. Recently, however, the principle of immobilization has been applied extensively and efficiently in the treatment of acute, and particularly in chronic, inflammatory processes of locomotory structures. Inflamed areas repair themselves more promptly if a proper degree of immobilization is maintained.

Thus we find that fractures, dislocations and inflammatory processes of skeletal structures represent, theoretically, the field of ailments in which immobilizing dressings are indicated. With the human patient the effective application of the principle of immobilization is possible in the widest range of conditions. In our practice with animals, however, on account of the numerous antagonizing factors arising, immobilizing dressings have a relatively limited application. The size of some of our patients; their lack of intelligence; the impossibility of getting perfect or even efficient immobilization by enforcement

alone; the fact that our immobilizing dressings must all be ambulatory in character and other conditions, necessitate the restriction of the method of treatment to a limited field. As a matter of fact in our work we apply these dressings only in fractures and dislocations, and then only when the fracture or dislocation is, in small animals, below the stifle,—and in large animals, below the knee. We have not yet been able to devise any suitable or efficient means of applying the principle of immobilization in the treatment of inflammatory conditions of bones, joints, tendons or muscles; nor have we had any satisfaction in treating fractures or dislocations in regions other than those above mentioned.

Of the various dressings applied for the purpose of immobilization, plaster-of-Paris is the chief one used in veterinary practice. Plain or moulded splints of cardboard, wood, composition or metal cannot be used on the larger animals because of the difficulty of properly fitting, the impossibility of keeping them in position, and their inefficiency in the demands made upon them. In smaller animals, splints may be utilized

occasionally but are inferior to plaster preparations.

The Circular Cast

The plaster dressing of choice is the circular cast. We seldom make use of the moulded splint, and then only with small patients. The removable circular cast is sometimes of service in cases where it is desired to inspect the limb during the course of treatment and where the demand made upon the dressing is not too severe.

The circular plaster cast may be applied plain or reinforced. In the large animals for the purpose of adding to the strength and deducting from the bulk and weight of the cast, the reinforcement consists of steel straps, the size of corset stays or slightly larger, fitted somewhat, and incorporated in the cast. In small animals increased strength with decreased weight may be obtained by reinforcing the cast with wooden straps, something on the order of light basket strips. The circular cast is applied in the following manner: The part to be covered by the cast is cleaned, dried and put in position to be retained by the cast. It is covered by a layer of cotton from one-eighth to one-quarter inch in thickness which is held in place by a few turns of dry gauze bandage applied with a fair degree of firmness. Gauze or crinoline bandages, three to five inches wide, rolled loosely and impregnated with a good quality of plaster-of-Paris powder (preferably the kind known as "dental plaster") are then immersed one at a time in lukewarm water containing no salt or other chemical, quickly saturated, wrung dry and applied, as is an ordinary bandage, to the part. As the bandage is rolled on, it should be rubbed and smoothed with the hand, thus adding to the hardness, strength and imperviousness of the resulting cast. If reinforcement is to be used, the reinforcing material is judiciously incorporated as the cast is applied to the sides requiring strengthening and in requisite amounts.

The time of the setting of the cast may

be influenced in two ways. The drier the bandages are wrung before application, the more quickly the setting; and, further, if the cast after completion has a strong current of air passed over it, it will harden more quickly. Even fanning with a folded newspaper will hasten the setting process. After twenty-four hours the cast has thoroughly dried and it may then have applied to its surface a coat of shellac. This not only improves its appearance but makes it less pervious to water and other fluids and adds greatly to its permanence. The absorption of fluids by a cast has a very marked softening effect and should be prevented.

If, at the extremities of the cast, there is danger of ingress of the moisture or of other substances, protection to a greater or lesser degree may be had by the use of a strip of rubber sheeting, or oiled silk, of sufficient width to cover an inch or more of the cast and extend upward onto the limb, and long enough to more than encircle the limb. This is applied as a cuff, one end covering the cast, the other extending up on to the limb tightly and held in position by a superimposed bandage, or adhesive strips.

A removable circular cast is made from the above described cast by longitudinally cutting it in two places on opposite sides. This divides the cast into two more or less equal parts. The edges of these portions may be smoothed, shellacked and then bound by the use of bands of adhesive tape folded over the edge so as to cover an inch or so of the inner and outer surfaces.

In replacing this cast it is held in position by a superimposed bandage or by the use of laces, eyelets being drilled along the edges for this purpose. The removable cast can be made satisfactorily only from the lighter and non-reinforced circular casts and, of course, is of value only where there is no severe demand made upon it.

The Molded Plaster Splint

A very satisfactory light immobilizing

dressing for small animals is the moulded plaster splint. This has all of the qualities of ordinary splints except that it may be made to accurately fit the part to which it is to be applied. Moulded plaster splints are made in two ways. The first and most generally used method is as follows: A pattern is made of paper, as a guide to the dimensions and shape of the required splint. In simple, small splints, no pattern is required. Next, a plaster bandage of suitable width is moistened and by recurrent folding of the bandage on itself on a flat surface, a plaster sheet is made of suitable, uniform thickness and the size and shape of the splint pattern. As the

layers of the bandage are laid down they should be rubbed so as to make a smooth, strong splint. If it is not possible to lay down the bandage in the required shape, the resulting plaster sheet may be trimmed to the pattern by use of strong scissors. These steps must be carried out quickly so that the sheet may be laid on the part to which it is to be applied before the hardening of the splint has begun. It is then placed as required, moulded to fit the part by binding it on firmly with a gauze bandage and while hardening, the limb, or part, is held in the proper reduced position. After the splint has hardened it is removed, in-

(Continued on page 987)

The Agricultural College An Important Stepping-Stone to the Veterinary School

By W. H. DALRYMPLE, M. R. C. V. S.,
Louisiana State University.

THE writer believes the following statement to be true, in the main, viz., that no system of agriculture can reach the maximum of success which does not include intelligent diversification and rotation of farm crops; that no system of diversification can succeed without the inclusion of suitable livestock; and that the farmer is not likely to make the most out of his livestock without the aid of the broadly educated and intelligent veterinarian.

The greater increase and development of the country's livestock industry have created the demand for greater assistance from, and call for a more extended field of information on the part of, the veterinarian, more especially the country practitioner, whose clientele is made up largely of the agricultural class, or those specially engaged in the breeding and raising of the different varieties of farm animals.

That which seems much to be desired, in the opinion of the writer, at least, is a stronger bond of sympathy and coöperation between the farmer and the veterinarian, not merely a cold business connection, but a sense of mutual helpfulness, which does not always appear to exist at the present time. In fact we are aware of instances in which the services of the veterinarian are sought merely as a last resort in cases of extreme emergency; and where the only interest the veterinarian seems to take in the farmer, is the collection of his fee. So long as this lack of mutual interest on the part of the two classes of individuals obtains, the profession is not going to come into its own as it should, nor be capable of as much beneficial influence as it might, if there existed a greater amount of confidence and friendship on the part of the client, and a little

less of the commercial, and somewhat more of the sympathetic and coöperative spirit shown by the veterinarian, toward his client, concerning the welfare of his livestock in general.

There is an old saying in the profession, viz., that it is often much more difficult to treat the owner than it is to treat his animal, and that if one can successfully manage the former, the latter is generally easy. And we believe that, in many cases, this may be true. The point, therefore, is, how best to treat the owner so as to gain his confidence and make him feel that the veterinarian is one of his best and most valuable friends, instead of a mere individual whom the farmer often tries to do without just as long as he can, and if he has to employ his services at all, is glad when the time comes for him to get off the premises.

The writer does not presume to say that the condition alluded to is universal, but it does exist, and may be more general throughout the country than is commonly suspected.

In our opinion, which we give for what it may be worth, the solution of this problem will depend largely upon the possession of wider information of an allied character to veterinary science, on the part of the veterinarian. Or, in other words, a more extended knowledge of the subject of hygiene, in its wider sense, as applied to the livestock of the farm.

The objection may here be raised, as it was by the medical profession in years gone by, viz., that to instruct people in the science of preserving health and preventing disease, would be ruinous to the profession. But do we find any fewer physicians today, or their having their fees reduced? Rather do we not find a stronger bond of union, and greater confidence established, between the family and the physician, who is not only the doctor, but the advisor in matters of family hygiene?

And so we believe that a similar con-

dition might be brought about, to a larger degree than at present, between the veterinarian and the farmer and his animal family, and to the greater benefit of both parties concerned.

True, the subject of zootechnics appears on the curricula of our veterinary schools, but it is a question, we think, whether the ordinary student entering a veterinary college realizes the full import of the subjects classed under this head, and is more inclined to view them as "padding," and of little service to him in after life as a practitioner. Or, in other words, the student's idea of the main requirements of a veterinary course is not to study the principles of feeding, for example; nor the judging of livestock; nor yet the various breeds of animals, with which he may be called upon to deal in practice; but merely the commoner forms of animal disease, and the sources, actions and doses of the "pills, potions and powders," so to speak usually employed in their relief.

Of course it is not the privilege of every prospective veterinary student to be able to take a course in agriculture at a state agricultural college. But to those who may be so privileged, we would certainly commend it as being one of the most valuable stepping-stones to the veterinary college, and, afterwards, to a more successful career in practice, particularly in the rural districts, as, after all, the country practitioners constitute the bulk of the profession.

Among the subjects taught in our agricultural colleges which might be considered as allied to that of veterinary science, and which are likely to receive greater attention there than in the veterinary school, the following may be mentioned: Zoology; economic botany; study of the breeds, and the breeding and judging of farm livestock; the chemistry of feeds, and the principles of economic feeding; topics connected with dairying, etc., and the veterinary course which is included in

that of agriculture in most, if not all, of our agricultural colleges.

We repeat, that at least some of the subjects mentioned do appear on the curricula of the veterinary schools, but we are inclined to the opinion that the teaching of them must, necessarily, be more thorough, and the facilities and equipment more complete, in the agricultural, than in the veterinary, college.

There can be little question, we think, of the greater value, to the farmer and stockowner, of the veterinary graduate who, in addition to his purely professional training, is possessed of a more or less accurate and practical knowledge of other branches which are so closely associated with the well-being of the livestock department of the farmer's business. Consequently, and in order to accomplish greater things for the individual, and for the profession generally, and owing to the constantly improving and developing livestock conditions of the country, the veterinarian should not only be a well trained practitioner, by which we mean a good diagnostician and therapist, and a more or less expert surgeon, but, in addition, should be an intelligent *advisor* in other, but associated, directions. However, to be able to meet the latter requirements successfully, he must have a reasonably accurate grasp of the more important of the subjects which we have been pleased to term, allied.

The successful treatment of a case of acute indigestion may impress the owner with the ability of the practitioner in that particular direction; but he is likely to be much more impressed, if, in addition, the veterinarian is able to give him an accurate and intelligent explanation of the true causes involved, and, incidentally, put him right on the subject of the rational and intelligent feeding of his animals.

Again, the practitioner may successfully vaccinate a herd of hogs for the farmer, and so impress his ability as a successful vaccinator of hogs, against

cholera, which many laymen, also, seem to be. But he is going to make a much more decided impression upon the farmer if he knows, and is willing to take the trouble to explain to the owner something about the different media through which infection of cholera may be carried, and the most effective and practical means by which to sanitize his premises.

The intelligent and economic feeding of farm animals is not generally looked upon by the farmer as a part of the information possessed by the veterinarian; and yet it ought to be, and to some extent is, a part of his education, and a valuable aid in gaining the confidence of the owner of livestock. In other words, the veterinarian has got to know more concerning the livestock problems of the farmer than the mere curing of individual cases of the commoner diseases and injuries.

When that time arrives, and advancing conditions are already hastening it on, there is going to be a most gratifying change in the attitude of the farmer and stockowner toward the veterinary profession generally. The practitioner will not, then, be looked upon merely as an emergency man, but one of the most valuable friends, associates and advisors the farmer can possibly possess in his business.

There is a piece of advice frequently given to young men just starting out in life, and which may be applicable here, viz., "Always show a willingness to do more than you are asked, or required, to do," which is worth bearing in mind, as it is sure to pay in the end. To be able to do this successfully, however, the information possessed by the veterinarian must be increased along the lines which we have attempted to suggest; and we believe we are reasonably correct when we say, that the source from which to obtain this broader education, or rather the pre-veterinary college part of it, is the course of study offered to students of agriculture by our state agricultural colleges throughout the country.

A Common or Public Nuisance, the Tubercular Milch Cow*

A COMMON or public nuisance is one which tends to the annoyance of the public generally, and is therefore to be redressed by forcible abatement, or by an action by the State."

That the tubercular milk cow is a common or public nuisance has been proven by the demonstration of the bacilli of Koch, or the bacillus of tuberculosis in the milk of such animals. That the milk from such animals is an annoyance to the public generally is shown by the percentage of human beings whose death has been caused by or who have been made cripples by its use. The abatement by force will not be tolerated, but legislative action can correct the nuisance.

That the bovine type of Koch bacillus does appear in the human subject, causing death and disability, has been demonstrated by various investigators. Eastwood and Griffith, in Great Britain, have made a report of the relative distribution of the various strains of tubercle bacilli in human bone and joint tuberculosis.

For the investigation, the material examined was removed directly from an affected joint or bone, or from an abscess in the neighborhood of such lesion. Out of a total of 261 patients, 55 or 21 per cent were bovine cases. Of these only three were over 16 years of age. One hundred and fifty-five cases were examined under 10 years of age, and 45 or 29 per cent were bovine.

Dr. M. J. Ravenal, of the University of Missouri, writes: "The transmission of tuberculosis from cattle to man through milk is no longer doubted by anyone. The danger is particularly great in children under five years of

age, but is marked in all children from birth to 16 years, apparently diminishing after that time."

Dr. William H. Park gives a summary of patients who have died from tuberculosis, as follows:

Adults, 16 years and over, 955 cases; 940 human, 15 bovine. Children, 5 to 16 years, 177 cases; 131 human, 46 bovine. Children, under 5 years, 368 cases; 292 human, 76 bovine.

Dr. Park further states that 10 per cent of the fatal cases of tuberculosis among children are due to bovine bacilli; that of all the children that are fed with raw dairy products one-half died of bovine bacilli; and that about one-half of all the people, younger children and older children, that had gland tuberculosis, had bovine infection.

Dr. Delepine says, "Taking all evidence into consideration, it is possible to say, without fear of exaggeration, that not less than 25 per cent of the children suffering from tuberculosis, under five years of age, suffer from tuberculosis of bovine origin, and that this rate is much lower than one based on probabilities would be."

Dr. Mitchell, of Edinburgh, examined 72 cases of children suffering from cervical tuberculosis, and of these 65 or 90 per cent showed bovine infection. There were 38 cases under five years of age, and of these 35 were infection from the bovine and only three from the human. Some of these cases led to death later, but all of them led to more or less disease and deformity.

Infant mortality in this State under one year of age, for 1913, was 10,086 from all causes, while 4,180 deaths are registered as being due to consumption that year, but the ages of the victims were not recorded in the report.

*Address of Dr. J. F. Winchester, Lawrence, Mass., delivered before the Massachusetts Association of Boards of Health.

Clinically it is impossible to tell whether a patient afflicted with tuberculosis is infected with the bovine or human type of the tubercle bacilli.

Professor Eber, director of the Veterinary Institute Laboratories at Leipsic, has repeatedly shown that it is possible to so alter the human type of tubercle bacillus, by systematic passage through animals, that, with the means at present at our disposal, they cannot be distinguished from bacilli of the bovine type.

His researches furnish abundant evidence that the two types of tubercle bacilli, the human and the bovine, are not types of sub-species with constant characters, but rather varieties of one and the same bacillus with relatively variable characters. He recognized that the bacilli cultivated directly from the human or bovine sources possess certain biological characteristics, which permit of a distinction in the majority of cases, between the human and bovine type.

The law that deals with the detection of tuberculosis in cattle is as follows: "Tuberculin as a diagnostic agent for the detection of tuberculosis in domestic animals shall be used only upon cattle brought into the commonwealth, and upon cattle at Brighton, Watertown, and Somerville; but it *may* be used as such diagnostic agent on any animal in any other part of the commonwealth, with the consent in writing of the owner or person in possession thereof, and upon animals which have been condemned as tuberculous upon physical examination by a competent veterinary surgeon."

Tuberculin is used upon foreign cattle, but *not* upon native or Massachusetts cattle at Brighton, Watertown, or Somerville.

In August, 1916, 1,931 milk cows went through Brighton stock yards, and of that number about 480 were na-

tive Massachusetts cattle or cattle that have been owned at least six months in this state.

Each year a physical examination of all cattle in the commonwealth is made by the city and town inspectors, and if a contagious disease is suspected in any animal, that animal must be placed in quarantine, and a certified copy of the order sent to the Department of Animal Industry.

Subsequent to his report, an inspector, a veterinarian, or layman is sent to examine the animal in quarantine, and if, in his opinion, the animal is not diseased, said animal is released.

There appears in Public Document No. 98 the fact that 1,456 native cattle were suspected of tuberculosis by the inspectors—some inspectors are veterinarians—and of that number 194 were officially released.

It is reported in Public Document No. 98 that 49 head of cattle were reported as reacting to the tuberculin test by veterinarians, and they were released as they could not be condemned on a physical examination by agents of the Department of Animal Industry.

To me it is paradoxical that one department of this state should permit the existence of centers of disease that carry contagion to man from diseased cows through milk, while another department should be under the great expense it is, being constantly supplied with patients and using all the energy at its command to *restore* the innocent victims to health.

The subject has an economic as well as a humanitarian phase, and should be kept under the spotlight of public opinion until remedied.

Since the duty of the boards of health is sanitation, and sanitation stands for prevention, can this organization do a greater service to the commonwealth than to have corrected and revised the laws permitting this state of affairs to exist?

The Primary Principles of Disease

By A. T. KINSLEY, Kansas City Mo.,
Pathologist, Kansas City Veterinary College.

DISEASE is the functional or structural deviation from the normal. It is that condition which obtains when a living being is unable to adjust itself to its environments. That which produces an inharmonious relation between an organism and its surroundings is the cause of disease, and the causes of disease are variable in their nature and intensity. In the investigation of diseases it is found that the condition of the animal, that is, the receptiveness to disease—its degree of susceptibility—must be taken into consideration, as well as the specific exciting agent, and thus the causes of disease may be divided into two groups, viz.: predisposing and exciting causes.

Predisposition to disease includes all conditions which diminish an animal's resistance and thus render them subject to the specific exciting causes of disease. Thus, age, sex, breed, color, occupation, climate, season and surroundings are all factors that veterinarians should comprehend in their investigations of disease of domestic animals. Without a thorough understanding of the predisposing causes of disease it is certain that veterinarians cannot give the service that the live stock industry justly demands.

The specific exciting causes of disease may be divided into four groups, viz.: mechanic, physic, chemic and parasitic. It is vitally important that a veterinarian, whether he be a private practitioner or a sanitarian, should have the knowledge essential for determining correctly the nature of the cause of diseases encountered in domestic animals.

The exciting causes of disease exert their influence and produce disease in

various ways. One certain agent may cause disease by inhibiting the activity of a certain gland or organ, for instance atropin diminishes glandular secretion, while another may accelerate the activity of a part as pilocarpin. Some causative agents are most active after gaining access to the blood, others appear to exert their action through the lymph. Some chemical agents exert their principal influence in the organ that eliminates them from the body, as turpentine when eliminated by the kidney, other chemical agents are harmless until their composition has been changed in the animal body, thus calomel is probably converted into corrosive sublimate by the action of the hydrochloric acid of the gastric juice. The concentration of chemic causative agents is of prime importance in the production of some chemically induced disease.

The most important active causes of disease are of a parasitic nature, because these agents are capable of multiplication under favorable conditions and thus those diseases having a parasitic origin may be transmitted from animal to animal, and by the agency of various direct or intermediate carriers the infection may be carried from farm to farm, county to county, state to state, and nation to nation. In this way tuberculosis, glanders and many other infectious diseases have become world wide in their distribution.

An understanding of parasitic causes of disease has been responsible for the promulgation and enforcement of quarantine regulations, which, when efficient and conscientiously enforced, prevent the spread of disease and thus conserve the live stock industry. The

quarantine regulations controlling the spread of foot and mouth disease, dourine, scabies, tick fever and other diseases has diminished the ravages of such diseases to a minimum.

The exact and specific manner in which all of the various causative agents produce disease is not known. Disease is produced mechanically by breaking the continuity of involved tissues, by compression, or by changing the relations of anatomical elements. The physical causes of disease are further divided into thermic, photic and electric. Either a high or low temperature damages tissues and thus causes disease. The active part of the cells of the body is protoplasm, and protoplasm is a watery suspension or solution of complex proteid substances, and a high temperature causes more or less coagulation of proteids, therefore, a high temperature locally (a burn) results in coagulation of the portions of the protoplasm of the affected cells, and a high general temperature (fever) results in extensive coagulation of the protoplasm of essential cells. A low temperature diminishes the activity of cell protoplasm and a sufficiently low temperature causes the water content of the cell to congeal, form ice, which, occupying more space than the water from which it is formed, ruptures and lacerates the cell involved.

Undue exposure to light may cause diseases of the skin or eyes. The production of skin disease by light may be due to the effect of chemic or thermic rays. It has been found that the raising of white hogs is not profitable in the South.

The chemic causes of disease produce their action by forming injurious compounds with the substance of the cell as bichlorid of mercury or by stimulation or inhibition of the cell action. Thus strichnin stimulates motor nerve cells and quinine diminishes the activity of leukocytes. Injurious chemic substances sometimes occur in suffi-

cient quantities in animal foods to result in extensive damages, as, hydrocyanic acid in sorghum poisoning. Food poisoning is a common malady and is responsible for extensive losses of live stock annually. It is sometimes difficult to distinguished diseased conditions resulting from chemic substance and those caused by infection.

The mechanism of the production of disease is not definitely known for all of the various parasitic agents. Most of the animal and vegetable parasites primarily cause disease by chemic substances that they elaborate and eliminate. Excepting for the fact that the animal body serves as a reservoir for parasitic invaders parasitic diseases may be considered as chemic induced diseases. It is true that certain parasitic agents produce some mechanical injury to their hosts, as the *Taenia frimbriata*. This type of injury is practically confined to animal parasites, as vegetable parasites primarily produce disease by chemic substances.

A very interesting question frequently asked is: What causes lesions in disease; that is, what is it that causes the tubercle in tuberculosis, why are there hemorrhages in septicemia, etc., etc.?

In studying pathology the very interesting question is why the lesions evidenced in disease. If the manner of production of disease by a causative agent is understood, the evolution of the lesion is self evident, but the explanation of the appearance of certain unusual lesions without a knowledge of the causative agent is not always possible. For example, the formation of a tubercle in tuberculosis is not difficult to comprehend when it is definitely known that the tubercle bacilli produces chemic substances, one of which causes changes in the cell protoplasm which ultimately results in cell death, and another chemic substance attracts certain leukocytes, which, accumulating around the center of infec-

tion, cause tumefaction and thus diminishes the supply of blood to the part, rendering it non-vascular. But why there is a periganglionic round cell infiltration in rabies is not definitely known. Generally speaking, it is apparent that lesions are the result of a disturbed nutrition, of mechanic, physis or chemic injury.

Lesions are, generally speaking, the result of changes within the cell protoplasm alone, or changes within the cell protoplasm and variation of circulation. Protoplasmic changes may be degenerative or necrotic, and thus is explained cloudy swelling, fatty degeneration and other related metamorphosis, also the death of cells and the sequential changes. Circulatory changes are responsible primarily for edema, ischemia, hypermia and hemorrhage, and secondarily for thrombosis, embolism and necrosis. The causes of edema are mechanical interferences in which there is an accumulation of sufficient blood in the vessels to cause an increased production of lymph, or it may be caused by degeneration of the capillary endothelium. The causes of hemorrhage are mechanical injury, increased permeability of capillary walls due to increased pressure, or degeneration of the vessel wall, or a combination of two or more of the conditions named. Thus hemorrhage occurs in traumatic conditions in which there is marked hyperemia and in diseases such as glanders, in which there is vascular degeneration.

The cause of variation of the blood supply to a part, that is, the production of ischemia and hyperemia, is primarily chemic action on the vasomotor mechanism, and secondarily, mechanical interference. Inflammatory lesions consist of intracellular degeneration and necrosis, vascular changes in which there is an increased amount of blood in the part, intercellular accumulation of exudate consisting of plasma, leukocytes and sometimes erythrocytes, and in subacute or chronic

inflammation there is proliferation of connective tissue.

Sequential changes in degenerative or necrotic lesions, consisting of mineralization, exemplified in calcareous deposits or saponification, which may be a sequence of fatty changes, are not uncommon.

The disposition of pigments in apparently normal tissue sometimes occurs, as in melanosis. Pigments may be derived from bile, blood or from other sources, and it may be soluble and diffused in the affected tissue, e. g., icterus or insoluble and occur as granules, e. g., hemosiderin pigmentation. More rarely the normal pigments of various tissues may be diminished, thus producing a depigmentation, as leukoderma, which occurs in some cases of dourine and other diseases affecting the skin. Pigmentary changes in which there is either excessive or diminished pigmentation are of little consequence.

The formation of tumors produce lesions characterized by the proliferation of native or foreign cells. The proliferated cells may produce degenerative or necrotic changes in the adjacent or permeated normal tissue; more rarely will there be variation of circulation or inflammatory changes.

From the foregoing it is evident that the symptoms of disease are the modified functions of an injured cell or group of cells. Thus degenerative changes diminish the functional capacity of a cell proportional to the amount of cell protoplasm degenerated and is exemplified in fatty changes of the liver and other organs. Necrosis causes complete cessation of function. Ischemia results in diminished functional capacity. This condition is observed in thrombosis of the iliac artery. Venous hyperaemia diminishes the activity of a cell or part and probably results in edema, which further retards functioning, such conditions are sequential to tricuspid stenosis or

insufficiency. Arterial hyperemia increases the functional capacity of a part, but when exudation begins and inflammation is established functioning is diminished, such as observed in renal hyperaemia and nephritis. Inflammatory conditions resulting from infection not only interfere with the

functioning of part affected, but also of other functions because of the dissemination of the products of infection. Tumefaction occurring in tissues affected with inflammation or neoplastic formation, when superficial, can be detected and are symptomatic of the process.

Serum Treatment of Influenza in Horses and Mules*

By JAMES GREGG, M. R. C. V. S.

Veterinary Surgeon in Charge of British Horse and Mule Remount Depots, Newport News, Va.

THE disease is also known by two location terms, viz., "Shipping Fever" and "Barn Fever" and by at least one symptomatic name, viz., "Pink Eye."

Influenza is a well known fever that attacks most unimmune horses and mules when they are exposed to infection, especially when their resistance is lowered by travel and strange surroundings with a changed diet and water supply. The etiology and pathology would no doubt be interesting if we were capable of going into that department; frankly, we do not feel fit, so others more able and with better facilities will be required to shoulder the burden.

It is necessary, however, to say that the disease is highly contagious and possibly infectious to susceptible subjects. The virus is more active in spring and summer, but when large numbers of young animals are kept together it will be found quite active during the winter months.

The infection is carried by the blood and the disease can be artificially produced through that medium. The writer has on more than one occasion produced influenza by transfusing 2 mil. of blood from a diseased to a healthy animal. It can therefore be easily understood how the toxin reaches so many organs and by so doing produces as many symptoms.

The treatment of the disease has troubled us for years. After trying many vaccines and serums systematically (see paper read before the Missouri Valley Veterinary Medical Association at Omaha, July, 1915) it occurred to us that we were going on wrong lines. The question that first cropped up was: How can a vaccine which is not

made from the virus of the disease known as influenza cure influenza?

We proved conclusively in that paper that such vaccines do not cure influenza and further that many of them were harmful.

The next question was: What would be the best alternative for a correct vaccine until the virus had actually become isolated and a correct vaccine made? Knowing that the virus was in the blood, we commenced to reason along hog cholera lines. We took six horses that had recovered from influenza (Lathrop, 1915), four of whom had had pneumonia complications. We drew a little blood from each, defibrinated it and added five-tenths of one per cent carbolic acid. We injected twenty sick horses with blood of each, 120 altogether. One-third of these had the serum interavenous, one-third intermuscular, and the other third subcutaneous. It was found that in most cases where the blood of recovered pneumonia horses was used the temperature went lower in from 12 to 24 hours. The pulse also improved, and the general condition of the animals looked better. Those that had the intermuscular treatment had more permanency in their recovery, and few of them went back on the recovery registered. Again it was found that serum from a horse that had had an attack of pneumonia and had become fit, fresh and active gave much better results than those which had simply been affected with influenza without complications. It was also found that serum from a dull sluggish horse, even if a recovered pneumonia case, had little or no therapeutic value. Hypering was resorted to, but it did not materially increase the potency of the serum. Sixteen highly fevered horses were put into a pen, in order to test the serum as a preventive of

*Portions of this paper were presented at the 52nd annual meeting of the A. V. M. A., Detroit, August, 1916.

pneumonia, as well as a curative for shipping fever. Half of these animals were kept as controls. Two of the latter developed pneumonia, whereas those that had got the serum made a rapid recovery. (See table No. 6, Omaha paper). In the spring of 1915 several horses and mules had the treatment at the Lathrop Depot, in various ways and doses (at that time 20,000 horses and mules were stabled there). Serum was extracted from different kinds of horses and mules, the result of which was noted.

We then went on other duties and were not free until the spring of this present year to take the matter up again. Speaking roughly about 2,500 new horses and mules pass under review at this depot each week. On an average 750 out of that number are retained as sick from influenza. We were going almost two months before our recovered cases were ready for serum animals so it was the first week in June when we got a start made. The percentage of deaths then and now will be of some interest. Up to time of writing, July 29th, serum has been extracted weekly from a number of mules and horses, a few of which are given here as examples:

No. 1—Grey 6 year mule, gelding, had influenza followed by pleuro-pneumonia. This animal has a very strong constitution, with plenty of fight and spirit. (See good results from his serum Charts 1, 2 and 3.)

No. 2—Grey 5 year mule, gelding, had influenza followed by pleuro-pneumonia, and hydrothorax. A weak constituted mule with little spirit. (See poor results from his serum Chart 4.)

No. 3—Brown, 8 year mule, gelding, had influenza followed by pneumonia and laminitis, and when convalescent developed strangles. A very strong, active mule. (See good results from his serum Chart No. 4.)

No. 4—Grey, 6 year mule, gelding, had influenza without complications. Developed a small branding abscess. Very strong, good constitution, with spirit. (See poor results of his serum Charts 6 and 7.)

No. 5—Brown, 7 year mule, gelding, had influenza followed by double pneumonia. Very strong, active mule. (See good results from his serum, Charts 5 and 8.)

No. 6—Blue roan, 6 year horse, gelding, had influenza followed by pleuro-pneumonia. Fair constitution. (See good results from his serum Chart 9.)

Serum from these six animals have been used in order to test the value of serum from different kinds of animals, differently affected, but for general hospital work only serum of proved therapeutic value is used. The following is a brief description of the method and technic adopted:

First—Suitable Serum Animals.—The hospitals are closely watched for strong constituted subjects, that have developed pneumonia as a complication to shipping fever. When such make a good recovery and put on flesh, and become fresh and frisky, they are removed to a pen specially set aside. Here they get a special ration of corn, oats and bran, and the best hay and water procurable. Besides both pen and animals are kept clean and sanitary. The next step is to see that they are free from glanders. A little blood is drawn and sent to Washington for the complement fixation and other tests, and mallein is also used. If there is no evidence of glanders, and if the animal is in the best of good health and spirits, blood is drawn per-jugular enough to try its therapeutic value, say on twenty fevered animals.

Second—Blood Drawn from Immune Animals.—The subject is placed in carefully cleaned and disinfected stocks, and made secure. The head and neck is sponged with a weak carbolic solution. A sterile can with stirring stick, sterile bottles, funnel, lancet, etc., are all ready. The jugular vein is raised and opened. Sixty-four ounces each week is the amount we usually draw from satisfactory animals. The blood is defibrinated in the usual way and half of one per cent of carbolic acid is added. It is then placed in a cellar built for the purpose and cooled down in an ice box. (At the time of writing we are trying to procure a clear serum in paying quantities.)

Third—Introduction of Serum Into Fevered Animals.—When a train load of mules or horses arrive, they are examined coming off the cars. Those looking "dopy" are taken to a pen set apart for examination purposes. Specially selected men are constantly moving quietly through all pens and pastures picking out sick animals, which they lead carefully to the examining pen. The veterinary surgeons are constantly at work classifying and prescribing. Animals that have already developed pneumonia or strangles or other complications do not get serum, they are removed for treatment to pens provided. The simple influenza (often with pink eye symptoms) is greatly in majority. Every animal has its temperature taken by experienced men, who mark the degrees in chalk on the animal's side, and at the same time they fasten a tag number on the tail, and note both tag and temperature in a book kept for the purpose. The temperature process is followed up from day to day. Each pen having a separate chart. Needles and syringes are sterilized always after use, so

that they are ready when required. Tincture of iodine is painted on the neck about half way up and about two or three inches below the crest. A 35 c.c. syringe (about one ounce) is filled, a half inch needle fixed and introduced straight into the muscles. The syringe is half emptied and the needle is again inserted about one inch away and the syringe emptied. Notwithstanding the fact that some thousands of horses and mules have had this treatment under our control, we seldom have any swelling and never any abscesses. These animals get no other treatment. They are removed to sanitary pens, carefully fed, watered and watched. Occasionally on the second day after injection another dose is given, but that is not common. Eighty per cent of the death rate at this depot before introducing this serum was due to pneumonia. Since using it, to date, the death rate is very little over the ordinary accidental percentage. Besides we take it that the serum gives a much quicker recovery and therefore enables the sick animals to be shipped much earlier than formerly, further we look for fewer wrecks, and therefore fewer animals that will be required to be sold as unfit for military services.

It will be noted that the average death rate of horses before using the serum was 1.64 per cent, whereas since it has been .42, or a reduction of over two-thirds.

The death rate of mules before using the serum was .48 per cent. Since it averages .23 per cent, a reduction of over half.

Taking averages on all the depots in the States and Canada for comparison, over the same periods, the mule death rate is nearly one-third less in the latter period, whereas the horse death rate is rather higher in the latter period. On this basis also the serum treatment stands firm.

It should be pointed out that animals at this depot are about four days in the train before they arrive—so a large percentage of sickness and death must be expected. Just now (end of July) pink eye together with other forms of influenza is quite as virulent (if not more so) and as wide spread as it was earlier in the year.

In conclusion we would like to express thanks to the following who have given us aid and encouragement: Col. Deacon, P. V. O. Major Barry, Depot Superintendent, the Hon. Major Marsham, Embarkation Officer. We must also in a special manner thank Drs. McGuire, Gillespie, McLoughry, who are the able members of our staff, for their loyalty and support. A word of praise must also be given to the foremen and hospital hands.

The following letters from users of this serum are interesting and corroborate our experience at this station.

Newport News, Va., August 7, 1916.

Dr. Gregg,
Veterinary Officer in Charge Remounts,
Newport News, Va.

Dear Sir:—

I have the honor to submit to you my report on the serum which you gave me June 15th, requesting me to try the same.

I used the serum on twenty cases, all mules that had temperatures from 104 to 106, and in every case that I used it I can truthfully say that I got very marked results. There was a falling off in temperatures in from twelve to twenty-four hours, often in forty-eight hours the temperatures would be normal, and all the animals made a good recovery.

I tested the serum specially on two mules, at the same time I had two other mules taken sick which I used as controls. The symptoms and temperatures were almost the same in all four animals. I put them all together on the same deck, I injected the two, the other two got no serum, but I gave them the usual treatment. In twelve hours the temperatures of the two injected animals fell from 105 and 104.5 to 103 and 102.5 respectively. In thirty-six hours the first animal had a temperature of 102, the second a temperature of 101.6. The third day both temperatures were normal, and the animals made a good recovery in another day or two. Of the two I did not inject, one developed pneumonia and died, the other had influenza, ran about the regular course, getting thin and emaciated, but was well on the road to recovery at the end of two weeks, but this animal was in no such condition as the two that got the serum.

In my opinion this serum if used in the early stages is very effective.

Respectfully yours,
H. W. Laughlin, D. V. M.,
Veterinary Office,
S. S. Leysian.

Late Veterinary Officer to the United States Government at Panama for three years.

Newport News, Va., August 17, 1916.

Dear Sir:—

As requested I supply you with the following figures referring to cases of pneumonia extracted from my records of mules shipped from Newport News, Va., as follows:

On December 3, 1915, 1,305 mules for Alexandria, Egypt, four cases developed pneumonia.

On February 17, 1916, 1,283 mules for Salonika, four cases developed pneumonia.

On May 25, 1916, 1,283 mules for Alexandria, Egypt, three cases developed pneumonia.

On July 18, 1916,* 1,283 mules for Avon-

*Over half of this shipload had serum (other conducting veterinary officers have had similar experiences to Dr. Boyer but the latter was the only one who kept a complete record of his cases).

mouth, England, one very slight pneumonia case.

Hoping these figures will be of interest to you, I am

Yours truly,
Albert E. Boyer, M. R. C. V. S.,
S. S. Parisian.

Dr. James Gregg,
Senior Veterinary Surgeon,
Newport News, Va.

The following is the official death rate of Newport News Depot, given from week to week, the commencement period being about the time purchasing reopened.

Date	Horses	Mules
May 6th, 1916	.71	.18
May 13th, 1916	7.78	.38
May 20th, 1916	.48	.50
May 27th, 1916	.73	.74
June 3rd, 1916	.32	.62
June 10th, 1916	.53	.53*

June 17th, 1916	1.05	.31
June 24th, 1916	2.31	.34
July 1st, 1916	1.55	.14
July 8th, 1916	1.55**	.10
July 15th, 1916	.34	.12
July 22nd, 1916	.38	.10
July 29th, 1916	.39	.16

*Commenced using serum on Mules.
**Commenced using serum on Horses.

Temperature Chart No. 1.—Kept by Mr. Herbert Billups, object being to test serum from No. 1 mule, on fever cases (Nos. 1 to 7). Nine fever cases were kept as controls (all newly arrived Lathrop Mules).
Temperature at time of injection—

Date	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11	No. 12	No. 13	No. 14	No. 15	No. 16
May 27th	103.	104.	104.	105.	103.8	106.	103.5	105.	104.	103.	105.	103.	104.	105.	105.	103.6
May 28th	102.	102.5	101.6	103.	104.	103.2	103.	104.5	103.	103.5	106.	103.2	105.	105.	104.	102.5
May 29th	101.	101.2	102.5	102.	101.	103.	100.5	105.	104.5	104.	105.5	104.	105.	104.	105.	102.
May 30th	100.2	100.	101.	101.2	100.2	100.5	100.	103.5	105.	103.	106.*	104.	104.5	104.	105.*	101.

*Developed pneumonia.

Chart No. 2.—Kept by M. A. Gillespie, D. V. M., object being to test serum from No. 1 mule on fresh arrivals from St. Louis.

Date	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10
May 20th	104.1	104.1	104.2	102.	105.2	104.	103.2	104.	104.	105.1
May 21st	104.	105.	102.3	103.1	103.4	103.2	101.3	104.2	103.2	103.4
May 22nd	101.	103.2	102.4	100.4	101.	100.2	100.1	102.	100.	101.
May 23rd		100.4	100.1					101.		

Chart No. 3.—Kept by Mr. Gillespie, D. V. M., object being to test the serum from No. 1 mule on new arrivals from St. Louis.

Date	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10
June 5th	105.	106.	103.	104.2	103.4	105.	104.	103.	105.2	104.
June 6th	103.2	104.1	103.	103.	102.1	104.1	102.1	102.1	104.	103.
June 7th	100.3	102.	100.2	101.	101.	100.3	100.3	100.2	102.1	101.2
June 8th		100.3							100.	

Temperature Chart No. 4.—Kept by Mr. A. Gillespie; object, to test the serum from No. 2 mule on fresh arrivals from St. Louis.

Date	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10
June 9th	105.	106.	104.	106.3	104.	103.1	104.	105.	104.	103.
June 10th	106.	106.2	103.	104.3	105.1	102.	104.	104.3	105.	102.1
June 11th	106.1	106.	104.1	103.	104.	101.	102.1	102.1	103.2	100.

Owing to persistent high temperatures the following got a dose of serum from No. 3 mule.

Date	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9
July 11th	106.1	106.2	104.1	103.	103.	104.	102.1	102.1	103.2
July 12th	102.2	103.2	102.	101.	103.	103.	100.3	100.	103.
July 13th	100.	101.2	100.4	100.	102.	100.4	100.2	100.2	101.

Note the absence of curative value of No. 2 and therapeutic value of No. 3.

Temperature Chart No. 5.—Kept by Mr. A. Gillespie, D. V. M., the object being to test the serum from No. 5 mule.

Date	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10
June 22nd	103.2	104.	103.1	105.3	104.4	103.3	104.	103.3	103.	105.1
July 23rd	103.3	102.	101.1	101.2	104.	100.	103.1	100.2	104.	104.
June 24th	100.	102.	101.1	101.	100.	100.	102.	100.1	102.	102.3
June 25th		100.2					101.		100.1	100.2

Temperature Chart No. 6.—Kept by Mr. F. McGuire, V. M. D., object being to test the value of serum from No. 4 mule. The patients were mules. The results show the serum to have been of no value.

No.	July 17	July 18	July 19	No.	July 17	July 18	July 19
223	102.3	105.1	105.	205	102.2	101.6	99.5
217	103.6	103.8	103.6	202	102.	105.	105.
214	104.	103.1	100.6	198	103.	105.	105.2
203	102.8	103.6	102.6	190	103.	103.6	103.

Temperature Chart No. 7.—Kept by Mr. F. McGuire, V. M. D., object being to test the value of serum from Mule No. 4. The patients were horses. As for mules, it was valueless for horses.

No.	July 20	July 21	July 22	July 23	No.	July 20	July 21	July 22	July 23
21	104.	103.	105.	104.	25	104.4	103.	100.	100.
22	103.8	106.2	105.	104.	26		103.	103.	102.
23	106.	102.4	100.	101.	27		103.6	101.	100.
24	105.2	104.	100.6	102.6	28		104.	103.	102.4
					29		104.	103.	104.4
					30		103.	102.4	102.
					31		104.2	104.4	103.2
					32		103.5	103.6	103.

Temperature Chart No. 8.—Kept by Mr. F. McGuire, V. M. D., object being to test the value of serum from Mule No. 5. The patients were horses.

No.	July 20	July 21	July 22	July 23	July 24
1	104.	104.	101.6	101.	100.4
2	104.2	101.	100.		
3	105.	101.	105.	102.	102.4
4	104.	104.	101.2	102.4	100.4
5	103.6	101.	101.2	101.6	
6	105.	105.	100.4	100.	
7	103.6	101.6	102.	100.	
8	104.	102.	101.	100.	
9	102.	105.	106.	101.6	102.
10	104.2	104.1	102.	101.	
12	101.	101.	100.	101.6	
13	104.2	104.6	101.6	101.6	
14	103.4	102.	103.	102.6	102.
15	102.	103.2	100.6	100.6	
16	104.6	102.4	103.6	101.	

No.	July 20	July 21	July 22	July 23	July 24
17	104.	103.	103.	103.2	
18	104.	103.8	103.	101.	
19	103.2	102.6	101.2	101.	
20	105.	103.	104.4	101.	

Temperature Chart No. 9.—Kept by Mr. F. McGuire, V. M. D., object being to test the value of serum from Horse No. 6. The patients were horses.

No.	July 25	July 26	July 27	July 28
121	105.	105.6	102.	100.6
111	104.	103.	103.8	101.
129	106.2	104.4	103.4	102.
181	104.	104.	103.4	101.6
125	104.	101.6	101.	101.6
115	105.	102.	101.	101.2
156	104.6	103.	101.	101.
154	103.4	101.4	100.6	100.4
139	104.4	105.	103.6	101.8
197	105.4	105.6	103.	103.

Diagnosis and Pathology of Periodic Ophthalmia of Horses*

By L. C. TIFFANY.

IN the beginning let me say that I regard periodic ophthalmia of the horse and glaucoma of man as being practically identical, or rather, as one and the same thing. With this preface, I will proceed.

Diagnosis of so-called periodic ophthalmia is usually made without much difficulty if a previous history of the patient can be obtained, for in most cases the patient is not exhibited to the veterinarian until two or more attacks have been observed by the owner.

The symptoms of periodic ophthalmia and those of glaucoma of man are practically identical. In both cases the attacks are recurrent, or periodic, often without warning, and the intervening space of time is of variable duration. At times there is considerable constitutional disturbance with elevation of temperature, and always acute pain due to excessive intraocular distention, this condition also being the cause of the disease. The cornea displays more or less opacity which usually radiates from the margin. The iris is somewhat discolored and there is a yellowish reflection from the interior of the eye. After a short time there is often seen precipitates in the lower part. The conjunctiva is injected and, in fact, there is plain evidence of acute inflammation. The principal distinguishing character is the recurrence of these symptoms.

PATHOLOGY. In the belief that periodic ophthalmia of our patients is glaucoma, what little is known to me will be given. As above stated, the cause is an abnormal intraocular tension.

The symptoms and predisposing causes of periodic ophthalmia of the horse appear almost identical to those of glaucoma of man, and there is also an hereditary predisposition in both cases.

Those of us who have observed the eye of the horse critically have noticed that we are able to detect those which seem to be predisposed to the condition under consideration. We notice the wrinkled upper eyelid produced, probably, by the hypermetropic eye underneath. The hypermetropic eye is present and is congenital. The large deep eye seems practically exempt, but the small shallow one is the kind in which we expect to find it sooner or later. Occasionally periodic ophthalmia afflicts what appears to be an eye which should be exempt, but in such cases, if we could know, positively the conditions prevailing within such an eye, we might be able to determine that it was an hypermetropic one in spite of its appearance.

In both glaucoma and periodic ophthalmia, the period of attack is not usual in early life, but perhaps the latter makes its appearance at a comparatively earlier period than does the former. This, however, may be accounted for in the diet and environment of horses. Again plethoric animals, or those of that type, are more often affected than are those of the lighter breeds, or the non-lymphatic type.

Easy as it may be to deduce the symptoms of glaucoma from the intraocular tension, it is quite difficult to account for the origin of it, and thus explain the essential nature of glaucoma.

Of the many theories which have been

* Presented at semi-annual meeting Illinois Veterinary Medical Association, Peoria, July 20th, 1916.

hitherto propounded upon this subject, no single one is satisfactory in every respect, and only the most important of them will be adduced here, and that mainly with the object of showing upon what circumstances increase in tension in general depends.

The intraocular pressure is determined by the relation between the internal capacity and the elasticity of the envelopes of the eyeball on the one hand, and the amount of the contents on the other.

If the latter factor increases or the former factors diminish, the pressure is increased. An alteration of the internal capacity of the eyeball cannot be brought into account for the increase of pressure, since the volume of the envelopes, as a whole, is unalterable. In advanced life, to be sure, the sclera is not only a little more rigid, but also a little contracted, but the diminution in volume is very slight. We must, therefore, look for the cause of the elevation in an increase in amount of the contents of the eyeball, the envelopes not being sufficiently elastic to adapt themselves to their increased contents without marked heightening of the pressure or tension. Now, the amount of matter contained within the eyeball depends, on the one hand, upon the amount of ocular fluids which are constantly being secreted by the blood vessels, and on the other hand upon the quantity of fluid which leaves the eye through the lymph passages; that is, to the relation between the inflow and outflow, between secretion and excretion. In the normal eye this relation always remains about the same, since with any increase of the secretion, the liquid, which is now subjected to an increased pressure, also leaves the eye more quickly, so that the normal pressure is soon restored. For any permanent increase of tension to occur, a disturbance of this self-regulating action must be present. Such a disturbance can be looked for only in the excretory apparatus, for so long as this acts normally every increase in the amount of fluid would be soon compensated for by increase in excretion, but if the excretion is interfered with, a normal or even a diminished secretion or inflow would produce naturally increased intraocular tension. Consequently, the explanation that is accepted by most authorities at the present time, to account for the increase of tension is namely, the theory of Kneis and Weber, which presupposes a disturbance of the outflow. The most important path for the outflow is the sinus of the anterior chamber and passes through the ligamentum pectinatum into Schlemm's canal. It is at this spot that the obstacle must be looked for. Such an obstacle is produced in the following manner: A

genuine glaucoma develops *only* in an eye which has a *predisposition* to it. This predisposition depends upon insufficient spatial relations. This affects the eye as a whole and particularly the region of the anterior and posterior chambers. They are afforded by (1) smallness of the eye as a whole; (2) shallowness of the anterior chamber; (3) unusual size of the ciliary processes; (4) disproportionate size of the lens.

Such relations appertain to the hypermetropic eye as it advances in life. The hypermetropic eye is smaller than the normal eye, its anterior chamber is shallower, and its ciliary processes are unusually large because the ciliary muscle is hypertrophied on account of the constantly maintained accommodation. Yet the lens in such eyes is no smaller than it is in the emmetropic eye. And, as regards the lens, there is the additional fact that it increases in size progressively with advancing age, and yet the eye itself grows no larger, so that ultimately the lens becomes too large for the eye. Hence the hypermetrope does not acquire glaucoma while it is young, but does acquire it when with advancing age the lens becomes proportionately too large, for then the space between the lens and the ciliary processes becomes too narrow. It is through this circumlental space that the lymph flows from the vitreous to the aqueous cavity.

When this space is contracted, the lymph becomes dammed up in the vitreous; the latter consequently increases in volume, pushes the lens and iris forward and thus makes the anterior chamber more shallow. An actual increase of tension, however, is not yet present because the sinus of the chamber is yet intact, so that an increased volume of aqueous such as would correspond to the increased volume of vitreous, can still be discharged. An actual attack of glaucoma does not occur until this passage of outflow is blocked. This takes place from closure of the sinus of the chamber and is produced by some of the causes which we know can excite an attack of glaucoma.

The exciting causes of this sort are disturbances in the circulation of the blood and dilatation of the pupil. Let us, to begin with, consider the first case, a stasis of blood in the veins of the greater circulation. In the eye such a stasis makes itself apparent principally in the ciliary processes which are extremely rich in veins. The ciliary processes then swell up and as the circumlental space is so narrow, soon the communication between the vitreous cavity and the anterior chamber is still more interfered with

(Continued on page 987.)

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Subscriptions from the United Kingdom should be sent to our London office in care of Messrs. Baillière Tindal & Cox, 8 Henrietta Street, Covent Garden, London, England.

In Passing

ADMITTEDLY the best standard by which to judge the future is the past. To predict what VETERINARY MEDICINE will do next year, let us examine its accomplishments during the past year and compare them with those of preceding years. On this record, we can confidently promise to give our readers more during 1917 than they have ever received before for their subscriptions—incomparably more than any other veterinary publication can promise with a probability of fulfilling its promise.

Paper Cost Cuts the Size

In passing it may be said that Volume XI contains all told 1,376 pages, equivalent in size to more than 2,000 of the smaller pages of other veterinary publications. But for the extraordinary increase in the cost of paper, the volume would have contained an additional 200 pages. Even this decrease in size (which was accomplished without material decrease in the contents by using smaller type) nowhere near offset the increase in the cost of production due to the higher price of paper. Two years ago, we bought the white paper that goes into the journal at $4\frac{1}{4}$ cents a pound; one year ago it cost $4\frac{3}{4}$ cents a pound; the present price is about 10 cents a pound, and it is certain to go higher. When it

is recalled that we use 6,000 pounds in a regular 128 page issue, it will be seen that the increased cost for this alone amounts to \$300 a month. Further, the price of engraving has increased 40 per cent during the year. With a continued increase in the price of paper, we may be forced to print still more of the Journal in the smaller sized type, but the amount of material published monthly will not be lessened.

Advertising.

Every firm catering to the trade of veterinarians recognizes VETERINARY MEDICINE as the one medium through which the whole body of practicing veterinarians may be reached. Approximately 550 pages of display advertising was published during the year, an increase of more than 50 pages over the number carried last year. A rigorous censorship of the advertising submitted excluded something more than 100 pages as not coming up to the high standard that this publication insists upon.

The classified advertising columns while making a remarkable showing, did not receive the business that the results they produce warrant. Altogether nearly 300 classified advertisements were published, including 61 practices for sale, 10 practices wanted, 32 positions wanted, 18 veterinarians wanted, 2 operating tables

wanted, 2 ambulances wanted, 5 wanting to castrate cryptorchids, and many miscellaneous.

Of the whole number of classified advertisements, 86 used keyed addresses. To these more than 800 replies were received and forwarded to the advertisers. Some advertisers received more than 50 replies to a single classified advertisement, and one received more than a hundred replies.

Scientific Matter Published

During the year, there were published 52 leading articles occupying more than 175 pages, and 52 editorials occupying 67 pages; 26 books were reviewed and 88 bulletins of particular interest to veterinarians were mentioned and the address given from which each might be obtained; 204 case reports occupying 200 pages were published, 42 veterinary meetings were briefly reported; 601 news items concerning veterinarians were published; and changes in the address of 810 of our subscribers were given during the year.

All the special departments of the Journal were improved during the year. The Department of Surgery, by Dr. L. A. Merillat, comprised 40 pages; 67 abstracts by Dr. A. Eichhorn comprised 28 pages; the Therapeutic Digest by Dr. Mart R. Steffen comprised 18 pages; and in the Queries and Answers Department, 72 questions pertaining to veterinary practice were answered, comprising altogether 38 pages.

The Scoop of the Year

Perhaps the most spectacular, although by no means the most noteworthy accomplishment of the year, was the extraordinarily prompt, the unusually complete, and the very accurate reporting of the Detroit meeting of the American Veterinary Medical Association. One week from the day that the Detroit meeting adjourned, veterinarians in all parts of the country were reading our report of this meeting. While our report does not constitute the complete proceedings of

the meeting, it contains abstracts of nearly all the important papers presented, practically all the essential discussion of the papers, all committee reports of general interest, and a detailed account of all business sessions of the meeting, altogether 45 pages of boiled-down essentials of the meeting. This report was written, printed and in the mails four days after the close of the meeting. Some idea of the magnitude of the task may be surmised by considering the fact that the official report of this meeting has not yet (three months after adjournment) been published. A great many members of the association took the trouble to write us commending us for the promptness with which this report was placed in their hands and for its comprehensive scope and its accuracy.

Our New Readers

The most gratifying accomplishment of the year has been the large increase in the number of our readers, the number of new subscribers added to our list since January 1st being greater than the number that have been procured during any previous twelve months since VETERINARY MEDICINE was established; and there is more than a month yet to add to the list for 1916. Considerably more than 600 new subscribers have been added to our list during the past thirty days. Let us hope the final thirty-day period of the year will show an equal or better increase.

The Annual Index

The index, published in this issue, has been made more complete this year than ever before. Every article, every abstract, every query and answer, every case report, almost every subject, has been indexed and complete cross references given. The writings of every author and excerpts from every other publication, have likewise been given. It constitutes a complete and instant reference to anything and everything published in VETERINARY MEDICINE throughout the year.

Probable Changes in State Veterinarians

FORTUNATELY the office of State Veterinarian has been divorced from politics to a greater or less extent in most of the States. The recent election is not likely to cause changes in this position in very many States.

Among the states where a change is certain may be mentioned first of all Illinois. The position in this state is a purely political one. Governor-elect Lowden criticized Dr. Dyson's handling of the foot-and-mouth disease outbreak in this state in almost all of his campaign speeches in the farming districts, and he has frequently referred to Dr. Dyson's holding two positions, that of State Veterinarian and State Bacteriologist, in alleged violation of the civil service law of the State. So it seems certain that Dr. Dyson's successor will be appointed as soon as Governor-elect Lowden is inaugurated. Dr. F. H. Anderson, of Evanston, is mentioned as likely to be the new appointee. Dr. Anderson is a graduate of the Ontario Veterinary College and has been practicing in Evanston for about twenty-five years. He has held several offices of public trust in Evanston.

The position of State Veterinarian in Illinois is the best paying one in the whole country, the salary being, where the offices of State Veterinarian and

State Bacteriologist are combined as at present, \$7,000 a year. If the positions are divorced, the incumbents will receive respectively \$4,000 and \$3,000.

In Indiana the position of State Veterinarian is still looked upon as a political one, and a successor to the present incumbent, Dr. A. F. Nelson, may be appointed. The position in Indiana is one of the poorest paid, the salary being but \$1,200 a year. However, under a new law, the State Veterinarian may receive an equal amount for his work in hog cholera control. There is very little probability that hog cholera control work will cease in the near future in Indiana, so the position may be said to offer \$2,400 a year.

In Michigan, the Democratic Governor will be succeeded by a Republican, and this probably means that a new livestock commission will be appointed. Since the livestock commission selects the State Veterinarian, Dr. G. W. Dunphy, the present State Veterinarian may or may not be selected to succeed himself.

In Wisconsin, although the present incumbent, Governor Phillips, has been re-elected, there is a fight on to prevent the re-appointment of the present State Veterinarian, Dr. O. E. Eliason. It is stated that Governor Phillips has promised to make a new appointment.

Meeting of the Executive Board A. V. M. A.

THERE will be a meeting of the newly appointed executive board of the American Veterinary Medical Association at the Secretary's office, 1827 S. Wabash Ave., Chicago, beginning December 5, 1916. The object of the meeting is to consider a number of important questions arising under the new constitution and by-laws. It is the wish of President Cotton that the board consider only such matters as require immediate attention, leaving everything that can be postponed as well as not to

be dealt with by the executive board for which an election is now being held.

Among the matters to come before the board, will be the action to be taken by the association on the Lobeck Bill; fixing the subscription price of the official journal to non-members of the association and the proportion of the dues from members that are to be assigned to the editor of the journal for the subscription; also the financial arrangement between the treasurer and the

editor. The present arrangement does not meet with the requirements of the post office regulations, and on that account the journal is likely to be refused second class mailing privileges at any time.

The new constitution adds considerably to the duties of the treasurer and very largely to the duties of the secretary. The executive board will be asked to fix a salary for both officers and also a salary for the editor of the journal. The new constitution also provides that members shall be given diplomas or certificates of membership after five years and fellowship diplomas after twenty-five years and that the executive board shall approve such diplomas.

Further, there is a considerable number of delinquent members, and it is expected that the executive board will be asked to authorize their suspension. The constitution changes the fiscal year to correspond with the calendar year and the executive board will be asked to rule on the dues to be paid for the four months which this change makes. The board can remit the dues for this part of a year, but it cannot remit that portion which is to be applied on a subscription to the official journal.

In addition there is the matter of several applicants for membership who claim they were elected at the Detroit meeting, but whose applications were not acted upon so far as the records of the association show. The executive board will be asked to straighten out this tangle.

The matter of the time and place of the next annual meeting of the A. V. M. A. will also come before the board. There is a disposition to postpone action on this.

The vote of the members for nominations for positions on the executive board was very light. At this writing less than 25 per cent of the members have voted. The Secretary has asked President Cotton to appoint a special canvassing committee to count the ballots

and announce the results. Recently a concerted effort in behalf of Dr. Louis Klein of Philadelphia and Dr. C. H. Stange of Ames, Iowa, has undoubtedly resulted in procuring enough votes for each to make certain their nominations in their respective districts.

BOOK REVIEWS

Practical Bacteriology, Blood Work and Animal Parasitology, including Bacteriological Keys, Zoological Tables and Explanatory Clinical Notes, by E. R. Stitt, A. B., Ph. G., M. D., fourth edition, revised and enlarged.

Previous editions of this work have been reviewed at some length. This edition is a marked improvement over its predecessor, which was commendable. It incorporates a discussion of the great advances made in internal medicine, largely increasing the contents without materially enlarging the size of the volume. Practically every chapter has been revised and large portions largely rewritten. The work is intended for students of the laboratory side of internal medicine.

Cloth bound, 500 pages; 115 illustrations; price, 2.00 net. P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, Pa.

Sheep Diseases, by E. T. Baker, D. V. M. This volume is No. 12 of the VETERINARY MEDICINE Series and is a great credit to the series, which has been more favorably received by veterinarians than any other books ever published.

Perhaps the most striking feature of this work is its wide scope. Doctor Baker has recognized that the average veterinarian is not well informed as to sheep or their diseases—that the sheep industry and ovine medicine have been neglected by the profession as a whole; and without circumlocution, has proceeded to supply this needed information in a concise and pleasing manner. The amount of genuine essential information that he has been able to condense into this

small volume is truly astonishing and constitutes a testimonial to his own definite knowledge of the subject and his splendid ability as a writer.

The author first gives a history and description of the breeds with splendid half-tone illustrations of the type of each breed. Although this section comprises only forty pages, it has been pronounced by recognized authorities on sheep husbandry to constitute an adequate treatise on the subject.

Ten pages are devoted to a description of the anatomy of the sheep. This is based upon Sisson, whose assistant Dr. Baker formerly was, and gives a workable discussion of the subject.

The subject of hygiene, including feeding, care of the ewe, care of the newborn lamb and care of the buck, is taken up in detail and yet condensed into only twelve pages.

Recognizing that sheep practice may be wholly new to many of his readers. Doctor Baker has not hesitated to include a section dealing with medicines and their administration, stating specifically just when and what and how much to give sheep and just how to give it.

Following this come sections on acute infectious diseases, diseases of the blood, diseases of metabolism, diseases of the urinary organs, diseases of the circulatory organs, diseases of the respiratory organs, diseases of the digestive system, diseases of the liver, diseases of the peritoneum, diseases of the brain and spinal cord, diseases of the organs of locomotion, non-parasitic diseases of the skin, diseases of obscure origin, diseases of the lamb, diseases of the ewe, diseases of rams and wethers, surgical diseases, parasitic diseases, poisons, predatory animals, quarantine and transportation regulations.

The discussion throughout is clear, concise and positive. Doctor Baker's large experience in sheep practice has peculiarly fitted him to discuss the diseases of this animal, and his boldness

of statement is pleasing; his enumeration of the symptoms of the various ailments is positive; and his statements as to treatment and results, optimistic and unequivocal—a refreshing contrast to the discussions of those who speak from a theoretical knowledge only.

The section on poisons, both mineral and vegetable, is extraordinarily complete. The discussion of plant poisoning in sheep is almost equally applicable to this condition in cattle and horses. It is unquestionably the most comprehensive discussion of this subject available. It is illustrated with six three-color lithographed plates showing the fruit, flower, plant and root of the more important poisonous plants *in their natural colors*.

A section on predatory animals and one on quarantine regulations complete the work. The paper, the printing, the binding and the illustrations are of the highest class throughout. We unhesitatingly recommend it to practitioners and others desiring information on the subject of sheep diseases.

Cloth bound; 72 illustrations including 10 full page half-tone plates; 6 color plates; 237 pages; price, \$2.50 prepaid; AMERICAN JOURNAL OF VETERINARY MEDICINE, 9 S. Clinton St., Chicago.

BULLETINS EVERY VETERINARIAN SHOULD HAVE

The Feeding of Dairy Cows, Bulletin No. 743, Department of Agriculture, Washington, D. C.

Home-Made Sterilizer for Dairy Utensils, Bulletin No. 748, Department of Agriculture, Washington, D. C.

Bedbugs, Farmers' Bulletin No. 754, U. S. Department of Agriculture, Washington, D. C.

Game Laws for 1916, Farmers' Bulletin No. 774, U. S. Department of Agriculture, Washington, D. C.

The Fate of the Mammalian Tubercle

culosis Bacillus in Sparrows and Chickens, by L. Van Es and A. F. Schalk, Dept. of Veterinary Science, North Dakota Agricultural Experiment Station, Agricultural College, N. D.

Report of the College of Agriculture and Agricultural Experiment Station of the University of California, Berkeley, Cal.

The Grazing Industry of the Bluegrass Region, Bulletin No. 397, U. S. Department of Agriculture, Washington, D. C.

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Contagious Epithelioma in Chickens, by Winfred B. Mack, D. V. M. and Edward Records, V. M. D., Agricultural Experiment Station, University of Nevada, Reno, Nevada.

Second Report on Investigation into Joint Ill in Foals in the Province of Ontario, by F. W. Schofield, D. V. Sc., Dept. of Bacteriology, Ontario Veterinary College, Toronto, Canada.

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Common Birds of Southeastern

United States in Relation to Agriculture, by F. E. L. Beal, W. L. McAtee and E. R. Kalmbach, Assistant Biologists, Farmers' Bulletin No. 755, Department of Agriculture, Washington, D. C.

Laws Relating to Fur-Bearing Animals, 1916, by D. E. Lantz, Assistant Biologist, Farmers' Bulletin No. 783, Department of Agriculture, Washington, D. C.

Bovine Tuberculosis, by J. G. Wills, Chief Veterinarian, and Charles Linch, First Asst. Veterinarian, Bulletin No. 82, New York Department of Agriculture, Albany, N. Y.

The Cause of the "Spewing Sickness" of Sheep, by C. Dwight Marsh, Physiologist, Pathological Division, Department of Agriculture, Washington, D. C.

Proceedings of the Indiana Veterinary Medical Association, by Dr. A. F. Nelson, Sec., Indianapolis, Ind.

The Care, Sanitation and Feeding of Foxes in Captivity, Bulletin No. 20, Dominion of Canada Department of Agriculture, Ottawa, Canada.

Report of the Veterinary Director General, by F. Torrance, B. A., D. V. S., Dominion of Canada Department of Agriculture, Ottawa, Canada.

Second Report on the Investigation into Joint-Ill in Foals in the Province of Ontario, by F. W. Schofield, D. V. Sc., Minister of Agriculture, Toronto, Ontario.

Report of the Ontario Veterinary College, 1915, Ontario Department of Agriculture, Toronto, Ontario.

Hogs and How to Keep Them Healthy, Third Edition., Pitman-Moore Co., Indianapolis, Ind.

Jubilee Souvenir, 1866-1916, Fifty Years of Manufacturing Pharmacy and Biology, Parke, Davis & Co., Detroit, Mich.

Suggestions for the Repression of Sterility, Abortion and Mammitis in Cows and of White Scours in Calves, by Prof. W. L. Williams, New York State Veterinary College, Ithaca, N. Y.

Department of Surgery

By L. A. MERILLAT, Chicago,
Professor of Surgery in the McKillip Veterinary College

Dental Nomenclature

TEETH are *temporary*—dentes decidui— or *permanent*—dentes permanentes—according to whether they are shed off and replaced by successors or not. The former are also very properly called *milk teeth* or deciduous teeth. The two terms "temporary teeth" and "permanent teeth" indicating respectively those replaced and those not replaced by successors during the years of corporal development are the most popular in English literature and are accepted as appropriate in our modern anatomical nomenclature.

According to function teeth have always and still today retain the names, *incisors* (dentes incisivi), *canines*—dentes canini and *molars*—dentes molares, or according to strictly modern usage, *cheek teeth*. The molars are again subdivided into *premolars*—dentes prae-molares, and *molars*, the anterior part of the a molar arcade comprising the premolars and the posterior part the molars. They are still further identified as *first*, *second*, *third*, and *fourth* premolars counting of course from before backward. The first, according to this now generally accepted nomenclature is the "*wolf tooth*" of the older authors, the second is the first premolar of the old authors, the third, is the second premolar and the fourth is the old third premolar. It is very important to mention this change in names to avoid chaos to the readers unacquainted with modern usage of anatomical terms. The molars are *first*, the old fourth, *second*, the old fifth, and *third* the old sixth.

The incisors are now called *first* or middle, the *second* or intermediate and *third* or corner. The *canines* and in fact all of the teeth are called *upper* or maxillary and *lower* or mandibular. The word "*fusk*" is appropriate for canines in animals having these highly developed as dogs, boars, elks, etc. Then teeth are either *right* or *left* according to the

side of the median line they occupy. Thus we would speak of the *right upper* (or maxillary) *second premolar* when referring to the first upper molar of the old books, and we would speak of the old sixth inferior as the *third inferior molar*. We might also arbitrarily use the term the *left third mandibular premolar* meaning the *third* lower molar on the left ramus because in this lower jaw of horses there is no "wolf tooth." With all due respect to the motive for forcing these changes upon the readers of veterinary literature it has always seemed to me that *Domestic Animal Anatomy* is in itself a sufficiently special study to deserve a nomenclature that does not yield entirely to that of zoology in general, and I am sure it will be difficult to force the reading and writing veterinarians into the use of these unpopular terms for some years to come. The old custom of naming the cheek teeth of the horse, 1st, 2nd, 3rd, 4th, 5th and 6th will be hard to overcome in America. It will be a long while before veterinarians will cease to refer to that "terrible fourth upper molar" or that "elongated sixth lower," etc., with any degree of grace.

There are other terms consecrated by usage in dental literature which might be profitably referred to here. *Crown* is that part of the tooth that is exposed—the visible part of a normal tooth. It terminates at the "*gingival margin*" a term used to designate the line along the teeth formed by the gums. The *neck* is the part covered with gums and the *fang* is the part embedded in the bone. *Roots* refers only to the points projecting from the fang. In speaking of a simple tooth such as an incisor or canine the words root and fang are synonymous. Instead of using the words lateral or medial surfaces (external or internal) the dentist speaks of *buccal* or *lingual* surfaces. Thus the lateral (external) surface

of a cheek tooth is spoken of as its *buccal surface* and the medial (internal) as the *lingual surface*. The surfaces of the incisors are referred to as *lingual* and *labial*. The infundibulum of a tooth is the depression of its enamel organ on its "*table surface*." In herbivorous animals this is a very deep cavity that is cemented shut with *crusta petrosa*. The part not filled up in the incisor infundibuli is usually called the "*cup*."

Other terms worth remembering in a serious study of teeth are dental, dentinal, denture, and dentine. *Dental* means pertaining to the teeth or to dentistry; *dentinal* refers to dentine; *denture* means a set of teeth, thus the incisors may be referred to as a denture; while *dentine* is one of the composite substances of teeth. The word *arch* or *arcade* is

sometimes used to indicate a row of teeth, as for example the right upper arcade, meaning the right maxillary cheek teeth in situ.

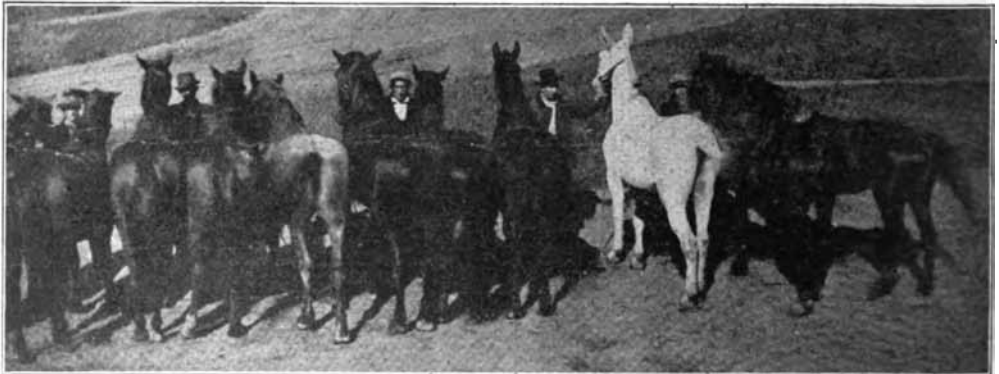
Alveoli are the cavities in the jaw in which the teeth are imbedded and the *alveolar margins* are their borders. There are the lateral and medial (external and internal) alveolar margins which correspond to the lateral and medial gingival margins.

The *diastema* or *interdental space* is the space intervening between the incisors and the cheek teeth, it is interrupted in male soliped by the canines. The term *interdental space* means also the space between any two teeth and is therefore less specific in its meaning than "*diastema*" which by right should be the universal term for this important space in the mouths of animals.

Fistula a Scourge of Country Horses

THE accompanying photograph is a picture of nine fistulae of the withers and two poll evils operated upon in a single day by Dr. O. E. Blair, Chandlerville, Ill., and the writer during the month of October. The picture does not show the lesions distinctly as each patient is sewed up and washed off ready for the hospital. It is reproduced here to show what a scourge fistula of the withers really is in any community

local veterinarian because of the little encouragement the honest practitioner is willing to give the owner of a horse so afflicted and there are many being treated by all sorts of patent medicines because at best the success from operative treatment has not brought to horse owners any great confidence in the veterinarian's ability to help them. After about five years of a pretty wide experience with these cases in rural



where the cases are brought together. As such an operating feat in a small town is no small event quite a crowd gathered to witness the event, and from side remarks heard here and there from out interested audience of many more cases distributed over the same territory, showing conclusively that in fistula of the withers the veterinary profession has a real problem to solve. There are many cases that are never brought to the

districts of the Middle West I am free to say that the salvation of fistula cases is early operative treatment. At this time there is some chance of bringing about a prompt recovery, while on the other hand if complications are allowed to play fast and loose with the withers of a horse the chances of a recovery with profit wane according to the time lost with button hole operations and caustic remedies.

WORLD'S WORK in Veterinary Science

A digest of all the Current Literature of Comparative Medicine

Dr. Adolph Eichhorn
Washington, D. C.

Transmission of Tuberculosis by Dried Dust

(*P. le Noir and J. Naums, Rec. d. med. vet No. 21.*)

The authors have not undertaken to solve the question as to whether tuberculosis may be transmitted by inoculation or by ingestion, but whether tuberculosis may be transmitted by dry particles of dust in the air under ordinary conditions. For this purpose they introduced guinea pigs in the rooms of tubercular patients.

In one ward, in which 45 tubercular patients were kept in the Hospital of St. Anton, they placed guinea pigs in a box without cover, on the floor, in close proximity to the patients. The animals were destroyed in two and one-half months; one proved to be affected with generalized tuberculosis.

In a certain series five guinea pigs were kept under the same conditions in this ward for a period of six weeks. One month later one proved to be tubercular.

A fourth series (mother with three young) was also kept for six weeks in the same ward, in a box attached to the ceiling; after four weeks two young guinea pigs destroyed were found affected with generalized tuberculosis.

Out of twelve animals therefore four were infected with dried particles of dust. In inoculating particles of dust which were obtained from the nasal cavities of students and attendants who were engaged in these wards,

the authors invariably received negative results.

In an inoculation of nasal secretion from fourteen tubercular patients of this ward (the sputum of one contained tubercle bacilli), positive results were obtained in three cases. In eleven guinea pigs which were inoculated with the dust collected in the ward two became tubercular, but it was invariably necessary to inject a considerable amount of dust. The authors confirmed the known fact that tubercle bacilli lose their virulence by drying.

Conclusions: The danger of infection through particles of dust is not pronounced, but cannot be entirely disregarded.

Alopecia and the Treatment of Horses with Mercury

Dr. Velu: *Recueil de Médecine Vétérinaire*, Vol. 92, pp. 134-136; 1916. The numerous observations published in recent years on alopecia in horses tend to prove that this affection is often caused by the toxic action of mercury. The communication of Prevôt and Ramon (this journal, the *Recueil*, June 18, 1914) has given a new direction to the question. It permits us to understand the significance of certain morbid phenomena which have thus far escaped attention.

Between December, 1913, and June, 1914, 40 horses and mules affected with epizootic lymphangitis were treated with intramuscular injections of mer-

curic biniodid. The doses administered, which at first were those indicated by Bouguet, were progressively increased from one to three grams, i. e., ten centigrams every two days during 60 days.

Some of the subjects received two grams of the biniodid in 20 days.

In spite of the administration of these large doses, through a channel which assured the entire absorption of the medicament, we did not observe the least sign of mercurialism in our patients. A single subject presented the classical symptoms of mercurial alopecia.

Horse 318 was admitted to the hospital March 30 with a cord under the right external thoracic region, extending to the prepect oral glands, etc. From April 16th to June 15th, he received, every second day ten centigrams of mercuric biniodid in the neck muscles.

About May 15 we noticed a voluminous substernal edema, which extended almost to the abdomen and the proximal parts of the anterior limbs. In the days which followed, the typical symptoms of mercurial alopecia were manifested: exudative erythematous dermatitis; loss of hair on the shoulders, sides of the chest, and base of the neck, epidermal exfoliation.

These well known lesions did not surprise us. Since the animal presented none of the symptoms of mercurial intoxication, and as there was a noticeable absence of gingivitis and salivation, *we continued the treatment with the biniodid.*

Everything went smoothly and the horse was discharged June 15 completely cured of lymphangitis and of the alopecia.

In short, out of 47 cases all of which had been injected with relatively large doses of mercury, there was only one case of alopecia and this was cured in spite of the continued mercury treatment.

This fact, well established in human

medicine, but not yet recognized in veterinary medicine, seems to support the plausible theory of Prevôt and Ramon and demonstrates that mercurial alopecia *is not due to mercurial intoxication.*

Affection of Large Numbers of Soldiers, Which Suggested the Possibility of Transmission of Foot-and-Mouth Disease

By Potting (Zietschr. f. Veterinarik, 1915)

A large number of soldiers in the field became affected with symptoms which revealed some similarity with those of the buccal affection of cattle suffering with foot-and-mouth disease. This suggested a possibility that the disease might have been caused by transmission with the meat from the butchering establishments of the army corps. The author, however, established that the conditions in these butchering establishments were hygienically complete, and expressed the opinion that the affection of the soldiers was probably not due to the virus of foot-and-mouth disease; the possibility of its being transmitted by conserves could not of course be excluded. This opinion was further strengthened by the fact that transmission experiments on calves and pigs proved negative.

The manifestations in the affected soldiers were as follows: Symptoms of a gastro-intestinal catarrh. Temperature 39 to 40° C., marked weakness, pronounced thirst. On the border of the gums island-like gray areas developed which soon spread to such an extent that the entire border of the gum, inside and outside, became affected. The lesions were without pain, and did not bleed. Vesicles were not found on the mucous membrane of the lips, tongue and cheeks.

The microscopical examination of the buccal cavity revealed nothing characteristic. The author is of the opinion that the finding on the gums in the patients represented secondary manifestations, and this view is also supported by the attending surgeons.

Bacteriotherapy has this advantage: it eliminates promptly, in successful cases, the leading factor of the infection and of the intoxication dependent upon it, leaving us to deal with the morbid tissue changes that have occurred in consequence of the bacterial activity. With the removal of the source of the disease, it is easier, usually, to deal with the disease itself.—*Amer. Jnl. Clin. Med.*

Therapeutic Digest

By MART R. STEFFEN, Milwaukee, Wisconsin

Servoss says: "In my mind, hyoscyamus is one of our most valuable drugs and one which is not given sufficient attention. Were it studied to a greater extent, it is my belief that it would very largely replace opium, and more especially morphin. Never, in the treatment of painful spasmodic conditions, does morphin enter my mind. Small and frequently repeated doses of hyoscyamin, either alone or with glomin and strychnin, suffice to relieve the pain as well as to overcome a congested condition, if the latter be present.

In congestion hyoscyamin acts much as does atropin, by dilating the capillaries and thus equalizing the circulation. Through the addition of glonoin we get an almost instantaneous dilating of the capillaries, which is more slowly reinforced by the hyoscyamin. The strychnin increases the tone and acts as a synergist to the other drugs in the combination."

Chloroform may be used to preserve solutions for hypodermatic use. A little warmth drives it off.

In the July *Medical Review of Reviews* a correspondent reports a case which occurred among the wounded in the European war. A soldier was hit in the head by shrapnel, in the left occipital region. Examination showed a rupture of the brain, the encephalocele growing as one watched it. This was

removed by operation. Several days later another quantity of brain tissue protruded and grew to such size that the cranial contents seemed to empty themselves into the left side. The escaping brain substance formed a mass half the size of a man's fist. This was also removed. In all, one-third of the left hemisphere was removed. Little by little the patient began to recover. At the present writing, so says the correspondent, he feels fine, from time to time strolls around town, etc., etc. He enjoys all his faculties and has no lack of control.

This is only one of various astonishing reports that have come to us from across the sea, and from good authorities, too.

This war will not only cause a re-writing of histories and geographies. Physiology will get a few jolts also.

In a paper on infantile paralysis Simon Flexner says, in the *Medical Times* for August: "Domestic flies experimentally contaminated with the virus remain infective for forty-eight hours or longer. Animals which have especially come under suspicion as possibly distributing the germ of infantile paralysis are poultry, pigs, dogs and cats, but in isolated instances sheep, cattle and even horses have been suspected. Experimental studies have, however, excluded the above mentioned animals from being carriers of the virus of infantile paralysis. The paralytic diseases which they suffer have long been known and are quite different from infantile paralysis. Their occurrence may be co-incidental; in

no instance investigated has one been found to be responsible for the other."

In the same journal Fralick, of New York, has a paper on "Induced Leukocytosis as an Aid to Surgery." He says that hyperleukocytosis is often the result of a course of digitalis treatment and ascribes to digitalis the power to increase the white corpuscles.

Novocain, a synthetic chemical, was recently determined by a jury in the United States Court, in New York, before Judge William I. Grubb, to be without the prohibitory provisions of the Federal Narcotic act. This is an important ruling, because of the fact that many of us use Novocain entirely to take the place of cocain.

The U. S. Department of Agriculture has published a pamphlet under date of September 8, 1916, on the subject of "Larkspur Poisoning of Live Stock." It is full of good stuff for practitioners and can be had from Superintendent of Documents, Government Printing Office, Washington, D. C., for twenty-five cents per copy.

In a paper on the stable fly in the *Medical Times*, Redway says: "There is a popular tradition that flies 'bite' during rainy weather. The common house fly does not bite at any time. During stormy weather, however, the stable fly seeks shelter; and indoors it bites quite as ferociously as out of doors.

"The term 'stable fly' is something of a misnomer for the biting member of the family. Rotting straw stacks is its preferred habitat. It infests stables because of the presence of rotting straw.

"The biting stable fly is anywhere and everywhere that rotting straw piles exist. Cow and horse stables are favorite places—hence the name, 'stable fly.'

"The one fact to be kept in mind is the fact that its mouth parts pierce the skin; that it is a blood sucker of the most savage type. It is, therefore, capable of communicating any infectious disease, the germ of which it may be a carrier."

In the same issue of the *Medical Times*, Sanborn, of Massachusetts, has a paper on "The Need of an American Association of General Practitioners." He has a "bone to pick" with the American Medical Association, and the issue seems to be "clique rule." Apparently the clique in power is not administering the affairs of the society for the best interests of the general practitioner.

Whether this is the case or not with our

colleagues in the human branch of medicine we do not know nor care. Neither do we think that such a charge would hold against the A. V. M. A., but we would like to see the launching of a sort of benevolent society for practitioners only, and to which none but practitioners could gain membership. There is a fine opening for such an organization among veterinary practitioners, and the finished organization should include a home for disabled members, pensions under certain conditions, and casualty benefits.

The New U. S. P.

Here are a few points of interest touching on revision of the U. S. P. taken from the Medical Council:

There is now no longer an elixir of iron, quinine and strychnin, no stable and satisfactory formula being available.

The National Formulary is now official by law, just as is the Pharmacopœia.

Aconite, digitalis, strophanthus, squills, dried suprarenals, and cannabis are now given a standard on the basis of biologic assay.

There are 86 additions to the new U. S. P. and 242 deletions; but few are of great therapeutic interest. A number of the deleted preparations are passed over to the new National Formulary, which has become a rather important book, much improved over the last one.

The cubic centimetre (cc.) has been replaced by the milli litre (mil.), the one-thousandth part of a litre. It is for all practical intents the equal of one cubic centimetre.

While the vaccine treatment of bacterial diseases undoubtedly is an agent of great merit and potency, it will never do to limit the management of disease to it alone; but it is necessary to pay attention to the general hygiene of our patient just as much as has been the case in the past, and even more so.—*American Journal of Clinical Medicine*.

The "modern specific treatment" by means of bacterins or vaccines is not a shortcut and does not diminish the responsibility or the work of the physician. It is an extremely potent weapon, and all powerful agents must be handled with care and circumspection. The employment of biologic remedies demands a careful study of our patients and of all phases of the cases confronting us. It requires an exact diagnosis as also a full knowledge of all the resources of the patient that need stimulation and support in his struggle against disease.—*Amer. Jnl. Clin. Med.*

Queries and Answers

The editor will reply to queries appearing here, as he is able and as opportunity permits, but he does not want, nor cannot undertake to monopolize this portion of the department. Any reader who can furnish further and better information in reply to any query is urgently requested to do so. Where the treatments advised in these replies is adopted it is hoped that those employing them will report their results whether good or bad. In all cases give the number of the query when writing anything concerning it.

QUERY No. 257. What is the best treatment for mammitis in cows where one quarter is swollen hard?

REPLY: Purge the subject with magnesium sulphate and apply hot packs to the quarter. Milk out the quarter gently and frequently. Support the udder by means of a suspensory and observe practical aseptic precautions in handling the affected parts. When acute pain subsides, the quarter may be gently massaged and a stimulating liniment may be applied to the affected parts.

QUERY No. 258. Are cold "swabs" to the feet always preferable to warm in treatment of acute laminitis?

REPLY: During the acute stage of inflammation, cold packs are probably preferable. The frequent application of ice-water is anesthetic in addition to the same effects which are derived from the application of warm water. Some practitioners alternate the hot and cold water applications throughout the acute stage of laminitis, but the majority of veterinarians employ only the cold packs.

QUERY No. 259.—What is the proper technic for castrating cryptorchid boars? Describe the operation fully.

REPLY BY DR. J. V. LACROIX—Cryptorchidism is of rather frequent occurrence in swine; at least the condition is more frequently observed in swine than in dogs and cats and, probably cryptorchid bulls are no more numerous than are cryptorchid swine. The condition is not discovered until animals are handled for castration and when the average hog owner who does castrating of swine, fails to locate both testicles in a pig at castrating time, he often postpones castration of such a pig until the subject has become a nuisance among the other animals. Consequently, in most instances the veterinarian is not called upon to handle such cases until the subjects have attained considerable size and several months of age. This, however, is of no

serious moment. The operation may well be done in animals that are six or eight months of age as well as in the younger ones. Nevertheless, when it is possible, castration of cryptorchid swine should be done before they weigh fifty pounds.

Preoperative Preparation of the Subject:—All food and water should be withheld for twenty-four hours and, needless to say, animals should be in good health. Furthermore, before completing preparations for operating, the subject should be carefully examined to determine that the "hidden testicle" is not located within the inguinal canal.

Restraint:—The animal should be confined upon some improvised operating table in such manner that the head is positioned lowermost and the body may rest at an angle of about forty-five degrees. When it is known which testicle is retained the pig may be placed in such position that the side upon which the testicle is retained is uppermost. However, this is not of great importance. One dram of chloral hydrate dissolved in two ounces of tepid water, for a fifty-pound pig, and this given per rectum, twenty minutes before confining the animal for operation is, in every way, of material benefit.

Preparation of the surgical area:—The hair is clipped from a liberal space in the region anterior to the external angle of the ilium. The surface of the skin is cleansed with soap and water, dried, and painted with tincture of iodine.

Technic:—In small animals, an abdominal incision about three inches in length is amply large in the ordinary case. Such an incision is made through the skin and fascia, the abdominal fat (which occurs in a thick layer in some subjects) is carefully divided and the incision is completed to the peritoneum. With a closed pair of dressing forceps, the peritoneum may be perforated and the peritoneal and muscular opening is then quickly enlarged with the index fingers.

In small subjects, the index finger alone, is introduced into the peritoneal cavity in the

direction of the shaft of the ilium and the bladder is located by tracing the pelvic brim. No difficulty should be encountered in locating the testicle by means of gentle traction which is applied to the vas deferens; the organ may then be brought to view and amputated with an emasculator. The stump of the spermatic cord is now replaced in the peritoneal cavity and the wound is closed with three or four interrupted sutures of heavy silk. It is unnecessary to include the peritoneum with the sutures if no unusually large rent is made in the peritoneum at this region.

No special after-care is needful in these cases, but the castrated animal should be confined and left undisturbed in clean and comfortable quarters for a week or ten days before being placed with other swine. A small enclosure that can be placed in a sodded pasture constitutes an ideal method of confinement when weather is suitable. A laxative and nutritive diet is necessary in these cases. It is not necessary to remove the sutures and the wound will require no attention beyond the application of a little pine tar to repel flies in fly season.

QUERY No. 260. I have a mule that ran a harrow-tooth in each hind foot on the 11th of August. One foot got well promptly but the other has not. On the foot that is giving me trouble, the harrow-tooth punctured it at a point about one inch back from the apex of the frog. I have been giving bacterins and using equal parts of ether and tincture of iodine and dressing the foot twice daily. The animal has never had any fever but is still very lame. There has been no discharge from the wound for over a week. I should be pleased to learn from you as to prognosis and also any treatment you might suggest.

S. A. T.

REPLY BY DR. J. V. LACROIX: It is my opinion that considerable inflammation has resulted and lameness will continue for an indefinite time. The fact that all wound secretions have stopped indicates that infection is not causing any trouble at present. Your treatment is good, excepting that there is no occasion for molesting the wound so frequently. I should be guided by the character and quantity of the wound secretions, as to the frequency of dressing the wound; probably twice weekly is sufficient, and I should discontinue injecting into the depth of the wound any sort of material when no discharge is present. Keeping the parts clean until the wound is thoroughly healed and allowing the animal exercise at will, later shoeing the foot to elevate the sole and thereby relieving the pressure, are about all that can be done in such cases. Many animals so injured remain permanently lame.

QUERY No. 261. I should be pleased to have some information in regard to cane poisoning among cattle. The cattle eat just a few mouthfuls of cane and die in a short time. If there is anything that can be done in these cases, I should be pleased to know of it as there seems to be no remedy.

H. S. S.

REPLY: The poisoning of cattle by second growth sorghum and kafir corn is not unusual, and in dry seasons, the first growth sometimes causes it. The poisoning is due to hydrocyanic or prussic acid either in the forage or formed in it by the action of the digestive fluids. Death occurs so quickly that there is no opportunity to do anything for the animals. Exceeding care must be used in allowing animals access to forage of this kind. No trouble, however, is experienced where the forage is dry, or where it is put into the silo.

QUERY No. 262.—Do cattle become poisoned from eating the smut on corn? If so, what are the symptoms and treatment? Will ensilage containing this smut affect stock?

REPLY.—Ordinary corn (maize) smut does not poison cattle. In an experiment at one of the agricultural experiment stations some time ago, a number of cattle were fed for some months on ears and stalks of corn containing smut. They received no feed whatsoever except that which had this fungus growth upon it, and they did fairly well. The smut is not harmful in ensilage.

QUERY No. 263.—Please give me information concerning the trephining for repulsion of the third upper molar. There is an enlargement above the root of the molar as if long continued inflammation had existed. Would it be advisable to trephine directly into the enlargement? A few pointers regarding this case would be appreciated.

E. N. L.

REPLY.—The case you refer to may be suffering from an odontoma. It does not signify, of course, that the presence of a swelling over the root of the tooth necessitates there being an osseous tumor. Nevertheless, one should be prepared to handle this condition when the operation is begun. I should advise you to trephine directly over the root of the tooth, regardless of the location of the enlargement, bearing in mind the position of the root of the tooth which, as you know, varies with the age of the subject. Should you find an odontoma, it is best to remove the outer alveolar wall, and it may be necessary to divide the mass with a chisel before its safe removal can be accomplished. There is no occasion to anticipate any serious difficulty in this instance, but it is always well to be prepared for the worst.

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

Impaction of the Cecum—Recovery

IT has often been said that the most interesting patients and the ones from which the most positive information can be obtained, are those whose case reports include the term "post mortem findings." It is unfortunate in "belly cases" in the horse that we cannot do as they do in our brother profession and make our "post mortem examination" on the living subject, or in other words, an exploratory laparotomy. Had such been made in the case which I am about to describe, or had the case died, we should have had definite information as to what was the trouble. In the absence of this ocular demonstration, I am of the opinion that the trouble was an impacted cecum.

The symptoms, as you will note, almost exactly paralleled a case reported by Dr. A. T. Gilyard in *VETERINARY MEDICINE* and reprinted in "Colics and Their Treatment"; that is, up to a certain point, the cases were the same, then Dr. Gilyard's went to the bad, mine, no thanks to me, took the opposite course. Let us examine the case report to see if my diagnosis is tenable.

History and Symptoms. A black gelding, age ten years, weight, 1,500 pounds, overcome by the heat early in the sum-

mer and worked intermittently since. Water allowed before feeding in the evening and none thereafter until morning. On Friday, September 1st, which I shall call the "first day," he had a diarrhea; cause, undetermined. On the *second* and *third* days, no appetite; dullness; bowel movements somewhat soft. No marked abdominal pain. During the third night, he became colicky and was found in the morning of the fourth day cast in the stall and pretty badly battered up. I was called and found him having intermittent pain. The abdomen was tucked, and when he rolled on his back, it could be seen that there was little in the abdominal cavity. The pulse was sixty per minute and of good quality; temperature, 100.8° F.; nominal peristalsis. There appeared to be no indication for the use of a stomach tube, and it was not passed. A rectal examination revealed the rectum containing a small amount of partially digested feces; pelvic flexure of large colon containing a small amount of fluid. A doughy mass was determined in the upper right region of the flank, the manipulation of which caused pain. The bladder was nearly empty.

The colicky pains, as I have said, were

of an intermittent character with periods of apparent ease. He would paw, kick at his belly with his hind feet, step around in the stall, and finally lie on the left side for a few minutes, and then be all right for a time.

I administered my usual antiferment, although there was no gas present, and also a peristaltic stimulant. An abundant peristalsis followed, and later apparent relief. He stood quietly in the stall and was not approached from two o'clock in the afternoon until seven the next morning. At this time, being apparently all right, although having no desire for food, he was led out to water. He drank only a swallow and when returned to the stall, and became violent again. The antiferment and peristaltic treatment was administered again upon my arrival, but the relief was not pronounced. A dose of arecalin produced a small amount of unformed feces. Later in the day more feces was passed, and the appetite returned, and he ate, or rather would have eaten some hay, and also drank a couple of buckets of water. Rectal examination revealed the same conditions as of the day before. Water was ordered to be supplied *ad lib.* and small doses of peristaltic stimulant ordered given. Urination was frequent, small quantities being passed, apparently normal in appearance.

On the fifth day, the colicky pains were about an hour apart. They were severer than on the preceding day and caused the horse to step around violently in the stall. These spells could be brought on by making the horse step over in the stall. This seemed to induce pain. There was some appetite, and a limited amount of hay was allowed. Water was partaken of freely.

On the sixth day, the pains were not so frequent or violent, and the horse appeared quite hungry, but a bilateral paralysis of the lips had appeared, probably due to restraint with a halter making mastication difficult. The bowels moved

several times. Urination still frequent. Pulse, 48; temperature, 100.4° F.

The seventh day passed with only two periods of pain; several bowel movements; good appetite; plenty of water drunk; temperature, 100.

On the eighth day, no pain, and the horse was apparently normal except for the bilateral paralysis of the lips, which persisted for some time.

Thus it is seen that the history paralleled Dr. Gilyard's case in that there was a purgation, a period of quiet during which the horse was not right but the owner did not think it necessary to call a doctor, and then a period of acute pain for a day with passage from the bowels; then, less pain for a period of time. The rectal examination at this point was similar to his case. The rectum contained little feces; pelvic flexure of the colon almost empty, and a large doughy mass in the upper right region of the flank, which was very sensitive to palpation.

At this point my case deviates, as instead of the next day showing a rapid change for the worse, as did his, this horse was somewhat better, notwithstanding a paralysis of the lips, and he progressed by slow stages until normal conditions were fully re-established.

Improvement was continuous although slow, as the upper and lower lips remained inactive for some time; but finally they returned to their normal condition, and the horse was put to work seven weeks after he became ill.

A. C. WIGHT, D. V. M.

Pittsburgh, Pa.

Proceedings of the Wisconsin Veterinary Medical Association, which met at Madison, January 18, 19, and 20, 1916, carefully edited and bound as a neat volume of 161 pages, does credit to the editor, Dr. Frederick B. Hadley. Every Wisconsin veterinarian should possess a copy of this volume.

AN INEXPENSIVE SUBSTITUTE FOR TINCTURE OF IODIN

We all know and acknowledge the value of tincture of iodine for disinfecting the skin or the field of operation, or in, as it is commonly but erroneously called, sterilizing a wound. Tincture of iodine, costs somewhere in the neighborhood of \$12.00 a gallon. An antiseptic I am going to mention can be made up for about \$1.25 a gallon, and I will guarantee that it will do everything so far as disinfecting is concerned that tincture of iodine will do and do it better, because it penetrates deeper, it destroys the micro-organisms deeper into the skin than tincture of iodine does. It leaves no bad odor—the odor is not an unpleasant one, and it disappears in about twenty minutes from your hands and it leaves no stain. This antiseptic is a pixol combination as follows:

- Pixol.....2 parts
- Commercial Acetone....40 parts
- Denatured Alcohol.....60 parts

If instead of "parts" we say "ounces" in the above formula it will give us nearly a gallon of the preparation, enough for a great many operations. You may use it full strength, swab the ragged wound with it or use it as a skin antiseptic, applying it with a swab of cotton or gauze, any way you please. The skin should be washed with it from one-half to one minute.

It is very extensively used by the high class human surgeons in the East. They even do many major operations with the bare hands, because they find by washing their hands in this for one minute, deep skin scrapings and scrapings from the finger nails reveal no living organisms.

It penetrates more deeply than iodine. Let us see why. The value of tincture of iodine over alcohol as an antiseptic lies in the fact that iodine tends to form combinations and in that way tends to work its way deeper into the skin than alcohol. The acetone in this pixol combination is a highly volatile ether, and

like ether but to a much greater extent than ether is a powerful solvent of fats and oils. The logic of this pixol-acetone combination then is this. The acetone dissolves the fats or oils, leaving virtually open the spaces wherein lie the bacteria. Then the pixol and alcohol can get in there and do their work as antiseptics. That is the logic of its action, not theoretically but absolutely proved by microscopical bacteriological examination. There is a big difference between \$12.00 a gallon and \$1.25 a gallon; and you won't have your fingers stained for another thing. The stain of iodine comes off some hands readily, but on others it stays. This drug has many advantages over tincture of iodine.

E. L. QUITMAN.

Chicago, Illinois.

EPIZOOTIC OF HEMORRHAGIC SEPTICEMIA IN OKLAHOMA

Rogers County, Oklahoma, is passing through an epizootic of hemorrhagic septicemia in cattle, horses and mules. The disease has been fatal in every case with the exception of two or three. The outbreak first appeared in horses and mules, but possibly it is to be traced back to an infection in cattle three months previous to the present outbreak, which then was in a very mild form and had occasioned little loss. When I saw these infected cattle, they were convalescent; the disease having been very mild and of pectoral form.

The ranch that harbored this infection in cattle three months ago is located about five miles from where the present outbreak has appeared. One, two or three animals will become infected, and then the disease will jump two or three miles and appear again, especially is this so where infected stock has been moved in advance of individual quarantine.

Bacterin is undoubtedly checking the outbreak for ten days after there has been a loss where bacterin was used, no infection has shown up. The infection in cattle is manifested in three forms,

pectoral, intestinal and exanthematous. Horses suffer the pectoral and exanthematous types of the malady but do not show the well marked lesions that are to be seen in cattle.

The symptoms in horses are; temperature 104 to 106.8; ears drooped; swelling of the shoulder just above scapulohumeral articulation, which might be mistaken for anthrax but upon incision, the muscles are normal, devoid of gas and odorless; connective tissues are full of an amber colored exudate that gradually progresses up the neck to the region of the glottis, where all tissues are filled with exudate; conjunctivae show petechiae. Affected animals as a rule do not show much distress except in the final stages. Death occurs in from six to thirty-six hours and the subjects generally go near to, or within streams of water to die.

Diseased cattle show swelling almost anywhere, although such is not always the case. The other symptoms are about the same as in horses.

The post-mortem lesions show infiltration around the pharynx, heart, kidneys and longitudinal bands of intestine; swelling in the skin; petechiae of kidneys, heart, intestines, spleen; hemorrhagic spots over lungs when pneumonic areas, which are solid; greenish amber colored exudate under skin in parts of body, which is very noticeable after the hide is removed and the carcass placed in the sunlight. The petechiae in the intestines of cattle are between the outer and middle layers and look as if they were stamped since they are so regular in position and size. Horses and mules have not shown the petechiae in the intestines, but they are very evident in the kidneys, spleen, myocardium and endocardium. In mules there is an infiltration over the kidneys, which is three or four inches thick in some cases, and of a thin gelatinous consistency. There is also an infiltration along the trachea up to the throat and this is of such character as to interfere with breathing. Bowel evacuations appear normal. Sometimes there

are several gallons of amber colored exudate in the peritoneal or thoracic cavities and this indicates to me, from what the old settlers say, that there occurred an outbreak of this kind in this country years ago, which they called "yellow water" because of the presence of this exudate in one of the two cavities.

The epizootic here is being transmitted by the fly (the *Tabanus lineola* and *T. atratus*). Sick animals are covered with these flies, and they are especially numerous over the swollen parts, drawing blood wherever they attach themselves and when they detach, large drops of blood remain on the surface of the skin at the site of the punctures.

The disease seems to be infectious but not readily transmissible. One animal in a herd will die, and there may be no further losses and the disease may not occur anywhere within two or three miles. Cattle become infected and die in the same pasture with horses without the latter becoming affected. I believe more horses than cattle have been lost and that the green headed fly is responsible for most of the trouble.

F. M. STARR,

STATE VETERINARIAN.

Oklahoma City, Okla.

NOTE: A further investigation revealed this trouble to be a mixture of hemorrhagic septicemia and anthrax.

QUITMAN PRAISES PITUITRIN

Pituitrin properly used, in the proper dosage, is the best oxytocic that we have, but let us place emphasis on the word "properly," that is, we should use pituitrin only where there is uterine inertia. Where there is mechanical obstruction, pituitrin should not be used, and cannot do any good. If there is dystocia from fetal displacement, pituitrin can, of course, only do harm. Pituitrin never should be used until the os is dilated. When the os is dilated, if there is anything that will promote uterine action, it is pituitrin. It will do

it if the drug is made by a dependable manufacturer, whether used subcutaneously or intravenously; but it should not be used unless the os is dilated. It can be repeated in thirty to sixty minutes. Personally, I give it in intervals of an hour, unless there is a reason for doing otherwise.

In uterine inertia the dose of pituitrin for a dog is the same as for a human being—one c. c. of the solution of pituitrin, as usually put out by the houses dealing in this substance. A dose for sows would be usually two to three c. c. I teach the use of pituitrin the same as I do any other drug, and I have had many reports from our graduates, who tell me that pituitrin has given very good results.

As a rule, a farmer does not care to pay for Cesarean section in a sow. You can charge him as much as most of you can charge for Cesarean section when you use pituitrin, and I know that good results are obtained from it, provided, as I said before, the os is dilated. If it is not, it will fail, just as any drug will fail if used outside of its sphere of action.—From a discussion by E. L. Quitman, Chicago, at the Missouri Valley Veterinary Meeting, Omaha, July, 1916.

AMERICAN RED STAR ANIMAL RELIEF

In June, 1916, the American Red Star Animal Relief was organized at Albany, N. Y., under the auspices of the American Humane Association. This new American organization is a branch of the International Red Star Alliance, organized at Geneva, Switzerland, December, 1914. In the announcement, it is stated that "the object of the new organization is to bring about international cooperation in behalf of sick or wounded war animals and to secure the neutralization of those engaged in such work by international agreement. The name 'Red Star' offers a distinguishing designation

and the emblem serves to mark persons and vehicles engaged in relief work."

OLOF SCHWARZKOFF,

Veterinarian, Third Cavalry, U. S. A.
Ft. Sam Houston, Texas.

CATTLE LOST FROM UNRECOGNIZED DISEASE

I am practicing in a small town of between 800 and 1,000 inhabitants and a good farming community and have other veterinarians to compete with and as all veterinarians are of a jealous disposition, much more than the doctors of human medicine, there is some little strife. When one can put his hammer out and knock a little, it seems that he is inclined to do so.

The twentieth day of last June, one of my good clients, who is a dairyman and milks forty head of registered Holstein cows and has about as many yearling and two-year old heifers, called me to his place. His farm is an elegant stock farm, lying on an east and west road with a spring running through it from northeast to southwest. There are some thirty-five or forty acres of bottom land, which is fine for grazing. This last spring this man bought twenty acres more of this kind of land adjoining his grazing ground. This land had been used for half a century as a sheep pasture.

On arriving at his farm, I was shown a fine heifer, about twenty months old, standing with her back arched, head pointed down, ears loped, eyes staring, nose dry, edematous swelling in submaxillary space, temperature normal, respiration about normal, and a staggering gait when made to move. I was informed by the owner that he had three dead heifers lying in the pasture. We went to inspect the dead ones, and I inquired as to whether there had ever been sheep pastured on this land and was informed that it had been a sheep pasture for fifty years and that the man who had the sheep had lost hundreds of them and had allowed them to lie where they had died.

The three dead heifers were decomposing rapidly.

Upon post mortem examination, I found the lungs in about the same condition as they would be in pneumonia, but the rest of the thoracic cavity and the abdominal cavity seemed to be in about normal conditions. I took out a small portion of the lungs and put it under a small magnifying glass. (I do not have much research work and am not in possession of a microscope.) I found small worms in the lungs and also in a small piece of the liver. Considering the history of the case, I gave my diagnosis as liver fluke. I put the sick heifer on stimulants of nux vomica and aromatic spirits of ammonia and oatmeal gruel. She lived three days after I saw her. The owner removed the rest of the herd from the pasture, and none of these animals were affected.

This was on Tuesday and that following Friday the supervisor of the township had the county agent call at this farm and look the situation over. He seemed to think that it was some kind of weed that had poisoned the stock.

I am fifty-three years old and a country raised boy and lived my boyhood days in a newly settled country, where there would probably not be forty acres of cleared land on a section, and sometimes there was nothing but weeds and underbrush for our cattle to eat; yet we let them go where they pleased and we never lost any cattle in this way. I forgot to mention that with a good heavy rain these pasture lands would overflow, and above this place where they pastured, the stock did well, and no one ever lost any cattle. I should like to hear from some one who has had a similar experience. Most of my clients claimed that they never heard of fluke. Mr. Editor, what do you say?

H. H. GUY, D. V. M.

Petersburg, Mich.

EDITOR'S NOTE: I shall not pretend to make a diagnosis in this case without further information, probably could not do so anyway, without seeing the animals, and perhaps not then; but it seems that the description would fit in better with cases of strongylosis or lung worm than with distomatosis or liver flukes. Swamps or marshes are necessary for the breeding of flukes, merely overflowed pastures are not infected. The flukes are so large that they can easily be seen in the liver, and it is rare that they cause death, except when they are present in extraordinary numbers. Further the disease runs a very chronic course and animals that succumb (chiefly lambs) are always greatly emaciated.

Likewise the description would fit in well with forage poisoning. The fact that the ground is low and flooded at times would cause vegetation thereon to mold, which might result in forage poisoning in the cattle grazing on it. Further than this, both the history and symptoms and some of the lesions are indicative of anthrax. It would seem that the trouble was one of these three ailments. It seems improbable that this trouble could have been due to poisonous plants at that season.

EXPERIENCE HAS TAUGHT ME

I. Do not flush out the uterus of a cow with water when removing the afterbirth. It will certainly kill some of them.

II. Do not try to swing a horse that has gone down with azoturia. Leave town if you can.

III. Do not try to remove an afterbirth from a cow immediately after the calf is born. Wait at least thirty-six hours, unless that is all you intend to do that week.

IV. Do not use too much medicine. Give Nature a chance.

V. Do not try to produce an abortion in a cow and get back to the office the same day.

VI. Examine your patient carefully before giving arecalin. They won't all stand it. Don't give it to "heavy" ones.

VII. Do not give a cow arecalin when treating her for impaction. Mine have all died at once.

VIII. Use camphorated oil in conjunction with the air treatment for milk fever. You will find it better than either strychnin or atropin.

IX. Don't tell the owner "There is no chance for him," until you have made a thorough examination. You might "overspeak" yourself.

X. Don't neglect that mild case of azoturia. He might "go down" yet.

T. N. S.

DECEMBER VETERINARY MEETINGS

Dec. 5, York Co. Vet. Med. Society, York, Pa.

Dec. 5, 6, 7, U. S. Live Stock Sanitary Assn., Chicago.

Dec. 6, 7, 8, Illinois State Vet. Med. Assn., Chicago.

Dec. 12, Chicago Veterinary Society, Chicago.

Dec. 12, Keystone Vet. Med. Assn., Philadelphia.

Dec. 12, 13, Nebraska Vet. Med. Assn., Lincoln, Neb.

Dec. 13, California State Vet. Med. Assn., San Francisco.

Dec. 15, Western New York Vet. Med. Assn., Buffalo, N. Y.

Dec. 20, Los Angeles Vet. Med. Assn., Los Angeles.

Dec. 27, Massachusetts Veterinary Assn., Boston.

Dec. 27, 28, Southeastern States Vet. Med. Assn., Atlanta, Ga.

Observations on Contagious Pneumonia

The author reports his observations and results with the salversan treatment in influenza, complicated with pneumonia, in the field, and records very favorable results from this method of treatment.

At the suggestion of Stodter he experimented in two cases with a serum from animals treated with salversan. While both patients recovered it should be considered that they were mild cases, and that the fever persisted in the first case for ten days, and in the second case, in which no lung complications were present, for two days.—Ehrhardt in *Berl. Tier. Woch.*

SUPPURATIVE ESOPHAGEAL CHOKE IN HORSE

June 8th I was called to see a work mare, about nine years old, in fairly good working condition. She was pasturing in an orchard with a young mule.

The history was that the mare had not been doing well for several days and stood around and did not seem to want to eat. Upon examination, an edematous area was found in the inferior cervical region about twelve inches anterior to the sternum. It seemed hard and appeared to involve all the muscles and structures in this region. As there seemed to be no difficulty in deglutition, and as the mule was in the habit of kicking at the mare, traumatism was suspected.

Hot fomentations were applied with daily massaging of the parts recommended, and as a cough was complained of, potassium dichromate was administered for it. No further treatment was given at this time.

Five days later, the case was visited again. At this time all the food that was ingested was ejected through the anterior nares and was mixed with mucus. Pharyngeal esophageal or thoracic choke was suspected. The stomach tube was passed, but no obstruction was encountered. A gallon of gruel was pumped into the stomach and another gallon pumped into the rectum.

Eight days later, I was called again, the owner saying that there was an opening under the neck. I found a suppurating wound about five inches long in the median line in the inferior cervical region, about four inches posterior to the ramus of the inferior maxilla. The food was being ejected through this opening. About ten inches posterior to this opening was a soft enlargement about the size of a croquet ball. This was incised and found to contain masticated grass and mucus, and on further examination into its depths, the esophagus was found to have a slit in it about two and one-half inches long. By dissecting away fibers of the sternomandibularis

and sternothyrohyoideus muscles, I was able by the use of a half-curved needle to suture up the rent in the esophagus. The external wound was then packed with sterilized gauze and absorbent cotton. The animal was given food and water and was able to perform the act of deglutition without difficulty.

The horse was now in a very anemic condition from inability to swallow for so long. This was Sunday, and I told the owner that the probabilities were that the animal would die on the following Tuesday but that if it did not, to call me on Wednesday. Sure enough, she died about noon on Tuesday, so that I have quite a reputation in that section as a prognosticator, if nothing more.

I have called this condition suppurative esophageal choke. I should be glad to hear through the columns of VETERINARY MEDICINE if any brother practitioner has had a similar case.

REMBRANDT MORGAN,
Veterinary Student.

Winfield, W. Va.

AMPUTATION OF FORE LEG IN STEER

A fifteen-months-old steer suffering a simple fracture of the metacarpus was



Doctor Jungerman's Case.

treated by the owner (a layman) and, resulting from tight bandaging and snug

application of rigid splints, pressure necrosis followed. This was discovered by the owner about seven days after he had set the animal's leg, when the bandages were removed to see how the injury was progressing. Observing that the parts were in bad condition, that extensive sloughing was taking place and that no union of bone was occurring, the owner called me to attend the case.

A cursory examination was sufficient to impress me with the fact that amputation of the member was necessary and this was promptly done. The fracture having occurred at the middle third of the metacarpus, amputation below the carpus was possible, and this was done. A flap operation was performed; the vessels were ligated, the flaps sutured, and the stump was bandaged. The client was instructed to remove the dressings in thirty-six hours and to apply dressing powder several times daily—this without re-bandaging the member.

A solution of chloral hydrate had been given as a drench before operating, and no difficulty was experienced in handling the case, and little inconvenience was occasioned the subject. Practically no loss of flesh occurred the first week after the operation, and thereafter the steer began to fatten. However, an abundance of good food was given. No laminitis has resulted, and at present (thirty days after the operation) the wound is practically well, and it has required no care for ten days. In this instance, because of the necrotic condition of the injured tissues, amputation was the only practical thing to do, but even though the injury had been recently inflicted and no necrosis had resulted, I should recommend treatment of the broken bone in such cases or amputation, if the nature of the fracture was such as to necessitate same, rather than to advise immediate slaughter.

In country practice, where local butchers do their own slaughtering, there exists considerable prejudice against the use of recently maimed animals for food. This steer will be slaughtered in two

weeks, and since practically no muscular atrophy has occurred, only the carpus will be unfit for food.

G. F. JUNGERMAN, D. V. S.
Hiawatha, Kans.

RUPTURE OF THE PREPUBIC TENDON

The accompanying illustration is of a seven-year-old cow with an extreme case of rupture of the prepubian ligament. This cow was all right in the



morning and was found in this condition at noon. She will have a calf soon, and I am anxiously waiting to see whether her condition is due to dropsy of the uterus or whether she will have a whole litter of calves.

Celina, Ohio. A. D. GEMMILL.

UNUSUAL RESULTS FROM ROARING OPERATION

CASE 1.—A delivery wagon horse of exceptional quality and splendid carriage, prized very highly for advertising purposes, gradually began to show signs of laryngeal hemiplegia by making a loud sound during exercise. The driver reported the condition had been gradually accentuating during a period of several months prior to the time of examination, which was in June, 1914. In August of the same year the horse had become worthless, the slightest trotting

exercise being sufficient to bring on a serious state of dyspnea. The first operation was performed August 14, 1914. The ventricle was stripped after the method of Blattenberg. Convalescence was normal and at the end of forty days the horse was returned to work. During the first few days the driver reported the horse much improved but not entirely well, and later acknowledged a complete recovery. During March, 1916, the horse rather suddenly became a

roarer again and was so bad that he could not be worked even at very slow exercise. The second operation was performed March 17, 1916, about nineteen months after the first one. On opening the larynx nothing abnormal was found to which the remarkable incapacity of the horse could be attributed. The left side, whose ventricle had been stripped nineteen months before, was found to have cicatrized in a perfectly usual manner,

entirely obliterating the ventricle and without any evidence of reaction upon the surrounding structures. The arytenoid of the right side and its vocal cord were highly motile, showing no evidence whatever of paralysis. There being nothing else to do, however, the right ventricle was treated by McKillip's method of cauterization. The convalescence from this operation, like the first, was uneventful except for a somewhat threatening dyspnea while eating during the first four days. At the end of forty days he was put in the harness again and at this writing (July 8, 1916) is reported perfectly sound.

CASE 2.—This case is that of a spirited driving horse that fell a victim of laryngeal hemiplegia from a serious illness of influenza, complicated with pleuropneumonia. The illness occurred during December, 1915, and January, 1916, and

the roaring followed immediately the period of convalescence. The horse was seriously afflicted, grunting badly on turning and roaring from the exertion of trotting at the halter. He could not be hitched without danger of dying from a seizure of dyspnea. The operation of stripping the ventricle was performed on the same day as Case No. 1 (March 17, 1916). On May 1st, or about forty days after the operation, when hitched for a trial it was found there was no improvement. Believing this to be a case of bilateral paralysis, the owner was advised to wait three weeks and then if still no better to submit the horse for another operation. There being no improvement whatever at the appointed time, a second operation was performed. Like Case No. 1, the interior of the larynx was perfectly normal; that is, the ventricle was obliterated and the right arytoid and vocal cord seemed to show no signs of immobility. The right ventricle was, however, stripped after the method of Blattenberg. Although convalescence was again normal and uneventful, the horse at this writing (about 60 days after the second operation) is still a very bad roarer. Here are two cases of roaring presenting the same general characteristics, both operated upon twice in approximately the same manner, but with diametrically opposite results. There seems to be something yet to be explained about laryngeal paralysis.

Chicago. L. A. MERILLAT.

TREATMENT FOR "BRINGING PUS TO THE SURFACE"

A valuable bull, two years old, stabled practically all his life, injured his stifle by climbing in a manger. He was treated by hot water fomentations, two to three hours in the morning and this was repeated in the evening. The bull did not eat much but drank six gallons of milk a day and was given epsom salts every other day. The medicine consisted of Fowler's solution, one tablespoonful twice a day and a prescription containing strychnin sulphate, quinin sulphate, aromatic sulphuric acid

and aromatic spirits of ammonia every three hours. The fever never went above 104° F. This treatment was carried on for six days. The weather was very hot and the bull seemed to suffer from the heat, flies and pain from the formation of pus over the stifle. At this stage the owner became dissatisfied and called another practitioner, who changed the medicine and discontinued the hot water.

He applied antiphlogistine, which seemed to quiet the bull but only temporarily. It seemed to allay the surface fever and check the formation of pus, which was not liberated for about sixteen days. The hot water was used about six days, and about two or three more days in my opinion would have brought the pus close enough to have been lanced and the patient would have been eased about eight days earlier. I contend that hot water in such cases as this one, is far superior in bringing the pus to the surface. I should be pleased to have the opinion of readers of the JOURNAL in this case.—H. O. R.

Comment: A good sharp scalpel is the one agent permissible for bringing pus to the surface. Any other treatment other than freely opening is worse than useless after pus has formed.

McCAMPBELL'S ADVICE DOES NOT INJURE THE VETERINARIAN

I have read with great interest the letter of Dr. A. H. Kraus in the November issue of VETERINARY MEDICINE, also the comment. It seems to me that Doctor Kraus is wrong; those who will be injured most by the advice the doctor from Kansas has been giving to the public, will be the farmers, who, having faith in the doctor by reason of the public position he holds, will attempt to profit by his advice. It certainly will not injure the practice of any veterinarian if every farmer will fit himself up with such a "box" and use the contents as often as he chooses. The real sufferers will be the poor

dumb animals, the real losers will be the owners.

Certainly no doctor with any knowledge of usual conditions around stables and who has any idea of the lack of knowledge concerning asepsis by the general public, would advise keeping hoof hooks and hypodermic syringes in the same "box." We should certainly have an increase in tetanus cases, to say the least, if that became a general practice.

I have been a reader of farm papers since childhood and have read the veterinary departments of these papers for years. I have never seen such advice to farmers in print before. The indiscriminate use of the agents he puts in the hands of the farmer would cause incalculable harm.

I repeat that the injured party is the farmer, who pays taxes to support a man who in return gives such unsound advice.

Clarence, Iowa.

W. E. STRIBLING, M. D. C.

SOMEWHAT RESEMBLES MALIGNANT EDEMA

On October 1st, a client called me, saying that he had a very sick horse. On my arrival I found a sorrel gelding, weight, about 1,100 lbs., very sick with acute intestinal indigestion. I performed enterocentesis and administered linseed oil with ether, leaving at 11 o'clock p. m., after telling the owner to give a physic ball. The next morning the horse was seemingly all right.

On October 3rd, the client called me in the morning, stating that the horse had been standing with his head down, looking stupid and weak, didn't care to eat, but wanted water as if he were feverish. I advised him to give a quart of linseed oil with one ounce spirits of turpentine, thinking perhaps he had failed to get the physic down into the horse.

About 9 o'clock p. m., I was called to the same place to see a sick mule, and after examining him and starting

treatment, I was asked by the owner to see what was the trouble with the horse that I had treated for intestinal indigestion on October 1st. When I got up to where I could see him, I found that his nose, lips and each side of the head were swollen to a considerable extent, and the owner said the swelling had started that afternoon about two o'clock. Since it was after dark, I could tell very little about him and left about 11 o'clock, stating that I would return in the morning and see what we could do for the horse.

On my arrival next morning, I found the horse's head very badly swollen on both sides from his lips half way down the neck. His nostrils were swollen to such an extent that breathing was difficult, or at any rate, a kind of snoring noise was present. The tumefaction was of a doughy nature, very hot and painful; the skin very thick; mucous membranes covered with hemorrhagic exudate; temperature 105.2 F. On examination I found a small wound on the floor of the mouth.

Diagnosis: erysipelas.

Prognosis: very grave.

Treatment: I cauterized the wound in the mouth, syringed the mouth with equal parts of saturated solution of boric acid and gum arabic, three or four times a day; administered 10 c. c. antistreptococcic serum. Externally, I used a hot sodium chlorid solution applied for thirty or forty minutes, followed with a hot five per cent carbolic acid solution; then hot saturated solution of magnesium sulphate every three or four hours.

On the morning of October 6th, the swelling had all gone, and the horse was drinking and eating fairly well. I put him on Cascara tonic comp. (Parke, Davis & Co.). The horse is now (October 11th) apparently completely recovered.

Perhaps someone can enlighten me as to this case. I have never seen one like it before. Was I mistaken in my diagnosis? Merillat says in his "Prin-

ciples of Surgery" that it is rare, especially the recovery of a patient. Any information or criticism will be highly appreciated.—J. H. D.

STRONGYLOSIS OF COLTS

On September 20th, I was called to a farm three miles from the city, and arriving there I found three colts, two of which were unable to control their hind quarters, and the other was down paralyzed and unable to get up. The owner stated that these colts had been running on low lying blue grass pasture and that a new growth of blue grass was coming through.

On examination of the colts, I found the temperature to be normal and the heart in all instances somewhat accelerated. The two colts that had not gone down were somewhat emaciated, and the feces indicated a catarrhal condition of the bowels. Appetite was good. The animals had no control over their hind extremities, and when pricked with a pin did not respond. The animal that was down was a three-year-old in good shape, only there was a lack of sensation from the hips to the shoulder.

A tentative diagnosis of infection with *strongylus armatus* was made. All three animals received one gram of atoxyl intravenously in a three per cent sterile solution and in addition one dram ferrous sulphate and tartar emetic each on feed in the morning on an empty stomach for six days. At the end of the six days, they received an aloetic ball. The *strongylus armatus* was found in the feces of the two yearlings after this treatment.

These colts are making a recovery and the symptoms of paralysis have disappeared. The animal that went down paralyzed died two weeks afterwards and showed a thrombosis of the anterior mesenteric artery and some *strongylus armatus* were in the thrombi. The artery was calcified and greatly enlarged. The large colon was infested with myriads of these parasites and showed an inflamed condition.

This condition of infestation with the *strongylus armatus* is found in this region at different times of the year, mostly in the fall, in low lying pastures where there is a good water supply and luxuriant growth of grass.

Dow City, Iowa.

J. A. BRILL, D. V. M.

SOME NOTES ON TETANUS

Nature—Tetanus is a nonrecurrent toxemia, producing tonic spasms of the voluntary, and in fatal cases, of the involuntary muscles. The mortality varies from 50 per cent to 75 per cent. Most fatal cases die in four or five days. It usually follows small insignificant wounds, but may follow any wound if there is a scab or crust sufficiently tenacious to exclude the air long enough to permit of sufficient multiplication of the germs and formation of the toxins.

PATHOGENESIS—The bacillus tetani, a drumstick shaped, anaerobic bacillus, enters through a wound, which closes, excluding the air and light. There, in the region of the wound, seldom getting farther from the point of entrance than six to twelve inches, they multiply and produce four toxins, according to Brieger, viz., tetanin, tetatoxin, spasmotoxin and muriate of toxin, which find their way to the brain, either by the blood stream, or along the axis cylinders of the nerves, most likely the former, and poison the nerve cells of it in a progressive toxemia, which irritates or stimulates them, producing the tonic, or tetanic spasms characteristic of the disease.

Period of incubation is four or five days to as many weeks, usually about eight days.

PROGNOSIS—The longer the period of incubation, the milder the attack. I presume the reason for this is in the slowly developing case nature has time to produce the antibodies that neutralize the toxins to a great extent. Figuring on the average mortality at 75 per cent, if an animal lives nine days he has 40 per cent of the chances to recover, if he

lives thirteen days he has 50 per cent, eighteen days 75 per cent, twenty-one days 90 per cent, twenty-eight days 99 per cent. One of my cases died on the twenty-eighth day.

TREATMENT—Prophylaxis consists in early and thorough sterilization of the wound, and continuous antiseptic treatment of it afterwards, and 500 units of the tetanus antitoxin, as soon as possible after the infliction of the wound. When prevention can be practically guaranteed by injecting 500 units of the tetanus antitoxin, it is neglectful not to use it. It is a grave reflection on the surgeon to have tetanus develop from a wound, if he gets the case reasonably early.

Curative treatment consists in giving, as early as possible, 3000 units of the antitoxin and repeating night and morning for four or five days; after that, as occasion requires. Sometimes a case seems to be doing well, but develops exacerbations which require another dose or two. The patient should be put into slings to keep him on his feet. A nerve sedative, such as morphin, lobelin, gelsenium, Cannabis indica or fluid extract of Physostigma, should be given two or three times a day. Nourishing drinks, a quiet dark place, away from other horses, are indicated. It usually takes from four to eight weeks to recover.

Chicago, Ill.

A. H. BAKER.

AN AUTOPSY NECESSARY BEFORE DIAGNOSIS

On April 11th a client of mine brought an eight-year-old horse to me for examination, diagnosis and treatment. The horse had two enlargements on each side of the larynx about as big as a duck egg, and round. He seemed loose in the tissues; otherwise, he felt good and seemed O. K. I diagnosed it as goiter, or enlarged glands (Hodgens' disease) and told him that I doubted if they could be removed or absorbed.

Treatment: I prescribed iodine locally, also Spanish fly blister, and gave Fowler's solution internally.

On May 6th I was called to see the same horse and found him in bad shape. He was swollen from head to foot and couldn't move out of the stall. His legs were twice their normal size and there was a three-inch swelling all along his abdomen. His shoulders and throat were very badly swollen also, and the two "duck eggs" were still there as before. He never refused food or water. I then called it a lymphangitis and prognosis unfavorable.

Treatment: I gave a cathartic first; then prescribed two drams potassium iodid once a day and one ounce of the following night and morning:

Fluid extract digitalis..... 2 oz.
Potassium acetate..... 1 oz.
Magnesium sulphate..... 6 oz.
Distilled water q. s.....16 oz.

Locally I applied liniment twice a day.

After a week of this treatment, the horse was much better and was turned out in a small pasture during the day and the formula treatment kept up for some time.

Several different times since then during the summer, he had very bad spells and would swell up all over and lose flesh from the attack. It usually started in a leg and he would get very lame. The owner turned him out to pasture and quit treatment about a month ago. He several times expected him to die. The horse was brought to me recently and the owner wanted to know what to do with him and if it would not be best to have him shot.

The horse feels good and has picked up some since the last attack. His left knee is enlarged some and his neck is swollen badly. The two enlargements on each side of the larynx are somewhat larger than they were at first, and the neck is swollen on both sides to the butt of the ears (parotid glands) so much that he carries his nose extended as in strangles and has labored breathing.

I advised turning him back to pasture and then destruction after several weeks when the owner has more time. This is or was a very fine little horse, and the

owner would give a good price for a cure but doesn't want to spend any more money on him unless I can give him some encouragement, which I can't.

Is my diagnosis right and was my treatment O. K.? I shall be pleased to hear from others with such cases.—C. J. H.

EVERSIONS OF VAGINA SUCCESSFULLY TREATED

Was called in the early morning to see a cow that had a prolapse of the uterus. I found a heifer due to calve soon that had had a prolapse of the vagina for the last week or more, so the owner informed me, and that he, with some help, had put it back several times, but now it was out more than usual. He said that he didn't want to bother with it this time but wanted me to put it back so that it wouldn't come out again. I told him that I could not perform miracles but would do the best I could, under the conditions. They had the animal raised up about two feet in the rear and when I saw her she was lying down with the uterus in the manure and saw dust. It was hard work to get her up but we finally did and I washed off the part as clean as I could which was not very clean, I must admit.

I wanted a sheet to keep it as clean as possible, but he did not have one that I could have, so I went on without it. I had then started in when the poor beast, tired out from exhaustion, dropped to the floor. I stopped long enough to give her strychnin hypodermatically and then proceeded with the replacement with animal lying. After much difficulty I finally got everything back. Then I sewed up the lips of the vulva with tape sutures. Before I tied them I took a smooth handle of a hoe, cut it about four feet long, grooved one end and around the other tied a large wad of absorbent cotton soaked in a solution of creolin. This I placed in the vagina and then tied my tape sutures. In front of the external angles of the illeum I passed a rope which was tied tight. The heifer still lay in the same position. When I

replaced the uterus I could feel a fine, large calf and told the owner that if the heifer died to act quickly and he might save the calf. I left after telling him to let me know how she was in the course of three or four hours. I never heard a word from the man until several weeks later. He happened to be at a place where I was dehorning some cows and then he told me that a week after I was down to his place this heifer had a fine, big heifer calf and is just as good as though nothing had ever happened.

I certainly did not expect this animal to live, but, nevertheless she did. Others treated under more favorable conditions have died.

F. G. RUDER, V. M. D.

Amherst, Mass.

MIGHT HAVE BEEN MALIGNANT EDEMA

On October 17th a farmer called at my office for advice, saying he had an eight-year-old mare which he had found in pasture the day before with colic, and as he led her to the barn she would stop frequently and want to stand still, apparently sleepy. Upon reaching the barn, he noticed a swelling just posterior to the upper third of the scapula and of considerable size. He thought she was developing fistula of the withers. Being very busy that day, I informed him I would call the following day, October 18th. The condition I found the next day was as follows:

The horse had a large hard swelling extending from the upper third of the scapula back under the saddle to about the fifteenth rib—this was on the right side only. The conjunctiva of the left eye was swollen and inflamed, also the eyelids; pulse, weak and irregular; temperature normal; cervical lymph glands swollen and all glands that could be palpated; a thick swelling all under the abdomen that would pit on pressure; appetite good.

Not being familiar with the condition present, I administered a laxative tablet followed with a large dose of calcium

sulphid and told my client I would call next morning. The next morning I found the same condition, only the pulse was stronger and faster, about 60. I continued to administer large doses of calcium sulphid that day, but there was no change in the swelling. The temperature was always about normal, but the pulse became rapid and hard, and the animal seemed to be extremely drowsy. I called every day, but the animal seemed to be about the same, and on October 21st I still had made no diagnosis and decided to call a neighboring veterinarian. All this time I had been administering calcium sulphid in large doses and small doses of aconite.

Upon the arrival of the other veterinarian, he made a thorough examination and diagnosed the case as botryomycosis internally, saying he had seen one case before that was diagnosed as botryomycosis by three prominent veterinarians. He advised me to give calcidin and polybacterins, so I quit the calcium sulphid and aconite and began the bacterins and calcidin and continued several days, but the condition did not improve. The pulse gradually grew weaker and slower; otherwise, there was no change that I could tell until October 31st, when the owner called me up saying that the mare was down and unable to rise but still had a good appetite. I advised destruction, so I called the neighboring veterinarian whom I had called before, and we held a post mortem examination.

We found the prescapular lymph glands greatly swollen and lymph in the surrounding tissues. The prepectoral, popliteal, deep inguinal and practically all the lymph glands were greatly swollen and contained thick yellow pus. The mesenteric lymph glands contained a thin whitish fluid. A part of the mesentery seemed to be endurated with blood, which was of a dark, tarry color. There were no abnormal lesions noticed other than in the blood and lymphatic glands, with the exception that one ovary was greatly enlarged and contained a thick whitish pus.

We made no diagnosis. What could this have been? In my three years' experience I have never seen any similar condition. I should like to have someone criticize my treatment for I might have another case just like it.

R. T., D. V. M.

CARE ENJOINED IN TUBERCULIN TESTING

The proper application of the tuberculin test by inspectors assigned to that work, especially the testing of cattle for import, export, and interstate shipment, is a matter of great importance. Several States have enacted laws governing the tuberculin testing of cattle entering their borders, which laws prescribe a specified number of temperature takings before and after the injection of the tuberculin, as well as the number of hours which may elapse between the injection of the tuberculin and the taking of the first following temperature. These points are included in the bureau's printed Summary of Directions for Making the Tuberculin Test. Inspectors are enjoined to follow these directions carefully so that faulty or improper testing may be avoided. The directions referred to are as follows:

Summary of Directions for Making the Tuberculin Test

1. Stable cattle under usual conditions and among usual surroundings, feeding and watering in the customary manner.
2. Make a physical examination of each animal, and give to each one some designation by which it will be known throughout the test.
3. Take each animal's temperature at least three times at two or three hour intervals on the day of injection; for instance, at 2, 5, and 8 p. m. When the last preliminary temperature (which would immediately precede the injection) registers about 103° F. the injection of the tuberculin should not be made; the test of such animal should be postponed.
4. At 10 p. m. inject a dose of tuberculin under the skin in the region of the shoulder, using a sterile hypodermic syringe after disinfecting the skin at the seat of injection with a 5 per cent solution of carbolic acid or a similar antiseptic solution.
5. The dose of the tuberculin made by the Bureau of Animal Industry is 2 c. c. for an

adult animal weighing about 750 pounds. Yearlings and two-year-olds, according to size, should receive from 1 to $1\frac{1}{2}$ c. c., while bulls and very large animals may receive 3 c. c. Double or even triple doses should be given to cattle recently injected with tuberculin; also in the case of animals which, on physical examination, are suspected of being tuberculous.

6. At 6 a. m. on the day following the injection of tuberculin commence taking temperatures, and continue every two or three hours until the twentieth hour after injection, at which time if there is no tendency for the temperature to rise the test may cease.

7. A rise of 2° F. or more above the maximum temperature observed on the previous day, or one which goes above 103.8° F., should be regarded as an indication of tuberculosis, provided the temperature reaction shows the characteristic rainbow curve.

8. Animals which, after injection, show a rise of temperature of 2° F. with a maximum between 103° and 103.8° F., as well as those which show a rise of less than 2° F. with a maximum temperature of 103.8° F. or more, are to be regarded as suspicious. These suspicious cases should be held for a retest six week later, giving double the original dose.

POLYARTHRITIS IN PIGS

The following instructions are issued for the guidance of inspectors engaged in Federal meat inspection.

Lesions of polyarthritis in pigs may exist without creating the presumption that an infective agent is present within the joints. For instance, sero-fibrinous polyarthritis occurs in pigs as a result of traumatism occurring during shipment by rail. There may be edematous infiltration of the subcutaneous tissues about the joints, yellowish fibrinous coagula within the joint cavity, or fibrinous deposits upon the synovial membrane, marked injection of the vessels of the synovial membrane, reddening of the synovia which may contain gray flakes, and also erosions of articular cartilages. There may also be necrotic caseous foci about the joint, which are examples of aseptic coagulation necrosis resulting from blows.

Arthritic lesions of infective origin may occur without the presence of the causative organism in the joint at the time of observation. Irritating bacterial products originating in a distant focus

may be carried to joints through the blood stream and set up an arthritis designated as a prebacterial or toxic stage of an infective arthritis. Such toxic matter is capable of inducing hyperemia and exudation in joint cavities with distention of the capsule and accompanied by pain. There may be designated a post-bacterial stage of polyarthritis in which the lesions still exist after the disappearance from the joints of the causative organisms. The bacteria undoubtedly die out in infected joints, and in such a case the lesions could easily be mistaken for a non-bacterial arthritis. Exostosis may exist without infective agents.

Thus the foregoing conditions are not to be regarded as of sufficient hygienic significance in inspection to warrant total condemnation of the carcass.

There is, however, another class of polyarthritis characterized by the presence of periarticular abscesses which may or may not be connected with similar suppurative foci within the epiphyses of the bones. The pus in such cases varies from a creamy consistency to a cheesy consistency and is usually yellowish in color, not infrequently a greenish-yellow shade.

In view of the foregoing findings, the whole carcass should be condemned in cases manifesting suppurative lesions in more than one joint, otherwise the condemnation should be restricted to the affected part, the same as in the case of joints affected with exostosis or ankylosis.

FALL MEETING OF THE N. Y. CITY VETERINARY MEDICAL ASSOCIATION

After omitting monthly meetings during the summer months, the N. Y. City Veterinary Medical Association held its first fall meeting at the Berns' Veterinary Hospital, Brooklyn, N. Y., October 4th, where Drs. Berns, Gannett, and Risley had gathered a variety of interesting cases. The clinic consumed the entire afternoon and various operators

and diagnosticians were kept busy in the different departments.

Several cases of lameness were presented for diagnosis but interest particularly centered on four operative cases. One a pony with necrosis of the coronary band, the history being that it had been injured by an auto several days previous. The foot presented a necrotic appearance with loosening of the hoof from the coronary band. Destruction of the pony was advised as a fracture of the os pedis was suspected. The pony was accordingly destroyed and the hoof removed revealing a comminuted fracture of the crest of the os pedis.

Another interesting case was a quitor of the lateral cartilage. The diseased cartilage was removed by Dr. Gannett, demonstrating how futile caustics would have been in this case as the navicular joint was involved.

Much interest was shown by the canine practitioners in the case of a black cocker bitch about six years old. She presented a semi-paraplegia of the hind extremities being able to partially stand and half drag her hind parts along in moving. The history was that she had had two similar attacks previously but of much shorter duration, and about six months apart. The paraplegia being preceded by and associated with whinnying and restlessness.

She had recovered from the two previous attacks under symptomatic treatment in the course of ten days or two weeks. The present attack had been particularly obstinate and so lingering that the owner had consented to have her destroyed. Various possibilities of the cause, such as new growths, embolism, diseased ovaries, etc., were advanced. An exploratory laparotomy was finally decided upon. The bitch was etherized and the abdominal cavity opened; the ovaries, fallopian tubes and uterus removed; all other organs were seemingly normal. Dr. R. Blair examined the tissues, finding the ovaries hyperemic and the fallopian tubes presenting a purulent salpingitis of sufficient intensity to create

a toxemia probably giving rise to the clinical condition presented by the animal.

Dr. John Adams operated on a roarer, removing the ventricle of one side. The animal was placed on a table and anesthetized with about one and one-half ounces of chloroform. Dr. Adams stated that he rarely used over three ounces in chloroforming a horse and he liked the method of plugging one nostril and simply putting a piece of muslin over the muzzle and allowing continuous dropping of chloroform into the other nostril (which he does not believe is necessary to protect with emollients) until the animal is under complete anesthesia, he then discontinues the chloroform, places the animal on its back, cuts through the cricoid cartilage and completes the operation without further anesthesia. His method of removing the ventricle was unique and would seem to us as about ideal. He nicks with a scissors the posterior part of the ventricle between the cord and the cartilage and passes a blunt instrument or his finger beneath the membrane and against the cartilage loosening its adhesions, picks up the center of the membrane with a forceps loosening it from its peripheral attachment with a blunt bistoury. Its complete removal was nicely demonstrated by slipping the membrane over the finger which showed the whole membrane intact.

The meeting was then adjourned to the Hotel Bossert where we all enjoyed a most delicious banquet. After cigars Dr. "Tom" Smith, all the way from Jersey, acting as toastmaster, introduced several speakers. Dr. Adams was the guest of honor of the evening and gave a general talk on the advantages of acquaintance and contact gathered at veterinary meetings of this character. He reviewed the advantages of honesty, and fairness to the public and to fellow practitioners and emphatically denounced crooked deals or collusions with horse dealers. In speaking of surgery he gave it as his opinion that a man must have some natural adaptability, good knowl-

edge of the structure and a certain amount of mechanical dexterity to succeed. He closed his remarks by reviewing several surgical conditions, speaking particularly of the advantage of exercising an animal when being treated for fistulous withers, the exercise hastening materially the healing of the tissues.

J. F. DEVINE.

TENNESSEE VETERINARIANS HOLD RECORD MEETING

We had the greatest meeting in the history of the Tennessee Veterinary Medical Association at Humboldt, November 8th and 9th, taking in twenty new members, presenting many valuable papers, and devoting an entire day to the clinic. A theatre party and a dinner were given by the local veterinarians.

The following papers were much enjoyed and thoroughly discussed: Hog Cholera and its Technic as a Standard Adopted by the State, by Dr. C. Dillon White, Nashville; The Production of Serums, Distribution and Results, by Dr. G. B. Blackman, Indianapolis, Ind.; The Relation Between the Division of Extensions and the Veterinary Profession, by Dr. C. D. Lowe, Knoxville; Transmissible Diseases among Live Stock in Tennessee, by Dr. M. Jacob, Knoxville; The Value of Meat and Milk Inspection, by Dr. Jas. A. Austin, Fulton, Ky.; Castration of Cryptorchids and Restraint by Dr. George R. White, Nashville; Infectious Stomatitis in the Dog, by Dr. J. W. Scheibler, Memphis; Case Report by Dr. P. J. Landis, Nashville.

The cases presented at the clinic included the following: Williams' method of operation for barren cows, Dr. M. Jacob; Operation on roarer, Dr. George R. White; Dentistry, Dr. Wm. M. Bell, Nashville; Ovariectomy in bitch, Dr. J. W. Scheibler; Ovariectomy in cow, Dr. J. H. McMahon, Columbia; Administration of hog cholera serum, Dr. C. Dillon White; Mallein test, Dr. G. B. Blackman; Points in live stock judging, Dr.

C. D. Lowe; Ovariectomy in bitch, Dr. F. R. Youree, Lebanon.

Officers elected and appointed were as follows: Dr. F. W. Morgan, Chattanooga, president; Dr. J. M. Jones, Lewisburg, vice-president; Dr. G. W. Shaw, Knoxville, second vice-president; Dr. F. R. Youree, Lebanon, secretary; Dr. A. C. Topmiller, Murfreesboro, treasurer; Drs. J. H. McMahon, J. W. Scheibler and S. H. Woods, executive committee; Drs. M. Jacob, F. R. Youree and Geo. R. White, legislative committee; Drs. Wm. Murray, L. D. Howell and A. J. Brown, finance committee; Drs. C. D. White, C. E. Kord and G. A. Metcalf, resolutions committee; Drs. Geo. R. White, A. C. Topmiller and G. B. Giltner, ethics committee.

Our next meeting will be at Columbia, Tennessee in the early part of November, 1917.

Chattanooga, Tenn.

F. W. MORGAN,
President.

FIRST MEETING OF THE AMALGAMATED OKLAHOMA ASSOCIATIONS

The first meeting of the Oklahoma State Veterinary Medical Association was held at Oklahoma City, October 23, 24 and 25, 1916. The association was assisted in their program by several of the leading veterinarians of the United States, which gave the members a chance to learn of the progress made in the control of infectious diseases.

One of the things which the association regretted was that the President, Dr. R. F. Eagle, was leaving the state, having received a promotion and will now be located in Chicago as assistant superintendent of all of Wilson & Co.'s packing establishments. To fill the vacancy made by the withdrawal of Dr. Eagle, Dr. J. S. Grove, inspector in charge of the Bureau of Animal Industry, was chosen as President.

This was the initial meeting of the Oklahoma State Veterinary Medical Association, and thanks to the assistance

of these veterinarians who came to help us in getting it started right, we have the prospect of becoming one of the best state veterinary associations in the United States.

The following prominent veterinarians were among those present and took part in the program or entered into the discussions: Dr. G. Ditwig, Washington, D. C.; Dr. A. O. Lundell, Ft. Worth, Texas; Dr. John Eagle, Kansas City, Mo.; Dr. J. A. Kiernan, Washington, D. C.; Dr. N. S. Mayo, Chicago; Dr. A. T. Kinsley, Kansas City, Mo.; Dr. H. Jensen, Kansas City, Mo.; Dr. D. F. Hinckley, State Veterinarian of Oklahoma; Dr. D. F. Luckey, State Veterinarian of Missouri; Dr. L. L. Lewis, A. & M. College, Oklahoma; Dr. R. C. Moore, St. Joseph, Mo.; Dr. Lewis Crabb, Ft. Worth, Texas; Dr. C. C. Hooker, Oklahoma City; Dr. J. E. Nance, Anadarko, Okla.; Marquis E. Gilmore, M. D., Ft. Worth, Texas; Dr. W. P. Schuler, A. & M. College, Oklahoma. E. Overholser, Mayor of Oklahoma City; John Fields, Editor, Oklahoma Farmer; T. P. Martin, Jr., President, Oklahoma Stock Yards National Bank; F. M. Gault, President, Oklahoma State Board of Agriculture; Dr. J. W. Duke, President, Oklahoma State Board of Health, honored us with their presence and contributed to the discussions.

About twenty new members were taken into the association at this meeting.

Enid, Okla. R. C. SMITH,
Secretary.

THE SOUTHEASTERN STATES VETERINARY MEDICAL AS- SOCIATION

The nucleus of this new organization was formed at Detroit during the recent A. V. M. A. meeting.

The need of such an organization is apparent when it is realized that a very large percentage of the veterinary practitioners of the section included will seldom have opportunity to attend meetings of the A. V. M. A. It should, how-

ever, be one of the numerous feeders of the latter organization. Again, it is felt that such an organization will give opportunity to develop much latent force in many of our better but more reserved practitioners. It will serve to bring the veterinarians of the section together and to get acquainted and it is hoped it will tend to popularize and elevate the profession in the eyes of their clients and public.

The size of the territory included in this organization is to be such that all veterinarians within it can easily attend by holding the meetings near the center of it. It has been thought best to hold the meetings in the most central state and ask those to join which bordered on this state or are no further off than bordering states. A glance at the map will show the southeastern territory logically to include Georgia as a center surrounded by North and South Carolina, Florida, Alabama and Tennessee with Mississippi being no further away than parts of Tennessee. Others wishing to join, however, will not be barred.

Temporary officers elected at the Detroit meeting were Drs. Tait Butler, Chairman, G. A. Roberts, General Secretary and Resident Secretary for North Carolina, C. A. Cary, Alabama, Dr. W. N. Burson, Georgia, Dr. F. P. Caughman, South Carolina, and Dr. F. W. Porter, Florida.

The next meeting will be held at Atlanta, Georgia, December 27-28.

A splendid program for the Atlanta meeting is being arranged at which time also the permanent organization will be formed.

All qualified veterinarians of the southeastern states are urged to attend and support their new organization.

G. A. ROBERTS,
Temporary Secretary.

INDIANA VETERINARIANS MEET

The N. E. Indiana Veterinary Association met at the Wayne Hotel, Ft. Wayne, Ind., Oct. 10, 1916, at 7:30 p. m.

with the President, Dr. A. H. Stoker, in the chair.

The minutes of the last meeting were approved as read.

The investigating committee, composed of Drs. Connell and Leach, was not ready with their report on Dr. L. L. Cardell, of Hoagland, Ind., but will report at the next meeting.

Dr. P. C. Kucher, of Ft. Wayne, was elected a new member.

The Secretary was instructed to send invitations to the following government men: Drs. Atherton and Miller of Ft. Wayne, and Drs. Hugh Fry and E. E. Shaw, who are stationed at Kendalville.

As the doctors who had been assigned papers for the evening were absent the time was taken by L. C. Kigin of Purdue University, his subject being "The County Agent."

Mr. Kigin's work brings him in close touch with the county agents of the state and he spoke in an intelligent way concerning the relation of this official and the veterinarian.

In part, he said that inasmuch as the county agent is here to stay it is up to the veterinarian to get acquainted with him and have an understanding, as much good can be accomplished by the two working together in dealing with contagious diseases.

Discussions of various subjects followed.

The President named Drs. Boor and Buckmaster to prepare and read papers at the November meeting.

A motion to adjourn carried.

C. R. BAUMGARTNER, D. V. M.,
Secretary.

The next meeting will be held Nov. 14 at the Alt Heidelberg, Ft. Wayne, Ind.

AGGRAVATED CASE OF ASCITIS IN A SHOAT

The accompanying picture shows a case of ascites in a spring shoat that I saw in Tama on September 24th. The history of the case was that the pig had been bloating for three weeks and was

becoming worse all the time. The clinical picture is sufficient to give the correct diagnosis at sight. The owner wanted something done, at least an at-



tempt made, that might relieve the pig of this "bloat" as he called it. He could not conceive of the idea that the content was not gas but a fluid. So we proceeded to tap with the understanding that it would be only a temporary relief and that in a few days the fullness would be present again. Upon tapping, the first fluid that escaped was of an amber color but later changed to red although the consistency remained the same. There were no tissue shreds nor pus present. In two days the pig was filled up again to the extent shown in the picture. I was not favored with the privilege of autopsy.

FRED M. MAXFIELD, D. V. M.
Tama, Iowa.

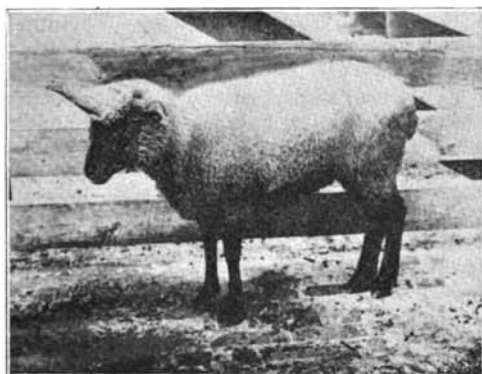
CURIOUS OKLAHOMA ANOMALIES

The accompanying photographs show an "eight cylinder" pig and a unicorn sheep, five and seven months old, respectively, both living and in good health. They attracted so much attention at the Oklahoma National Stock Yard that I exhibited them at the State fair here in September. The pig has eight perfect feet. The horny growth on the ewe's head is the size of a man's fist and tapers

to a point fully nine inches, giving the growth the appearance of a "dunce cap." This breed should have no horns, and,



therefore, it is quite a curiosity. The pig was purchased along with a whole litter and inbreeding had caused two



more to present an extra digit on their right fore foot.

M. L. CRANS, D. V. M.
Veterinary Director,
New State Serum Co.

Oklahoma City, Okla.

IMMOBILIZATION DRESSINGS

(Continued from page 939)

spected, trimmed further if required, and reapplied after a thin layer of cotton has been placed between it and the skin surface. The primary removal of the splint is facilitated by having the surface covered with vaseline before the moulding is attempted. A perfect splint is thus obtained which not only is more

effective but is more readily retained on restless patients.

The other method of making moulded splints is used for the larger and more complicated cases. In this the plaster material is laid down directly on the parts to which the splint is to be applied after they have been placed in the proper reduced position. The plaster bandage is applied back and forth over the surface, rubbed down, fitted and allowed to harden. Reinforcing bands may be applied, if desired. The splint is then removed, inspected, modified as desired, padded and replaced. It is held in position by various means, depending on circumstances.

This method of use of plaster is of service in making immobilizing dressing for the larger parts of the limbs and for the spine of the trunk and neck. These splints are commonly called cradles and are of inestimable value in orthopedic work in human practice. As I mentioned before in this paper, we have had no satisfaction in the use of immobilizing dressings above the stifle in small animals and above the knee in large animals. Consequently, this last use of plaster is of value to the veterinarian only as a scientific fact.

PERIODIC OPHTHALMIA OF HORSES

(Continued from page 952)

and the vitreous, owing to the retention of lymph, swells up to a still greater extent than before and pushes forward still more strongly upon the swollen ciliary processes. Since the latter are already abutting against the margin of the lens, they can give way toward the front only. They swell forward into the anterior chamber until they reach the root of the iris and jam the latter forward against the cornea-sclera, but in so doing the iris shuts up the passage of outflow for the aqueous and hence the intraocular pressure at once necessarily rises. In this way a glaucomatous attack is brought about.

If the swelling of the ciliary processes soon recedes or the pupil soon contracts, the iris returns to its former position, the sinus of the chamber becomes free, the tension falls, and the attack, being in this case simply a prodromal one, passes off. If

upon the other hand a return to the normal condition does not take place soon, the root of the iris becomes agglutinated to the cornea-sclera and out of this agglutination an adhesion afterwards develops; a return to the normal condition has become impossible and the glaucoma is permanent.

VETERINARY SHORT COURSE IN NORTH CAROLINA

The Veterinary Division of the North Carolina Agricultural College will offer a one week's course for graduate veterinarians January 8-13, 1917.

The success of the course last year was such as to warrant giving again, which will probably become an annual event.

The college force is expected to be supplemented by Dr. R. C. Moore, President of the St. Joseph Veterinary College, Dr. N. S. Mayo, of the Abbott Laboratories, and Dr. T. B. Carroll, practitioner and horseshoer, of Wilmington, N. C.

G. A. ROBERTS.

The U. S. Pharmacopeia and the National Formulary

The Pharmacopeia of the United States of America, ninth decennial revision, and the National Formulary, fourth edition, which are decreed to be official from September 1, 1916, are now available in the ordinary channels of trade. Public health officials and others entrusted with the enforcement of pure drug laws will no doubt be interested in the nature and composition of these two books that are recognized by law as standards for drugs and preparations and which are generally used as the basis for prosecution in cases involving adulteration or the misbranding of drugs. The two books were this time published simultaneously, and for the first time in their history an effort has been made to have them in harmony as to contents and standards.

The Pharmacopeia of the United States, ninth decennial revision, contains a total of 908 large octavo pages and in general appearance and style the book has much in common with the previous edition of the Pharmacopeia, now out of date, though in fact every monograph has been rewritten and practically every line in the book revised. The preparatory pages of the Pharmacopeia include a table of contents, a short historical introduction with a review of the proceedings of the ninth decennial convention in 1910 and a preface in which the changes in

the Pharmacopeia are briefly outlined. The introductory pages also include a number of tables, among others a review of the International Protocol compared with the drugs and preparations of the U. S. P. IX. and lists of the admissions, deletions and changes in the official Latin titles and in the official English titles of the Pharmacopeia followed by a comparative table showing the strength of the more important pharmaceutical preparations in the preceding and in the present Pharmacopeia.

The main portion of the Pharmacopeia, or Part I, as it is sometimes designated, comprises 497 pages and contains monographs for 782 articles, including nine general headings, 188 drugs, 265 chemicals and 320 preparations as against 958 articles included in the U. S. P. VIII.

The list of articles dismissed from Part I of the U. S. P. includes 242 titles, while the list of articles added to Part I includes 65 titles, a net decrease of 176. The list of changes in the official Latin titles of the U. S. P. VIII includes 29 articles and the list of changes in the official English titles from the U. S. P. VIII includes 28 articles. The number of titles included in the U. S. P. IX from the U. S. P. VIII unchanged is 680.

The remaining portion of the book, now designated as Part II, includes a table of atomic weights based on oxygen=16, a table of the elements and pharmacopeial chemicals and their molecular weights, and a table of multiples; also a list of reagents and test solutions and volumetric solutions followed by directions for general tests. A table of alcoholic content in preparations of the Pharmacopeia is accompanied by directions for the determination of alcohol in official preparations and is followed by general directions for alkaloidal assays and for the determination of certain physical and chemical constants; also directions for percolation and for sterilization. This portion of the book also contains an extensive list of diagnostic reagents and clinical tests and a comprehensive table of thermometric equivalents; alcoholometric tables and tables for temperature corrections. The Pharmacopeia also contains the usual acid and alkali tables, tables of weight and volume relations, and tables for converting metric quantities to quantities in apothecaries' weights and measures. This part of the book also includes a double column index of 66 pages that is unusually complete for a book of this type.

The National Formulary, fourth edition, includes 436 large octavo pages, and in general appearance is quite distinct from the preceding edition. The preliminary portion of the book includes a short historical introduction and a preface in which the changes repre-

sented in the Formulary are briefly summarized. This part also contains a list of preparations added to the National Formulary and a list of preparations dropped from the National Formulary; also a list of changes in the official Latin titles. The preparatory pages also contain a rather complete discussion of sterilization, followed by a number of special notices.

Part I of the National Formulary comprises 255 pages and contains a total of 596 titles, including 12 general formulas and 584 galenical preparations. The total number of preparations deleted from the National Formulary aggregates 183, and the total number of preparations added to the National Formulary totals 201, a net gain of 18 over the third edition. All of these titles are now included in Part I of the National Formulary. No less than 90 fluidextracts are now included in the National Formulary. Of these, 50 are new in the present edition, 30 being taken over from the U. S. P. VIII. The elixirs constitute the second largest group of preparations. This class now numbers 79; 23 were deleted and 10 new preparations added. Solutions come next, with 54 titles, followed closely by tinctures, with 50 preparations. Among the preparations new to the present edition are fluidglycerates, sprays, and ready-made petroxolins. The steatins, or salve mulls, of the N. F. III are now classed simply as mulls.

Part II of the National Formulary, which is now devoted to a description of standards for drugs used in the National Formulary preparations but not included in the Pharmacopeia of the United States, is entirely new. This part includes a total of 98 pages, with descriptions of 186 drugs, 140 of vegetable origin, 6 of animal origin, and 40 chemicals. This portion of the National Formulary was prepared by the Committee on Standards of the American Pharmaceutical Association, under the able leadership of George M. Beringer as chairman.

Part III of the National Formulary is also a novel feature and includes a number of special tests reprinted from the Pharmacopeia of the United States, ninth decennial revision, by special permission of the board of trustees of the United States Pharmacopeial Convention. The book also includes a double-column index of 30 pages that will serve to facilitate reference.

Both of these books have been practically rewritten and in their present form are designed to overcome the criticism that has heretofore been directed at fixed standards. Many, if not all, of the requirements in these books, as outlined in the revised standards, fix a minimum as well as a maximum requirement for purity and, no books of standards

available at the present time come so near to theoretical perfection as do the new editions of the Pharmacopeia of the United States and the National Formulary that are now being distributed.

The purity rubric introduced in the Pharmacopeia of the United States a decade ago has been considerably elaborated, and in the present edition of the Pharmacopeia the rubric for practically each article is accompanied by a specific method of assay. In many instances the permissible variation from the average is less than five per cent, and it is only in an exceptionally few instances that this permissible variation exceeds ten per cent.

The comparative table showing the strength of the more important pharmacopeial substances and preparations which is included in the introductory portion of the ninth decennial revision of the Pharmacopeia of the United States, includes a total of 193 titles; 85 chemicals, 25 drugs, and 83 preparations. For no less than 34 of these drugs and preparations the previous Pharmacopeia contained no assay method or purity requirement. The requirement in connection with 25 of the chemical substances has been slightly increased and in connection with 22 chemicals has been slightly decreased, while one article, calcium chlorid, has been changed from the anhydrous to the hydrated form, or from 99 to 75 per cent of CaCl_2 . The alkaloidal content of hyoscyamus has been changed from not less than 0.08 per cent to not less than 0.065 per cent of the alkaloids from hyoscyamus and the requirement for pilocarpus has been raised from 0.5 per cent to 0.6 per cent of the alkaloids from pilocarpus. The requirement for oil of clove has been changed from not less than 80 to not less than 82 per cent of eugenol and the requirement for oil of cassia has been correspondingly changed from not less than 75 to not less than 80 per cent of cinnamic aldehyd.

The strength of nine galenical preparations has been slightly increased and that of eleven preparations slightly decreased. The more important changes in this connection are those evidenced by the preparations of opium which, in compliance with the international treaty of 1906, are now on a basis of 10 to 10.5 per cent of anhydrous morphine in place of from 12 to 12.5 per cent of crystallized morphine in the U. S. P. VIII. All of these several changes are, however, negligible in comparison with the now general practice of definitely stating the maximum as well as the minimum strength of preparations of active drugs.

No other pharmacopeia now in force contains so many directions for assay as does the new Pharmacopeia of the United States. The total number of assay requirements in

the new pharmacopœia aggregates 387; 187 of which are for chemicals, 44 for drugs, and 86 for preparations.

Of the 44 drugs, 16 are directed to be assayed chemically for alkaloids, one is to be assayed biologically for the relative activity of its constituents, and in connection with five additional drugs a biological method of assay is recommended. One of the drugs, aconite, is to be assayed chemically as well as physiologically. Three drugs are to be assayed for resins, three enzyme preparations are to be tested for their enzyme action, and thirteen volatile oils are to be assayed for active constituents.

Of the 86 preparations, 36 are to be assayed chemically for alkaloids, three are to be tested biologically for their activity, and for 11 others an optional biological method of testing is recommended.

The assay methods for galenical preparations include seven assays for diluted acids, one alkaloidal assay for a plaster, nine chemical assays for alkaloidal content of extracts, and one biological assay; 11 alkaloidal assays for fluid extracts and three biological assays, one required and two recommended. Of the 18 tinctures included in the list 12 are to be assayed for alkaloids, two for their chemical constituents, one is required to be assayed biologically, and for four others a biological assay is recommended.

In view of the great care that has been exercised to standardize drugs and their preparations it is rather disappointing to find that the committee of revision has reintroduced into the Pharmacopœia almost unchanged the tables of approximate measures that were included in the eighth edition of the Pharmacopœia. In connection with the metric system this effort to force the use of this table is altogether unfortunate as the quantities given are not metric, do not comply with the practices in other countries, and do not agree with the actual capacities of the spoons named in the table.

The National Formulary, just out, includes methods of assay under 52 different titles, 23 preparations, 7 drugs, and 22 chemical substances. Of the seven drugs, four are to be assayed for alkaloids, one rennin, is to be tested for its milk curdling properties, one, lime juice is to be tested for acid content and one, oil of bergamot, is to be assayed for linalyl acetate. The requirement for chemical substances in the National Formulary are quite as high as the requirements that have been included in the Pharmacopœia and the permissible variation is frequently not more than five per cent from the apparent average on which the variation is based.

From the point of view of officials entrusted with the enforcement of food and drug laws,

the question naturally arises, are these theoretically much improved standards practically applicable at the present time and are the standards for excellence that have been set in connection with the maximum and minimum limitations equitable and attainable from a practical point of view, or have the limitations been fixed at too narrow a range for pharmacists who are expected to comply with them. If practical and attainable the now official requirements and methods of assay will undoubtedly serve to insure to physicians, and through them to their patients drugs and preparations more uniform in strength and composition than have hitherto been available and to this extent the two books should make for progress in medicine and related sciences.

—*Bulletin Amer. Ass'n of Phar. Chemists.*

BRITISH COLUMBIA VETERINARIANS HOLD SUCCESSFUL CONVENTION

The annual general meeting of the British Columbia Veterinary Association was held at Vancouver, B. C., September 20, 1916.

The President, Dr. S. F. Tolmie, expressed his regret at not being able to be present, having to appear on that date before the Royal Commission on the Resources of Canada, but he forwarded his address which was read by the Secretary.

In it he briefly reviewed the activities of the Association for the past year, complimenting the Secretary in his work, stating that action had been taken under our act against members more than four years in arrears, and that 14 members were at the Front, whose fees were remitted while away, and that a committee had been appointed to bring a recommendation before this meeting to amend the by-laws to admit honorary and associate members to the Association.

The President also stated that five candidates had been admitted to membership during the past year, and that two very successful public meetings had been held in Vancouver and Victoria on matters relating to public health, the speakers at both meetings being members of this Association, mentioning Dr. Jervis for the active part he had taken, and expressing a wish that more such meetings would be held during the coming year. He reported also a number of stock owners had made application to the Secretary that veterinary surgeons be sent to their districts, which requests had been complied with. The address concluded with the President's best wishes for the success of the Association for the coming year.

After the reading of the address various matters were discussed by the members

present and adjournment was taken for lunch at the Castle Hotel. On reassembling an interesting address was given by Dr. L. D. Swenerton, of Vancouver, describing the work in general of the Royal Army Veterinary Corps in England and France, and the various hospitals there, and his work in particular, having just returned from France on leave. Veterinary surgeons in the British and Canadian Forces rank as lieutenants and are promoted to captains after one year of active service. Dr. Taylor, of Landers, B. C., read a newspaper clipping of a speech by Senator Cummins, in the United States Senate in support of the bill to make veterinary surgeons rank as officers in the United States Army.

Dr. Bruce, of Agassiz, B. C., then gave a very instructive address on "Poisonous Plants of British Columbia," illustrated by specimens prepared by himself.

Election of officers then took place, resulting as follows: President, Dr. S. F. Tolmie; Vice-President, Dr. Geo. Howell; Secretary-Treasurer, Dr. K. Chester. Council; the above officers together with Drs. Alton, Pickering, Jagger and Jervis.

A resolution was passed stating that as most of the annual meetings had been held at the Coast it would be a good thing to hold the next annual meeting in the Upper Country and the Secretary was instructed to write to the Upper Country members and ask them to get together and choose a suitable town convenient to all.

The Social Committee was appointed by the Vice-President in the absence of the President as follows: Drs. Jervis, Jagger and Swenerton.

This brought a very successful meeting to a close.

New Westminster, Kenneth Chester,
B. C., Canada. Sec-Treas.

MASSACHUSETTS VETERINARIANS MEET AT DAIRY SHOW

The October meeting of the Massachusetts Veterinary Association was held in Springfield, on October 18th. The meeting was held in conjunction with the National Dairy Show, and as was expected, the combination of the two proved a very great attraction.

After the arrival in Springfield, all journeyed toward the Eastern States Exhibition, where the National Dairy Show was being held. After registering at the temporary headquarters of the Association, which were in the Coliseum, the members spent the day according to their own inclinations, endeavoring to see some of the many attractions which were presented. All were agreed in declaring it the greatest

event of its kind that they had ever seen, and we were forcefully impressed with the beauty and permanence of the buildings which had been erected to house this show. We were considerably interested after forming this opinion, to hear the opinion of some of the prominent western veterinarians who were in attendance, and who have always attended the show which heretofore has been held in Chicago. They seemed to be agreed that it was the greatest dairy show ever held in this country; and greatly surpassed the previous shows at Chicago. It was impossible to see more than a few of the many attractions of the different places as they were being exhibited. However, the time spent there was very profitable to all of us.

At seven o'clock, members and friends met at the Hotel Worthy, where an unusually good banquet was served. Following the banquet, a short business meeting was held, during which eighteen applications for membership were received. One hundred and fifty-two members and guests partook of the banquet. After dinner, and before the speeches began, fully twenty more arrived who were unable to be present at the banquet.

Dr. James B. Paige, of the Massachusetts Agricultural College, acted as toastmaster. The first speaker of the evening was Dr. V. A. Moore, Dean, New York State Veterinary College, Cornell University. Dr. Moore's subject was "The Practical Application of the Tuberculin Test." It proved to be one of the best addresses to which the Association has ever had the pleasure of listening. It was exceedingly practical, and at the same time included many scientific aspects of the disease. Many of the common errors which are made in applying the test were spoken of, and many mistaken ideas regarding the disease and its control were discussed in detail. It was indeed a scholarly presentation of the entire subject, and was listened to with rapt attention by all persons present.

Dr. W. Horace Hoskins, Philadelphia, Pa., was the next speaker, and forcefully addressed us on the subject of "Associations and Association Work." Dr. Hoskins was, as is always the case, very well received by the members, who thoroughly enjoyed his remarks. He impressed us with the advantages of associations and of some of the present aspects of association work, together with a wonderfully brilliant review of the profession in this country.

Dr. Thomas Maloney, of Fall River, responded to the toast "The Ladies," in his usual skillful manner, and needless to say he made a splendid impression, particularly

on the ladies, in spite of the fact that he admitted several things which we have always suspected him of, but of which we were never certain heretofore.

The last speaker of the evening was Dr. E. C. Schroeder, of the Bureau of Animal Industry, Washington, D. C. Dr. Schroeder's paper was on "Infectious Abortion," and proved to contain all that was new and interesting on this very important disease.

It is doubtful if any two subjects could have appealed to those present more than the ones presented by Dr. Moore and Dr. Schroeder. Dr. Schroeder most successfully extracted from the maze of misunderstanding and uncertainty which surrounds infectious abortion, the factors which are known to be of practical and certain application, so that we were able to discard much of the unimportant. His entire paper was masterful, and was greatly appreciated by all present.

Our chief regret was that the hour had become so late that we were unable to hear from the many noted veterinarians who were present. There were many present from other states whom we greatly respect and seldom see, and from whom a few remarks would have been greatly appreciated. A large number of veterinarians were present from New Hampshire, Connecticut, Rhode Island, New York, Vermont and Maine.

State Capitol,
Boston, Mass.

EDWARD A. CAHILL,
Secretary.

THREADWORMS

Parasites Infesting the Gullet of Sheep and Cattle Caused by Swallowing Insects

Sheep and cattle very frequently have threadworms in the gullet. These worms are seen in the lining of the gullet beneath the surface in a rather striking wavy pattern similar to that formed by a snake as it travels over a smooth surface. The worms are slender and threadlike, but as they measure from over an inch to almost 6 inches in length and raise up the surface of the lining of the gullet to form slender wavy ridges, they are readily located when an infested gullet is slit open and examined. So far as known, the damage occasioned by the presence of these parasites in sheep and cattle is rather slight, though it has been determined that a closely related parasite is intimately associated with if not the causal agent of cancer in the stomach of rats.

It has been shown by investigations and experiments in the Zoological Division of the Bureau of Animal Industry that various species of dung beetles are the source from

which sheep and cattle become infested with the gullet worm. These dung beetles may be found in almost any manure deposit, except during the winter in cold climates. The beetles usually crawl under the manure deposit, enter from the bottom, and feed on the inner portion of the deposit as long as it remains moist. When the beetles eat the manure they swallow the gullet-worm eggs which have passed down the esophagus through the stomach and intestine and out in the manure of the infested sheep or cow. As soon as the manure becomes too dry and hard to work the dung beetles abandon it and crawl into the ground or fly to other and fresher deposits. In about a month the eggs which were eaten by the beetles have hatched and developed into an encysted stage in the body of the beetle, ready to continue their development when the infested beetle is swallowed by a cow or sheep.

The opportunity for sheep and cattle to swallow these beetles comes when the beetles fly from one manure deposit to another. The flight usually ends by the beetles landing on the pasture somewhere near a manure deposit, and as they crawl about through the grass toward the manure, attracted by the odor, they are commonly swallowed by grazing animals. The beetles are no doubt eaten unconsciously as a rule, but as sheep and cattle eat large numbers of insects, since practically every plant is the permanent home or the temporary resting place of a number of insects, it is perhaps a matter of more or less indifference to them even if they are conscious of the presence of insects in a mouthful of food. This is especially true of cattle, since cattle are noted for eating foreign objects, such as nails, wire, bolts, knives, rubbers, etc. Among the various kinds of insects picked up by sheep and cattle during the course of a day, dung beetles are likely to be more or less numerous, and of these some are likely to harbor larval stages of the gullet worm, now ready for the next step in development. In the digestive tract of the cow or sheep the beetles undergo partial digestion, releasing the larval worms, which make their way to the gullet and burrow into its lining. Here the worms become mature and in time the female deposits eggs which pass down the gullet and out in the manure to carry on the life cycle.

It was found that under experimental conditions the eggs of the gullet worm would develop to an infective larva in croton bugs as well as in dung beetles; but since croton bugs do not breed in manure and are house dwellers, it is evident that they do not play any part in the natural

transmission of the parasite. It is interesting to note, however, that Danish scientists have found a worm, similar to the gullet worm of sheep and cattle, which develops as a larva in croton bugs, cockroaches, and mealworms, and which occurs in nature in the gullet, mouth, tongue and first portion of the stomach of rats. This worm is extremely interesting from the fact already mentioned that its development in the rat is followed by the appearance of cancer of the stomach, a fact of great importance from a scientific and medical standpoint. The same parasite will also develop in mice, rabbits and guinea pigs, but apparently does not cause cancer in these animals.

While there is now a general recognition of the importance of biting insects as carriers of such diseases as malaria and yellow fever, and of such insects as the fly as carriers of the germs of typhoid fever and other bacterial diseases, the facts cited above show that insects have an importance not yet generally recognized as carriers of parasites. From such parasitic infection man himself is not immune. It has long been known that infestation with a certain kind of tapeworm only occurs as the result of eating the fleas or lice of dogs, and the list of cases of the occurrence of this tapeworm in man, and especially in children, indicates only too well that dog fleas and lice are swallowed by human beings not altogether rarely. In the case of sheep and cattle the swallowing of insects is practically unavoidable, but man can guard himself against swallowing dog fleas and lice and its rather unpleasant as well as dangerous, consequences by observing greater care in his relations with pet animals, particularly by excluding them from his household, which is the only certain way of preventing the scattering of their external parasites in places from which children and even grown persons are liable to swallow them. —Weekly News Letter, U. S. Dept., of Agriculture.

S. J. Walkley, secretary of the National Association B. A. I. Employees, went to Chicago on October 8 to confer with lay inspectors regarding an increase in their salaries. He also conferred with Congressmen Wilson and McDermott on this matter, and Congressman Wilson suggested that the association have a bill introduced in Congress, providing for an additional appropriation sufficient to increase the salaries of lay inspectors, grade 1, from \$840 to \$1,000 per annum. The executive committee of the association has this matter under consideration.

NEW HEAD FOR FRANK S. BETZ COMPANY

Mr. Louis R. Curtis, Formerly of St. Luke's Hospital, Chicago, Elected President of Well Known Instrument House

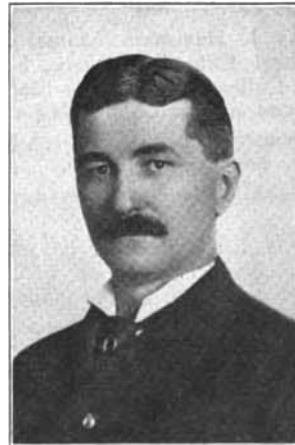
Considerable interest has been aroused in medical circles by the announcement of the election of Mr. Louis R. Curtis, for 18 years



Louis R. Curtis

superintendent and secretary of St. Luke's Hospital, Chicago, as president of that institution.

It is stated that Mr. Frank S. Betz, the retiring president continues with the company as chairman of the board of directors.



Frank S. Betz

Mr. Curtis was born in 1865 in Philadelphia. He obtained his college training at Stevens, graduating as mechanical engineer. In 1889 he entered the hospital field as assistant superintendent of the New York Hospital. During

that period he attended medical college, not with an idea of practicing, but to better fit himself for his hospital work. From the New York Hospital, Mr. Curtis went to the General Hospital of Elizabeth, New Jersey, staying there for about one and one-half years. From there he came to St. Luke's Hospital, Chicago, as superintendent and has been the dominating figure in that institution, both as superintendent and secretary until recently and is now vice-president in charge of the operation of the institution. During the last years Mr. Curtis has also been prominent as a consulting engineer, especially among hospitals, and has introduced many advanced and successful ideas in hospital construction and organization. His wide experience among hospitals and medical men, coupled with his technical training, makes him peculiarly well fitted for his new position.

Mr. Frank S. Betz, under whose control the concern bearing his name assumed its present proportions, will continue with the company as chairman of the board of directors and give the organization the benefit of his long experience and training. His many and diversified interests are given as reasons for his retiring as active head of the company.

THE MONTANA VETERINARY MEDICAL ASSOCIATION HOLDS IMPORTANT MEETING

The Montana Veterinary Medical Association convened for a two days' session at the Capitol Building, Helena, Montana, September 27, 1916, and an interesting program was carried out.

Dr. W. J. Hartman, Animal Specialist, Agricultural Extension Work, State Agricultural College, Bozeman—Blackleg and the use and misuse of blackleg vaccine.

Discussion: Dr. W. J. Butler, State Veterinarian, general discussion.

Dr. C. H. Stevens, Stevensville—Case Reports.

Dr. E. H. Riley, Veterinarian to the Montana Stallion Registration Board, Bozeman—Examination for soundness.

Dr. J. F. Mitchell, Pathologist St. Ann's Hospital, Anaconda—An unnamed horse disease, with microscopical demonstration of blood organism, in Flint Creek Valley.

Discussion: Dr. W. J. Butler, general discussion.

Dr. H. L. Brawner, Livingston—Contagious abortion in cattle.

Discussion: Dr. H. Welch, general discussion.

Questions from the Question Box.

Dr. R. R. Parker, Department of Entomology, State Agricultural College, Boze-

man—Insects as Factors in the Transmission of Disease.

Discussion: Dr. J. F. Mitchell, general discussion.

Dr. Howard Welch, Veterinarian to the State Experiment Station, Bozeman—Case Reports of Plant Poisoning in Stock. Also further reports on the investigation of the cause of hairless pigs.

Questions from the Question Box.

The association passed the following resolution:

"Be It Resolved, that it is the sense of this association that there should be a closer intimacy between the professions of human and veterinary medicine, both for the advancement of public health and for mutual welfare.

Therefore, Be It Further Resolved, that this association extend a cordial invitation to the Montana Medical Association and to all of its members to attend all meetings of the Montana Veterinary Medical Association and to participate in their deliberations; and

Be It Further Resolved, that we earnestly request the Montana Medical Association to delegate one or more of their members to read papers on medical subjects of mutual interest at each of our meetings and participate in our discussions and deliberations; and

Be It Further Resolved, that the Secretary be instructed to mail a copy of these resolutions to the President and Secretary of the Montana Medical Association extending to that association our felicitations and earnest wishes for co-operation and closer association between the two professions."

The association also passed a resolution inviting all "County Agents" of Montana to the future meetings of the Montana Veterinary Medical Association.

A resolution was passed thanking Senator Myers for his cordial co-operation in the United States Senate on the Army Veterinary Bill.

The association appointed a committee of three to confer with a like committee to be appointed by the Montana State Medical Association to confer with the State Board of Health with a view of securing laws by our next legislature for better milk and meat inspection.

The following officers were elected:

Dr. M. E. Knowles, President.

Dr. C. H. Stevens, Vice-President.

Dr. A. D. Knowles, Secretary-Treasurer.

All told, it was the most interesting meeting yet held by the association.

Missoula, Mont.

A. D. KNOWLES,
Secretary-Treasurer.

HOG CHOLERA REMEDY

During the session of the Iowa legislature, two years ago, a shrewd manufacturer of a hog cholera remedy persuaded the agricultural committee of the senate, of which Senator Doran was chairman, to appoint a sub-committee to investigate the merits of his remedy. One of the members of the sub-committee was Senator Balkema; another was Senator H. C. White, of Garrison. In our issue of September 29th, we published a communication from Senator Balkema on this matter. Recently we have received from Senator White a request to publish the following statement by him:

"In the winter of 1915, there appeared before the agricultural committee of the Iowa senate, a man by the name of D. W. Nolan, asking for recognition of a so-called hog cholera remedy. A sub-committee of three was appointed to make such investigation as time and opportunity would permit, it being well along in the busy part of the session. Doctor Nolan was allowed to advertise for sick hogs, with the promise that the first fifteen or eighteen owners of such stock would be furnished free treatment, provided they made application to the sub-committee spoken of above, stating number, condition, etc., and would make an affidavit later in regard to the results obtained.

"The sub-committee made report to the whole committee, based on the information contained in said affidavits, having first had the assurance from the senator from Van Buren county that many of the applicants were personally known by him, to be representative farmers of that county.

"Later the sub-committee report, together with affidavits, etc., were turned over to Nolan by the chairman of the agricultural committee. Nolan has since been using this report for advertising purposes. Neither myself nor any other member of the sub-committee, when making this report, ever dreamed that we would be put in the position of endorsing or recommending this cure-all to the public, but such now seems to be the case. In the fall of 1915, I tested this medicine on my own farm, and do not hesitate to say that I consider it absolutely worthless. Later, the Agricultural College at Ames tested it on cholera hogs at the college, and reported it worthless for the cure of cholera.

"It was reported to me at Marengo, last week, that several farmers had been swindled out of considerable sums of money by this same Doctor Nolan and his men.

"I do not believe there is any known cure for hog cholera, nor any preventative except vaccination.

"This letter is written for the purpose of warning farmers not only against Nolan, but every other person who advertises a cure for hog cholera."—*Wallace's Farmer*.

Comment: Old Dave Nolan will be remembered as formerly of Wichita, Kansas, where by the grace of political pull he served a term as president of the first state board of veterinary examiners. When his quacking smelled to heaven, in his trial before the Kansas Veterinary Medical Association, he offered as a reason for not being expelled the fact that he was wearing an eighty-dollar fur-lined overcoat. The Missouri Valley Veterinary Association, of which he was also a member, took summary action in expelling him. He next appeared in Illinois where for two years picking was all he could desire. Grown opulent he wandered into Indiana where his path was strewn with anything but roses. With the consummate gall for which he is even more distinguished than for his avariciousness, he put in an appearance at a meeting of the Indiana State Veterinary Society and heard himself called such names as "faker," "grafter," "quack," "thief," "criminal," etc., and faced open charges that he had maliciously spread hog cholera for the purpose of creating a demand for his fake remedy. After exhausting their vocabulary to no effect the Hoosiers asked him to leave the room and the meeting and to get out of the state. He refused and was forcibly ejected and returned to the green pastures of Illinois. When they began to sear for lack of new material he migrated to Iowa, where he achieved the great success of his variegated career—recognition by the state legislature as narrated in the foregoing clipping.

BRINGING THE COW TO THE CUSTOMER

By Dr. Woods Hutchinson

Necessity is the mother of invention, and there are no necessities like those of war.

The stress and emergencies of the milk war drove the companies to suggest a temporary measure, which might prove of real value to city babies—that of bringing small groups of cows close to the edge of or even into the suburbs of the city.

This, at first sight, sounds like a backward step to village and country town conditions, and hands of horror will be raised at once at the thought of dirty, fly-swarmed stables and barnyards trodden into a filthy bog, which would be a nuisance and a menace to the health of the entire neighborhood. And, of course, as a source for the whole or any considerable fraction of the supply, dairy barns in the suburbs would be out of the

question. But for a limited and special part of the city's milk supply, namely, that required by babies and very young children, the plan is both practical and possessed of real value and advantage.

Especially in view of the fact that most of our city milk is from 47 to 72 hours old before it reaches the homes and that stale milk is both indigestible and unwholesome for babies, to say nothing of the generations and millions of germs who are given time to breed in it.

Indeed, it has several times been suggested by careful and competent students of the city milk problem and, in one instance at least, has actually been put in operation on quite an extensive scale. The great metropolitan city of Buenos Ayres, with a population of nearly two millions, after a very careful and competent survey of the situation by eminent experts, has established or licensed one dairy of 10 to 15 cows in every acre containing 10,000 population in the city. The cows, of course, are carefully selected, tested by tuberculin and rigidly examined by competent veterinarians before being permitted to be brought into the city and kept under the strictest and most hawk-like sanitary supervision during their stay.

They are housed in model dairy barns, with cement floors, flushed down with the hose, tiled walls, all manure and other waste either cremated upon the spot or hauled out of the city every night and, in fact, are made not merely not a nuisance and an eye-sore, but an ornament and attraction to the neighborhood. A valuable object lesson to all children and their parents of how a model dairy should be conducted and what clean, pure milk really looks and tastes like.

The milk from these exclusive bovine dames—these Daughters of the Hygienic Revolution—can be sold only upon written permission from the district health officer to babies and young children and also, it is said, to a certain number of invalids, and the surplus may be consumed upon the premises in the form of milk or ice cream or soft cheese. The method is said to work admirably and these "milk-on-the-half-shell" stations are extremely popular and successful. There is no reason whatever, given competent health officers and intelligent dairymen, why cows cannot be kept almost as clean and in fully as sanitary condition as humans.

As the traveler in Southern Europe will probably recall, several of the Italian cities, notably Rome, Florence and Milan, have beautiful model dairies of this type in their city parks. The great one in the famous Villa Borghese, in Rome, is a delight to the eye, and its ice cream and bread and milk a pleas-

ure to every other sense, and every visitor to Rome ought certainly to put it on his list of sights along with the Sistine Chapel and the Forum. It is not so old, but far prettier and more attractive and infinitely more useful.—*Pittsburgh Post.*

EFFECTIVE METHOD FOR DESTROYING POULTRY LICE

Entomologists of the United States Department of Agriculture have demonstrated that all species of lice which infest poultry may be quickly destroyed by the application of a very small quantity of sodium fluorid, according to the annual report of the Chief of the Bureau of Entomology just issued. Entire flocks of poultry were cleared of the parasites in this way and were found to remain free when ordinary precautions were taken against reinfestation by contact with infested fowls.

In connection with this work the entomologists of the department made the first complete studies of the chicken mite and determined that it depends exclusively upon the fowl for its food and will not develop in any stage on filth or similar substances. In tests of a large series of insecticides it was found that a few thorough applications of crude petroleum to the interior of poultry houses will completely destroy the mites.

LICENSES FOR VETERINARY BIOLOGICAL PRODUCTS

Licenses for the manufacture of veterinary biological products under the act of Congress of March 4, 1913 (37 Stat., 832), and the regulations made thereunder (B. A. I. Order 196) have been issued and canceled as follows:

Licenses Issued

License No. 21, Continental Serum Laboratories, Muscatine, Iowa. September 1, following added to products previously announced: Polyvalent bacterin, anti-influenza bacterin, navel ill bacterin, abortus bacterin, hemorrhagic septicemia bacterin, colon bacterin, autogenic bacterin.

License No. 107, the Jensen-Salsbery Laboratories, Kansas City, Mo. September 29, following added to products previously announced: *Streptococcus mastitis* bacterin.

Licenses Canceled

License No. 28 to North Portland Serum Co., North Portland, Ore., canceled September 26.

License No. 108 to Canton Serum Co., Canton, S. D., canceled September 23.

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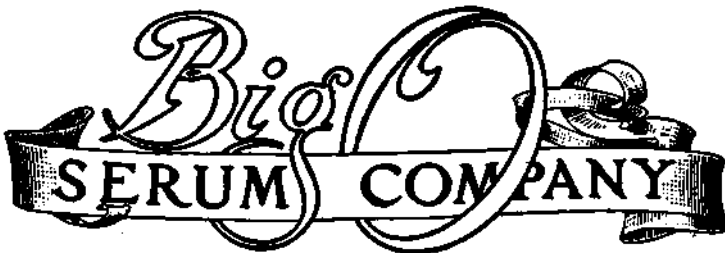
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THE PAPERS SAY—

At a convention of the National Association B. A. L. Employees held at New York City, August 14 to August 16, a resolution was passed putting the convention on record as favoring the formation of a ladies' auxiliary to affiliate with the association, the question to be submitted to all branches for action through a referendum vote. A resolution was also passed favoring semi-monthly pay and that the matter be taken up personally with Bureau officials.

Dr. G. N. Miller of Pomona, California, was painfully injured on October 24th, when his Maxwell car caught fire and in the excitement. Dr. Miller ran it into a palm tree. The doctor received a severe bump on the head; one hand was lacerated, and one leg was burned quite badly.

Dr. Thomas A. Jones of San Francisco has been transferred to Oklahoma City, Okla., where he will act as veterinary inspector with the Bureau of Animal Industry in the place left vacant by Dr. W. R. McCall, who has gone to San Francisco.

The Louisiana Veterinary Medical Association held its annual convention at Shreve-

port, La., November 3rd and 4th. A great part of the time was spent in examining the livestock exhibits of the state fair.

Ringling Brothers' circus lost forty-seven horses and forty-five were injured in a fire that destroyed their stable tent at Huntsville, Ala., October 28th. The value of the horses killed was estimated at \$16,450.

Farmers near Adrian, Tecumseh, Tipton and Clinton, Michigan, have lost a large number of sheep as the result of disease. The sheep had been shipped from Montana, and two weeks after they arrived commenced to show signs of illness. The losses have averaged from eight to ten sheep to each flock, although some farmers have lost as many as forty in a short time. The local veterinarians diagnosed the disease as hemorrhagic septicemia.

Dr. Van Der Hack, of Streator, Ill., has turned down an offer to accompany a shipment of horses to Europe. The doctor was offered \$20.00 a day until his return to Streator.

W. H. Little, of Mapleton, Minn., was tried in the municipal court at Mankato, November 1st, on the charge of practicing veterinary



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medicine without a license. It was alleged that on May 24th Little had vaccinated ten head of cattle for a farmer and received \$3.50 for the service. The case was dismissed as the court held that there was not sufficient evidence to convict.

Dr. F. A. Marshall, who has been associated in practice with his brother, Dr. L. G. Marshall, at Towanda, Pa., has accepted a position on the Barber stock farm at Barberton, Ohio, near Akron. The farm is owned by O. C. Barber, the millionaire match manufacturer. Drs. F. A. and L. G. Marshall are brothers of Dr. C. J. Marshall, State Veterinarian of Pennsylvania.

Dr. Stanton Harris, of Clarksdale, Mo., was killed when his automobile was struck by a Rock Island passenger train, October 31st. Dr. Harris was 25 years old and a graduate of the St. Joseph Veterinary College.

I have received the copy of Lacroix's "Lameness of the Horse" and have read the whole book almost through. I find it most interesting and explicit. It is a very useful book to students and practitioners. I have shown it to several of the boys and recommended it also.

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