Chinese herbology

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Chinese herbology (simplified Chinese: 中药学; traditional Chinese: 中藥學; pinyin: *zhōngyào xué*) is the theory of traditional Chinese herbal therapy, which accounts for the majority of treatments in traditional Chinese medicine (TCM). A *Nature* editorial described TCM as "fraught with pseudoscience", and said that the most obvious reason why it has not delivered many cures is that the majority of its treatments have no logical mechanism of action.[1]

Dried herbs and plant portions for Chinese herbology at a Xi'an market

The term herbology is misleading in the sense that, while plant elements are by far the most commonly used substances, animal, human, and mineral products are also utilized. In the Neijing they are referred to as 毒藥 [duyao] which means toxin, poison, or medicine. Unschuld points out that this is similar etymology to the Greek *pharmakon* and so he uses the term 'pharmaceutic'.[2] Thus, the term "medicinal" (instead of herb) is usually preferred as a translation for 药 (pinyin: *yào*).[3]

The effectiveness of traditional Chinese herbal therapy remains poorly documented.[4] There are concerns over a number of potentially toxic Chinese herbs.[5]

Contents

Ready-to-drink macerated medicinal liquor with goji berry, tokay gecko, and ginseng, for sale at a traditional medicine market in Xi'an, China

History

Chinese herbs have been used for centuries. Among the earliest literature are lists of prescriptions for specific ailments, exemplified by the manuscript "Recipes for 52 Ailments", found in the Mawangdui which were sealed in 168 BC.

Chinese pharmacopoeia

The first traditionally recognized herbalist is Shénnóng (神农, lit. "Divine Farmer"), a mythical god-like figure, who is said to have lived around 2800 BC.[6] He allegedly tasted hundreds of herbs and imparted his knowledge of medicinal and poisonous plants to farmers. His *Shénnóng Běn Cǎo Jīng* (神农本草经, *Shennong's Materia Medica*) is considered as the oldest book on Chinese herbal medicine. It classifies 365 species of roots, grass, woods, furs, animals and stones into three categories of herbal medicine:[7]

1. The "superior" category, which includes herbs effective for multiple diseases and are mostly responsible for maintaining and restoring the body balance. They have almost no unfavorable side-effects.[7]
2. A category comprising tonics and boosters, whose consumption must not be prolonged.[7]
3. A category of substances which must usually be taken in small doses, and for the treatment of specific diseases only.[7]

The original text of Shennong's Materia Medica has been lost; however, there are extant translations.[8] The true date of origin is believed to fall into the late Western Han dynasty[6] (i.e., the first century BC).

The *Treatise on Cold Damage Disorders and Miscellaneous Illnesses* was collated by Zhang Zhongjing, also sometime at the end of the Han dynasty, between 196 and 220 CE. Focusing on drug prescriptions,[9] it was the first medical work to combine Yinyang and the Five Phases with drug therapy.[10] This formulary was also the earliest Chinese medical text to group symptoms into clinically useful "patterns" (*zheng* 證) that could serve as targets for therapy. Having gone through numerous changes over time, it now circulates as two distinct books: the *Treatise on Cold Damage Disorders* and the *Essential Prescriptions of the Golden Casket*, which were edited separately in the eleventh century, under the Song dynasty.[11]

Succeeding generations augmented these works, as in the *Yaoxing Lun* (simplified Chinese: 药性论; traditional Chinese: 藥性論; literally "Treatise on the Nature of Medicinal Herbs"), a 7th-century Tang Dynasty Chinese treatise on herbal medicine.

There was a shift in emphasis in treatment over several centuries. A section of the Neijing Suwen including Chapter 74 was added by Wang Bing [王冰 Wáng Bīng] in his 765 edition. In which it says: 主病之謂君，佐君之謂臣，應臣之謂使，非上下三品之謂也。 "Ruler of disease it called Sovereign, aid to Sovereign it called Minister, comply with Minister it called Envoy (Assistant), not upper lower three classes (qualities) it called." The last part is interpreted as stating that these three rulers are not the three classes of Shénnóng mentioned previously. This chapter in particular outlines a more forceful approach. Later on Zhang Zihe [張子和 Zháng Zī-hè (or hē?), aka Zhang Cong-zhen] (1156-1228) is credited with founding the 'Attacking School' which criticized the overus of tonics.

Arguably the most important of these later works is the *Compendium of Materia Medica* (*Bencao Gangmu*:本草綱目) compiled during the Ming dynasty by Li Shizhen, which is still used today for consultation and reference.

The use of Chinese herbs was popular during the medieval age in western Asian and Islamic countries. They were traded through the Silk Road from the East to the West. Cinnamon, ginger, rhubarb, nutmeg and cubeb are mentioned as Chinese herbs by medieval Islamic medical scholars Such as Rhazes (854– 925 CE), Haly Abbas (930-994 CE) and Avicenna (980-1037 CE). There were also multiple similarities between the clinical uses of these herbs in Chinese and Islamic medicine.[12]

Raw materials

There are roughly 13,000 medicinals used in China and over 100,000 medicinal recipes recorded in the ancient literature.[13] Plant elements and extracts are by far the most common elements used.[14] In the classic *Handbook of Traditional Drugs* from 1941, 517 drugs were listed – out of these, only 45 were animal parts, and 30 were minerals.[14] For many plants used as medicinals, detailed instructions have been handed down not only regarding the locations and areas where they grow best, but also regarding the best timing of planting and harvesting them.[15]

Some animal parts used as medicinals can be considered rather strange such as cows' gallstones.[16]

Furthermore, the classic materia medica *Bencao Gangmu* describes the use of 35 traditional Chinese medicines derived from the human body, including bones, fingernail, hairs, dandruff, earwax, impurities on the teeth, feces, urine, sweat, and organs, but most are no longer in use.[17][18][19]

Preparation

Each herbal medicine prescription is a cocktail of many substances, usually tailored to the individual patient.

Decoction

Typically, one batch of medicinals is prepared as a decoction of about 9 to 18 substances.[20] Some of these are considered as main herbs, some as ancillary herbs; within the ancillary herbs, up to three categories can be distinguished.[21] Some ingredients are added in order to cancel out toxicity or side-effects of the main ingredients; on top of that, some medicinals require the use of other substances as catalysts.

Chinese patent medicine

Chinese patent medicine (traditional Chinese: 中成藥, Simplified Chinese: 中成药, pinyin: zhōngchéng yào) is a kind of traditional Chinese medicine. They are standardized herbal formulas. From ancient times, pills were formed by combining several herbs and other ingredients, which were dried and ground into a powder. They were then mixed with a binder and formed into pills by hand. The binder was traditionally honey. Modern teapills, however, are extracted in stainless steel extractors to create either a water decoction or water-alcohol decoction, depending on the herbs used. They are extracted at a low temperature (below 100 degrees Celsius) to preserve essential ingredients. The extracted liquid is then further condensed, and some raw herb powder from one of the herbal ingredients is mixed in to form an herbal dough. This dough is then machine cut into tiny pieces, a small amount of excipients are added for a smooth and consistent exterior, and they are spun into pills. Teapills are characteristically little round black pills.

Chinese patent medicines are easy and convenient. They are not easy to customize on a patient-by-patient basis, however. They are often used when a patient's condition is not severe and the medicine can be taken as a long-term treatment.

These medicines are not patented in the traditional sense of the word. No one has exclusive rights to the formula. Instead, "patent" refers to the standardization of the formula. In China, all Chinese patent medicines of the same name will have the same proportions of ingredients, and manufactured in accordance with the PRC Pharmacopoeia, which is mandated by law. However, in western countries there may be variations in the proportions of ingredients in patent medicines of the same name, and even different ingredients altogether.

Several producers of Chinese herbal medicines are pursuing FDA clinical trials to market their products as drugs in U.S. and European markets.[22]

Chinese herbal extracts

Chinese herbal extracts are herbal decoctions that have been condensed into a granular or powdered form. Herbal extracts, similar to patent medicines, are easier and more convenient for patients to take. The industry extraction standard is 5:1, meaning for every five pounds of raw materials, one pound of herbal extract is derived.[23]

Categorization

There are several different methods to classify traditional Chinese medicinals:

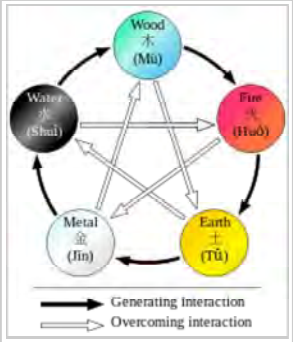
- The Four Natures (simplified Chinese: 四气; traditional Chinese: 四氣; pinyin: *sìqì*)
- The Five Flavors (Chinese: 五味; pinyin: *wǔwèi*)
- The meridians (simplified Chinese: 经络; traditional Chinese: 經絡; pinyin: *jīngluò*)
- The specific function.

Four Natures

The Four Natures are: hot (热), warm (温), cool (凉), cold (寒) or neutral (平), in terms of temperature.[24] Hot and warm herbs are used to treat cold diseases, while cool and cold herbs are used to treat heat diseases.[24]

Five Flavors

The Five Flavors, sometimes also translated as *Five Tastes*, are: acrid/pungent (辛), sweet (甘), bitter (苦), sour (酸), and salty (咸).[24] Substances may also have more than one flavor, or none (i.e., a bland (淡) flavor).[24] Each of the Five Flavors corresponds to one of the zàng organs, which in turn corresponds to one of the Five Phases:[25] A flavor implies certain properties and therapeutic actions of a substance: saltiness "drains downward and softens hard masses";[24] sweetness is "supplementing, harmonizing, and moistening";[24] pungent substances are thought to induce sweat and act on qi and blood; sourness tends to be astringent (涩) in nature; bitterness "drains heat, purges the bowels, and eliminates dampness".



The Five Phases, which correspond to the Five Flavors

Meridians

This classification refers not just to the meridian, but also to the meridian-associated zàng-organ, which can be expected to be primarily affected by a given medicinal (there are 12 standard meridians in the body a medicinal can act upon). For example, traditional beliefs hold that menthol is pungent and cool and goes to the lung and the

liver channels. The traditional Chinese concept of the lungs includes the function of protecting the body from colds, and menthol is thought to cool the lungs and purge heat toxins caused by wind-heat invasion (one of the patterns of common cold).

Specific function

These categories mainly include:

- exterior-releasing[26] or exterior-resolving[27]
- heat-clearing[26][27]
- downward-draining[26] or precipitating[27]
- wind-damp-dispelling[26][27]
- dampness-transforming[26][27]
- promoting the movement of water and percolating dampness[26] or dampness-percolating[27]
- interior-warming[26][27]
- qi-regulating[26] or qi-rectifying[27]
- dispersing food accumulation[26] or food-dispersing[27]
- worm-expelling[26][27]
- stopping bleeding[26] or blood-stanching[27]
- quickening the Blood and dispelling stasis[26] or blood-quickening[27] or Blood-moving.[28]
- transforming phlegm, stopping coughing and calming wheezing[26] or phlegm-transforming and cough- and panting-suppressing[27]
- Spirit-quieting[26][27] or Shen-calming.[28]
- calming the Liver and expelling wind[26] or Liver-calming and wind-extinguishing[27]
- orifice-opening[26][27]
- supplementing[26][27] or tonifying:[28] this includes qi-supplementing, blood-nourishing, yin-enriching, and yang-fortifying.[27]
- astriction-promoting[26] or securing and astringing[27]
- vomiting-inducing[26]
- substances for external application[26][27]

Nomenclature

Many herbs earn their names from their unique physical appearance. Examples of such names include *Niu Xi* (Radix cyathulae seu achyranthis), "cow's knees," which has big joints that might look like cow knees; *Bai Mu Er* (Fructificatio tremellae fuciformis), white wood ear,' which is white and resembles an ear; *Gou Ji* (Rhizoma cibotii), 'dog spine,' which resembles the spine of a dog.[29]

Color

Color is not only a valuable means of identifying herbs, but in many cases also provides information about the therapeutic attributes of the herb. For example, yellow herbs are referred to as *huang* (yellow) or *jin* (gold). Huang Bai (Cortex Phellodendri) means 'yellow fir," and *Jin Yin Hua* (Flos Lonicerae) has the label 'golden silver flower."[29]

Smell and taste

Unique flavors define specific names for some substances. *Gan* means 'sweet,' so *Gan Cao* (Radix glycyrrhizae) is 'sweet herb," an adequate description for the licorice root. "Ku" means bitter, thus Ku Shen (Sophorae flavescentis) translates as 'bitter herb.'[29]

Geographic location

The locations or provinces in which herbs are grown often figure into herb names. For example, *Bei Sha Shen* (Radix glehniae) is grown and harvested in northern China, whereas *Nan Sha Shen* (Radix adenophorae) originated in southern China. And the Chinese words for north and south are respectively *bei* and *nan*.[29]

Chuan Bei Mu (Bulbus fritillariae cirrhosae) and *Chuan Niu Xi* (Radix cyathulae) are both found in Sichuan province, as the character "chuan" indicates in their names.[29]

Function

Some herbs, like Fang Feng (Radix Saposhnikoviae), literally 'prevent wind," prevents or treats wind-related illnesses. Xu Duan (Radix Dipsaci), literally 'restore the broken,' effectively treats torn soft tissues and broken bones.[29]

Country of origin

Many herbs indigenous to other countries have been incorporated into the Chinese materia medica. *Xi Yang Shen* (Radix panacis quinquefolii), imported from North American crops, translates as 'western ginseng," while *Dong Yang Shen* (Radix ginseng Japonica), grown in and imported from North Asian countries, is 'eastern ginseng.' Similar examples are noted in the text whenever geography matters in herb selection.[29]

Toxicity

From the earliest records regarding the use of medicinals to today, the toxicity of certain substances has been described in all Chinese materia medica.[30] Since TCM has become more popular in the Western world, there are increasing concerns about the potential toxicity of many traditional Chinese medicinals including plants, animal parts and minerals.[5] For most medicinals, efficacy and toxicity testing are based on traditional knowledge rather than laboratory analysis.[5] The toxicity in some cases could be confirmed by modern research (i.e., in scorpion); in some cases it could not (i.e., in *Curculigo*).[31] Further, ingredients may have different names in different locales or in historical texts, and different preparations may have similar names for the same reason, which can create inconsistencies and confusion in the creation of medicinals,[32] with the possible danger of poisoning.[33][34][35] Edzard Ernst "concluded that adverse effects of herbal medicines are an important albeit neglected subject in dermatology, which deserves further systematic investigation."[36] Research suggests that the toxic heavy metals and undeclared drugs found in Chinese herbal medicines might be a serious health issue.[37]

Substances known to be potentially dangerous include aconite,[31] secretions from the Asiatic toad,[38] powdered centipede,[39] the Chinese beetle (*Mylabris phalerata*, Ban mao),[40] and certain fungi.[41] There are health problems associated with *Aristolochia*.[5] Toxic effects are also frequent with *Aconitum*.[5] To avoid its toxic adverse effects *Xanthium sibiricum* must be processed.[5] Hepatotoxicity has been reported with products containing *Polygonum multiflorum*, glycyrrhizin, *Senecio* and *Symphytum*.[5] The evidence suggests that hepatotoxic herbs also include *Dictamnus dasycarpus*, *Astragalus membranaceous*, and *Paeonia lactiflora*; although there is no evidence that they cause liver damage.[5] Contrary to popular belief, *Ganoderma lucidum* mushroom extract, as an adjuvant for cancer immunotherapy, appears to have the potential for toxicity.[42]

Also, adulteration of some herbal medicine preparations with conventional drugs which may cause serious adverse effects, such as corticosteroids, phenylbutazone, phenytoin, and glibenclamide, has been reported.[43][44]

A 2013 review suggested that although the antimalarial herb *Artemisia annua* may not cause hepatotoxicity, haematotoxicity, or hyperlipidemia, it should be used cautiously during pregnancy due to a potential risk of embryotoxicity at a high dose.[45]

However, many adverse reactions are due to misuse or abuse of Chinese medicine.[5] For example, the misuse of the dietary supplement *Ephedra* (containing ephedrine) can lead to adverse events including gastrointestinal problems as well as sudden death from cardiomyopathy.[5] Products adulterated with pharmaceuticals for weight loss or erectile dysfunction are one of the main concerns.[5] Chinese herbal medicine has been a major cause of acute liver failure in China.[46]

Efficacy

Regarding Traditional Chinese herbal therapy, only few trials exist that are considered to be of adequate methodology by modern western medical researchers, and its effectiveness therefore is considered poorly documented.[4] A 2016 Cochrane review found "insufficient evidence that Chinese Herbal Medicines were any more or less effective than placebo or Hormonal Therapy" for the relief of menopause related symptoms.[47] A 2012 Cochrane review found no difference in decreased mortality when Chinese herbs were used alongside Western medicine versus Western medicine exclusively.[48] A 2010 Cochrane review found there is not enough robust evidence to support the effectiveness of traditional Chinese medicine herbs to stop the bleeding from haemorrhoids.[49] A 2008 Cochrane review found promising evidence for the use of Chinese herbal medicine in relieving painful menstruation, compared to conventional medicine such as NSAIDs and the oral contraceptive pill, but the findings are of low methodological quality.[50] A 2007 Cochrane review found there is not enough evidence to support or dismiss the use of Chinese medicinal herbs for the treatment of influenza.[51] A 2005 Cochrane review found that although the evidence was weak for the use of any single herb, there was low quality evidence that some Chinese medicinal herbs may be effective for the treatment of acute pancreatitis.[52]

Successful results have however been scarce: artemisinin, for example, which is an effective treatment for malaria, was discovered from an herb traditionally used to treat fever.[1] Although advocates have argued that research had missed some key features of TCM, such as the subtle interrelationships between ingredients, it is largely pseudoscience, with no valid mechanism of action for the majority of its treatments.[1]

Ecological impacts

The traditional practice of using (by now) endangered species is controversial within TCM. Modern Materia Medicas such as Bensky, Clavey and Stoger's comprehensive Chinese herbal text discuss substances derived from endangered species in an appendix, emphasizing alternatives.[53]

Parts of endangered species used as TCM drugs include tiger bones[54] and rhinoceros horn.[55] Poachers supply the black market with such substances,[56][57] and the black market in rhinoceros horn, for example, has reduced the world's rhino population by more than 90 percent over the past 40 years.[58] Concerns have also arisen over the use of turtle plastron[59] and seahorses.[60]

Dried seahorses like these are extensively used in traditional medicine in China and elsewhere.

TCM recognizes bear bile as a medicinal.[61] In 1988, the Chinese Ministry of Health started controlling bile production, which previously used bears killed before winter. Now bears are fitted with a sort of permanent catheter, which is more profitable than killing the bears.[62] More than 12,000 asiatic black bears are held in "bear farms", where they suffer cruel conditions while being held in tiny cages.[61] The catheter leads through a permanent hole in the abdomen directly to the gall bladder, which can cause severe pain. Increased international attention has mostly stopped the use of bile outside of China; gallbladders from butchered cattle (niú dǎn / 牛膽 / 牛胆) are recommended as a substitute for this ingredient.

Collecting American ginseng to assist the Asian traditional medicine trade has made ginseng the most harvested wild plant in North America for the last two centuries, which eventually led to a listing on CITES Appendix II.[63]

Herbs in use

There are over three hundred herbs that are commonly being used today. Some of the most commonly used herbs are Ginseng (人参, 人參, *rénshēn*), wolfberry (枸杞子), *dong quai* (*Angelica sinensis*, 当归, 當歸, *dāngguī*), astragalus (黄耆, 黃耆, *huángqí*), atractylodes (白术, 白朮, *báizhú*), bupleurum (柴胡, *cháihú*), cinnamon (cinnamon twigs (桂枝, *guìzhī*) and cinnamon bark (肉桂, *ròugui*)), coptis (黄莲, 黃蓮, *huánglián*), ginger (姜, 薑, *jiāng*), hoelen (茯苓, *fúlíng*), licorice (甘草, *gāncǎo*), *ephedra sinica* (麻黄, 麻黃, *máhuáng*), peony (white: 白芍, *báisháo* and reddish: 赤芍, *chìsháo*), rehmannia (地黄, 地黃, *dìhuáng*), rhubarb (大黄, 大黃, *dàhuáng*), and salvia (丹参, 丹參, *dānshēn*).

Ginseng

The use of ginseng (人参) is well over 2,000 years old in Chinese medicine. Ginseng contains ginsenosides. The amount of ginsenosides in ginseng depends on how the plant was cultivated and the age of the root. Wild ginseng is rare and commands the highest prices on the market. Red Panax ginseng is the most popular form of ginseng and it is usually packaged as a liquid or tea. Ginseng comes in two kinds, red and white. The color of the ginseng depends on how it is processed. White ginseng is unprocessed and dries naturally. Red ginseng is processed with steam and is believed to be more effective. Native Americans have used American ginseng for dry coughs, constipation, and fevers.

Chinese red ginseng roots

TCM Information: Species: Panax ginseng. Pinyin: Ren Shen. Common Name: Chinese Ginseng. Quality: Sweet, Bitter, Warm. Meridians: Lung, Spleen, Heart. Actions: Tonifies yuan qi to treat collapse of qi, tonifies spleen and lung, generates fluids, mildly tonifies heart qi.[64][65][66]

Species: Elutherococcus senticosus. Pinyin: Ci Wu Jia. Common Name: Siberian Ginseng. Quality: Pungent (Acrid), Slightly bitter, Warm. Meridians: Spleen, Heart, Kidney. Actions: Tonifies spleen and kidney, mildly tonifies heart qi, promotes blood circulation, calms shen.[67][68]

Species: Panax quinquefolius. Pinyin: Xi Yang Shen. Common Name: American Ginseng. Quality: Sweet, Slightly bitter, Cold. Meridians: Heart, Kidney, Lung. Actions: Tonifies lung and spleen qi, tonifies lung yin, cools fire from lung yin deficiency, generates fluids.[69][70]

Ginkgo

Mushrooms

Mushrooms have long been used as a medicinal food and as a tea in Chinese herbology. Clinical, animal, and cellular research has shown some mushrooms may be able to up-regulate aspects of the immune system.[71][72][73][74] Notable mushrooms used in Chinese herbology include Reishi and Shiitake.

Wolfberry

Wolfberry (枸杞子) is grown in the Far East and is grown from shrubs with long vines. The shrubs are covered with small trumpet-shaped flowers, which turn into small, bright red berries. The berries are usually fresh and sometimes used when dried.

TCM Information: Species: *Lycium barbarum*. Pinyin: Gou Qi Zi. Common Name: Chinese Wolfberry. Quality: Sweet, Neutral. Meridians: Liver, Lung, Kidney. Actions: Tonifies kidney and lung yin, tonifies liver blood, tonifies jing, improves vision.[75][76][77]

Dang Gui

Dang Gui (当归, *Angelica sinensis* or "female ginseng") is an aromatic herb that grows in China, Korea, and Japan.

TCM Information: Species: Angelica sinensis. Pinyin: Dang Gui. Common Name: Chinese Angelica Root. Quality: Sweet, Pungent(Acrid), Warm. Meridians: Liver, Heart, Spleen. Actions: Tonifies blood, invigorates blood, regulates menstruation, relieves pain, unblocks bowels by moistening intestine.[78][79][80]

Lycium barbarum, Wolfberry (枸杞子)

Astragalus

Astragalus (黄芪) is a root used for immune deficiencies and allergies.

TCM Information: Species: Astragalus membranaceus. Pinyin: Huang Qi. Common Name: Astragalus Root, Milkvetch Root. Quality: Sweet, Slightly warm. Meridians: Lung, Spleen. Actions: Raises yang qi to treat prolapse, tonifies spleen and lung qi, tonifies wei qi, increases urination, promotes drainage of pus, generates flesh.[81][82][83]

Atractylodes

Atractylodes (白术) is believed to be important in the treatment of digestive disorders and problems of moisture accumulation.

TCM Information: Species: Atractylodes lancea. Pinyin: Cang Zhu. Common Name: Atractylodes Rhizome. Quality: Pungent(Acrid), Bitter, Warm. Meridians: Spleen, Stomach. Actions: Strong to dry dampness, strengthens the spleen, induce sweating, expels wind-cold, clears damp-heat from lower jiao, improves vision.[84][85][86]

Bupleurum

Bupleurum (柴胡) is believed to be useful for the treatment of liver diseases, skin ailments, arthritis, menopausal syndrome, withdrawal from corticosteroid use, nephritis, stress-induced ulcers, and mental disorders.

TCM Information: Species: Bupleurnum chinense. Pinyin: Chai Hu. Common Name: Hare's Ear Root. Quality: Bitter, Pungent(Acrid), Cool. Meridians: Gallbladder, Liver, Pericardium, San Jiao. Actions: Treats alternating chills and fever, clears lesser yang disorders, relieves liver qi stagnation, raises yang qi to treat prolapse, treats certain menstrual disorders.[87][88][89]

Cinnamon

Cinnamon (桂枝, 肉桂), mostly *gui zhi* and *rou gui*, is the twigs and bark from large tropical trees.

Studies show that cinnamon reduces serum glucose, triglyceride, LDL cholesterol, and total cholesterol in people with type 2 diabetes, and the findings suggest that the inclusion of cinnamon in the diet of people with type 2 diabetes will reduce risk factors associated with diabetes and cardiovascular diseases.[90][91][92][93][94][95][96]

TCM Information: Species: Cinnamomum cassia. Pinyin: Gui Zhi. Common Name: Cinnamon Twig. Quality: Pungent (Acrid), Sweet, Warm. Meridians: Heart, Lung, Bladder. Actions: Induces sweating, warms and unblocks channels, unblocks yang qi of the chest, treats dysmenorrhea.[97][98][99]

Species: Cinnamomum cassia. Pinyin: Rou Gui. Common Name: Cinnamon Bark. Quality: Pungent (Acrid), Sweet, Hot. Meridians: Heart, Kidney, Liver, Spleen. Actions: Tonifies kidney yang, leads fire back to its source, disperses cold, encourages generation of qi and blood, promotes blood circulation, alleviates pain due to cold, dysmenorrhea.[100][101][102]

Coptis chinensis

Coptis chinensis (黄莲) is a rhizome that is one of the bitterest herbs used in Chinese medicine.

TCM Information: Species: Coptis chinensis. Pinyin: Huang Lian. Common Name: Coptis Rhizome. Qualities: Bitter, Cold. Meridians: Heart, Large Intestine, Liver, Stomach. Actions: Clears heat and drains damp, drains fire(especially from heart and stomach), eliminates toxicity.[103][104][105]

Ginger

Ginger (姜, 薑) is a herb and a spice that is used in Chinese cuisine. There are four main kinds of preparations in Chinese herbology: fresh ginger, dried ginger, roasted ginger, and ginger charcoal, all made of the rhizomes.

TCM Information:

Species: Zingiber officinalis.
Pinyin: Sheng Jiang (生姜, 生薑).

Common Name: Fresh Ginger Rhizome.
Quality: Pungent(Acrid), Slightly warm.
Meridians: Lung, Spleen, Stomach.
Actions: Releases the exterior, expels cold, warms the middle *jiao*, relieves nausea, transforms phlegm, warms lung to stop coughing, treats toxicity, and moderates the toxicity of other herbs. [106][107][108]

Species: Zingiber officinalis.
Pinyin: Gan Jiang (干姜, 乾薑).
Common Name: Dried Ginger Rhizome.
Quality: Pungent(Acrid), Hot.
Meridians: Heart, Lung, Spleen, Stomach.
Actions: Warms the spleen and stomach, restores devastated yang, warms the lung to transform thin mucus, warms and unblocks channels.[109][110]


Ginger is consumed in China as food and as medicine.

Licorice

The use of the licorice plant (甘草) *Glycyrrhiza glabra* L. is thought to help treat hepatitis, sore throat, and muscle spasms.

TCM Information:

Species: *Glycyrrhiza inflata* or *Glycyrrhiza glabra*.
Pinyin: Gan Cao.
Common Name: Licorice Root.
Quality: Sweet, Neutral.
Meridians: All 12 channels, but mainly Heart, Lung, Spleen, Stomach.
Actions: Tonify spleen qi, moisten lung for dry cough, clears heat and fire toxicity, tonifies heart qi to regulate pulse, alleviates spasmodic pain, antidote for toxicity, moderates the effects of harsh herbs.[111][112][113]

Ephedra

Ephedra (麻黄)

TCM Information: Species: Ephedra sinica or Ephedra intermedia. Pinyin: Ma Huang. Common Name: Ephedra Stem. Quality: Pungent(Acrid), Slightly Bitter, Warm. Meridians: Lung, Bladder. Actions: Induce sweating and release exterior for wind-cold invasion with no sweating, promotes urination, move lung qi for wheezing, cough or asthma.[114][115][116]

Peony

Peony (白芍, 赤芍) comes in two varieties: bai shao (white) and chi shao (red), the root of the plant is used in both varieties.

TCM Information: Species: Paeonia lactiflora. Pinyin: Bai Shao. Common Name: White Peony Root. Quality: Bitter, Sour, Cool. Meridians: Liver, Spleen. Actions: Tonify liver blood, calms liver yang, alleviates flank/abdominal pain from liver qi stagnation or liver and spleen disharmony, preserves yin and adjusts nutritive and protective levels, regulates menses for blood deficiency problem.[117][118][119]

Species: Paeonia lactiflora or Paeonia veitchii. Pinyin: Chi Shao. Common Name: Red Peony Root. Quality: Sour, Bitter, Cool. Meridians: Liver, Spleen. Actions: Clears heat, cools blood, invigorates blood and dispel stasis to treat irregular menses, dysmenorrhoea, amenorrhea, abdominal pain, and fixed abdominal masses.[120][121]

Rehmannia

Rehmannia (地黄) is a root where the dark, moist part of the herb is used.

TCM Information: Species: Rehmannia glucinosa. Pinyin: Sheng Di Huang. Common Name: Chinese Foxglove Root. Qualities: Sweet, Bitter, Cold. Meridians: Heart, Kidney, Liver. Actions: Clears heat, cools blood, nourishes yin, generates fluids, treats wasting and thirsting disorder.[122][123]

Species: Rehmannia glucinosa. Pinyin: Shu Di Huang. Common Name: Chinese Foxglove Root Prepared with Wine. Qualities: Sweet, Slightly warm. Meridians: Heart, Kidney, Liver. Actions: Tonifies blood, tonifies liver and kidney yin, treats wasting and thirsting disorder, nourishes jing. [124][125][126]

Rhubarb

Rhubarb (大黄), used medicinally for its root, was one of the first herbs to be imported from China. [127]

TCM Information: Species: Rheum palmatum, Rheum ranguticum, or Rheum officinale. Pinyin: Da Huang. Common Name: Rhubarb Root and Rhizome. Quality: Bitter, Cold. Meridians: Heart, Large Intestine, Liver, Stomach. Actions: Purge accumulation, cool blood, invigorate blood, drain damp-heat.[128][129][130]

Salvia

Salvia (丹參) are the deep roots of the Chinese sage plant.

TCM Information: Species: Salvia miltiorrhiza. Pinyin: Dan Shen. Common Name: Salvia Root. Qualities: Bitter, Cool. Meridians: Heart, Pericardium, Liver. Actions: Invigorate blood, tonify blood, regulate menstruation, clear heat and soothe irritability.[131][132][133]

50 fundamental herbs

In Chinese herbology, there are 50 "fundamental" herbs, as given in the reference text,[134] although these herbs are not universally recognized as such in other texts. The herbs are:

Chinese rhubarb depicted by Michał Boym (1655)

Binomial nomenclature	Chinese name	English Common Name (when available)
Agastache rugosa[135]	huò xiāng (藿香)[136]	Korean Mint
Alangium chinense[137]	bā jiǎo fēng (八角枫)[138]	Chinese Alangium Root
Anemone chinensis (syn. *Pulsatilla chinensis*)[139]	bái tóu weng (白头翁)[138][139]	Chinese anemone
Anisodus tanguticus	shān làng dàng (山莨菪)[140]	
Ardisia japonica	zǐ jīn niú (紫金牛)[141]	Marlberry
Aster tataricus	zǐ wǎn (紫菀)	Tatar aster, Tartar aster
Astragalus propinquus (syn. *Astragalus membranaceus*)[142]	huáng qí (黄芪)[143] or běi qí (北芪)[143]	Chinese astragalus
Camellia sinensis	chá shù (茶树) or chá yè (茶叶)	Tea Plant
Cannabis sativa	dà má (大麻)	Cannabis
Carthamus tinctorius	hóng huā (红花)	Safflower
Cinnamomum cassia	ròu gùi (肉桂)	Cassia, Chinese Cinnamon
Cissampelos pareira	xí shēng téng (锡生藤) or (亞乎奴)	Velvet leaf
Coptis chinensis	duǎn è huáng lián (短萼黄连)	Chinese Goldthread
Corydalis yanhusuo	yán hú suǒ (延胡索)	Chinese Poppy of Yan Hu Sou
Croton tiglium	bā dòu (巴豆)	Purging Croton
Daphne genkwa	yuán huā (芫花)	Lilac Daphne
Datura metel	yáng jīn huā (洋金花)	Devil's Trumpet
Datura stramonium[144]	zǐ huā màn tuó luó (紫花曼陀萝)	Jimson Weed
Dendrobium nobile	shí hú (石斛) or shí hú lán (石斛兰)	Noble Dendrobium
Dichroa febrifuga[145]	cháng shān (常山)	Blue Evergreen Hydrangea, Chinese Quinine
Ephedra sinica	cǎo má huáng (草麻黄)	Chinese ephedra
Eucommia ulmoides	dù zhòng (杜仲)	Hardy rubber tree
Euphorbia pekinensis[146]	dà jǐ (大戟)	Peking spurge
Flueggea suffruticosa (formerly *Securinega suffruticosa*)	yī yè qiū (一叶秋)[147]	
Forsythia suspensa	liánqiáo[148] (连翘)	Weeping Forsythia
Gentiana loureiroi	dì dīng (地丁)	
Gleditsia sinensis	zào jiá (皂荚)	Chinese Honeylocust
Glycyrrhiza uralensis	gān cǎo (甘草)[149]	Licorice
Hydnocarpus anthelminticus (syn. *H. anthelminthica*)	dà fēng zǐ (大风子)	Chaulmoogra tree
Ilex purpurea	dōngqīng (冬青)	Purple Holly
Leonurus japonicus	yì mǔ cǎo (益母草)	Chinese motherwort
Ligusticum wallichii[150]	chuān xiōng (川芎)	Szechwan lovage
Lobelia chinensis	bàn biān lián (半边莲)	Creeping Lobelia
Phellodendron amurense	huáng bǎi (黄柏)	Amur cork tree
Platycladus orientalis (formerly *Thuja orientalis*)	cè bǎi (侧柏)	Chinese Arborvitae
Pseudolarix amabilis	jīn qián sōng (金钱松)	Golden Larch
Psilopeganum sinense	shān má huáng (山麻黄)	Naked rue
Pueraria lobata	gé gēn (葛根)	Kudzu
Rauwolfia serpentina	shégēnmù (蛇根木), cóng shégēnmù (從蛇根木) or yìndù shé mù (印度蛇木)	Sarpagandha, Indian Snakeroot
Rehmannia glutinosa	dìhuáng (地黄) or gān dìhuáng (干地黄)[151]	Chinese Foxglove
Rheum officinale	yào yòng dà huáng (药用大黄)	Chinese or Eastern rhubarb
Rhododendron tsinghaiense	Qīng hǎi dù juān (青海杜鹃)	

Saussurea costus	yún mù xiāng (云木香)	Costus root
Schisandra chinensis	wǔ wèi zi (五味子)	Chinese Magnolia Vine
Scutellaria baicalensis	huáng qín (黄芩)	Baikal Skullcap
Stemona tuberosa	bǎi bù (百部)	
Stephania tetrandra	fáng jǐ (防己)	Stephania Root
Styphnolobium japonicum (formerly *Sophora japonica*)	huái (槐), huái shù (槐树), or huái huā (槐花)	Pagoda Tree
Trichosanthes kirilowii	guā lóu (栝楼)	Chinese Cucumber
Wikstroemia indica	liāo gē wáng (了哥王)	Indian stringbush

Other Chinese herbs

In addition to the above, many other Chinese herbs and other substances are in common use, and these include:

- *Akebia quinata* (木通)
- *Arisaema heterophyllum*[152][153] (胆南星)
- *Arsenic trioxide* (砒霜)
- *Arsenolite* (砒石)
- *Aspongopus* (九香虫)
- *Asteriscus pseudosciaenae* (鱼脑石)
- *Benzoinum* (安息香)
- *Bombyx batryticatus* (僵蚕)
- *Bulbus fritillariae cirrhosae* (川贝母)
- *Bulbus fritillariae hupehensis* (湖北贝母)
- *Bulbus fritillariae pallidiflorae* (伊贝母)
- *Bulbus fritillariae thunbergii* (浙贝母)
- *Bulbus fritillariae ussuriensis* (平贝母)
- *Bulbus lycoridis radiatae* (石蒜)
- *Cacumen securinegae suffruticosae* (叶底珠)
- *Cacumen tamaricis* (西河柳)
- *Calamine* (炉甘石)
- *Calculus bovis* (牛黄)
- *Calculus equi* (马宝)
- *Calomelas* (轻粉)
- *Calyx seu fructus physalis* (锦灯笼)
- *Caulis ampelopsis brevipedunculae* (山葡萄)
- *Caulis aristolochiae manshuriensis* (关木通)
- *Caulis bambusae* in taeniam (竹茹)
- *Caulis clematidis armandii* (川木通)
- *Caulis entadae* (过江龙)
- *Caulis erycibes* (丁公藤)
- *Caulis et folium piperis hancei* (山蒟)
- *Caulis et folium schefflerae arboricolae* (七叶莲)
- *Caulis euphorbiae antiquori* (火殃勒)
- *Caulis fibraureae* (黄藤)
- *Caulis gneti* (买麻藤)
- *Caulis hederae sinensis* (常春藤)
- *Caulis impatientis* (透骨草)
- *Caulis lonicerae* (忍冬藤)
- *Caulis mahoniae* (功劳木)
- *Caulis perillae* (紫苏梗)
- *Caulis piperis kadsurae* (海风藤)
- *Caulis polygoni multiflori* (首乌藤)
- *Caulis sargentodoxae* (大血藤)
- *Caulis sinomenii* (青风藤)
- *Caulis spatholobi* (鸡血藤)
- *Caulis tinosporae* (宽根藤)
- *Caulis trachelospermi* (络石藤)
- *Cera chinensis* (虫白蜡)
- *Chenpi* (Sun-Dried tangerine (Mandarin) peel) (陳皮)
- *Cinnabaris* (朱砂)
- *Clematis* (威灵仙)
- *Colla corii asini* (阿胶)
- *Concha arcae* (瓦楞子)
- *Concha haliotidis* (石决明)
- *Concha margaritifera usta* (珍珠母)
- *Concha mauritiae arabicae* (紫贝齿)
- *Concha meretricis seu cyclinae* (蛤壳)
- *Concretio silicea bambusae* (天竺黄)
- *Cordyceps sinensis* (冬虫夏草)
- *Corium erinacei seu hemiechianus* (刺猬皮)
- *Cornu bubali* (水牛角)
- *Cornu cervi* (鹿角)
- *Cornu cervi degelatinatum* (鹿角霜)
- *Cornu cervi pantotrichum* (鹿茸)
- *Cornu saigae tataricae* (羚羊角)
- *Cortex acanthopanacis* (五加皮)
- *Cortex ailanthi* (椿皮)
- *Cortex albiziae* (合欢皮)
- *Cortex cinchonae* (金鸡纳皮)
- *Cortex dictamni* (白鲜皮)
- *Curcuma* (郁金)
- *Dalbergia odorifera* (降香)
- *Hirudo medicinalis* (水蛭)
- *Myrrh* (没药)
- *Olibanum* (乳香)
- *Persicaria* (桃仁)
- "Pogostemon cablin" (广藿香)
- *Polygonum* (虎杖)
- *Sparganium* (三棱)
- *Zedoary* (*Curcuma zedoaria*) (莪朮)

See also

- Chinese classic herbal formula
- Chinese ophthalmology
- *Compendium of Materia Medica*
- Hallucinogenic plants in Chinese herbals
- Herbalism, for the use of medicinal herbs in other traditions.

- Li Shizhen
- Pharmacognosy
- Star anise
- Japanese star anise
- Traditional Chinese medicine
- Traditional Japanese medicine
- Traditional Korean medicine
- *Yaoxing Lun*
- *Jiuhuang Bencao*

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