TEXTUAL RESEARCH FOR LATIN NAMES AND MEDICINAL EFFECTS OF MEDIUM GRADE DRUGS IN SHENNONGBENCAOJING

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(Received 21th March 2012, accepted 18th June 2012)

In our previous research for Top Grade Drugs, Textual Research for Latin Names and Medicinal Effects of Top Grade Drugs in Shennongbencaojing, we have defined names by various used parts, corrected misnames, confirmed scientific names, gathered papers and evaluated utilization in medicine, which helped to achieve the internationalization of Chinese Medicine. This study was one of the sequels to textual research for Shennongbencaojing. The Medium Grade Drugs were divided, in the same way for Top Grade Drugs, into six groups and their drug numbers were also shown in the following order: Plant (74 drugs), Mineral (14 drugs), Animal (11 drugs), Fish and Shellfish (four drugs), Insect (eight drugs) and Other (three drugs). The number of Medium Grade Drugs in the Sun’s edition was summed up by us to 114 exactly. The 114 drugs were reclassified by us in this study although old classifications already existed in the Shennongbencaojing. Eight drugs were considered by us to be edible as daily food, such as: Ganjing (No. 1), Baihe (No. 14), Haizao (No. 36), Longyan (No. 62), Meishi (No. 66), Sumi (No. 69), Shumi (No. 70), and Xie (No. 73). Only for two drugs, Zishen (No. 28 of Plants) and Fuqing (No. 14 of Minerals), their scientific names have not yet been defined. All the other drugs can be used in medicine. The results fit the conception that “The Medium Grade Drugs are less often used as food and more often used to treat patients in medicine.” Moreover, some drugs (plant or mineral) although have same origin but their Chinese medicinal names are different from Chinese common names. Examples are Zingiber officinale Roscoe, Iris lactea Pall. var. chinensis (Fisch.) Koidz., Centella asiatica (L.) Urb., Zanthoxylum bungeanum Maxim., Campsis grandiflora (Thunb.) K. Schum., Ziziphus jujuba Mill. var. spinosa (Bunge) Hu ex H. F. Chou, Mineral Ningshuishi, Vespertilio superans Thomas, Sepiella maindroni de Rochebrune, Periplaneta americana L., and Eupolyphaga sinensis Walker. Finally, the edition of Shennongbencaojing compiled by Sun Xingyan and Sun Fengyi was still chosen as the foundation to complete this sequent Medium Grade Drugs textual research.

Key words: Shennongbencaojing, medium grade drug, scientific name, pharmacological effect, edible and medicinal, textual research

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Introduction

Shennongbencaojing (《神農本草經》), also known as Shennong’s Classic of Materia Medica, is the first Chinese Pharmacy monograph compiled during the Eastern Han Dynasty (25-220 A.D.). The drugs were divided into three main parts in Shennongbencaojing. The three parts having its each meaning were defined as follows: Top Grade Drugs (上品), medicinals that are non-toxic, possesses a rejuvenating effect and can be taken frequently and for a long period of time without harm. Medium Grade Drugs (中品), medicinals that have no or only slight toxic effect and are effective for treating diseases or deficiency conditions. Low Grade Drugs (下品), medicinals that are effective for expelling pathogens, but are toxic and should not be taken for a long period of time.

The original edition of Shennongbencaojing was not preserved and lost long time ago. Fortunately, we can read the classic of Materia Medica from the editions which were recompiled at Ming Dynasty and Qing Dynasty. But only Chinese name, odor, therapy, collection and growing area were mentioned in them. They are lack of international defined information such as scientific names to join to these drugs which were researched by us not only for Top Grade Drugs but also for Medium Grade Drugs.

In our previous research for Top Grade Drugs (Top), we have shown how to define different medicinal names by various used parts, to correct misnames, to confirm scientific names, to gather papers in pharmacological effects and to evaluate utilization in medicine. Top Grade Drugs were summed up to 142 drugs in Sun’s edition. In this study, official medicinal origins were confirmed to 135 drugs. Fourteen drugs which were included in the 135 drugs could be edible as daily food. This result was identical to the old definition that Top grade drug is the least harmful to human treatment in the three grades of Shennongbencaojing. The Medium Grade Drugs of Shennongbencaojing are to be studied further continuously. The same edition of Shennongbencaojing compiled by Sun Xingyan (孫星衍) and Sun Fengyi (孫馮翼) was chosen as the foundation to complete this sequent textual research. Improving the ancient Materia Medica internationalization and universalization is always our final goal.

Materials and Methods

I. Materials

We referred following materials for this textual research.

(1) The Original Literatures of Classic of Materia Medica


5. Chinese Herbal Medicine (《中華本草》), edited by Editorial Committee of National
Administrative Bureau on Chinese Medicine, published by Shanghai Science and Technology Pub Co., Shanghai, 19999.

(Ⅲ) National Pharmacopoeia
1. Zhonghua Chinese Herbal Pharmacopoeia (《中華中藥典》), edited by Editorial committee of Zhonghua Pharmacopoeia on Chinese Medicine, Published by Department of Health, Executive Yuan, R.O.C., Taipei, 20043.  

(Ⅳ) Folk Publication
Encyclopedia of Medicinal Plants 1-4, chief editors are Zhao ZZ, and Xiao PG, Shanghai World Pub Co., Shanghai, 20099.

(Ⅴ) Popular Medicine Websites

II. Methods
The Medium Grade Drugs in Shennongbencao-jing compiled by Sun Xingyan and Sun Fengyi were first chosen to use in the study for the original formal Chinese drug names. Then, the literatures documented in classics of ancient Materia Medica such as Bencaojingjizhu (《本草經集注》)10, Xinxibencao (《新修本草》)11, Jingzhenghengleiadaqnbencao (《經史證類大覈本草》)12, Zhenghe Jingzhenghengleiabeijibencao (《政和經史證類備急本草》)13, and Bencaogangmu (《本草綱目》) were studied to indentify the exact original formal Chinese drug names. Drug origins by its scientific names were identified through national pharmacopoeias such as Zhonghua Chinese Herbal Pharmacopoeia (《中華中藥典》), China Pharmacopoeia (《中國藥典》) and Chinese Herbal Medicine (《中華本草》). With each scientific name, the pharmacological effects of the drug were searched via Academic Search Premier or Medline in EBSCOhost data base. As regard to the drug utilizing, the original Chinese herbal name was used as the key word for searching on the internet via Google into some popular websites such as Health.chinatimes.com, Zhong-yao, Yibian.hopto.org, Pharmnet.com, Hudong.com, Baike.baidu.com and Wikipedia-the free encyclopedia. At the last, the Latin dictionary- Babylon.com was used for translating Latin into English.

Besides, the literatures documented in Classics of Materia Medica or publications in academic circles were also referred to and some combinations and comparisons were also involved to complete this study.

Results
Medium Grade Drugs in Shennongbencao-jing were still divided into six groups, (I) Plant, (II) Mineral, (III) Animal, (IV) Fish and Shellfish, (V) Insect, and (VI) Other. Then the serial numbers, formal Chinese name and pinyin were arranged as title of the drugs. In addition to the title, scientific name, specific name, common name, medicinal parts and corresponding pharmacological effects, or chemical composition were presented. Another official botanical or zoological names would be shown if they existed. Lastly for the plant group, the utilizing levels i.e. from most commonly used to almost not used were pointed out in the study.
I. Plants (74 drugs)

1. 乾薑 Ganjing

   *Zingiber officinale* Roscoe (Zingiberaceae)\(^8\), also known as Ginger. Its dried rhizome, *Zingiberis Rhizoma*\(^8\), has anti-diabetic\(^12\), anti-pyretic, analgesic, anti-inflammatory, anti-tumor, and anti-bacterial effects\(^9\), and has a potential anti-tolerant/anti-dependence property against chronic usage of morphine\(^13\). It is popularized as condiment and is one of the most commonly used in TCM.

2. 柴胡 Cangershi

   *Xanthium sibiricum* Patrin. ex Widder (Asteraceae)\(^7\), also known as 草耳子 Cangerzi. Its dried ripe fruit with involucre, *Xanthii Fructus*\(^7\), has antibacterial, anti-viral, anti-fungal activity, anti-hyperglycemia effects, and improves microcirculation\(^9\). *X. mongolicum* Kitag. of this species was also recorded as another official botanical origin of Cangershi\(^6\). They are seldom used in TCM.

3. 葛根 Gegen

   *Pueraria lobata* (Willd.) Ohwi (Fabaceae)\(^7\), its dried root, *Pueraria Lobatae Radix*\(^7\), has stress-related disease, myocardial ischemia-inhibiting, anti-arrhythmic, vasodilator, anti-hyperlipidemic hepatoprotective, bone loss inhibiting, and anti-pyretic, anti-inflammatory and oxidative effects\(^4,14\). *P. thomsonii* Benth. of this species was also recorded as another official botanical origin of Gegen\(^6\). These plants are edible, but often sprayed with herbicides. They are ones of the most commonly used in TCM.

4. 瓜蒌 Gualou

   *Trichosanthes kirilowii* Maxim\(^8\), (Cucurbitaceae), also called as Snake Gourd fruit or Chinese Cucumber. Its fruit, *Trichosanthis Fructus*\(^8\), has coronary artery dilator, anti-ulcer, antitumor, and anti-ageing effects\(^6\). *T. rosthornii* Harms of this species was also recorded as another official botanical origin of Gualou\(^6\). They are commonly used in TCM.

5. 苦参 Kushen

   *Sophora flavescens* Ait. (Fabaceae)\(^8\), its root known as “Ku Shen” which means “bitter root”, *Sophorae Flavescentis Radix*\(^8\). The considered roots of this species has and possess antibacterial, antihelminthic, astringent, diuretic, and tonic properties\(^8\). It is commonly used in TCM.

6. 當歸 Danggui

   *Angelica sinensis* (Oliv.) Diels (Umbelliferae)\(^7\), also commonly known as Dong Quai, Female Ginseng or Chinese Angelica. Its dried root, *Angelicae Sinensis Radix*\(^7\), some herbalists call it Danggui, the Queen of all female herbs. It is often included in prescriptions for abnormal menstruation, suppressed menstrual flow, painful or difficult menstruation, and uterine bleeding\(^9\), and has antibacterial and anti-inflammatory activity\(^15\). It is one of the most commonly used in TCM.

7. 麻黃 Mahuang

   *Ephedra sinica* Stapf (Ephedraceae)\(^7\) common names are Joint-pine, Jointfir, Mormon-tea or Brigham Tea. Its dried herbaceous stem, *Ephedrae Sinicae Herba*\(^7\), has traditionally been used by indigenous people for a variety of medicinal purposes, including treatment of asthma, hay fever, and the common cold\(^9\). It has anti-inflammatory effect\(^16\). *E. equisetina* Bge. or *E. intermedia* Schrenk ex C. A. Mey. of this species was also recorded as others official botanical origin of
Mahuang⁶. They are ones of the most commonly used in TCM.

8. 通草 Tongcao

_Akebia quinata_ (Thunb.) Decne. (Lardizabalaceae)⁷ also known as Chocolate Vine or Five-leaf Akebia. Its cane stem, _Akebiae Quinatae Caulis_ (Thunb.) Koidz. or _A. trifoliata_ (Thunb.) Koidz. var. _australis_ (Diels) Rehd. of this species was also recorded as others official botanical origin of Tongcao⁷. They are commonly used in TCM.

9. 芍藥 Shaoyao

(1) 白芍 Baishao

_Paeonia lactiflora_ Pall. (Paeoniaceae)⁷ also known as Chinese Peony or common garden peony. Its dried root, _Paeoniae Alba Radix_ is used to reduce fever and pain, and on wounds to stop bleeding and prevent infection⁹, and has anti-inflammatory effects¹⁷.

_P. lactiflora_ Pall. var. _trichocarpa_ (Bunge) Stern of these species were also recorded as another official botanical origin of Baishao⁶. They are commonly used in TCM.

(2) 赤芍 Chishao

_Paeonia lactiflora_ Pall. (Paeoniaceae)⁷ is the plant same as above first drug. _P. veitchii_ Lynch⁷, _P. obovata_ Maxim., _P. obovata_ Maxim. var. _willmottiae_ ( Stapf) Stern, _P. mairei_ Lévl., _P. anomal L._ or _P. anomal L._ var. _intermedia_ (C.A. Mey.) O. et B. Fedtsch. of these species were also recorded as others official botanical origin of Chishao⁶. They are commonly used in TCM.

10. 莲實 Lishi

_Iris lactea_ Pall. var. _chinensis_ (Fisch.) Koidz. (Iridaceae)⁶, was best known as 馬蔺 Malinzi, _Iris Lacteae Semen_⁶, has anti-tumor, anti-radiation, improving immunity, and contraception effects⁶. It is seldom used in TCM.

11. 瞿麦 Qumai

_Dianthus superbus_ L. (Caryophyllaceae)⁸, also known as Fringed Pink, Superbus Pink. The aerial part, _Dianthi Herba_⁸, has diuretic, anti-bacterial, cardiac inhibitory, smooth muscle stimulating, antioxidant, and cytotoxic activities effects⁶,¹⁸. _D. chinensis_ L. of this species was also recorded as another official botanical origin of Qumai⁶. They are commonly used in TCM.

12. 元参 Yuanshen

_Scrophularia ningpoensis_ Hemsl. (Scrophulariaceae)⁷ also known as figwort. Its dried root, _Scrophulariae Radix_, has anti-inflammatory, anti-bacterial, inhibition of platelet aggregation, and hypotensive effects⁶. _S. buergeriana_ Miq. of this species was also recorded as another official botanical origin of Yuanshen⁶. They are commonly used in TCM.

13. 秦艽 Qinjiao

_Gentiana macrophylla_ Pall. (Gentianaceae)⁸ also known as large-leaf gentian. Its dried root, _Gentianae Radix_, has anti-hypertensive, anti-inflammatory, hepatoprotective, analgesic, and pyretic effects⁶. _G. crassicaulis_ Duthie ex Burk., _G. straminea_ Maxim. or _G. dahlurica_ Fisch. of these species were also recorded as others official botanical origin of Qinjiao⁸. They are commonly used in TCM.

14. 百合 Baihe

_Lilium brownii_ F. E. Brown ex Miellez var. _viridulum_ Baker (Liliaceae)⁷ also known as lily. Its dried fleshy scale leaf, _Lili Bulbus_⁹ has antitussive,
expectorant, anti-fatigue, anti-oxidative, anti-hyperglycemia, anti-tumor, sedative, and hypnotic effects. L. lanciflorum Thunb. and L. pumilum DC. of these species were also recorded as another official botanical origin of Baihe. They are edible and commonly used in TCM.

15. 知母 Zhimu

Anemarrhena asphodeloides Bunge. (Liliaceae), its dried rhizome, Anemarrhenae Rhizoma, has anti-viral, anti-bacterial, anti-pyretic, anti-inflammatory, anti-asthmatic, anti-hyperglycemic, antiplatelet, and antithrombotic effects. They are commonly used in TCM.

16. 貝母 Beimu

Fritillaria thunbergii Miq. (Liliaceae) also known as 贝母 Zhebeimu or Thunberg fritillary. Its dried bulb, Fritillariae Thunbergii Bulbus, has antitussive, expectorator, sedative, analgesic, and anti-inflammatory effects. It is commonly used in TCM.

17. 白芷 Baizhi

Angelica dahurica Benth. (Fisch. ex Hoffm.) Benth. et Hook. f. (Umbelliferae), its dried root, Angelicae Dahuricae Radix, has anti-pyretic, analgesic, anti-inflammatory, anti-spasmodic antimicrobial and photosensitive effects. A. dahurica (Fisch. ex Hoffm.) Benth. et Hook. f. var. formosana (Boiss.) Shan et Yuan of this species was also recorded as another official botanical origin of Baizhi. They are commonly used in TCM.

18. 淫羊藿 Yinyanghuo

Epimedium brevicornum Maxim. (Berberidaceae), its aerial part, Epimedii Folium, enhances gonadal function, promotes bone formation, improves hemorheological parameters, protects against cardiac ischemia and has anti-tumor, immunoregulatory, anti-inflammatory, and antidepressant effects. E. sagittatum (Sieb. et Zucc.) Maxim., E. wushanense T. S. Ying, E. pubescens Maxim., or E. koreanum Nakai of these species were also recorded as others official botanical origin of Yinyanghuo. They are commonly used in TCM.

19. 黄芩 Huangqin

Scutellaria baicalensis Georgi (Lamiaceae), its dried root, Radix Scutellariae, has antibacterial, antimicrobial, anti-pyretic, anti-inflammatory, anti-platelet aggregation, hypotensive, and diuretic effects. S. amoena C.H. Wrigt, S. viscidula Bunge or S. likiangensis Diels of these species were also recorded as others official botanical origin of Huangqin. They are ones of the most commonly used in TCM.

20. 狗脊 Gouji

Cibotium barometz (L.) J. Smith (Dicksoniaceae), also known as 金毛狗脊 Jinmaogouji, golden chicken fern or woolly fern. Its dried rhizome, Cibotii Rhizoma, can relieve rheumatism and related conditions, strengthen waist and knee. It is commonly used in TCM.

21. 石龍芮 Shilongrui

Ranunculus sceleratus L. (Ranunculaceae), its whole plant, Ranunculi Scelerati Herba, can relieve rheumatismal pain. It is seldom used in TCM.

22. 茅根 Maogen

Imperata cylindrica (L.) Beauv. var. major (Nees) C. E. Hubb. (Poaceae), also known as 白茅
Baimaogen, blady grass, cogon grass, kunai grass, or Japanese blood grass. Its dried root and rhizome, Imperatae Rhizoma, have astringent, febrifuge, diuretic, tonic, and styptic actions. It is commonly used in TCM.

23. 紫菀 Ziwan
Aster tataricus L.f. (Asteraceae), its dried root and rhizome, Asteris Radix et Rhizoma, has expectorant, anti-tussive, anti-bacterial, and anti-tumor effects. It is commonly used in TCM.

24. 紫草 Zicao
Arnebia euchroma (Royle) Johnst. (Boraginaeae), its dried root, Arnebiae Radix, has anti-bacterial, anti-inflammatory, anti-tumor, anti-coagulant, and anti-HIV effects. A. guttata Bunge of this family was also recorded as another official botanical origin of Zicao. They are commonly used in TCM.

25. 散瘀 Baijiang
Patrinia scabiosaeofolia Fisch. ex Trev. (Valerianaceae), also known as 散瘀草Baijiangcao. Its whole herb, Patriniae Scabiosaofoliae Herba, has anti-inflammatory, anti-bacterial, anti-viral, improve liver cell regeneration and sedative effects. P. villosa (Thunb.) Juss. of this species was also recorded as another official botanical origin of Baijiang. They are commonly used in TCM.

26. 白鲜 Baixian
Dictamnus dasycarpus Turcz. (Rutaceae), also known as 白鲜皮Baixianpi, or dense-fruit pittany. It dried root bark, Dictamni Radicis Cortex, has anti-bacterial, anti-inflammatory, homeostatic, cellular, and humoral immunosuppressive effects. D. angustifolius G. Don ex Sweet. of this species was also recorded as another official botanical origin of Baixian. They are commonly used in TCM.

27. 酸蔹 Suanjiang
Physalis alkekengi L. (Solanaceae) also known as Bladder cherry, Chinese lantern, Japanese lantern, or Winter Cherry. The whole plant, Physalis Alkekengi Herba, has diuretic, anti-septic, abortifacient, and antifertility activities. P. alkekengi L. var. franchetti (Mast.) Makino, called 酸蔹Jindenglong. This species was also recorded as another official botanical origin of Suanjiang. They are seldom used in TCM.

28. 紫参 Zishen
Some other plants are also called Zishen but their relative official scientific names are still not defined.

29. 藁本 Gaoben
Ligusticum sinense Oliv. (Apiaceae), also known as 藁本(with the same pinyin) or Chinese lovage. Its dried rhizome and root, Ligustici Rhizoma et Radix, have analgesic, sedative, anti-spasmodic, anti-inflammatory, and anti-thrombotic effects. L. jeholense (Nakai et Kitag.) Nakai et Kitag. of this species was also recorded as another official botanical origin of Gaoben. They are seldom used in TCM.

30. 舌韉 Shiwei
Pyrrosia lingua (Thunb.) Farw. (Polypodiaceae), also known as 舌韉 with the same pinyin) or Felt Fern. Its dried leaf, Pyrrosiae Folium, has anti-microbial, diuretic, anti-platelet aggregation, and expectorant effects. P. sheareri (Bak.) Ching, P. gralla (Gies.) Ching, P. davidii (Bak.) Ching or P. petiolasa (Christ) Ching of these species were
also recorded as others official botanical origin of Shiwei. They are commonly used in TCM.

31. 白藓 Beixie

*Dioscorea colletti* Hook. f. var. *hypoglauca* (Palibin) Péi et Ting (Dioscoreaceae), its raw and dried rhizome, *Dioscoreae Collettii Rhizoma*, has anti-bacterial, killed insect, hypoglycemia, and anti-tumor effects. It is seldom used in TCM.

32. 白薇 Baiwei

*Cynanchum atratum* Bunge (Asclepiadaceae), also known as Blackend Swallowwort. Its dried root, *Cynanchi Atrati Radix*, has antipyretic and anti-inflammatory effects. *C. versicolor* Bunge of this species was also recorded as another official botanical origin of Baiwei. They are seldom used in TCM.

33. 水萍 Shuiping

*Spirodela polyrrhiza* (L.) Schleid. (Lemnaceae), also known as 浮萍 Fuping, Commonly Ducksmeat, or duckweed. Its dried whole plant, *Spirodela Polyrhizae Herba*, has anti-pyretic, anti-infection, diuretic, and cardio tonic effects. *Lemna minor* L. of this family was also recorded as another official botanical origin of Shuiping. They are seldom used in TCM.

34. 王瓜 Wanggua

*Trichosanthes cucumeroides* (Ser.) Maxim. (Cucurbitaceae), its dried fruit, *Trichosanthis Cucumeroidis Fructus*, can treat wasting-thirst, jaundice, and oligogalactia. It is seldom used in TCM.

35. 地榆 Diyu

*Sanguisorba officinalis* L. (Rosaceae), also known as garden burnet. Its dried root, *Sanguisorbae Radix*, has homeostatic, anti-inflammatory, anti-cancer, and anti-bacterial effects, and can be to treat burns. *S. officinalis* L. var. *longifolia* (Bert.) Yü et Li of this species was also recorded as another official botanical origin of Diyu. They are commonly used in TCM.

36. 海藻 Haizao

*Sargassum fusiforme* (Harv.) Setch. (Sargassaceae), its frond, *Sargassum* had anti-hypertension, anti-blood aggregation, lipoidolytic, improve immune, anti-tumor, and anti-inflammatory effects. *S. pallidum* (Turn.) C. Ag. of this species was also recorded as another official botanical origin of Haizao. They are edible and commonly used in TCM.

37. 澤蘭 Zelan

*Lycopus lucidus* Turcz. (Lamiaceae), also known as 地瓜兒苗 *Digua’ermiao*, Japan Bogorchid or shiny bugleweed. Its dried aerial part, *Lycopi Herba*, improves microcirculation and hemorheology, lowers blood viscosity, and has sedative, analgesic, anti-allergic, and immunostimulatory effects. *L. lucidus* Turcz. var. *hirtus* Regel of this species was also recorded as another official botanical origin of Zelan. They are ones of the most commonly used in TCM.

38. 防己 Fangji

*Stephania tetrandra* S. Moore (Menispermaeae), also known as 粉防己 *Fenfangji*. The dried root, *Stephaniae Tetrandrae Radix*, improves and protects injured myocardial cells and brain tissues, and also has anti-tumor, liver fibrosis-resisting, and hepatoprotective effects. It is one of the most commonly used in TCM.
39. **款冬花 Kuandonghua**

*Tussilago farfara* L. (Asteraceae), also known as Coltsfoot. Its dried flower bud, *Farfarae Flos*, has anti-tussive, expectorant, anti-asthmatic, respiratory stimulation, anti-inflammatory, and platelet aggregation-inhibiting effects. It is commonly used in TCM.

40. **牡丹 Mudan**

*Paonia suffruticosa* Andr. (Paeoniaceae), also known as tree peony. Its dried root bark called *Mudanpi*, *Moutan Radicis Cortex*, known as *Mushan* (also known as *Jiasu*). Its whole plant, *Centellae Asiatice*, also known as *Hankecao*, *Leigonggen*, or *Jiasu*, has anti-bacterial and anti-arrhythmia effects. It is seldom used in TCM.

41. **馬先蒿 Maxianhao**

*Pedicularis resupinata* L. (Scrophulariaceae), its root was used to dispel wind-dampness and increased urination. It is seldom used in TCM.

42. **積雪草 Jixuecao**

*Centella asiatica* (L.) Urb. (Apocynaceae), also known as *Hankecao*, *Leigonggen* or Asiatic pennywort. Its dried whole plant, *Centellae Herba*, protects the gastric mucosa, and has anti-viral, anti-inflammatory, anti- depressive, and anti-tumor effects. It is one of commonly used folk medicinal herbs in Taiwan.

43. **女薊 Nuwan**

*Turczaninowia fastigiata* (Fisch.) DC. (Asteraceae), its root or whole plant can cure diarrhea infected by bacteria. It is seldom used in TCM.

44. **王孫 Wangsun**

*Paris bashanensis* Wang et Tang (Liliaceae), its dried rhizome, *Paridis Bashanensis Rhizoma*, was used to spread cold, eliminate impediment, and free the collateral vessels. It is seldom used in TCM.

45. **蜀羊泉 Shuyangquan**

*Solanum septemlobum* Bunge (Solanaceae), also called as *Qingqi*. Its whole plant or fruit, *Solani Septemlophi Herba seu Fructus*, was said to be able to clear heat and detoxify. It is seldom used in TCM.

46. **爵床 Juechuang**

*Rostellularia procumbens* (L.) Nees (Acanthaceae), its dried aerial part, *Rostellulariae Procumbentis Herba*, has anti-bacterial and anti-arrhythmia effects. It is seldom used in TCM.

47. **假蘇 Jiasu**

*Schizonepeta tenuifolia* (Benth.) Briq. (Lamiaceae), also known as *Jingjie*. Its dried aerial part, *Schizonepetae Herba*, has hemorheology-improving, anti-pyretic, analgesic, anti-inflammatory, anti-allergic, anti-microbial, and diaphoretic effects. *S. multifida* (L.) Briq. of this species was also recorded as another official botanical origin of *Jiasu*. They are seldom used in TCM.

48. **翹根 Qiaogen**

*Forsythia suspensa* (Thunb.) Vahl. (Oleaceae), also known as *Lianqiao*. Its sliced dried root has cleaning heat, detoxifying, and anti-icteric functions. This root is seldom used in TCM.

49. **桑(根)白皮 Sang-gen-baipi**

*Morus alba* L. (Moraceae), also known as white mulberry. Its mulberry root bark, *Mori Cortex*, has diuretic, anti-hyperglycemic, anti-inflammatory, anti-bacterial, anti-viral, and immunomodulatory
effects\(^6\). It is commonly used in TCM.

50. 竹葉 Zhuye

*Phyllostachys nigra* (Lodd. ex Lindl.) Munro var. *henonis* (Mitf.) Stapf ex Rendle (Poaceae)\(^7\), also known as Bamboo. Its dried stem and leaf also called 淡竹葉Danzhuye, *Phyllostachys Henonis Folium*\(^6\), has anti-pyretic, anti-bacterial, and diuretic effects\(^6\). It is commonly used in TCM.

51. 吳茱萸 Wuzhuyu

*Evodia rutoecarpa* (Juss.) Benth. (Rutaceae)\(^7\). Its dried nearly ripe fruit, *Evodiae Fructus*\(^7\), has anti-inflammatory, analgesic, anti-gastric ulcer, anti-thrombotic, anti-bacterial, and anti-parasitic effects\(^9\). *E. rutoecarpa* (Juss.) Benth. var. *officinalis* (Dode) Huang or *E. rutaecarpa* (Juss.) Benth. var. *bodinieri* (Dode) Huang of this species was also recorded as other official botanical origin of Wuzhuyu\(^6\). They are commonly used in TCM.

52. 山茱萸 Zhizi

*Gardenia jasminoides* Ellis (Rubiaceae)\(^7\), also known as 梓子 (with the same pinyin) or Cape Lasmine. Its dried fruit, *Gardeniae Fructus*\(^7\), has hepatoprotective, choleretic, anti-inflammatory, sedative, and anti-pyretic effects\(^9\). It is commonly used in TCM.

53. 蕤葉 Wuye

*Ulmus macrocarpa* Hance (Ulmaceae)\(^6\). Its dried ripe fruit, *Ulmi Macrocarpae Preparatus Fructus*\(^6\), can get rid of plasmodium, killed roundworm, killed pinworm, and anti-bacterial effects\(^6\). It is seldom used in TCM.

54. 枳實 Zhishi

*Citrus aurantium* L. (Rutaceae)\(^7\), also known as bitter orange, Seville orange, sour orange, bigarade orange, and marmalade orange. Its dried fruit, *Aurantii Immutus Fructus*\(^7\), has anti-thrombosis, vasodilatation, anti-bacterial, anti-viral, and anti-inflammatory effects\(^9\). *C. sinensis* (L.) Osbeck of this species was also recorded as another official botanical origin of Zhishi\(^6\). They are commonly used in TCM.

55. 厚朴 Houpo

*Magnolia officinalis* Rehd. et Wils. (Magnoliaceae)\(^7\), its dried bark, root-bark and branch-bark, *Magnoliae Cortex*\(^8\), has analgesic, smooth muscles regulatory, anti-inflammatory, anti-ulcer, and anti-epileptic effect\(^9\).28. *M. officinalis* Rehd. et Wils. var. *biloba* Rehd. et Wils. of this species was also recorded as another official botanical origin of Houpo\(^6\). They are commonly used in TCM.

56. 秦皮 Qinpi

*Fraxinus rhynchophylla* Hance. (Oleaceae)\(^8\), its dried bark, *Fraxini Cortex*\(^8\), has anti-inflammatory, anti-allergic, diuretic, and anti-bacterial effects\(^9\). *F. chinensis* Roxb., *F. szaboana* Lingelsh. or *F. stylosa* Lingelsh. of these species were also recorded as other official botanical origin of Qinpi\(^8\). They are commonly used in TCM.

57. 秦艽 Qinjiao

*Zanthoxylum bungeanum* Maxim. (Rutaceae)\(^8\), also known as 花椒Huajiao, Sichuan pepper, black pepper or prickly ash. Its dried pericarp of ripe fruit, *Zanthoxyli Pericarpium*\(^8\), regulates the movement of the bowels, acts against bacteria, kills parasites, and inhibits platelet aggregation\(^9\). *Z. schinifolium* Sieb. et
Zucc. of this species was also recorded as another official botanical origin of Qinjiao\(^6\). They are hot spices and commonly used in TCM.

58. 山茱萸 Shanzhuyu

*Cor**>* **nus officinalis** Sieb. et Zucc. (Cornaceae)\(^7\), also known as Asiatic cornelian cherry. Its dried ripe sarcocarp, *Cor*ni Fructus\(^7\), has immunoregulatory, cardiac, anti-shock, platelet aggregation inhibiting, anti-thrombotic, anti-inflammatory, and hepatoprotective effects\(^9\). \(^{29}\). It is commonly used in TCM.

59. 紫薇 Ziwei

*Camp**>**sis grandiflora** (Thunb.) Loisel ex K. Schum. (Bignoniaceae)\(^8\), also known as Chinese trumpet creeper or凌霄花Lingxiaohua, Its dried flower, *Camp*si Grandiflorae Flos\(^8\), has anti-bacterial, anti-thrombotic, and anti-tumor effects\(^9\).\(^{29}\). *C. radicans* (L.) Seem. of this species was also recorded as another official botanical origin of Ziwei\(^8\). They are commonly used in TCM.

60. 紫荆 Zhuling

*Poly**>**porus umbellatus* (Peres.) Fr. (Polyporaceae)\(^6\), its dried sclerotium, Polyporus\(^8\), has immunity-boosting, anti-tumor, hepatoprotective, and diuretic effects\(^6\). It is commonly used in TCM.

61. 白棗 Baiji

*Ziz**>**phus jujuba* Mill. var. *spinosa* (Bunge) Hu ex H. F. Chou (Rhamnaceae)\(^7\), also known as 酸棗Suanzao. Its dried thorns can alleviate edema and relieve pain\(^6\). It is seldom used in TCM.

62. 龍眼 Longyan

*Dimocarpus longan* Lour. (Sapindaceae)\(^8\), its dried aril, Arillus Longan\(^8\), has immunostimulatory, anti-aging, and anti-oxidant effects\(^6\). This fruit is edible and commonly used in TCM.

63. 松蘚 Songluo

*Us**>**nea longissima* Ach. (Usneaceae)\(^6\), also known as Usnea. This lichen, Usnea\(^6\), has anti-inflammatory, anti-bacterial, vasodilatory, and antispasmodic effects\(^6\). *U. diffracta* Vain of this species was also recorded as another official botanical origin of Songluo\(^6\). They are seldom used in TCM.

64. 衛矛 Weimao

*Euon**>**ymus alatus* (Thunb.) Sieb. (Celastraceae)\(^7\) known variously as Winged Spindle, Winged Euonymus or Burning Bush. Its winged branches, Ramulus Euonymi Alati\(^8\), has lipohemia regulatory and hypoglycemic effects\(^6\). It is seldom used in TCM.

65. 合歡 Hehuan

*Albizia julibris**>**sin Durazz. (Fabaceae)\(^7\), also known as silktree. Its dried bark called合歡皮Hehu-\>anpi, Albiziae Cortex\(^7\), has sedative, hypnotic, anti-depressant, anti-tumor, and immunoregulatory effects\(^9\). It is commonly used in TCM.

66. 梅實 Meishi

*Armeniaca mume* Sieb. (Rosaceae)\(^6\), also known as Japanese apricot. Its dried, nearly ripe fruit, Mume Fructus\(^8\), has ascaricidal and anti-bacterial effects. It is edible but seldom used in TCM.

67. 大豆黃卷 Dadouhuangjuan

*Glyc**>**ine max* (L.) Merr. (Fabaceae)\(^7\), also known as Soybean. Its dried black soybean sprout, Glycines Mac Germinatum Semen\(^6\), can clear summer heat, dispel dampness\(^6\). It is seldom used in TCM.
68. 赤小豆 Chixiaodou

*Vigna umbellata* (Thunb.) Ohwi et H. Ohashi (Fabaceae), also called ricebean or rice bean. Its dried seed, Vignae Semen, can treat edema, jaundice, diarrhea and beriberi. *V. angularis* (Willd.) Ohwi et Ohashi of this species was also recorded as another official botanical origin of Chixiaodou. They are commonly used in TCM.

69. 栗米 Sumi

*Setaria italica* Beauv. (Poaceae), also known as Foxtail millet, Italian millet, German millet, Chinese millet, and Hungarian millet. Its kernels can be used to fortify the spleen, harmonize the stomach and replenish deficiency. *S. italica* Beauv. var. *germanica* (Mill.) Schred. of this species was also recorded as another official botanical origin of Sumi. They are edible but seldom used in TCM.

70. 穗米 Shumi

*Panicum miliaceum* L. (Poaceae), also known as Proso millet, common millet, hog millet or white millet. Its seed has boosting qi, tonifying middle, suppressing thirst, and detoxifying functions. It is edible but seldom used in TCM.

71. 莳實 Liaoshi

*Polygonum hydropiper* L. (Polygonaceae) also known as Water pepper. Its dried ripe fruit, Polygoni Hydropiperis Fructus, can improve vision, warm the middle, disperse swelling, treat abscess, and tolerance cold. It is seldom used in TCM.

72. 蔥實 Congshi

*Allium fistulosum* L. (Liliaceae) also known as Welsh onion, Japanese bunching onion. Its dried ripe seed, Allii Fistulosi Semen can warm kidney, improve vision and detoxify. It is seldom used in TCM.

73. 蒜 Xie

*Allium macrostemon* Bunge (Liliaceae), also known as 蒜白 Xiebai. Its dried bulb boiled or steamed, Allii Macrostemi Bulbus, is used for aggregating antioxidant, depressing blood pressure, preventing atherosclerosis, and antitumor pharmacy. *A. chinense* G. Don., *A. neriniflorum* (Herb.) Baker or *A. caeruleum* Pall. were also recorded as other official botanical origin of Xie. They are edible and commonly used in TCM.

74. 水蘇 Shuisu

*Stachys japonica* Miq. (Lamiaceae), its whole plant, Stachydis Chinensis Herba, was used medicinally for tonsillitis, sore throat, and dysentery. *S. chinensis* Bunge ex Benth. or *S. baicalensis* Fisch. ex Benth. of these species were also recorded as others official botanical origin of Shuisu. They are seldom used in TCM.

II. Minerals (14 drugs)

Nowadays all the mineral drugs are seldom used due to higher risks to human health.

1. 雄黄 Xionghuang

Realgar, also known as ruby sulphur or ruby of arsenic, is an arsenic sulfide mineral. Its main composition is arsenic sulfide (As$_4$S$_4$) and often in association with the other mineral, orpiment (As$_2$S$_3$). With its poison, it is used for abscess and insects or snakes bite in tradition.
2. 銀華 Shi-liuhuang

Sulfur (Sulphur) also known as 銀華liuhuang, it is represented by the symbol S. Sulfur easily is found in sulfide and sulfate minerals. Its well-known uses for the element are in matches, insecticides and fungicides.

3. 銅黃 Cihuang

Orpiment is a commonly monoclinic arsenic sulfide mineral (As$_2$S$_3$). The material, Orpimentum, was used as a medicine for killed insects and measure to lessen the virulence of pathogens in China although it is highly toxic.

4. 水銀 Shuiyin

Mercury also known as Quicksilver or Hydrargyrum, is a chemical element with the symbol Hg. Mercury in the form of one of it’s commonly ores, cinnabar, is used in traditional medicines. Mercury has been used in medicine for dermatosis such as scabies, tinea, scall and leprosy. Although they are much less commonly today than they once were. Now, the toxic effects of mercury and its compounds are more widely understood.

5. 石膏 Shigao

Gypsum, is a very soft sulfate mineral composed of calcium sulfate dihydrate, with the chemical formula CaSO$_4$·2H$_2$O. The powdered crystals, Gypsum Fibrosum, were given by Chinese physicians to treat fevers and coughs, and externally for eczema, burns, and sores. Homeopaths use it for sinusitis. It is commonly used in TCM.

6. 磁石 Cishi

Magnetitum is a ferromagnetic mineral mainly contain iron oxide (Fe$_3$O$_4$). Magnetitum can inhibit CNS, sedative, and possesses anti-convulsion effect. It can treat anxiety, palpitation, insomnia, epilepsy, dizziness, and blurry vision.

7. 凝水石 Ningshuishi

The drug also known as 寒水石Hanshuishi, includes two derivatives:

1. Gypsum is a very soft sulfate mineral composed of calcium sulfate dihydrate, with the chemical formula CaSO$_4$·2H$_2$O. Its materials, Gypsum Rubrum, a tofu (soy bean curd) coagulant, make it ultimately a major source of dietary calcium, especially in Asian cultures which traditionally use few dairy products.

2. Calcite is a carbonate mineral and the most stable polymorph of calcium carbonate (CaCO$_3$). Its article, Calcitum, was used to remove heat, reduce fire and treat edema by Chinese physician.

8. 陽起石 Yangqishi

Tremolite is a member of the amphibole group of silicate minerals with composition: Ca$_2$Mg$_5$Si$_8$O$_{22}$(OH)$_2$. Its material, Tremolitum, was use on kidney deficiency and lack of copulative power in the male by Chinese physician. It is seldom used in TCM.

9. 孔公聨 Konggongnie

Stalactite is formed by the deposition of calcium carbonate and other minerals. The drug was cited for the middle part of stalactite deposition which had thin or space inside. The drug can free yang for man. Chinese physician used it to treat dissipate stasis and remove toxicity.
10. 石灰岩 Yinnie

Stalactite⁶ is formed by the deposition of calcium carbonate and other minerals. The drug was cited for the agglomerates of stalactite deposition which was attached to stone bed. It can warm the kidney and strong bone. Chinese physician used it to treat dissipate stasis and remove toxicity⁶.

11. 铁精矿 Tiejingluo

Haematite⁶ also spelled as haematite, is the mineral form of iron oxide (Fe₂O₃). It is the essence one of several iron oxides stated in ancient times. The drug used to tranquilize and relieve mental uneasiness caused by fright by Chinese physician.

12. 石灰 Lishi

Gypsum and Anhydrite⁶ is mixed of Gypsum, also called hydrated calcium sulphate (CaSO₄·2H₂O), and anhydrite (CaSO₄). This drug, Gypsum and Anhydritum, treat subjective feeling of feverishness and wasting-thirst⁶ by Chinese physician.

13. 长石 Changshi

Anhydrite⁶ is a mineral which composed of anhydrous calcium sulfate (CaSO₄). This drug, Anhydritum, was used for feverishness, improving emiction, remove nebula and improve vision⁶.

14. 腹青 Fuqing

It is still not defined today.

III. Animals (11 drugs)

Nowadays some animal drugs are seldom used in TCM due to wildlife conservation or animal rights.

1. 白马茸 Baimajing

Equus caballus orientalis Noack (Equidae)⁶, also known as horse. Its penis can treat impotence, seminal emission, deficiency cold, and vaginal discharge⁶. It is seldom used in TCM.

2. 鹿茸 Lurong

Cervus nippon Temminck (Cervidae)⁸, also known as the Sika Deer, Spotted Deer or the Japanese Deer. Its hairy antlers of a young stag, Cervi Pantotrichum Cornu⁸, can strengthen kidney yang, benefit essence and blood, and effective sinew, and bone⁶. C. elaphus L. of this family was also recorded as another official zoological origin of Lurong⁸. They are commonly used in TCM.

3. 牛角胶 Niujiaosai

Bos taurus domesticus Gmelin (Bovidae)⁶, also known as cattle. The hard bone in its horn, Bovis Medulla Cornus⁶, can resolve stasis, stop bleeding and treat hematochezia⁶. Bubalus bubalis L. of this family was also recorded as another official zoological origin of Niujiaosai⁶. They are seldom used in TCM.

4. 羊角胶 Guyangjiao

Capra hircus Linnaeus (Bovidae)⁶, also known as domestic goat. The male’s horn, Cornu Caprae seu ovis⁶, has antipyretic, analgesic, and sedative effects. Ovis aries L. of this family is also recorded as another official zoological origin of Guyangjiao⁶. They are seldom used in TCM.

5. 狗肾茸 Gouyinjing

Canis familiaris L. (Canidae)⁶, also known as domestic dog. Its penis with testis, also called 狗鞭 Goubian, Canis Penis et Testis⁶, treat impotence,
seminal emission, deficiency cold, and vaginal discharge. It is seldom used in TCM.

6. 羚羊角 Lingyangjiào

Saiga tatarica L. (Bovidae), its horn, Saigae Tataricae Cornu, has antipyretic and analgesic effects. The antelope was listed as first-grade protected animal and hunting it is forbidden by government.

7. 犀角 Xijiao

Ceratotherium simum Burchell (Rhinocerotidae), also known as White Rhinoceros, Square-Lipped Rhinoceros. Its horn was forbidden to use for the animal was on the brink of extinction. It is never used in TCM.

8. 燕屎 Yanshi

The drug is the feces of swallow. It was abandoned after Shennongbencaojing. It is almost not used in TCM.

9. 天鼠屎 Tianshushi

Vespertilio superans Thomas (Vespertilionidae), also known one of bat. Its excrements, also called 夜明砂 Ye ming sha, Vespertilionis Faeces, were used to improve vision, activate blood and resolve stasis. Murina leucogaster Milne-Edwards, Pipistrellus abramus Temminck, Plecotus auritus L., Eptesicus andersoni Dobson, Hipposideros armiger Hodgson or Rhinolophus ferrumequinum Schreber of this family is also recorded as another official zoological origin of Tianshushi. They are seldom used in TCM.

10. 蝠皮 Wepi

Erinaceus europeus L. (Erinaceidae), commonly known as hedgehogs. Its dried skin is called 蝠皮 Ciwepi, Erinacei seu Hemiechini Corium. Its fatty oil can treat wind spasm and contracture, hemiplegia, and qi stagnation. Hemiechins auerus Sundevall or H. auritus Gmelin of this family is also recorded as others official zoological origin of Wepi. They are seldom used in TCM.

11. 伏翼 Fuyi

Vespertilio superans Thomas (Vespertilionidae), also known as 蝠蝠 Bianfu, its dried body, which was takes out the internal organs, hair and claws, Concha Ostreae, was cough-suppressing, panting-calming and strangury-relieving diuretic medicinals. Its official zoological origin is the same as 天鼠屎 Tianshushi. (No. 9.). It is seldom used in TCM.

IV. Fish and Shellfish (4 drugs)

1. 钓甲 Biejia

Trionyx sinensis Wiegmann (Trionychidae), also known as Chinese soft shell turtle. Its quenched shell, Trionycis Carapax, was used to prevent and treat syndrome-complex of deficiency of Yin. T. stein-dachneri Siebenrock of this family is also recorded as another official zoological origin of Biejia. They are commonly used in TCM.

2. 蟹 Xie

Eriocheir sinensis H. Milne-Edwards (Varunidae), also known as Chinese mitten crab. Its crabmeat and viscera, Eriocheir Sinensis, can clear heat, stasis-resolving, alleviate edema, and detoxify. E. japonicus (de Haan) of this family is also recorded as another official zoological origin of Xie. They are edible but seldom used in TCM.
3. 蜈蚣 魏玉菇

*Sepiella maindroni* de Rochebrune (Sepiidae), also known as cuttlefish. Its cuttlebone, dried internal shell, known as 海螵蛸Haipiaoxiao, Os Sepiae⁷, can stop bleeding arrest seminal discharge or leukorrhea, to inhibit gastric secretion, and to promote the healing of wound⁸. *Sepia esculenta* Hoyle, *Sepia andreana* Steenstrup, *S. latimanus* Quoy et Gaimard or *S. lycidas* Gray of this family is also recorded as other official zoological origin of Wuzeiyugu⁹. They are commonly used in TCM.

4. 鮃魚甲 Tuoyujia

*Alligator sinensis* Fauvel (Alligatoridae), also known as Chinese Alligator or China Alligator. Its scales contain much collagen and epidermis constituents of β-keratin was used to dispel stasis and remove accumulation by Chinese physician⁶. It is seldom used in TCM.

V. Insects (8 drugs)

1. 柞蛻 Zuochan

*Cryptotympana pustulata* Fabricius (Cicadidae)⁶ was known as 蝉蛻Zhachan. Its steamed dried whole body, Cicada⁵, is used to relieve heat, extinguish wind, and settle fright⁶ by Chinese physician. It is seldom used in TCM.

2. 壤蛞 Qiao

*Holotrichia diomphalia* Bates (Scarabaeoidea)⁶, its dried larva, Holotrichiae Larva⁶, used to dispel stasis, dissipate binds, relieve pain, and detoxify⁶ by Chinese physician. It is seldom used in TCM.

3. 白僵蠱 Baijiangcan

*Bombyx mori* L. (Bombycidae)⁷, also known as silkworm. Its fungus *Beaeveria bassiana* (Bals.) Vailant infected died white bug, Bombyx Batryticatus⁷, has anti-convulsive, sedative, anti-blood coagulator, and hypoglycemic effects⁶. It is commonly used in TCM.

4. 越雞 Chuji

*Lycomia delicatula* White (Fulgoridae)⁶, can activate blood, unblock the meridian, attack toxicity, and disperse nodules⁶. It is seldom used in TCM.

5. 蛆虵 Femeng

*Tabanus mandarinus* Schiner (Tabanidae)⁶, also known as 蝇虵Mengchong or Gadfly. The dried female whole body has anti-blood coagulator, anti-inflammatory, analgesic and haemolysis effects⁶. *Atylotus bivittatus*in Takahasi of this family is also recorded as another official zoological origin of Femeng. They are seldom used in TCM.

6. 木蛻 Mumeng

This drug had been disused. It was replaced by 蛆虵Femeng (above, No. 5) by Chinese physicians. This was footnoted by Su Song (蘇頌) at *Tujing-bencao* (《圖經本草》) in Song Dynasty.

7. 螨龜（蟤）Feilian

*Periplaneta americana* L. (Blattidae)⁶, also known as 蟑龜Zhanglang, cockroach, a roach, black-beetle or waterbug. The dried whole body, Periplaneta Americana⁶, has anti-tumor, lift immunity function and detoxify functions⁶. *Blatta orientalis* (L.) or *P. austral-asiae* (Fabricius) of this family is also recorded as others official zoological origin of Feilian⁶. It is seldom used in TCM.
8. 蝉虫 Zhechong

Eupolyphaga sinensis Walker (Corydiidae)\(^a\), also known as Ground Beetle, wingless cockroach, eupolyphaga, di bie chong (地膽蟲), tu bie chong (土膽蟲), tu yan (土兎). The dried female whole body, Eupolyphaga seu Stelephaga\(^a\), can treat blood stasis, amenorrhea, injuries of bones, and muscles from impact, sprain in loin area and has immunomodulation function\(^3^0\). Stelephaga plancti Boleny of this family is also recorded as another official zoological origin of Zhechong\(^a\). These drugs is forbidden for pregnant woman. They are commonly used in TCM.

VI. Other (3 drugs)

1. 活蟾 Huoyu

Limax fravus (L.) (Limacidae)\(^a\), also known as 蟾蜍Kuoyu or slug. This can dispel wind, settle fright, clear heat, detoxify, disperse swelling, and relieve pain\(^6\). Agriolimax agrestis (L.) of this family is also recorded as another official zoological origin of Huoyu\(^a\). They are seldom used in TCM.

2. 石龍子 Shilongzi

Eumeces chinensis Gray (Scincidae)\(^a\), also known as 蝾螈Xiyi or Chinese Skink. Its whole dried body, which its internal organs were taken off, has water-draining, strangury-relieving, break accumulation, dissipate stasis, and detoxify functions\(^6\). E. elegans Beulenger of this species is also recorded as another official zoological origin of Shilongzi\(^a\). They are seldom used in TCM.

3. (露)蜂房 Lu-fengfang

Polistes olivaceous DeGeer (Vespidae)\(^a\), also known as honeycomb. Its or its close species honeycomb, Nidus Vesptae, can dispel wind, relieve pain, attack toxicity, treat dermatophytosis, and relieve itching\(^6\). P. japonicus Saussure or Parapolybia varia Habricius of this family is also recorded as others official zoological origin of Lu-fengfang\(^a\). They are edible and commonly used in TCM.

Discussion

Jingshizhengleidaguanbencao (《經史證類大觀本草》)\(^3\) is the National Pharmacopoeia of Song Dynasty. The original documents of Shennongbencaojing (《神農本草經》) were included in it as the main content and printed with “White on Black”. All the drugs in white on Black were called Ben-Jing-Zheng-Pin (本經正品). Jingshizhengleidaguanbencao (《經史證類大觀本草》) were adopted for the edition of Shennongbencaojing by Sun Xingyan (孫星衍) and Sun Fengyi (孫鳳翼) who were ones of the most popular text researchers and considered to be the scholars royal to the original contents of their studying objects. Many people believe that there are just 365 drugs in Shennongbencaojing. In the preface of Sun’s recompiled edition, Sun Xingyan (孫星衍) mentioned that the total drugs number in original Shennongbencaojing was more than 365. The drugs number will be surveyed by us. Tao Hongjing (陶弘景) chose 365 drugs from them and completed his work, Bencaojingjizhu (《本草經集注》)\(^3^1\). In our studies for Sun’s Shennongbencaojing, there were 142 drugs in Top Grade Drugs, and 114 drugs in Medium Grade Drugs, respectively. It was different from a common impression that there were 120 drugs in Top and Medium Grade Drugs, respectively. The above results indicated that many different Shennongbencaojing editions were ever used in ancient times.\(^3^2\)

In the Medium Grade Drugs, the number for the
drugs that were considered by us to be edible as daily foods was eight. They were Ganjiang (乾薑, No. 1), Baihe (百合, No. 14), Haizao (海藻, No. 36), Longyan (龍眼, No. 62), Meishi (梅西, No. 66), Sumi (粟米, No. 69), Shumi (黍米, No. 70), and Xie (薤, No. 73). Comparing with our previous studies, there were at least 14 drugs in Top Grade Drugs which are considered to be edible as foods. This result was conformed to the definition of Medium Grade Drugs: “less are used as food, more are used for treating disease”.

In the Medium Grade Drugs, there were only two drugs which their scientific names had not yet been decided. They were Zishen (紫參, No. 28 of Plants) and Fuqing (膚青, No. 14 of Minerals). In the Top Grade Drugs, six drugs, Baituhuo (白兔藿), Weixian (薇幹), Guhuo (姑活), Bieji (別寄), Qucao, (屈艸) and Huaimu (懷木), could not be defined. The latter four drugs were withdrawn from Jingshizhen (《景史真籤》) and listed in the type of You-Ming-Wei-Yong (有明備用)24, which means that the drug only has its name but has never been used in medicine. As they were rarely used and the document is insufficient, the chance for their relative scientific names to be defined is very slim in the future.

The drug Ganjiang (乾薑, No. 1), it means “dried” Ginger. The “fresh” Ginger was taken as another drug called Shengjiang (生薑). The drug name of Fresh Ginger was attached as an add-on for Dried Ginger firstly in Mingyibielu (《明史醫補錄》)34. As ancestor considered they had different medical effects so dried ginger and fresh ginger were given different drug names. Fresh ginger is a warm acrid superficial-resolving drug, and is used for colds, nausea, vomiting, bloating, and coughing. After processing, fresh ginger becomes as dried ginger. Dried ginger is an interior-warming, chill-repelling drug, and is used for releasing vomiting, diarrhea, cold limbs, weak pulses, coughing, and rheumatism.

Tongcao (通草, No. 8), it means “perforated grass” in Chinese. Its scientific name of botanical origin is Akebia quinata (Thunb.) Decne. This (pinyin Mutong) meaning “perforated wood” was named first at Shixingbencao (《史性本草》) which is also generally referred to as Tongcao (通草)33. The medicinal part of these plants (通草+木通) is the woody stem which is sliced in transverse sections and prepared as a decoction. The stem contains approximately 0.25% potassium salts thus giving the diuretic action36.

Shaoyao (芍藥, No. 9) was most early distinguishing into Baishao (白芍) and Chishao (赤芍) for its white or red color by Tao Hongjing (陶弘景). They all belong to Genus Paeonia and have same comprehensible function in therapy37. But they still have some distinct nature such as that the White tasted sweet, benefit for tonification, warm the meridian to nourish blood, pacify the liver. However, the Red tasted bitter, benefit for purgation, cool the blood and dissipate stasis, purge the liver by Chinese physician.

Lishi (粟實, No. 10) is the seed of Iris lactea Pall. var. chinensis (Fisch.) Koidz. (Iridaceae). Its another common name, Malinzi (馬蓮子), was first denominated illustration in Tujingbencao (《圖經本草》) by Su Song (蘇頌), A.D. 106238,39. However, as the name of Emperor Kangxi (康熙) was Xuan-ye (玄), so the word Xuan (玄) was replaced by Yuan (元) and Xuanshen became Yuanshen. After Ching Dynasty, Xuanshen (玄參) came back to its original name.
Drug Baixian (白藓, which was documented in the Sun’s edition. No. 26) or Baixianpi (白藓皮), it was named for having white cortex and gamy odor. The significant drug name was recorded on all previous classic of Materia Medica. But it was deemed to be miswritten as Baixianpi (白藓皮) which has very similar Chinese pronunciation and writing. Which is the right one is still under debate and not yet been clarified.

Suanjiang (酸醬, No. 27), this Chinese drug name was only used by Sun Xingyan and Sun Fengyi1. It was printed with酸酱 (with the same pinyin) on all other versions of Shennongbencaojing. It is suggested to take notice the variation of this drug when reading the Sun’s edition.

Some drugs are also called 紫參Zishen (No. 28) such as the drugs from Polygonum bistorta L., P. manshuriense V. Petr. ex Kom., and P. sulphatum Maxim., and Salvia yunnanensis C.H. Wright, and S. chinensis Benth., and S. plectranthoides Griff. and Astragalus membranaceus Bunge var. mongholicus (Bunge) P. K. Hsiao, A. membranaceus (Fisch.) Bunge, and Paris bashanensis Wang et Tang, and P. polyphylla Smith var. chinensis (Franch.) Hara. by textual research with its different scientific names.

For the plant Centella asiatica (L.) Urban (No. 42) its official Chinese name is Jixuecao (仙草), in China and Classic of Materia Medica. One commonly used folk herb called Leigonggen (雷公根) in Taiwan was also defined as Centella asiatica (L.) Urban, the same scientific name as Jixuecao (仙草), a drug already listed in the famous Shennongbencaojing. Therefore it was proved that Leigonggen (雷公根) is the same plant as Jixuecao (仙草)27.

The drug Jiasu (假蘇, No. 47) was also known as Jingjie (荆芥) in Wushibencaojing (《本草經集注》) which was annotated by Wu Pu (吳普)40. The latter name is much commonly used nowadays.

Forsythia suspensa (Thunb.) Vahl. (Oleaceae) (No. 48), its root was called Qiaogen (開根) in Shennongbencaojing and seldom used. Its dried ripe fruit was named Lianqiao (連翹) which is much more commonly used nowadays.

This drug name Qinjiao (秦椒, No. 57), Zanthoxylum bungeanum Maxim. was used in Sun’s edition and it is the same as 秦椒 (with the same pinyin as 秦椒). Its another general name was recorded as Huajiao (花椒)41. This comment that a drug often had other different names was explained by Li Shizhen (李時珍) on Bencaogangmu41.

The plant Ziziphus jujuba Mill. var. spinosa was famous mainly for its seed but not for its thorn in TCM. Its seed as a drug was called Suanzaozen (酸枣仁) which was listed in the Top Grade Drugs. It is used to treat insomnia. Its thorn called Baiji (白棘, No. 61) was listed in the Medium Grade Drugs and was occasionally used in the past but is seldom used nowadays.

Sumi (粟米, No. 69), it scientific name is Setaria italica Beauv. (Poaceae) which was defined by Chinese Herbal Medicine (《中華本草》). In Chinese-speaking territories, it is also called Xiaomi (小米), meaning “Little Rice”. The drug was first documented on Sun’s edition of Shennongbencaojing. But in Chinese Herbal Medicine, it was recorded that Sumi (粟米) was first documented on Mingyibielu (《名醫別錄》)42.

The mineral drug Ningshuishi (凝水石, No. 7), was so named as having nature to coagulate water and stop its mobility. Many materials were ever considered as Ningshuishi but only the two, Gypsum and Calcite were finally accepted to be used as drugs by Chinese
Herbal Medicine.

The mineral drug, 膚青Fuqing (No. 14), was included among the series Classic of Materia Medica from Han Dynasty to Song Dynasty. But “Disused and unacquainted for the drug” was noted by Tao Hongjing. Its annotation was not collected in Bencao-gangmu by Li Shizhen.

Periostracum Cicadæ (蟬蛻, Chantui), is the outermost layer of the shell of insect Zuochan (柞蟬, No. 1 of Insects), which is much more often used than its whole body (Cicada) in TCM right now.

After Top Grade Drugs, we preceded with Medium Grade Drugs trying to complete the series textual research of Shennong’s Classic of Materia Medica with the objective to popularize it to the world.

Acknowledgements

The use of TCM in this study was revised by Dr. Wu Lungyuan. He is a Chinese physician with rich knowledge and experience in TCM. We deeply appreciate his help.

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《神農本草經》中品藥拉丁名與藥效之本草考證

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（101年03月21日受理，101年06月18日接受刊載）

作者曾發表《神農本草經》「上品藥」拉丁名與藥效之本草考證，有助於中醫藥國際化。本文擬繼續進行「中品藥」的本草考證研究。首先仍將藥物分類為：植物（74種）、礦石（14種）、動物（11種）、魚類（4種）、昆蟲（8種）、其它（3種）等六大類。考證結果「中品藥」共有114種藥物，其中可供日常食用的藥物約有8種（乾薑、百合、海藻、龍眼、梅實、粟米、黍米、蔥），尚未被定義出基準者僅有2種（紫參、麴香），並無「有名未用」的藥物存在。結果與前已發表論文「上品藥」作比較，本研究符合「中品藥」的定義，即「食用者較少，但療病者漸深」。另各藥物具有相同基準者，羅列於下：乾薑 - 生薑、粟實 - 禾實子、積雪草 - 雷公藤、秦艽 - 花椒、紫蔭 - 凌霄花、白棘 - 酸棗、凝水石 - 寒水石、天鼠尿 - 夜明砂、烏頭魚骨 - 海螵蛸、薊菜（薤） - 蛞蝓、蚯蚓 - 地藏蟲。本研究仍引用孫星衍與孫毓麟編著的《神農本草經》版本，作為藥物考證的來源依據。

關鍵字：神農本草經、中品藥、學名、藥效、食藥用、本草考證

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