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

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The textual research for Latin names and medicinal effects of Shennongbencaojing, after Top Grade and Medium Grade, the Low Grade Drugs was studied. The Low Grade Drugs were divided, in the same way for Top and Medium Grade Drugs, into 6 groups and their drugs number were also shown in the following order: Plant (72 drugs), Mineral (7 drugs), Animal (6 drugs), Fish and Shellfish (2 drugs), Insect (14 drugs) and Other (2 drugs). The number of Low Grade Drugs in Sun’s edition was summed up to 103. In this study, many drugs were considered to be toxic such as: Aconitum carmichaeli (No. 1), Pinellia ternata (No. 4), Rheum palmatum (No. 7), Hyoscyamus niger (No. 10), Veratrum nigrum (No. 13), Gelsemium elegans (No. 14), Dichroa febrifuga (No. 17), Euphorbia pekinensis (No. 24), Agrimonia pilosa (No. 29), Rhododendron molle (No. 30), Phytolacca acinosa (No. 31) etc. They were also listed in the Poisonous Weeds Class of Compendium of Materia Medica. Modern research has confirmed that most of the Low Grade Drugs are toxic as well. For four drugs, Guanjun (No. 22), Yangtao (No. 37), Wujiu (No. 41) and Yaoshigen (No. 64) their botanical names have not yet been defined. Some drugs might have different medicinal names by various used parts but were originated in the same scientific name. For example, Fuzi (Aconiti Lateralis Preparata Radix, No. 1), Wutou (Aconiti Radix, No. 2) and Tianxiong (Radix Aconiti Singularis, No. 3) are originated from Aconitum carmichaeli. Hengshan (Radix Dichroae, No. 17) and Shuqi (Cacumen Dichroae Febrifugae, No. 18) are originated from Dichroa febrifuga. Fubi (Flower, No. 69) and Choxiaodou (bean, in Medium Grade) are originated from Vigna umbellata. Moreover, there is one drug that its name does not match with its constituent. It is Fenxi (No. 4, in Minerals). This study was conducted with modern scientific academic skills and still based on Sun’s edition of Shennongbencaojing which was examined thoroughly and faithfully. The conclusion conformed to the description of Low Grade Drugs in original Shennongbencaojing: “Drugs mainly used for treating disease, with more toxic, not suitable for long-term used”. We hope the completion of this textual research for Top, Medium, and Low Grade Drugs of Shennongbencaojing can help to promote the internationalization of Chinese medicine.

Key words: Shennongbencaojing, low grade drug, scientific name, pharmacological effect, medicinal, textual research

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Introduction

Shennongbencaojing (神農本草經) is the first Chinese pharmacy monograph. Its original version was lost a long time ago, but several resume publications were submitted by various Chinese medicinal specialists in the past years. Sun Xing-yan, one of the outstanding explanatory specialists, also led Sun Feng-yi to accomplish one edition of Shennongbencaojing. The edition was written by fully quoting from Jingshizhengleibijibencao (《經史證類備急本草》) which was recognized to possess the most complete content of Shennongbencaojing. The annotations supplemented by Sun were recognized to present drug status faithfully and completely. Various historical records and classics of Materia Medica were also referred in Sun’s edition. Therefore, it is the most popular and almost faultless in all Shennongbencaojing editions through the ages. The formal drug names in Sun’s edition with its Chinese pinyin were chosen to commence. Scientific materials, in the recent time, which never existed in old Chinese books such as biological name, pharmaceutical name, pharmacological effects, and chemical constituents of each drug were offered after proofread. Different drug names defined by various used parts of one plant (or animal) were also mentioned in the serious textual researches of Shennongbencaojing. We are in an effort to marshal and to complete a modern fine work about Shennongbencaojing.

In our previous researches for Top Grade Drugs (Top) and Medium Grade Drugs (Medium), we have shown how to define different medicinal names by various used parts, to correct the misnamed, to confirm scientific names, to gather papers in pharmacological effects and to evaluate utilizing in medicine. Top Grade Drugs and Medium Grade Drugs were summed up to 142 and 114 drugs respectively in Sun’s edition. There are 14 and 8 drugs which are edible as daily food in the Top and Medium respectively, and all the other drugs can be used in medicine. This result is identical to the old definitions that Top grade drugs are the least harmful for human treatment and Medium Grade Drugs are not or only slightly toxic and are effective for treating diseases or deficiency conditions.

The Low Grade Drugs (Low) of Shennongbencaojing is to be studied further in this study. The same edition of Shennongbencaojing compiled by Sun Xing-yan and Sun Feng-yi 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


**National Pharmacopoeia**


**Folk Publication**

Encyclopedia of Medicinal Plants 1–4, chief editors are Zhao ZZ, and Xiao PG, Shanghai World Pub Co., Shanghai, 2009.

**Popular Medicine Websites**


**II. Methods**

The Medium Grade Drugs in Shenongbencaojing compiled by Sun Xing-yan and Sun Feng-yi 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 Bencao- jingjizhu (《本草經集注》), Xinxuibencao (《新修本草》), Jingshizhengleidaguanbencao (《經史證類大觀本草》), revised Zhenghe Jingshizhengleibie jibencao (重修《政和經史證類備急本草》), and Bencaoangmu (《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 pharmacopoeia 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 EBSCO-host 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, 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**

Low Grade Drugs in Shenongbencaojing were still divided into six groups, (I) Plant, (II) Mineral, (III) Animal, (IV) Fish and Shellfish, (V) Insect, and (VI) Other. Then the serial number, formal Chinese name, and pinyin were arranged as title of the drugs. In addition to the title, scientific name, family name, common name, medicinal parts, and corresponding pharmacological effects, or chemical constituents
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 one of the most commonly used to almost not used) were pointed out in the study.

I. Plants (72 drugs)

1. 附子 Fuzi

*Aconitum carmichaeli* Debx. (Ranunculaceae), also known as Chinese Aconite, Carmichael’s Monkshood, and Chinese Wolfsbane. Its lateral root, Aconiti Lateralis Preparata Radix, prepared with thermal hydrolysis to lower down its toxicity, has cardiac stimulation, anti-myocardial, arrhythmogenic, anti-arrhythmic, exhibited both blood pressure-raising and blood pressure-lowering activities, anti-stress, immunosuppressant, analgesic, anti-inflammatory, and anti-tumor effects. It is commonly used in TCM.

2. 乌头 Wutou

The botanical origin of this drug was same as the above drug 附子 Fuzi, *Aconitum carmichaeli* Debx. Its tuberous mother root is Aconiti Radix. This is a very toxic herb, especially in raw form for its aconitine-type alkaloids. It has anti-inflammatory, analgesic, cardiactonic, and local anesthetic effects. It is seldom used in TCM.

3. 天雄 Tianxiong

The botanical origin of this drug was same as the above drug 附子 Fuzi, *Aconitum carmichaeli* Debx. Its long and singular root, Aconiti Singularis Radix. Its medicinal effects were similar to 附子 (Fuzi). It is seldom used in TCM.

4. 半夏 Banxia

*Pinellia ternata* (Thunb.) Breit. (Araceae), also known as crown dipper. Its dried stem tuber, Pinelliae Rhizoma, has anti-tussive, anti-emetic, expectorant, and anti-tumor effects. It is commonly used in TCM.

5. 虎掌 Huzhang

*Pinellia pedatisecta* Schott (Araceae), also known as 天南星 Tiannanxing. Its dried tuber, Pinelliae Pedatisectae Rhizoma has expectorant, anti-convulsion, and anti-tumor effects. *Arisaema heterophyllum* Bl., *A. erubescens* (Wall.) Schott or *A. amurense* Maxim. of this family were also recorded as others official botanical origin of Huzhang. They are commonly used in TCM.

6. 鸢尾 Yuanwei

*Iris tectorum* Maxim. (Iridaceae), commonly called roof iris. Its leaves or whole herb, Iris Tectorum Folium seu Herba can treat parasitic toxin, pathogen, and various toxins, and induce apoptosis of HepG2 cells. It is seldom used in TCM.

7. 大黄 Dahuang

*Rheum palmatum* L. (Polygonaceae), commonly called Turkey rhubarb, Chinese rhubarb, Indian rhubarb, Russian rhubarb or rhubarb root Tea. Its rhizome and root, Rhei Palmat Rhizoma et Radix, has purgative, anti-bacterial, anti-neoplastic, liver fibrosis-inhibiting, and anti-thrombotic effects. *R. palmatum* L. var. tanguticum Maxim. ex Regel. or *R. officinale* Baill. of this family were also recorded as others official botanical origin of Dahuang. They are most commonly used in TCM.
8. 亭歷 Tingli
   Lepidium apetalum Willd. (Brassicaceae)\textsuperscript{12} also known as 莹藶子 Tinglizi or pepperweed. Its dried seed, Lepidii Semen,\textsuperscript{12} has expectorant and cardiotonic effects\textsuperscript{13}. L. virginicum\textsuperscript{12} and Descurainia sophia (L.) Webb ex Prantl of this family were also recorded as other official botanical origin of Tinglizi\textsuperscript{10}. They are commonly used in TCM.

9. 桂梗 Jiegeng
   Platycodon grandiflorus (Jacq.) A. DC. (Campanulaceae)\textsuperscript{11} also known as Platycodon or Chinese bellflower. Its root, Platycodi Radix\textsuperscript{11}, is used extensively as an anti-inflammatory in the treatment of coughs and colds, and has anti-angiogenesis\textsuperscript{24} and antioxidant\textsuperscript{25} effects. It is commonly used in TCM.

10. 穀穗(着)子 Langdangzi
   Hyoscyamus niger L. (Solanaceae)\textsuperscript{12}, also known as 天仙子 Tianxianzi, Black henbane or stinking nightshade. Its ripe seed, Hyoscyami Semen\textsuperscript{12}, is narcotic and poisonous to human. It also has anti-inflammatory\textsuperscript{26}, antiparkinsonian\textsuperscript{27}, sedative and anti-spasmodic effects\textsuperscript{13}. H. bohemicus F.W. Schmidt of this family was also recorded as another official botanical origin of Langdangzi. They are seldom used in TCM.

11. 仲薑 Caohao
   Artemisia annua L. (Asteraceae)\textsuperscript{11}, also best known as 青蒿 Qinghao, Sweet Wormwood, Sweet Annie, Sweet Sagewort or Annual Wormwood. The dried aerial part, Artemisiae Annuae Herba\textsuperscript{11}, has anti-pyretic, anti-inflammatory, analgesic, anti-malarial, anti-schistosomal, immunoregulatory, anti-tumor, anti-bacterial, and anti-viral effects\textsuperscript{13,28,29}. It is commonly used in TCM.

12. 旋覆花 Xuanfuhua
   Inula japonica Thunb. (Asteraceae)\textsuperscript{11}, also known as elecampane flower. Its inflorescence, Inulae Japonicae Flos\textsuperscript{10}, has anti-tussive, expectorant, anti-diabetic polysaccharide\textsuperscript{30}, and anti-inflammatory effects\textsuperscript{13}. I. britannica L. of this family was also recorded as another official botanical origin of Xuanfuhua. They are commonly used in TCM.

13. 藿薑 Lilu
   Veratrum nigrum L. (Liliaceae)\textsuperscript{10}, commonly known as Black False Hellebore. Its dried root and rhizome, Veratri Nigri Radix et Rhizoma\textsuperscript{10}, induce vomiting to treat wind-phlegm, and kills parasites\textsuperscript{13}. V. schindleri Loes. f., V. maackii Regel., V. dahuricum (Turecz.) Loes. f. or V. grandiflorum (Maxim.) Loes. f of this family were also recorded as other official botanical origin of Lilu\textsuperscript{10}. They are commonly used in TCM.

14. 鉤吻 Gouwen
   Gelsemium elegans (Gardn. et Champ.) Benth. (Loganiaeaceae)\textsuperscript{10} also known as 断腸草 Duanchangcao, 野葛 Yege, 大茶藤 Dachateng, poison hemlock, graceful jesamine. The dried whole plant, Gelsemii Elegantis Herba\textsuperscript{10} has anti-tumor, sedative, analgesic, and immunoregulatory effects\textsuperscript{13}. It is seldom used in TCM.

15. 射干 Shegan
   Belamcanda chinensis (L.) DC (Iridaceae)\textsuperscript{10}, also known as blackberry lily. Its rhizome, Belamcandae Rhizoma\textsuperscript{11}, has anti-bacterial, anti-inflammatory, and anti-viral effects\textsuperscript{13}. It is commonly used in TCM.

16. 蛇合 Shehe
   Potentilla kleiniana Wight et Arn. (Rosaceae)\textsuperscript{10}
also known as 蛇含委陵菜 Shehanweilingcai or 蛇衔 Shexian. This whole herb with roots, Potentillae Kleini-nanae Herba\(^\text{10}\), can treat bacterial dysentery, swelling of unknown origin, sore throat, and snakebite\(^\text{10}\). It is seldom used in TCM.

17. 極山 Hengshan

*Dichroa febrifuga* Lour. (Hydrangeaceae)\(^\text{12}\) also known as 常山 Changshan. Its dried root, *Dichroae Radix*\(^\text{12}\), has anti-malarial, emetic, anti-inflammatory, and anti-tumor effects\(^\text{13}\). It is seldom used in TCM.

18. 蜀漆 Shuqi

The drug was the same official botanical origin of above drug, *Dichroa febrifuga* Lour\(^\text{10}\). Its another used parts, verdant branches and leaves, *Dichroae Febrifugae Cacumen*\(^\text{10}\), can be used as expectorant or deadline malaria drug\(^\text{10}\). It is seldom used in TCM.

19. 甘遂 Gansui

*Euphorbia kansui* T. N. Liou ex T. P. Wang (Euphorbiaceae)\(^\text{11}\), its dried root tuber, *Euphorbiae Kansui Radix*\(^\text{10}\), has purgative, anti-fertility, immuno-suppressant, anti-viral, and anti-inflammatory effects\(^\text{13}\). It is seldom used in TCM.

20. 白薇 Bailian

*Ampelopsis japonica* (Thunb.) Makino (Vitaceae)\(^\text{12}\), also known as Japanese Pepper Vine. Its dried tuberous root, *Ampelopsis Radix*\(^\text{12}\), has anti-bacterial and anti-tumor effects\(^\text{13}\). It is seldom used in TCM.

21. 青葙子 Qingxiangzi

*Celosia argentea* L. (Amaranthaceae)\(^\text{12}\), commonly known as plumed cockscomb. Its dried ripe seed, *Celosiae Semen*\(^\text{12}\), lowers intraocular pressure, and has hypotensive and anti-bacterial effects\(^\text{13}\). It is commonly used in TCM.

22. 青蔥 Guanjiu

The drug is still not defined for unclear source plant recorded.

23. 白及(茤) Baiji

*Bletilla striata* (Thunb.) Reichb. f. (Orchidaceae)\(^\text{11}\). Its dried tuber, *Bletillae Rhizoma*\(^\text{11}\), has hemostatic, anti-bacterial, anti-oxidative, and anti-tumor effects, and protects the mucous membrane\(^\text{13}\). It is commonly used in TCM.

24. 大戟 Daji

*Euphorbia pekinensis* Rupr. (Euphorbiaceae)\(^\text{12}\), its dried root, *Euphorbiae Pekinensis Radix*\(^\text{12}\) regulates smooth muscles, induces diuresis, dilates blood vessels, and irritates the skin\(^\text{13}\). It is seldom used in TCM.

25. 潤滋 Zeqi

*Euphorbia helioscopia* L. (Euphorbiaceae)\(^\text{10}\), its whole herb, *Euphorbiae Helioscopiae Herba*\(^\text{10}\), has antitussive, expectorant, and antitumor effects. It is seldom used in TCM.

26. 銀芽 Yinyu

*Skimmia reeuesiana* Fort. (Rutaceae)\(^\text{10}\), its stem and leaves, *Herba Skimmiae Reeuesianae*, have hypertensive, uterus contactory, and blood vessels dilatory effects. *S. arborescens* T. Anders. of this family was also recorded as another official botanical origin of Yinyu\(^\text{10}\). They are seldom used in TCM.

27. 君陰 Guanzhong

*Dryopteris crassirhizoma* Nakai (Dryopteri-
daceae)\textsuperscript{12}, its rhizome, Dryopteridis Crassirhizomae Rhizoma\textsuperscript{12}, has insect repellent, uterus contactor, estrogen-like, anti-tumor, and anti-viral effects\textsuperscript{10}. It is commonly used in TCM.

28. 药花 Yaohua
   
   *Wikstroemia canescens* (Wall.) Meissn. (Thymelaeeae)\textsuperscript{10} also known as 药花 (with the same pinyin). Its flower bud, Wikstroemias Canescents Flos\textsuperscript{10}, was used in edema, cough, and asthma. It is seldom used in TCM.

29. 牙子 Yazi
   
   *Agrimonia pilosa* Ledeb. (Rosaceae)\textsuperscript{7} also known as 齿草芽 Hecaoya, Hairyvein, Agrimonia or Cocklebur. Its bud and rhizome, Agrimoniae Rhizoma \textsuperscript{10}, also known as 狼牙 Langya, can used for teniasis. It is commonly used folk medicinal herbs in Taiwan\textsuperscript{31}.

30. 羊蹄 Yangzhizhu
   
   *Rhododendron molle* (Bl.) G. Don (Ericaceae)\textsuperscript{12}, its flower, Rhodendri Mollis Flos\textsuperscript{12}, has analgesic, anti-arrhythmic, anti-hypertensive, and anti-bacterial effects\textsuperscript{13}. It is seldom used in TCM.

31. 商陆 Shanglu
   
   *Phytolacca acinosa* Roxb. (Phytolaccaceae)\textsuperscript{12}, its dried sliced root, Phytolaccae Radix\textsuperscript{10} has anti-bacterial and anti-fungi effects. *R. nepalensis* Spreng. of this family was also recorded as another official botanical origin of Yangti\textsuperscript{10}. They are seldom used in TCM.

32. 鬼针 Baitouweng
   
   *Pulsatilla chinensis* (Bunge) Regel (Ranunculaceae)\textsuperscript{12} was nicknamed White Haired Old Man. Its dried root, Pulsatillae Radix\textsuperscript{10}, has anti-amebic, anti-bacterial, and anti-cancer effects\textsuperscript{18,32}. *P. turczaninovii* Kryl. et Serg., *P. ambigua* Turcz. ex Pritz., *P. dahurica* (Fisch. ex DC.) Spreng., *P. cernua* (Thunb.) Bercht. et Opiz. or *P. campanella* Fisch. ex Regel of this family were also recorded as other official botanical origin of Baitouweng\textsuperscript{10}. They are commonly used in TCM.

33. 狼毒 Langdu
   
   *Stellera chamaejasme* L. (Thymelaeaceae)\textsuperscript{10}, this fresh or dried sliced root, Stellereae Chamaejasmis Radix\textsuperscript{10}, has analgesic, anti-tumor, anti-bacterial, and enhances intestinal motility effects\textsuperscript{10}. It is seldom used in TCM.

34. 狼毒 Langdu
   
   *Stellera chamaejasme* L. (Thymelaeaceae)\textsuperscript{10}, this fresh or dried sliced root, Stellereae Chamaejasmis Radix\textsuperscript{10}, has analgesic, anti-tumor, anti-bacterial, and enhances intestinal motility effects\textsuperscript{10}. It is seldom used in TCM.

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36. 鬼针 Guijui
   
   *Dysosma versipellis* (Hance) M. Cheng ex Ying (Berberidaceae)\textsuperscript{10}, also known as 八角莲 Bajiaolian, East-Chinese Many-flowered or May-apple. Its dried rhizome and root, Dysosmae Versipellis Rhizoma et
Radix\textsuperscript{10} has certain effects in anti-virus, anti-parasites, and preventing cardiovascular diseases\textsuperscript{13}. \textit{D. pleiantha} (Hance) Woods. and \textit{D. veitchii} (Hemsl. et Wis.) Fu ex Ying of this family were also recorded as other official botanical origin of Bajiaolian\textsuperscript{10}. They are seldom used in TCM.

37. \textbf{羊桃 Yangtao}

The relative official scientific name of this drug is still not defined.

38. \textbf{女青 Nüqing}

\textit{Cynanchum thesioides} (Freyn) K. Schum. (Asclepiadaceae)\textsuperscript{12}, its dried herb, Cynanchi Thesiodis Herba\textsuperscript{10}, has antiviral effect in vivo and in vitro. It is seldom used in TCM.

39. \textbf{连翘 Lianqiao}

\textit{Forsythia suspensa} (Thunb.) Vahl. (Oleaceae)\textsuperscript{11}, its dried ripe fruit, Forsythiae Fructus\textsuperscript{11}, has antimicrobial, anti-inflammatory, antipyretic, anti-emetic, diuretic, cardiotonic, and anti-tumor effects\textsuperscript{13}. It is commonly used in TCM.

40. \textbf{阑茹 Lanru}

\textit{Euphorbia pallasii} Turcz. (Euphorbiaceae)\textsuperscript{10}, also known as 阑茹 Lüru. Its dried sliced root, Euphorbiae Pallasii Radix\textsuperscript{10}, has anti-tumor and kill larvae effects. It is seldom used in TCM.

41. \textbf{乌韭 Wujiu}

The relative official scientific name of this drug is still not defined.

42. \textbf{鹿藿 Luhuo}

\textit{Rhynchosia volubilis} Lour. (Fabaceae)\textsuperscript{10}, its stem and leaves, Rhynchosiae Volubilidis Herba, can increase urination, eliminate swelling, activate blood, and detoxify in TCM\textsuperscript{10}. It is seldom used in TCM.

43. \textbf{蚤休 Zaoxiu}

\textit{Paris polyphylla} Smith var. \textit{chinensis} (Franch.) Har. (Liliaceae)\textsuperscript{12}, also known as 重樓 Chonglou. Its dried rhizome, Paridis Rhizoma\textsuperscript{12}, has hemostatic, analgesic, sedative, anti-microbial, gastric mucous membrane injure inhibitory and anti-tumor effects\textsuperscript{13,33}. \textit{P. polyphylla} Smith var. \textit{yunnanensis} (Franch.) Hand.-Mazz. or \textit{P. polyphylla} Smith of this family were also recorded as other official botanical origin of Zaoxiu\textsuperscript{9}. They are commonly used in TCM.

44. \textbf{石膽生 Shichangsheng}

\textit{Adiantum monochlamys} Eaton (Adiantaceae)\textsuperscript{10}, its whole herb, Adianti Monochlamysis Herba, can clean heat, reduce phlegm, and has detoxifying action in TCM\textsuperscript{10}. It is seldom used in TCM.

45. \textbf{陸英 Luying}

\textit{Sambucus chinensis} Lindl. (Caprifoliaceae)\textsuperscript{10}, its steam and leaves, Sambuci Chinensis Caulis et Folium\textsuperscript{10}, has against hepatitis effect\textsuperscript{34}. It is seldom used in TCM.

46. \textbf{薃仲 Jincao}

\textit{Arthraxon hispidus} (Thunb.) Makino (Poaceae)\textsuperscript{10}, the whole herb\textsuperscript{10}, Arthraxi Hispidus Herba can used for scabies, carbuncle and furuncle, and itchy skin. It is seldom used in TCM.

47. \textbf{牛扁 Niubian}

\textit{Aconitum barbatum} Pers. var. \textit{puberulum} Ledeb. (Ranunculaceae)\textsuperscript{10}, its dried root, Aconiti Puberuli...
Radix\textsuperscript{10}, can dispel wind and dampness, mainly for relieving rheumatism and related conditions in TCM\textsuperscript{10}. It is seldom used in TCM.

48. 夏枯草 Xiakucao

*Prunella vulgaris* L. (Lamiaceae)\textsuperscript{11} is known by many names such as All Heal, Heal all, Self Heal, Woundwort, and many others. Its fresh or dried flower spike, *Prunellae Spica*\textsuperscript{11}, has anti-hypertensive, anti-viral, anti-inflammatory, analgesic, and hyperglycemic effects\textsuperscript{13,36}. *P. asiatica* Nakai of this family was also recorded as another official botanical origin of Xiakucao\textsuperscript{10}. They are commonly used in TCM.

49. 芫花 Yuanhua

*Daphne genkwa* Sieb. et Zucc. (Thymelaeaceae)\textsuperscript{12}, also known as 芫花 (with the same pinyin). Its dried flower bud, *Genkwa Flos*\textsuperscript{12}, has purgative, diuretic, anti-inflammatory, and antiviral effects\textsuperscript{10, 37}. It is seldom used in TCM.

50. 巴豆 Badou

*Croton tiglium* L. (Euphorbiaceae)\textsuperscript{11}, also known as 巴豆 (with the same pinyin). Its dried fruit, *Crotonis Fructus*\textsuperscript{11}, has purgative, anti-microbial, and anti-tumor effects\textsuperscript{13,38}. It is seldom used in TCM.

51. 花椒 Shujiao

*Zanthoxylum bungeanum* Maxim. (Rutaceae)\textsuperscript{11}, also known as 花椒 (with the same pinyin) or Zanthoxylum bungeanum. Its dried pericarp, *Zanthoxyli Pericarpium*\textsuperscript{11}, has anti-experimental gastric ulcer, anti-thrombotic, anti-diarrheal, hepatoprotective, analgesic, anti-inflammatory, and local anesthetic effects\textsuperscript{13}. *Z. schinifolium* Sieb. et Zucc. of this family was also recorded as another official botanical origin of Shujiao\textsuperscript{10}. They are commonly edible as condiment.

52. 皂荚 Zaojia

*Gleditsia sinensis* Lam. (Fabaceae)\textsuperscript{11}, also known as 皂荚 (with the same pinyin) or Chinses honeylocust. Its normal fruit - Gledis Asia Fructus or sterile fruit – *Gledis Asia Abnormalis Fructus*\textsuperscript{11}, has expectorant, antibacterial, anti-tumor, anti-allergy, sedative, and hypotonic effects\textsuperscript{13}. It is commonly used in TCM.

53. 柳花 Liuhua

*Salix babylonica* L. (Salicaceae)\textsuperscript{10}, also known as 柳花 (with the same pinyin) or Weeping Willow. Its inflorescence, *Salicis babylonicae Flos* can sweep wind and drain dampness, and has haemostatic and stasis-resolving effects\textsuperscript{10}. The drug is seldom used in TCM.

54. 杞實 Lianshi

*Melia toosendan* Sieb. et Zucc. (Meliaceae)\textsuperscript{11}, also known as 川楝子 Chuanlianzi or Szechwan chinaberry. Its dried ripe fruit, *Toosendan Fructus*\textsuperscript{11}, has anti-parasitic, and anti-bacterial effects, and blocks the transfer between neuromuscular junctions\textsuperscript{13,39}. It is commonly used in TCM.

55. 佛手仁 Yüliren

*Cerasus japonica* (Thunb.) Lois. (Rosaceae)\textsuperscript{10}, also known as Korean cherry, Flowering almond or Oriental bush cherry. Its kernel, *Cerasi Japonicae Semen*\textsuperscript{10}, has deobstruent, aperient, aperien, carminative, diuretic, laxative, hypotensive, ophthalmic, and lenitive action\textsuperscript{10}. *C. humilis* (Bge.) Sok., *Amygdalus trifolia* (Lindl.) Ricker or *A. pedunculata* Pall. of this family were also recorded as other official botanical origin of Yüliren\textsuperscript{10}. They are commonly used in TCM.

56. 佛手 Mangcao

*Illicium lanceolatum* A. C. Smith. (Illiciaceae)\textsuperscript{12},
its fresh or dried leaves, Illicii Lanceolati Folium\(^{10}\), can induce convulsion like picrotoxin. It is seldom used in TCM.

57. 雷丸 Leiwan

*Polyporus mylittae* Cooke et Mass. (Polyporaceae)\(^{10}\), a genus of fungi in the Tricholomataceae family, *Omphalia*\(^{10}\), can kill tapeworm, trichomonas, roundworm, and hookworm, increase immunization and has anti-tumor effects. It is seldom used in TCM.

58. 桐葉 Tongye

*Paulownia fortunei* (Seem.) Hemsl. (Scrophulariaceae)\(^{10}\), also known as Foxglove Tree. Its dried or fresh leaves, Paulowniae Fortunei Folium have heat-clearing, detoxify, stop bleeding, and disperse swelling action. *P. tomentosa* (Thunb.) Steud. of this family was also recorded as another official botanical origin of Tongye\(^{10}\). They are seldom used in TCM.

59. 梓白皮 Zibaipi

*Catalpa ovata* G. Don (Bignoniaceae)\(^{10}\), also known as yellow catalpa or Chinese catalpa. Its outer layer of bark (cortex), Catalpae Ovatae Cortex\(^{10}\), has heat-clearing, dampness-draining, counterflow down-bearing, kill worms, and relieve itching effects\(^{10}\). It is commonly used in TCM.

60. 石南 Shinan

*Photinia serrulata* Lindl. (Rosaceae)\(^{11}\), also known as Chinese photinia. Its dried leaves or dried twig with leaves; Photiniae Serrulatae Folium et Cacumen\(^{10}\), has cardiac excitatory and vasoconstriction effects, and can kill *Schistosoma japonicum*\(^{10}\). It is seldom used in TCM.

61. 黃環 Huanghuan

*Wisteria sinensis* Sweet (Fabaceae)\(^{10}\), also known as 紫藤 Ziteng or Chinese Wisteria. Its dried root, Wisteriae Sinensis Radix, was used to remove toxicities caused by venomous insects in Chinese folk\(^{10}\).

62. 澳疏 Soushu

*Deutzia scabra* Thunb. (Hydrangeaceae)\(^{10}\) also known as fuzzy deutzia. Its dried fruit, Deutziae Scabrae Fructus\(^{10}\), has heat-cleaning and diuretic actions. It is seldom used as folk medicine.

63. 鼠李 Shuli

*Rhamnus utilis* Decne. (Rhamnaceae)\(^{10}\) also known as Chinese buckthorn. Its fruit, Rhamni Utilis Fructus, was used to remove toxicities hided in body. It also can be used as an edible fruit. has laxative and diuretic action\(^{10}\).

64. 藥寶根 Yaoshigen

The official botanical origin of Yaoshigen has not been defined yet.

65. 欭華 Luanhua

*Koelreuteria paniculata* Laxm. (Sapindaceae)\(^{10}\), also known as 欭華 (with the same pinyin) or Golden-rain tree. Its dried flowers, Koelreuteriae Paniculatae Flos, can clear liver and improve vision\(^{10,40}\). It is seldom used in TCM.

66. 蔓藤 (椒) Manjiao

*Zanthoxylum nitidum* (Roxb.) DC. (Rutaceae)\(^{12}\), also known as 楮椒 (same pinyin), 魚面針 Liangmian-zhen, 鳥不踏 Niaobuta, or Shiny-leaved Prickly Ash. Its root or twig with leaves, Zanthoxyli Nitidi Radix seu Ramulus et Folium\(^{10}\), has analgesic, anti-bacterial,
anti-spasmodic, and anticancer effects\cite{13,41}. It is one of commonly used folk medicinal herbs in Taiwan\cite{42}.

67. 桃仁 Tao(he)ren

Amygdalus persica L. (Rosaceae)\cite{10}, also known as Peach Tree. Its dried seed, Amygdalus Persicae Semen\cite{10}, has cardiovascular circulation modifying, anticoagulant, antithrombotic, anti-inflammatory, and anti-allergic effects\cite{10}. *A. davidiana* (Carr.) C. de Vos ex Henry of this family was also recorded as another official botanical origin of Tao(he)ren\cite{10}. They are commonly used in TCM.

68. 杏仁 Xing(he)ren

Armeniaca vulgaris Lam. (Rosaceae)\cite{10}, also known as Apricot. Its dried seed, Armeniacae Vulgaris Semen\cite{10}, has anti-cough, anti-asthmatic, laxative, anti-tumor, anti-inflammatory, and analgesic effects\cite{10}. *A. vulgaris* Lam. var. *ansu* (Maxim.) Yü et Lu, *A. sibirica* (L.) Lam. or *A. mandshurica* (Maxim.) Skv. of this family were also recorded as another official botanical origin of Xing(he)ren\cite{9}. They are commonly used in TCM.

69. 赤小豆 Fubi

Vigna umbellata (Thunb.) Ohwi et Ohashi (Fabaceae)\cite{10}, also known as 赤小豆 Choxiaodou, ricebean or rice bean. Its fresh or dried flowers, Vignae Umbellatae Flos\cite{10}, has detoxify, alleviates edema, move qi and diuresis actions\cite{10}. *V. angularis* (Willd.) Ohwi et Ohashi of this family was also recorded as another official botanical origin of Fubi\cite{10}. The drug is seldom used in TCM.

70. 苦瓜 Kuhu

Lagenaria siceraria (Molina) Standl. var. microcarpa (Naud.) Hara (Cucurbitaceae)\cite{10}, also known as Bitter Bottle Gourd. Its ripe peeled fruit, Lage-nariae Sicerariae Fructus, can treat edema, jaundice, wasting-thirst, difficult urination, abscess, and lichen by Chinese physician\cite{10}. It is seldom used in TCM.

71. 水芹 Shuiqin

Oenanthe javanica (Bl.) DC. (Apiaceae)\cite{10}, also known as 水芹, Japanese parsley or Chinese celery. Its aerial part, Oenanthis Javanicae Herba\cite{10}, has hepatoprotective, anti-arrhythmia, hypolipidemic, and anti-allergic effects\cite{10}. The plant is sometimes cultivated as a vegetable, and is seldom used in TCM.

72. 彼子 Bizi

Torreya grandis Fort. (Cephalotaxaceae)\cite{12}, also known as 榧子 Feizi or Chinese Nutmeg Tree. Its dried seed, Torreyae Semen\cite{12}, has anthelmintic, antitussive, laxative, and peptic effects\cite{13}. It is seldom used in TCM.

II. Minerals (seven drugs)

1. 石灰 Shihui

Calx\cite{10}, also known as Limestone, Lime or Portlandite. After a long time stored, the limestone (CaCO\textsubscript{3}) was derived from burnt lime (CaO) and hydrated lime [Ca(OH)\textsubscript{2}]. It can treat dry dampness, sore, ulcer, wound bleeding, scald, and diarrhea in TCM.

2. 硫石 Yushi

Arsenopyrite\cite{10} also known as Arsenopyritum. It is an iron arsenic sulfide (FeAsS). It can treat wind, cold, dampness and impediment, sore, and ulcer in TCM.

3. 鉛丹 Qiandan

Plumbum Rubrum\cite{10} also known as red lead. The
lead oxide drug, Pb₂O₄, was made from pure lead. It was used for eczema, tinea, and epidermal.

4. 粉锡 Fenxi / 錫鏡鼻 Xijingbi

Hydrocerussitum¹⁰ also known as 鉛粉 Qianfen, Ceruse or white lead. The drug is a white powder which mainly contains basic lead carbonate 2PbCO₃ · Pb(OH)₂. It was used for treating worm, diarrhea, scabies, carbuncle, and sore¹⁰.

5. 代赭石 Daizheshi

Haematite¹⁰ is one of several iron oxides. This iron ore mainly contains Fe₂O₃, Haematitum, can pacify the liver to subdue yang, cool blood and stop bleeding, and treat manic psychosis in TCM¹⁰. It is commonly used in TCM.

6. 戎鹽 Rongyan

With various names, the drug was sorted as below,
(1) 大青鹽 Daqingyan
Halite¹⁰, commonly known as 胡鹽 Huyan, or rock salt. It mainly contains sodium chloride (NaCl)¹⁰. The mineral medicine, Halitum, can discharge heat, cool blood, improve vision, and moisten dryness in TCM¹⁰.

(2) 鹵鹽 Luyan
Bischofitum¹⁰ also known as 鹵鹹 Luxian. It mainly contains magnesium chloride (MgCl₂)¹⁰. The mineral medicine can discharge heat, fire-draining, resolve phlegm, soften hardness, and improve vision in TCM¹⁰.

7. 白墻 Baie

This drug has two origins:
(1) 高嶺土 Gaolingtu
Kaolin¹⁰ is a clay mineral, with the chemical composition Al₂Si₂O₅(OH)₄. Its material, Kaolinitum, was used for nausea, diarrhea, itching, and hematemesis¹⁰.

(2) 甘土 Gantu
Montmorillonite¹⁰ is a grayish white odorless power, with the chemical composition (Al, Si)₄O₁₀(OH)₂·nH₂O. The material, Bentonitum, was used as an antidote to adsorb toxins produced by infected food and bacteria¹⁰.

III. Animals (six drugs)

1. 膢卵 Tunluan

Sus scrofa domestica Brisson (Suidae)¹⁰, also known as domestic pig. Its testis can synthesize testosterone and was used to warm kidney, dissipate cold, calm frightened, and stabilize epilepsy in TCM¹⁰.

2. 麋脂 Mizhi

Elaphurus davidianus Milne-Edwards (Cervidae)¹⁰, also known as the 麋鹿 Milu or elaphure. Its fat, Elaphuri Davidianus Adeps can moisten skin, dispel cold and treat acne⁹.

3. 鼱鼠 Leishu

Petaurista petaurista Pallas (Sciuridae)¹⁰, also known as Red Giant Flying Squirrel. Its meat and bone can hasten parturition, and treat sore waist, joint pains, and headache caused by pathogenic wind¹⁰. It is seldom used in TCM.

4. 六畜毛蹄甲 Liuxumaotijia

These drugs were assembled by the hair, crust, or hoof of 6 animals such as horse, cattle, sheep, pig, dog, and chicken. They were almost not used in medicine nowadays.
5. 蝌蚪 Hama

*Rana limnocharia* Boie (Ranidae), also known as 蝌蚪 Gema, or Cricket Frog. Its whole body can clean heat, treat swollen sore, scrofula, boil, furuncle, and dysentery.

6. 蛇蜕 Shetui

*Elaphe carinata* (Guenther) (Colubridae), also known as King Ratsnake or Keeled Ratsnake. Its outer layer of skin, *Serpentis Periostracum*, can treat fright epilepsy, corneal opacity, vision obstruction, ringworm, scabies, boil, and scrofula. *E. rufodorsata* Cantor, *E. taeniurus* Cope or its close relative family also recorded as other official zoological origin of Shetui. It is commonly used in TCM.

IV. Fish and Shellfish (two drugs)

1. 马刀 Madao

*Cuneopsis capitata* Heude (Unionodae) is one of distinctive animals of China. Its shell was used for dizziness, palpitations, psychosis, hematemesis, and nosebleed. *Lanceolaria grayana* (Lea) and other close relative species were also recorded as same official zoological origin of Madao. These shells are seldom used in TCM.

2. 贝子 Baizi

*Monetaria moneta* Linnaeus (Cypraeidae), also known as the money cowry. Its shell, *Monetariae Concha*, can treat strangury, edema, corneal opacity, vision obstruction, pus, and blood sinusitis. *M. annulus* (Linnaeus) of this family is also recorded as another official zoological origin of Baizi. They are seldom used in TCM.

V. Insects (14 drugs)

1. 钱蛭 Quyin

*Pheretima aspergillum* (E. Perrier) (Megascolecidae), also known as 钱蛭 (with the same pinyin) or Earthworm. Its dried body can treat high fever with impaired consciousness, numbness of the limbs, cough, and asthma due to heat in the lung, convulsions, arthralgia, hemiplegia, edema, and hypertension. *P. guillelmi* (Michaelsen), *P. vulgaris* Chen or *P. pectinifera* Michaelsen of this family were also recorded as other official zoological origin of Quyin. They are commonly used in TCM.

2. 蜈蚣 Yiweng

*Eumenes pomifomis* Fabricius (Eumenidea) its dried whole body can treat cough, downbear counter-flow, and nasal congestion. It is seldom used in TCM.

3. 蜈蚣 Wugong

*Scolopendra subspinipes mutilans* L. Koch (Scolopendridae) also known as 蜈蚣 (with the same pinyin) or Chinese red-headed centipede, its whole body, Scolopendra, can extinguish wind to arrest convulsions, dispel wind to free the collateral vessels and relieve pain. *S. subspinipes mutidens* (Newport) of this family is also recorded as another official zoological origin of Wugong. They are commonly used in TCM.

4. 水蛭 Shuizhi

*Hirudo nipponica* (Whitman) (Hirudinidae) is a species of leeches. Its whole dried body, Hirudo, has anticoagulant effect. *Whitmania pigra* (Whitman) of this family is also recorded as another official zoological origin of Shuizhi. They are commonly used in TCM.
5. 班蝥 Banmiao

*Mylabris phalerata* Pallas (Meloidae)\(^1\), also known as 班蝥 (with the pinyin Banmao"), Chinese blister beetle or Chinese blistering fly. Its whole body, *Mylabris*\(^1\) has anti-tumor, white blood cells increasing, immune-enhancing, anti-inflammatory, anti-viral, anti-bacterial, estrogen-like facilitating, and epidermal stimulation effects\(^1\). *M. cichorii* L. of this family is also recorded as another official zoological origin of Banmao\(^1\). They are commonly used in TCM.

6. 石蛾 Chican

*Phryganea* (*Colpomera*) *japonica* McLachlan (Phryganeidae), also known as 石蛾 Shie. Its larva and pupa can induce diuresis and relieve fever, and treat difficult urination and stone strangury\(^3\). It is seldom used in TCM.

7. 雀蠅 Queweng

*Cnidocampa flavescens* Walker (Limacodidae)\(^1\), this dried steamed larva with its cocoon, Cnidocampae Flavescentis Turfur et Larva\(^1\), has anti-anoxic, anti-convulsive, hypnotic, analgesic, and anti-inflammatory effect\(^1\). It is seldom used in TCM.

8. 蚤螈 Qianglang

*Catharsius molossus* (Linnaeus) (Scarabaeidae)\(^1\), this dried died whole body, Catharsius Molossus\(^1\), can anti-blood coagulator and relax the bowels, and has sedative and paralytic effects\(^1\).

9. 蟋蟀 Lougu

*Gryllotalpa africana* Palisot et Beauvois (Gryllotalpidae)\(^10\), also known as African Mole Cricket. The dried whole body, Gryllotalpa\(^10\), can treat inhibited urination, edema, and stone strangury. *G. unispina* Saussure of this family is also recorded as others official zoological origin of Lougu\(^10\). They are seldom used in TCM.

10. 马陆 Malu

*Kronopolites svenhedini* (Verhoeff) (Strongylosomidae)\(^1\) is a species of Millepede. Its whole dried body, Kronopolites Svenhedini\(^1\), can treat gastric ulcer, duodenal ulcer, and chronic gastritis\(^1\). It is seldom used in TCM.

11. 地蠅 Didan

*Meloe coarctatus* Motschulsky (Meloidae)\(^1\), its dried whole body, Meloe Corvinus\(^8\), can be used for accumulation, scabies, ringworm, and oxhide lichen. *M. violcews* L. of this family is also recorded as another official zoological origin of Didan\(^1\). They are seldom used in TCM.

12. 燃火 Yinghuo

*Luciola vitticollis* Kies. (Lampyridae)\(^10\), is a species of firefly beetles (螢火蟲 with pinyin “Yinghuochong”). Its dried whole body can treat bluish blindness, dim vision, and premature graying of the hair\(^10\). It is seldom used in TCM.

13. 衣魚 Yiyu

*Lepisma saccharina* L. (Lepismatidae)\(^10\), also known as silverfish or fishmoth. Its dried whole body can treat strangury disease, inhibited urination, fright epilepsy, furuncle, and corneal nebula in tradition. *Ctenolepisma villosa* Fabricius of this family is also as another official zoological origin of Yiyu\(^10\). They are seldom used in TCM.
14. 虱婦 Shufu

Armadillidium vulgare Latreille (Armadillidiidae)², also known as 平甲蟲 pingjiachong, pill-bug or pill woodlouse. Its dried whole body can treat accumulation, amenorrhea, inhibited urination, and various sore. Porcellio scaber Latreille of this family also as another official zoological origin of Shufu¹⁰. They are seldom used in TCM.

VI. Other (two drugs)
1. 青琅玕 Qinglanggan

Acropora pulchra Brook (Acroporidae)¹⁰ is one of coral polyp species. Its colony, formed by skeleton and tissue, contains calcium carbonate and has anti-hypertensive, vasodilator, and anti-myocardial ischemia effects. All Acropora species are also recorded as official zoological origin of Qinglanggan¹⁰. They are seldom used in TCM.

2. 冬灰 Donghui

The drug is the ashes remained after firewood is burned in the kitchen range at winter. It was used to resolve verruca and polyp, and treat pruritus induced by abscess.

Discussion

In our previous and current studies for Shennongbencaojing (《神農本草經》), there were 142 drugs in Top Grade Drugs, 114 drugs in Medium Grade Drugs, and 103 drugs in Low Grade Drugs respectively⁵⁶. It was different from a common impression that there were 120 drugs in Top, 120 drugs in Medium, and 125 drugs in Low Grade Drugs, respectively. The above results indicated that there were many different Shennongbencaojing editions ever used in ancient time.² Without conducting more detailed research and checking, many people blindly believed that there were just 365 drugs in Shennongbencaojing. Actually there were more than 365 drugs listed in Shennongbencaojing. Tao Hong-jing (陶弘景) chose 365 drugs from the many and completed his work, Bencaojingjizhu (《本草經集注》)¹⁴. This information was proved to be true again in this study.

In this Low Grade Drugs study, there was nearly no drug edible as daily food in plants. Furthermore, there were many drugs in Low with certain degree of toxicity on human body which were classified as the toxicants such as Fuzi, Wutou, Tianxiong (附子、烏頭、天雄, No. 1-3), Banxia (半夏, No. 4), Huzhang (虎掌, No. 5), Yuanwei (鳶尾, No. 6), Dahuang (大黃, No. 7), Langdangzi (莨菪子, No. 10), Lili (藜蘆, No. 13), Gouwen (鉤吻, No. 14), Shegan (射干, No. 15), Shaqi (薊梅, No. 18), Gansui (甘遂, No. 19), Daji (大戟, No. 24), Zeqi (澤漆, No. 25), Yinwu (茵芋, No. 26), Yaohua (蕘花, No. 28), Yazi (牙子, No. 29), Yangzhizhu (羊躑躅, No. 30), Shanglu (商陸, No. 31), Langdu (狼毒, No. 34), Guijiu (鬼臼, No. 36), Lanru (蘭茹, No. 40), Zaoxiu (蚤休, No. 43), Yuanhua (芫花, No. 49), and Mangcao (莽艸, No. 56). They were ever included in the Poisonous Weeds Class of Bencaogangmu (本草綱目)⁴⁴. Also many studies have reported these poisonous herbs about their effects, toxicities, actions, indications, doses, and safety. These were already well known in academia. Comparing with our previous studies, the number for the drugs that were edible as daily food was 14 in the Top Grade Drug⁶. It was eight in the Medium Grade Drug⁴. However, in the Low Grade Drug, no drug was mentioned to be edible as daily food. It suggested that although the Low could be used to treat illnesses but they were with some degree of toxicity, and should
not be taken for a long period of time after the disease was cured, and further medication should be avoided. The results of our textual research were proved again to comply with the implication of Shennongbencaojing which was properly divided into Top, Medium, and Low Grade Drug.

Drug Fuzi (附子, No. 1), Wutou (烏頭, No. 2), and Tianxiong (天雄, No. 3) were originated from same plant, Aconitum carmichaeli Debx. (Ranunculaceae). Different names were given basis on its part grown and external entity on root. Wutou means tuberous mother root or root tuber. Fuzi means lateral root. Tianxiong means singular and long root. All three radical parts were used but had different given drug names44,45.

Dysosma versipellis (Hance) M. Cheng ex Ying (Berberidaceae) with numerous mortared connected roots was previously named Guijiu (鬼臼, No. 36) in Chinese medicine. Its popular name nowadays is called Bajiaolian (八角蓮) for palmed leaves with 4-9 deep cleft or lobed as an endemic species in China.

As the drug Shujiao (蜀椒, No. 51. of Plant of Low) had strong scent and poisonous so it was listed in Low Grade Drugs; and although the drug Qinjiao (秦椒, No. 57. of Plant of Medium) was very similar to Shujiao but it was less poisonous, less hot, so it was listed in Medium Grade Drugs of the Classic Materia Medica such as Shennongbencaojing (《神農本草經》), Xinxiubencao (《新修本草》)52 and also recognized by Li Shi-zhen53. They were the same plant and had been debated by others classic materia medica. The unidentified evolutionary relationships of the two Chinese words was affected by Tao Hong-jing (陶弘景).

According to the knowledge of phonology and norm of developed Chinese feature, the word 榧 (Fei) was sub-differentiated from 彼 (Bi). Feizi (榧子) was Bizi (彼子) and annotated as same drug first on Xinxiubencao (《新修本草》)52 and also recognized by Li Shi-zhen53. They were the same plant and had been debated by others classic materia medica. The unidentified evolutionary relationships of the two Chinese words was affected by Tao Hong-jing (陶弘景).

Lead and tin often mixed named and there were no differences before Qin and Han Dynasty. The lead is always taken as tin, such as drug Fenxi (粉錫, No. 4 of Mineral) is practically a white powdered lead with basic lead carbonate $2\text{PbCO}_3 \cdot \text{Pb(OH)}_2$, although its Chinese name means powdered tin.
Materia Medica. The series of research results will facilitate the Chinese medicine modernization and internationalization.

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References


《神農本草經》下品藥拉丁名與藥效之本草考證

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《神農本草經》的考證研究，已完成「上品藥」、「中品藥」，本次繼續進行「下品藥」之研究。首先仍將藥物分類為：植物（72種）、礦石（7種）、動物（6種）、魚貝（2種）、昆蟲（14種）、其他（2種）等六大類。共计「下品藥」有103種，其中許多藥物皆具有毒性。如烏頭、半夏、大黃、莨菪子、藜蘆、鉤吻、恆山、大戟、狼牙、羊躑躅、商陸等，也曾被列於《本草綱目》草部毒草類。《本經》「下品藥」據現代研究也證實，大多有毒，尚未被定義出基原者有4種：雚菌、羊桃、烏韭、藥實根；藥物「一物數名」具有相同基原者，如：烏頭—附子，天雄—恆山，葛徵—腐婢，赤小豆—商陸等。本考察「下品藥」類藥物，大部分為「多毒，主治病，不可久服」。《神農本草經》上、中、下三品皆以考證詳實的孫氏版為依據，並運用當今的學術文獻，完成《神農本草經》現代的藥物的考證，有助於中醫藥國際化。

關鍵字：神農本草經、下品藥、學名、藥效、藥用、本草考證

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