

Development of the Materia Medica

- Beginning with eating plants and animals
- Prescription for Fifty-Two Ailments 215 B.C. (Wu Shi Er Bing Fang)
- Discovered in 1973 from the Ma Wang Dui Tomb (Chinese cinnamon, magnolia flower bud(xinyi), sour date kernel, ginger, gaoben, peilan, huajiao,
- 300 formulae and 247 drugs, one third are derived from mineral or animal sources
- Early Development Empirical Medicine
 - Yellow Emperor's Classic of Internal Medicine (100/200 B.C.-200A.D.) (Huang Di Nei Jing) 13 formulas, 28 drugs
 - Divine Husbandman's Classic of Materia Medica Late Han dynasty, (Shen Nong Ben Cao Jing), 365 drugs, the earliest book of materia medica . >>200 B.C.
 - Treatise on Febrile Diseases Caused by Cold, 113 formulas while Jin Gui has 245 formulas (Shang Han Lun)

Introduction to the history of Chinese herbology

Tang Materia Medica (tang ben cao, 844 herbs, illustrated, the earliest encyclopedia of materia medica .>>659A.D.:

- Ming dynasty: Grand Materia Medica (Ben cao gang mu) by Li Shi Zhen (1518~1593), 1892 herbs, 11,000 formulas
- Encyclopedia of Traditional Chinese Medicinal Substances (Zhong Yao Da Ci Dian)

Li Shizhen

-> **Grand materia medica-**(Ben Cao Gang Mu) (*The Compendium of Materia Medica*).

Li Shizhen was one of the greatest physicians and pharmacologists in Chinese history



Li Shizhen

Ben Cao Gang Mu (*The Compendium of Materia Medica*).

- His major contribution to medicine was his 27 year research, the results of which are found in his epic book, **Ben Cao Gang Mu** (*The Compendium of Materia Medica*).
- He is also considered to be the greatest naturalist of China, and was very interested in the proper classification of herb components.

Li Shizhen

Ben Cao Gang Mu (*The Compendium of Materia Medica*).

- The book has details about more than 1,800 herbs (Chinese Medicine), including 1,100 illustrations and 11,000 prescriptions.
- The classic also described the type, form, flavor, nature and application in disease treatments of 1,094 herbs.

Types of Materia Medica

■ Botanical

- ❑ Whole plant (cao):
- ❑ Flower (hua):
- ❑ Leaf (ye):
- ❑ Fruit (guo):
- ❑ Stem (Jing, teng):
- ❑ Twig (Zhi):
- ❑ Radix (gen):
- ❑ Cortex or Bark (pi):
- ❑ Seeds (zi or ren):

■ Zoological

- ❑ Insects (chong):
- ❑ animal :

■ Mineral :

Types of Materia Medica

- Whole plant (cao)

Yi Mu Cao



Types of Materia Medica

Botanical

Flower 花

- Jin yin **hua** (honeysuckle flower),
- Ju **hua**: (chrysanthemum flower),
- Meigui **hua** (Rosebud, bud of Chinese rose)



Types of Materia Medica

Leaf (Ye, 叶)

- Sang ye (White mulberry leaf),
- Da qing ye (Isatis leaf, dyers woad leaf)



Types of Materia Medica

Fruit (guo, 果)

- Long yan rou (longan)



Types of Materia Medica

Stem (jing 茎, teng 藤)

- Ma huang (Ephedra stem)



Types of Materia Medica

Twig (zhi, 枝) - is a small thin terminal branch of a woody plant

- Gui zhi (Cinnamon twig, cassia twig), Sang zhi (White mulberry twig)



Types of Materia Medica

Radix (gen, 根)

- Ren shen (ginseng)



Types of Materia Medica

Radix

- Ban lan gen (Isatis root, woad root)



Types of Materia Medica

Cortex or Bark (pi 皮)

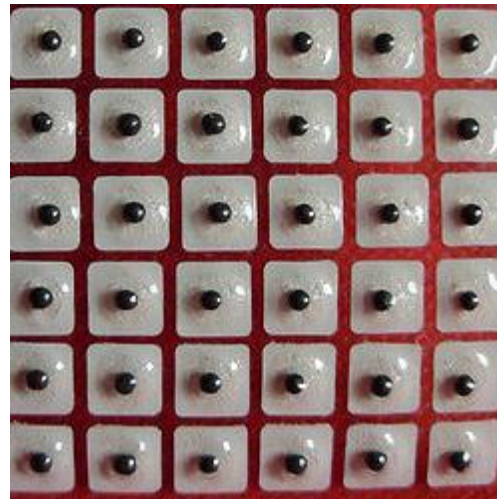
- Rou gui (Cinnamon bark)



Types of Materia Medica

Seeds (zi 子 or ren 仁)

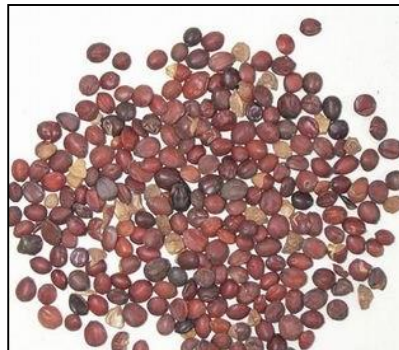
- Wang bu liu xing (Vaccaria seeds)



Types of Materia Medica

Seeds

- Suan zao ren (Sour jujube seed)



Types of Materia Medica

Zoological

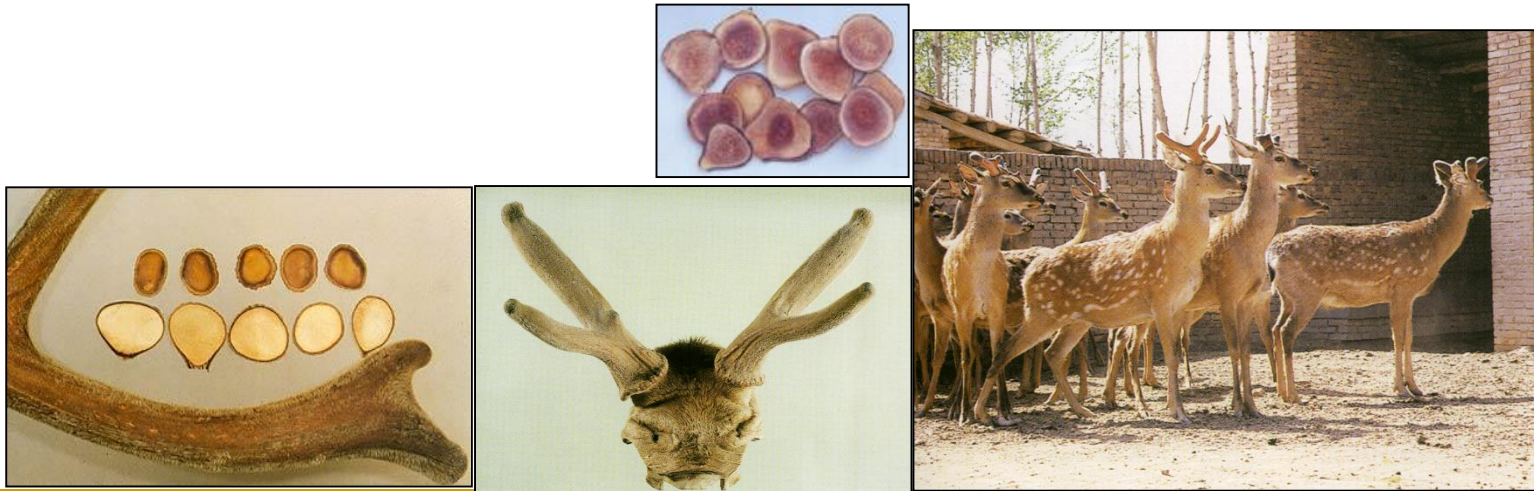
- Insects: Chan tui (cicada molting)



Types of Materia Medica

Zoological

- Animal: Lu rong (deer horn)



Types of Materia Medica

Mineral

- Ci shi (Magnetite)



Types of Materia Medica

Mineral

- Shi gao (Gypsum)



Properties of Materia Medica

1. Taste
2. Temperature characteristics
3. Functions
4. Application

Five tastes

- **Pungent (acrid):** Pungent herbs function to disperse, promote flow of qi and blood, ma huang, bo he, mu xiang, hong hua
- **Sweet:** Sweet herbs function to tonify, harmonize the middle jiao and relax spasm and emergencies, dang shen, gan cao, yi tang
- **Sour:** Sour herbs function to astringe and consolidate, mostly used to treat sweating of deficiency type, diarrhea, frequent urination, bleeding or emission, wu wei zi, wu bei zi
- **Bitter:** Bitter taste has two functions, drying and purging: cang zhu, huang lian, da huang
- **Salty:** Salty herbs function to soften hardness, dissipate nodules and purge, gui ban, bie jia
- **Astringent:** similar to sour, lian zi
- **Aromatic:** penetrate through turbidity and revive a particular function, either the digestive function of the spleen, or the cognitive functions of the spirit and sensory orifices
- **Bland:** drain dampness, promote urination

Four Natures : temperature characteristic

- Cold and cool: The herbs treating heat patterns,
 - huang qin, ban lan gen
- Hot and warm: The herbs treating cold patterns
 - Fu zi, gan jiang
- Neutral: jie geng, bai qian
 - slight warm: less hot than warm: xuan fu hua
 - slight cool: less cold than cool: bei mu

Four Tendencies

- **Lifting, Floating**
 - The herbs that can raise yang, release the exterior, expel the wind and cold, induce vomiting, open the orifice;
- **Lowering, Sinking**
 - The herbs that can drain downward, clear heat, drain dampness, promote the urination, calm the spirit, anchor yang and extinguish the wind, remove the food stagnation, stop cough, astringe.
- **Four tendencies are related to natures and tastes**

Actions of Herbs (Lifting, Lowering, Floating, Sinking):

Refers to curative effects of herbs relative to the tendency of diseases.

Lifting (Upward) & Floating (Outward)

Actions:

- ❑ Elevates Yang
- ❑ Disperses the Exterior (Dispels Wind Cold, Promotes Sweating)
- ❑ Induces vomiting
- ❑ Opens the Sensory Orifices

Indications:

- ❑ Diseases located in the Upper part
- ❑ Downward Disorder (diarrhea, uterine bleeding, organs prolapsed)
- ❑ Exterior syndrome

pungent and sweet in taste and warm and hot in nature.

Actions of Herbs (Lifting, Lowering, Floating, Sinking):

Refers to curative effects of herbs relative to the tendency of diseases.

Lowering (Downward) & Sinking (Inward)

Actions:

- ✦ **Clears Heat and Purges Accumulations and Stagnation**
- ✦ **Promotes Bowel movement and urination**
- ✦ **Drains Dampness**
- ✦ **Anchors the Yang and Calms the Spirits**
- ✦ **Directs Rebellious Qi Downward to Stop vomiting and to Relieve Coughing and Wheezing**

Indications:

- ✦ **Diseases located in the Lower part**
- ✦ **Upward Disorder (vomiting, cough, wheezing, Ascending Liver Yang)**
- ✦ **Constipation, food/Blood Stagnation**

Sour, bitter, salty or astringent in flavor, cold or cool in property

Channel Tropism (channel entered)

✦ Channel Tropism (channel entered)

This means the specific selective effect of an herb on a specific part of the body. Many herbs may have similar functions, but they work on different parts of the body, so they have different indications.

The concept of an herb entering a particular channel was later expanded to describe the capacity of the herb to guide or lead other herbs in a prescription into that channel or its related organ.

Examples:

Heart meridian : wu wei zi

Kidney meridian: rou gui

Lung meridian: ma huang

Liver meridian: mu li

Toxicity

Toxicity of the Herbs

✦ Degree of Toxicity:

✦ Slightly Toxic

✦ Toxic

✦ Extremely poisonous

✦ Deadly poisonous

How to reduce the toxicity

- **Detoxification:**
 - **Preparation**
 - **Combination of other herbs**
 - **Controlling the dosage**

Preparation

- Origin(soil, moisture, sunlight, and climate)
- Harvest
 - The season, time and method of collection will affect the function of herbs.
- Aims of preparation
 - To alter or modify properties: sheng di huang and shu di huang, sheng shou gu and zhi shou wu
 - To enhance therapeutic effects: cu chai hu
 - To eliminate or lower toxic and drastic properties and side effects: fu zi, cao wu, chuan wu

Methods of preparation

- Utilizing heat
 - Dry-frying(chao, 炒):
 - Frying with liquids (zhi, 炙)
 - Vinegar: astringent, analgesic, blood-invigorating and detoxifying actions
 - Wine: clear blockage from the channels, expel wind, alleviate pain
 - Ginger juice, reduce the tendency of bitter and cold herbs to upset the stomach; enhance the ability of herbs to warm the stomach and stop vomiting
 - Calcining(duan, 煅): calcined over fierce fire to make them crispy for easily crushing
 - Quick-frying (pao, 炮):

Methods of preparation

Utilizing water

- Washing
- Moistening:
- Rinsing
- Refining powder with water (Shui fei)

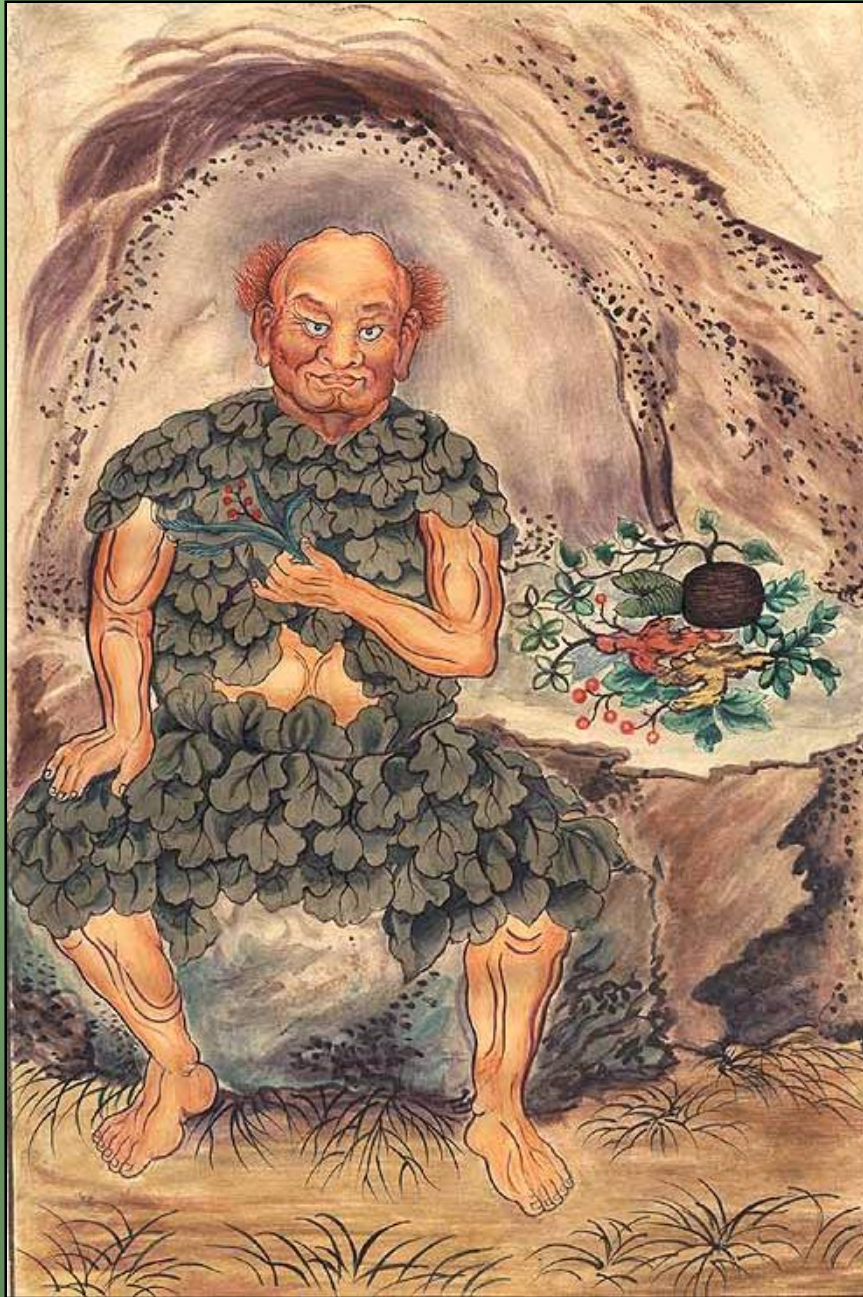
Methods of preparation

Utilizing both heat and water

- Boiling (Zhu)
- Quenching (Cui)
- Simmering (Ao)

Weight and measures

1 qian=3 g



Shen Nong
Divine Farmer

Seven consequences of combination of medical substances

1. Mutual accentuation/necessity (Xiang Xu)
2. Mutual enhancement/employment (Xiang Shi)
3. Mutual counteraction /fear (Xiang Wei)
4. Mutual suppression/killing (Xiang Sha)
5. Mutual antagonism/aversion (Xiang Wu)
6. Mutual incompatibility / opposition (Xiang Fan)
7. Single effect (Dan Xing)

Techniques for Combining Herbs

■ Mutual accentuation is

- **Mutual Necessity (Xiang Xu) 相须**
- Herbs of similar characteristics and functions are used in coordination to strengthen their actions
- Accentuate mutual properties
 - Ma Huang and Gui Zhi to induce diaphoresis
 - Shi gao and Zhi mu to clear heat and drain fire
 - Da huang and Mang xiao to purge the intestines

Techniques for Combining Herbs

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■ Mutual enhance

is

Mutual Employment (Xiang Shi) 相使

Combination of 2 or more herbs with different actions,
one herb is the principal, others are enhancements for
the principle

eg. Huang Qi and Fu Ling:

Techniques for Combining Herbs

- **Mutual Counteraction**

is

Mutual Fear (Xiang Wei)

The toxicity or side effects are reduced or eliminated by herbs when used together in combination

(A reduces B's side effect, B afraid A)

Sheng ban xia and Sheng jiang

Techniques for Combining Herbs

- **Mutual Suppression is**

Mutual Killing (Xiang Sha)

One herb can reduce the undesirable side effects of another.

The emphasis is on the substance that produces the action.

(B afraid A, so A can Kill B's side effects)

Techniques for Combining Herbs



Mutual antagonism/Mutual Aversion (Xiang Wu)

Two herbs used together that inhibit each other to weaken or even lessen their original functions.

$(A + B \rightarrow a + b)$

Renshen wu lai fu zi

19 antagonistic herbs

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Liu Huang antagonizes Pu Xiao

Shui yin antagonizes pi shuang

Lung Du antagonizes Mi tuo zeng

Ba Dou antagonizes Qian Niu

Ding Xiang antagonizes yu Jin

Chuang wu and cao wu antagonizes xi jiao

Ya xiao antagonizes san leng

Guan gui antagonizes shi zhi

Ren shen antagonizes wu ling zhi

Techniques for Combining Herbs

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- **Mutual Incompatibility is Mutual Opposition (Xiang Fan)相反**



Don't use EVER

Two herbs used in combination that produce toxicity or side effects

Not caused by either when used separately

Eighteen herbs of mutual incompatibility (Shi Ba Fan)

18 incompatible Herbs⁴⁵

Gan Cao **incompatible with** Gan Sui, Da Ji, Hai Zao, Yuan Hua

Wu Tou **incompatible with** Ban Xia, Gua Lou, Bei Mu, Bai Lian, Bai Ji

Li Lu **incompatible with** Ren Shen, Sha Shen, Dan Shen, Xuan Shen, Xi Xin, Shao Yao

Techniques for combining herbs

- **Single effect (Dan Xing)**
- The use of only one medicinal herb to treat a patient (not common)

Ren shen alone treats qi deficiency with collapse of yang.

Techniques for combining herbs

2. Contraindications

- **Incompatibility of herbs**

 - Mutual antagonism (Xiang Wu): Nineteen herbs**

 - Mutual incompatibility(xiang Fan): Eighteen herbs**

Techniques for combining herbs

Incompatibility in pregnant women

- **Used with caution:**

Herbs for moving Blood stasis, such as Ru Xiang, Mo Yao, Tao Ren and Hong Hua.

Herbs being powerful in promoting Qi movement and having sinking tendency such as Zhi Shi, Zhi Ke, Da Huang and Mu Tong.

Herbs with pungent and heat properties such as Fu Zi, Gan Jiang and Rou Gui

Techniques for combining herbs

Contraindicated:

Herbs are toxic and drastic such as She Xiang, Ba Dou, Ban Mao, Qian Niu Zi, Gan Sui, Da Ji, Yuan Hua, San Leng, E Zhu, Shui Zhi, Meng Chong.

Modern research on contraindicated herbs in pregnant women:

Those that contain some substances causing teratism (deformity of the fetus) such as Tao Ren, Yu Li Ren and Ku Shen

C+C Pregnancy

- Mu Dan Pi
- Zi Cao
- Dan Zhu Ye
- Xia Ku Cao
- Gui Zhi
- Xin Yi Hua
- Chai Hu (caution)
- Chuan Xin Lian
- Bai Hua She She Cao
- Ma Chi Xian
- She Gan
- Lou Lu
- Di Gu Pi- early pregnancy
- Da Huang
- Mang Xiao
- Fan Xie Ye
- Lu Hui
- Yu Li Ren

Dosage

- Most herbs: 3~9g
- Weight and nature:
 - Hard, heavy, bland: larger dosage
 - Light, toxic and strongly flavored: smaller dosage
- Severity of the disorder:
 - The more severe the problem, the larger the dosage
- Constitution and age
 - Weak patients, the elderly, and infants: smaller dosage

Categories

- 1. Herbs that release the exterior (jie biao yao)
- 2. Herbs that clear heat (qing re yao)
- 3. Downward-draining herbs (xie xia yao)
- 4. Herbs that drain dampness (li shui shen shi yao)
- 5. Herbs that dispel wind-dampness (qu feng shi yao)
- 6. Herbs that transform phlegm and stop coughing (hua tan zhi ke yao)
- 7. Aromatic herbs that transform dampness (fang xiang hua shi yao)
- 8. Herbs that relieve food stagnation (xiao shi yao)
- 9. Herbs that regulate the qi (li qi yao)
- 10. Herbs that regulate the blood (huo xue yao)
- 11. Herbs that warm the interior and expel cold (wen li yao)
- 12. Tonifying herbs (bu xu yao)
- 13. Herbs that stabilize and bind (gu se yao)
- 14. Substances that calm the spirit (an shen yao)
- 15. Aromatic substances that open the orifices (kai qiao yao)
- 16. Substances that extinguish wind and stop tremors (ping gan xi feng yao)
- 17. herbs that expel parasites (qu chong yao)
- 18. substances for topical application (wai yong yao)

Safety issues

- Correct identification (Feng Fang, Fang Feng)
- Understanding toxicity
 - Traditional and biomedical
 - Cautions & conintaindications
- Use of appropriately processed herbs
 - Raw herbs (sheng yao)
 - Herbs prepared for ingestion (yin pian)
- Use of quality herbs
- Use of uncontaminated herbs
 - Natural contaminants: molds or other microbes
 - Artificial contaminants: pesticides or heavy metals
- Herb-drug interactions