

REFERENCES

Stemona tuberosa Lour.

Keys, D.: Chinese Herbs - Their Botany, Chemistry and Pharmacodynamics. 1976 (1990 in paperback) Charles E. Tuttle. ISBN No. 0-8048-1667-0.

Keys says that it is an herbaceous volubilate plant found in Central China, Indochina, Taiwan, India. (Syn. *Roxburghia gloriosoides* Roxb., *R. viridiflora* Smith, *R. stemona* Steud.)

The drug occurs as yellowish white, cylindrical tubers, the interior hollow and dark brown. The taste is bittersweet. The tubers contain stemonine (C₂₂H₃₃NO₄; white needles, odorless, slightly bitter; soluble in alcohol, ether, acetone, toluene, benzene, chloroform; m.p. 160°), which is mildly toxic. Stemonine calms the respiratory centre; it is strongly effective against *Pediculus capitus*, *P. corporis* and *Phthirus pubis* without irritation or toxicity.

Used internally as antitussive. Dose, 5-10 g. Externally, as pediculicide.

Reid, Daniel P.: Chinese Herbal Medicine. Shambhala (Boston) 1993. ISBN NO. 0-87773-397-X and ISBN No. 0-87773-398-8 (paperback).

Reid refers to the plant as *Stemona tuberosa* or Bai Bu in Chinese. It is a member of the Stemonaceae family, and found in Central China, Indochina, Taiwan and India. The roots are used.

Nature: Sweet and bitter; slightly cold.

Affinity: Lungs.

Effects: Antitussive; demulcent to lungs; anthelmintic; kills lice.

Indications: Coughs; chronic, dry coughs; whooping cough; tapeworm; external application to lice.

Dosage: 5-10 g.

Remarks: Recent applications have found the drug to be effective against tuberculosis.

World Health Organisation (WHO) Regional Publications: Western Pacific Series No.3. Medicinal Plants in Viet Nam. 1990. Institute of Materia Medica, Hanoi. 1990. ISBN No. 92-9061-101-4.

Stemona tuberosa Lour. Stemonaceae

Description: Perennial climbing shrub, reaching a length of 5-6m., with tuberous roots, fascicled. Leaves opposite or alternate, oblong heart-shaped; main nerves curved, secondary nerves very close. Rows in the axil of leaves, greenish-yellow externally, reddish-purple within, fetid. Capsule ovoid-oblong, many-seeded.

Flowering period : March - May.

Distribution: Grows wild in the hills and mountains.

Parts used: Tuberous roots cropped all the year round, especially in autumn. After being well washed and docked at each end, the roots are steam-cooked, then dried in the sun or in ovens at 50-60 C.

Chemical composition : The tuberous roots contain alkaloids: stemonine, tuberostemonine, isotuberostemonine, stemonidine, sinostemonine; glucides 2.3%, lipids 0.83%, proteins 9%, organic acids (citric, formic, malic, succinic ...)

Therapeutic uses : The tuberous roots are well known for their antibacterial, antiparasitic and expectorant properties. They are prescribed in the therapy of cough, ascariasis and oxyuriasis in a dose of 4 to 12g per day, in the form of a decoction, extract, powder or pills, for 4 to 6 days. The decoction or extract is applied externally against impetigo and scabies. Can also be used as an insecticide against mosquito larvae, fleas and bugs.

Geng, Junying, Huang, Wenquan, Ren, Tianchi, Ma, Xiufeng: Practical Traditional Chinese Medicine & Pharmacology. Medicinal Herbs. New World Press, Beijing, China. 1997. ISBN No. 7-80005-119-6.

Stemona root (Baibu)

Pharmaceutical name: Radix Stemonae

Botanical Name: 1. *Stemona sessilifolia* Miq.; 2. *Stemona japonica* (Bl.) Miq.; 3. *Stemona tuberosa* Lour.

Common Name: Stemona root

Source of Earliest Record: Mingyi Bielu

Part Used & Method for Pharmaceutical Preparations: The roots are dug in spring or autumn. After the fibrous roots have been removed the roots are cleaned and put into boiling water. Then they are dried in the sun and cut into pieces.

Properties & Taste: Sweet, bitter and neutral

Meridian: Lung

Functions: 1. To moisten the lungs and stop cough; 2. To kill lice and parasites

Indications & Combinations:

1. Cough in common cold. Stemona root (Baibu) is used with Schizonepeta (Jingjie), Platycodon root (Jiegeng) and Aster root (Zi-wan).

2. Whooping cough. Stemona root (Baibu) is used with Glehnia root (Beishashen), Tendrilled fritillary bulb (Chuanbeimu) and Swallowwort rhizome (Baiqian).

3. Cough due to tuberculosis. Stemona root (Baibu) is used with Ophiopogon root (Maidong) and Fresh rehmannia root (Shengdi-huang).

4. Lice of the head or body. The herb is made into a 20% tincture, or a 50% decoction used as an external wash.

5. Pinworm. The 30-ml 100% decoction as an enema before sleep, daily for five days.

Dosage: 5-10 g

Lu, Henry C.: *Legendary Chinese Healing Herbs – entertaining & beneficial to your health.* Pelanduk Publications, Malaysia. 1991. ISBN No. 967-978-394-4.

Chinese: Baibu.

Common name: wild asparagus.

Family: Stemonaceae.

Chinese name: hundred parts (so named because its roots are over one hundred in number).

Scientific names: *Stemona sessilifolia* (Miq.), *Stemona japonica* (Bl.) Miq., and *Stemona*

tuberosa *Pharmaceutical name:* Radix Stemonae

Part used: tuberous root.

Dosage: 5 g.

Flavour: sweet and bitter.

Energy: slightly warm.

Class: 10, herbs to suppress cough and reduce sputum,

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Meridians: lungs.

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Actions: to lubricate lungs, suppress cough, bring down energy, and destroy worms.

Indications: cough due to deficiency fatigue, pulmonary tuberculosis, chronic bronchitis, and whooping cough.

Notes: Experiments indicate that *baibu* is effective for suppression of cough and it is also an anti-tuberculous herb.

Tierra, Michael: *The Way of Chinese Herbs – the most complete guide to natural healing and health with traditional Chinese herbalism.* 2003 (purchase date). Pocket Books, London. ISBN No. 0-671-89869-8.

Stemona Root (Bai Bu)

Radix stemonae

Common name: Stemona root

Family: Stemonaceae

Energy and Flavours: Slightly warm; sweet, bitter, acrid.

Organ meridian affected: Lung

Properties: Demulcent, antitussive, antifungal, antiparasitic

Indications: Because of its lubricating and nutritive properties, stemona root is useful for acute or chronic coughs, especially those caused by yin deficiency. This herb can also be employed to expel parasites.

Contraindications: Stemona root should not be used when there is spleen and stomach



deficiency with diarrhoea.

Dose: 3 – 9 grams

Zhu, You-Ping: Chinese Materia Medica - chemistry, pharmacology and applications. Harwood Academic Publishers. 1998. ISBN No. 90-5702-285-0.

Bai Bu

RADIX STEMONAE (STEMONA ROOT)

Bai Bu is the dried root tuber of *Stemona sessilifolia* (Miq.) Miq., *Stemona japonica* (Bl.) Miq. or *Stemona tuberosa* Lour. (Stemonaceae). The root tuber is collected in the spring and autumn, removed from fibrous roots, boiled or steamed till no white core and dried in the sun. The herb from *S. sessilifolia* and *S. japonica* is mainly produced in Anhui, Zhejiang, Jiangsu and Shandong provinces, and that from *S. tuberosa* is mainly produced in Hubei, Guangxi, Yunnan and Sichuan provinces.

CHEMISTRY

The root of *Stemona* plants contains alkaloids. The root of *S. sessilifolia* contains tuberostemonine and oxotuberostemonine [1-3]. From the root of *S. japonica* protostemonine, stemonamine and isostemonamine were isolated [4,5]. Tuberostemonine, stenine, oxotuberostemonine, stemonine, stemotinine and isostemotinine were identified in the root of *S. tuberosa* [2, 6-8].

PHARMACOLOGY

Effect on Smooth Muscles

The alkaloidal extract of the herb had a relaxant effect on histamine-induced spasm of the isolated bronchial muscles of guinea pigs [9]. At 6.7×10^{-5} M, tuberostemonine paralyzed the motility of isolated mouse ileum and stimulated the twitch response induced by guanidine in isolated frog rectus preparation [10]. A water extract of the root tuber of *S. sessilifolia* (1-50 mg/ml) concentration-dependently relaxed guinea-pig tracheal preparations contracted by carbachol, histamine or KC1. The effect was not affected by pre-treatment with a JS-adrenoceptor antagonist propranolol, indicating that its effect was not due to an activation on β -adrenoceptors. Receptor binding assay indicated that it interacted with the muscarinic receptors and the dihydropyridine (DHP) binding site of L-type Ca^{2+} channels, but not with the histamine H_1 receptors [11].

Insecticidal Effect

The aqueous and the 70% alcoholic extract of the herb were lethal to *Pediculus capitis* and *P. vestimenti*. It was also able to kill lice ova. The alcoholic extract killed *P. pubis* in a few min after contact [9]. Tuberostemonine produced an inhibitory effect on the motility of *Angiostrongylus cantonensis*, *Dipylidium caninum* and *Fasciola hepatica* at 6.7×10^{-6} – 6.7×10^{-5} M *in vitro* [10].

Antimicrobial Activity

The alcoholic extract of the herb at 1:100-1:1600 inhibited and at 1:80 killed *Mycobacterium tuberculosis* var. *hominis* H₃₇RV. The decoction of the herb was also inhibitory against multiple species of bacteria and fungi, and decreased the pathogenicity of Asian influenza virus type A in mice. It was also effective in mice infected with the influenza virus [9].

FUNCTIONS AND APPLICATIONS

Traditional Description

Bai Bu has sweet and bitter tastes and a neutral property, acting on the lung channel. It has the functions of:

- (i) moistening the lung and relieving cough, used in acute and chronic cough, cough in phthisis, and whooping cough; and
- (ii) killing insects and worms, used externally in pediculosis capitis, pediculosis corporis, oxyruiasis and pudendal itching.

Applications

Chronic bronchitis

In 928 patients treated with the 50% syrup or the extract tablet of the herb, 139 had marked effects, 390 had improvements, 11 had short-term control and remaining 388 unchanged. The mixture of the powdered herb and honey (4:3) was effective in preventing chronic bronchitis activated by common cold.

Pulmonary tuberculosis

In 105 patients treated with a combined therapy of the injection of the herb and isoniazid, 48 cases had markedly absorbed lesions, 16 were unchanged and 2 aggravated. The effective rate was 83.8% and marked effective rate was 37.1%. The cavities were healed in 3 of 7 cases and had shrunk in 2 cases; 12 out of 15 cases previously identified to be positive in sputum test were declared bacteria-free. The efficacy was similar to that of streptomycin plus isoniazid treatment.

Vaginal trichomoniasis

A threaded cotton ball soaked with the 50% decoction of the herb was inserted deeply into the vagina at bed-time and removed the next morning. Out of 100 cases so treated, 66 were cured after 4 days of treatment, 30 in 8 days and remaining 4 in 12 days.

DOSAGE

4.5-9 g.

SIDE EFFECTS AND TOXICITY

Oral administration of the herb preparations caused heartburn, dryness of the mouth, nose and pharynx, dizziness, chest discomfort, shortness of breath and anorexia. The incidence of the side effects was 20-30% [9].

REFERENCES

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Hsu, Hong-Yen: How to treat yourself with Chinese herbs. Keats Publishing Inc. 1980. ISBN No. 0-87983-603-2.

Stemona

Botanical name: *Stemona japonica*, *S. tuberosa* (Stemonaceae)

Pharmaceutical name: Radix *Stemona*e

Chinese name: pai-pu

Constituents: stemonine

Properties and actions: slightly warm; sweetish, bitter taste. An anthelmintic and insecticide.

Calms the respiratory centre.

Indications: colds, coughs, phthisis, scabies