

Producing plants for homeopathic medicines: *Artemisia cina*
Beerg ex Poljak. - Citrine wormwood (family *Astrovykh* - *Asteraceae*)
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GENERAL INFORMATION

In classical homeopathy, four monopreparations are known, the raw material for which are plants from the genus *Artemisia* (wormwood) [4, 5, 8, 21, 23, 24, 25, 26]. Our previous publications were dedicated to two representatives of the genus *Artemisia* - *Artemisia absinthium* L. (wormwood) and *Artemisia abrotanum* L. (wormwood), widely used in homeopathy [9, 10].

Our studies made it possible to differentiate both in the homeopathic and botanical sense *Artemisia absinthium* L. from *Artemisia vulgaris* L. and *Artemisia pontica* L., as well as *Artemisia abrotanum* L. from *Artemisia paniculata* Lam. and *Artemisia procera* Willd. and to establish that in the homeopathic pharmacopoeias of various countries [21, 23, 24, 25, 26] as a raw material for the production of the drug *Absinthium* is given exclusively by wormwood - *Artemisia absinthium* L., and for the production of the drug *Abrotanum* - God's tree wormwood - *Artemisia abrotanum* L. Other types of wormwood will be unacceptable impurities in raw materials for the production of these drugs [9, 10].

The third drug is *Artemisia vulgaris* (*Artemisia vulgaris* L.) [23, 24, 25, 26], to which the next publication will be devoted.

Quite especially, both by morphological characteristics of the producing plant and by pathogenesis, among the preparations of wormwood is the drug *Cina* (producing plant - *Artemisia cina* Beerg ex Poljak.) [21, 23, 25], to which this information-analytical study is devoted.

All of the listed homeopathic preparations made from producing plants belonging to the genus *Artemisia* are approved for medical use in Russia by order of the Ministry of Health and the Ministry of Health of the Russian Federation No. 335 dated November 29, 1995 [6]. The terminological confusion in the raw materials for their production and, as a consequence, in the pathogenesis of drugs, was the reason for the present research aimed at studying and creating a domestic raw material base for the production of homeopathic medicines.

The drug known as *Qing* (*Cina*) in various bibliographic sources is cited as a preparation made either from *Artemisia maritima* b. (sea wormwood) [2], or from *Cina maritima* Willd. (sea wormwood) [4, 7]. This causes confusion among homeopathic physicians and homeopathic medicine manufacturers,

In fact, as we were able to establish, all these names are the name of a widely understood species - *Artemisia maritima* r.p., which grows on saline soils of the dry steppe of the European part of Russia and Asia. It was subdivided by taxonomists into a number of smaller species - (*Artemisia salina* Willd., *Artemisia stepposa* Kell., *Artemisia incana* Kell., Etc.) [15, 17]. For example, in the flora of the USSR [17], the name of this plant is *Artemisia cina* Beerg ex Poljak. is indicated as the main one, and the synonym for it is - *Artemisia maritima* Bess. f. *fragrans* Rgl.

Artemisia cina differs from other species isolated within *Artemisia maritima* in sessile baskets [17]. In the work on plant resources of the USSR [13], only the name *Artemisia cina* Beerg ex Poljak is given. In the consolidated list of vascular plants on the territory of the former USSR [19], which determines the priority plant names for citation in works on pharmacognosy, botany, and floristry, only the main name of this species is given - *Artemisia cina* Beerg ex Poljak. (Table 1).

Terminological confusion in the names of plants producing homeopathic medicines is, unfortunately, not uncommon. This is more the rule than the exception. Therefore, we considered it expedient to conduct this historical and botanical excursion and establish the correct names of the producing plant for the monocomponent homeopathic medicine *Qing*.

The confusion in the names of the producing plant for the *Qing* preparation is due to the fact that various botanical sources were used to characterize the plant, as well as the lack of

the first stages of the formation of homeopathy, scientific and practical contacts between doctors using the homeopathic method of treatment, pharmacists who manufacture medicines, and botanists who determine the species of producing plants.

As we were able to establish, in the homeopathic pharmacopoeias of various countries [21, 23, 25, 26], *Artemisia cina* Beerg ex Poljak is cited as a raw material for the production of the Qing preparation. This name of the producing plant is also a priority for the botanical nomenclature. The name *Artemisia maritima* r.r. should be considered synonymous with it. Other types of wormwood - *Artemisia abrotanum* L., *Artemisia vulgaris* L., *Artemisia pontica* L., *Artemisia absinthium* L. - will be unacceptable impurities in raw materials for the production of Qing.

Table 1

Latin name producing plants	Synonyms	Russian name producing plants	Synonyms
<i>Artemisia cina</i> Beerg ex Poljak.	<i>Artemisia maritima</i> b.r., <i>Cina maritima</i> Willd., <i>Artemisia maritima</i> Bess. f. <i>fragrans</i> Rgl.	Wormwood	Wormwood

BOTANICAL AND PHARMACOGNOSTIC CHARACTERISTICS

Description: Citrine wormwood is a perennial plant up to 40 cm tall, cobweb-hairy at the beginning of the growing season, subsequently glabrous; the root is upright, woody, developing shortened perennial, woody, ascending, sterile shoots, covered with brownish-gray cracking bark. Fruiting stems are numerous, 18-30 cm tall, rather slender, twig-like, straight, sometimes arcuate at the base, brown, glabrous, glossy in the second half of summer, branched in the upper part, with very thin branches facing upwards. Leaves of sterile shoots and lower stems, early withering, long-petiolate, 2.5-4.0 cm long, the blade is oval in outline, twice pinnately dissected, the terminal lobules are narrow-linear, 2-5 mm long, shortly pointed; the middle stem leaves are almost sessile, simpler arranged; at the base with pinnately dissected ears, the uppermost sessile, solid, linear, small. Baskets sessile, protruding, oblong-ovate, up to 3 mm long, spike-collected on twigs. The wrappers are shiny, green, with a filmy edge, the outer ones are small, oval, the inner ones are larger, oblong; flowers in number 3-5; corolla yellow; anthers on short filaments, linear; stigma lobes oblong, slightly deflected, with a beard of protruding hairs at the apex. Seed chambers about 1.2 mm long, ovate, flat, blooms in August. Fruits are achenes (Fig. 1) [17, 20]. at the apex with a beard of protruding hairs. Seed chambers about 1.2 mm long, ovate, flat, blooms in August. Fruits are achenes (Fig. 1) [17, 20]. at the apex with a beard of protruding hairs. Seed chambers about 1.2 mm long, ovate, flat, blooms in August. Fruits are achenes (Fig. 1) [17, 20].

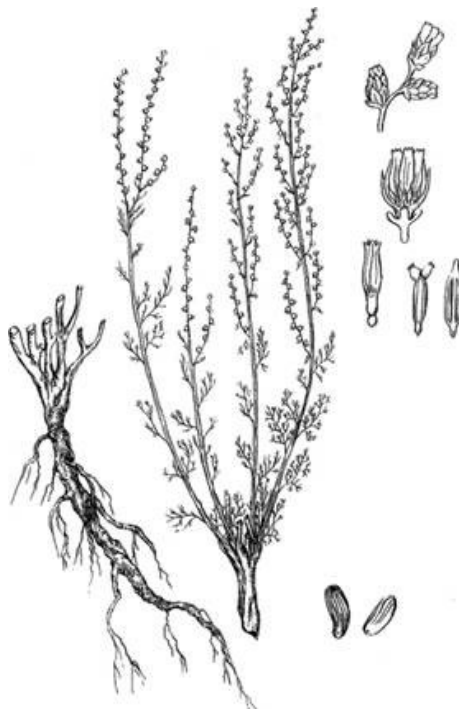
Areal. *Artemisia cina* is an endemic plant in Turkmenistan and southern Kazakhstan. It grows in dry steppes, preferring saline soils, coastal and lakeside lowlands [13, 17].

The introduction of wormwood on saline soils of the European part of Russia is possible. The plant is cultivated in the Krasnodar Territory, but sometimes it freezes out in winter [13].

Raw materials. Citrine wormwood buds - "citric seed" used in homeopathy are allowed also for medical use in Russia as a phytopharmaceutical [6]. In accordance with the 2002 State Register of Medicines, citric seed has an antiseptic effect. The use of wormwood buds in folk medicine has a very long history. This remedy has been used as an anthelmintic since the time of Avicenna. During the Crusades, citrus wormwood came to Europe, where it was called the "sacred seed", as it was believed that it grows in Palestine [5]. In fact, citrus wormwood in natural conditions grows only in Turkmenistan. Dried buds of citrine wormwood - "citric seed"

- are still used here as an anthelmintic; adults are given 4-5 g with jam or honey, children 0.25 g for each year of life. Santonin in powder or tablets is prescribed at 0.08-0.1 g per intake for adults and 0.005 g for each year of life for children, treatment is carried out within two days, the agent is prescribed 3 times a day. Santonin is a part of the preparations "Sankofen", "Calomel", "Phenolphthalein" [3].

Chemical composition. The chemical composition of different parts of the plant is different. If in bud the main substance is santonin, then in the blossoming inflorescences there are nitrogen-containing substances: betaine, choline. The leaves contain quebrachite [13]. The buds, in addition to the main active ingredient - santonin, contain an essential oil, which includes cineole, alpha-pinene, ter-pinene, terpineol, terpenenol, alpha-camphor, corvacrol, betanin, choline, bitter and coloring substances, apple and acetic acid [11].



Rice. 1. Citrine wormwood. *Artemisia cina* Beerg ex Poljak. (fig.Kogan L.I.)

Toxic effect. The agent acts mainly on mucous membranes, lymphatic system, heart, blood vessels, fibrous and aponeurotic tissues, synovial membranes, large sympathetic nerve and cranial nerves. Santonin, a nitrogen-free organic substance with a lactone ring in its structure, has a toxic effect, the presence of which explains the antihelminthic effect of the plant. In case of an overdose, vomiting, diarrhea, and respiratory depression may occur [11]. Citric seed is toxic when taken 10-20 g at a time. Doses of using flowers of citrine wormwood strictly depend on age [3].

Wormwood civic in homeopathy

In homeopathy, flower buds are used for the preparation of matrix tinctures [18, 24, 25].

Homeopathic tests. The drug was introduced into homeopathic practice by S. Hahnemann in 1829 under the name TSINA [16].

The classification is miasmatic. The drug is predominantly sycotic.

PATHOGENESIS [2, 3.5, 7, 8, 12, 16, 18].

Mentality and psyche. Irritable mood (vitamin deficiency), changeable appetite, grinding of teeth and convulsions with screaming and violent jerking of the hands and feet; the patient is constantly hungry, grumpy and irritable; bad mood, abnormal feelings of guilt, as if you really did something bad; paralytic shock; the patient jumps up suddenly, as if in great pain; restlessness when yawning [2].

Deceptions of the senses - sight, smell, taste, but not hearing; tearfulness and moodiness [18]. Touchiness, increased mental and physical sensitivity [8].

The patient loses consciousness and foam comes out of his mouth [5].

Central nervous system. Shaking pain (body), skin is sensitive to touch; headaches alternate with abdominal pains, relieved by bending over, headaches with tension in the eyes; choreic twitching of the muscles of the face and hands, night cramps [2],

Hypothalamic-pituitary system. Conditions that appear with irritation of intestine worms; the patient in a dream moves his hands and knees, puts them on his stomach, screams and talks, grinds his teeth, Light chills and severe fever with a clean tongue, chills with thirst, cold sweat on the forehead, nose, cheeks, hands; with fever, the face remains cold and the hands are warm [2].

Feverish conditions occur daily or every three days, with a predominance of chills, thirst, and subsequent fever; fever is accompanied by indigestion, headache, dilated pupils, convulsions; after the heat, profuse sweat appears and deep sleep sets in; chronic malaria; weakness, especially of the legs, from sexual excesses and masturbation in children [18],

The patient sleeps lying on his stomach; severe exhaustion with helminthiasis and from poor nutrition [5]. Appearance. Intense, limited redness of the cheeks; face pale and hot, dark circles around eye; whitish-cyanotic coloration of the nasolabial triangle; facial tics; persistent itching in the nose; the patient constantly rubs his nose and grabs it, picks the nose until it bleeds [2]. The painful appearance reflects brain damage [8].

Children are large, obese, ruddy, scrofulous; very angry, demanding to be rocked, The child does not want to be touched, does not tolerate being contradicted; demands different things, but when they are given, throws them away with anger; afraid to speak or move, so as not to cause a new attack of a painful cough, moans after coughing, fearful, greedily gasps for air, turns pale; throws his hands in different directions (night fright in children), screams, shrieks and talks in his sleep, wakes up in fright [2],

The drug is suitable mainly for dark-skinned and scrofulous children; round worms in children; enuresis in debilitated children [18]. Children with black hair, very angry, with a bad character, do not tolerate caresses, do not like to be approached when they go about their business [18], "Enuresis [7]". "The baby's mouth smells like worms," says the mother; hydrocephalus without an increase in the volume of the skull, but with the accumulation of fluid in the ventricles and the central canal of the spinal cord (Okhapkina). Blockage of the Sylvian aqueduct connecting the third and fourth ventricles and invariably causing the death of the child, such congenital conditions cannot be cured; rolling head on pillow, sensitive to shock. The child cannot stand touching the spine; in the sun feels heat in the head and cold in the feet; the child cannot be punished, it causes convulsions [8]. Minor skin lesions in infants [5]. Child hits parents, pinches and scratches when upset; can get early development, but at the same time have a difficult character; behavior problems in children [12].

Eyes. The pupils are dilated; weakening of vision as a result of masturbation; strabismus with painful irritation of the abdomen; fatigue of the eyes, especially with presbyopia (age-related weakening of vision); twitching of the eyebrow muscles [2].

Everything is seen in yellow (xanthopsia) or first in blue, and then in yellow and green; blurred vision, itching in the inner corners of the eyes; nervous lesions of the eyes [18], strabismus [16]. Variety of colors before the eyes [8].

Respiratory apparatus. Constant itching in the nose; cough with gagging in the morning whooping cough-like cough; violent, repeated attacks of coughing with a tickling sensation in the throat; the attack of coughing ends in a spasm. The cough is so violent that it causes tears and chest pains, as if coughing would cut everything off; the cough recurs periodically, especially in spring and early autumn; after coughing, the patient swallows sputum; gurgling sensation after coughing from the pharynx to the stomach [2].

Violent sneezing with piercing in the temples, epistaxis, nasal congestion in the evening [5].

Ears. Something scratches and sores in the ear canal [2].

The cardiovascular system. Feeling of longing and pressure in the chest, palpitations and tachycardia, pulse weak, uneven [18].

The gastrointestinal tract. Feeling hungry soon after eating; boring and gnawingsensations in an empty stomach, worse on first waking in the morning, before the usual time of eating. Vomiting and diarrhea after eating, vomiting with a completely clean tongue; the desire to eat many different things, the need for sweets, Squeezing and tightening pains in the navel, the belly is swollen and hard; feces in the form of whitish mucus; stool preceded by constrictive colic; itching in the anus, worms [2].

Indigestion with insatiable thirst, frequent hiccups and belching [18]. The tongue is brownish yellow, whitish, always clean [5].

Genitourinary system. Urine cloudy, white, standing, takes on the appearance of milk, involuntarydischarge of urine at night [2]. Frequent urge to urinate and copious flow of urine [18]. Enuresis [5].

MEN. The bad consequences of masturbation, including impaired vision [5]. WOMEN. Uterine bleeding in girls before puberty [2]. Menses premature and profuse [18].

Locomotive apparatus. Convulsive twitching and convulsive curvature of the limbstrembling, sudden sharp squeezing of the fingers of the right hand, spastic straightening and abduction of the foot, constant spastic movements of the left foot [2].

Tearing and pulling pains in the back and limbs, trembling limbs, paralytic weakness of the legs [5]. Tearing pains throughout the spine [5].

Leather. Itching does not change when scratching, boils, ulcers with scant discharge [5].

Side. Not expressed.

Modalities. Worse, fixed gaze on an object, from worms, at night.in the sun, in summer [2]; from touching and movement [18]. Better, eating. [16]

DILUTION. 3CH, in the treatment of nervous and irritable children, 30CH and 200CH are preferable (4); 2-3DN and higher (5); with ascariasis 3DN for at least 3 weeks, with nervous phenomena - 6CH, 12CH, 30CH (7); 30CH in solution (25).

NOTE

The drug acts similarly to IGNATION and HAMOMIL (18). Antidotes for the drug: KAMFORA and CAPSICUM (2); ARTEMISIA VULGARIS, BALSAMIN, BRIONIUM, ACIDUM HYDROCYANICUM, GIOSCIAMUS, IPECACUANA, CANNABIS, ROSE, CHINA (18). CINA is an antidote against ALOE, AURUM, BERBERIS, HEPAR SULFURICUM, HYPERICUM, MERCURIUS SOLUBILIS, MIMOSA, SODIUM SALICILLICUM, ORCHITIS, PETROLEUM, PULSATILLA, UZTIMOIRIN

Key Symptoms: Irritability, grumpiness, resentment, deception, seizures, andtics, excessive and changeable hunger, painful appearance, redness of the cheeks, itching in the nose. Children are obese, ruddy, black-haired, angry and with a bad temper, sleep-talk and enuresis, worms; hydroorthecephalus without an increase in the volume of the skull, but with the accumulation of fluid in the ventricles and the central canal of the spinal cord (Okhapkina), Blockage of the Sylvian aqueduct connecting the third and fourth ventricles; rolling the head on the pillow; the child does not tolerate concussion. Hypersensitivity of the spine and skin to touch, Wide pupils, xanthopsia, strabismus, presbyopia (convergence disorder), Cough with chest pains, palpitations and arrhythmias, cloudy urine, uterine bleeding in girls, the consequences of masturbation, Skin itching and furunculosis of gaze on object, from worms, at night, in the sun, from motion, better from eating.

CONCLUSION

Thus, as a result of the information and analytical studies carried out, it was possible to establish reliable sources for the production of homeopathic medicines.Absintium [9], Abrotanum [10] and Qing (Table 2).

table 2

Name drug	Name producing plants	Synonyms	Possible impurities to raw materials (others representatives of the genus Absinthium)	A source information
ABSINTIUM (Absinthium)	Artemisia absinthium L. (bitter wormwood)	-	Artemisia pontica L., Artemisia vulgaris L., Artemisia abrotanum L.	13, 15, 17, 22
ABROTANUM (Abrotanum)	Artemisia abrotanum L.	Artemisia paniculata Lam., Artemisia procera Willd.	Artemisia pontica L., Artemisia vulgaris L., Artemisia absinthium L.	13, 15, 17, 22, 23, 24, 25, 26
ARTEMISIA VULGARIS (Artemisia vulgaris)	Artemisia vulgaris L.	-	Artemisia pontica L., Artemisia absinthium L., Artemisia abrotanum L.	13, 15, 17, 22, 23, 24, 25, 26
CINA	Artemisia cina Beerg ex Poljak.	Artemisia maritima R. R.	-	2, 3, 5, 13, 17, 21, 22, 23, 25, 26

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