Drugs in traditional herbal medicine



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There are about 1. 75 million known species of animals, plants, fungi, & micro-organisms on earth. Each species contains a wide spectrum of chemical moieties that number hundreds to thousands. The use of plants as sources of medicine is as old as the history of mankind.

Today, there are at least 120 distinct chemical substances derived from plants that are considered as important drugs currently in use in one or more countries in the world. A few of these chemical substances are shown in the table below. Several of the drugs sold today are simple synthetic modifications or copies of the naturally obtained substances.

This chapter deals with a few of the traditional drugs used commonly in traditional herbal medicine in India, which are presently being explored for a wide variety of medical conditions where the allopathic system is either insufficient or disadvantageous.

SATAVARI

Common name: Shakakul, Chatwal, Satawar (Hindi)

Biological Source: Satavari consist of dried tuberous roots of Asparagus racemosus.

Family: Liliaceae

Morphology: The plant grows all over India in tropical areas and is found in the Himalayas up to an altitude of 1300-1400 meters. The plant is an armed climber, growing 1-2 meters in length. The leaves are green, shiny, small, and uniform and like pine needles. The flowers are tiny, white, in small spikes. The roots are finger-like, clustered, tuberous, 30 cm to 1 meter or

Drugs in traditional herbal medicine – Paper Example

more in length and tapering at both ends. The diameter of the root is 1-3 cm. The colour of the root is grey. The fruits are globose, pulpy berries, purplish black when ripe. The plant flowers in July and fruits in September. The roots of Satavari are adventitious, arising from a single point and become fleshy

and tuberous, tapering towards the base and swollen in the middle.

Charaka has categorized Satavari as balya promoting strength or a tonic, vaya sthapana – promotes longevity, sukra janana (spermatogenic). Also, he has cited it as a rejuvenative to rasa and mamsa dhatus and mamsavaha srotasa. Susruta has mentioned it as sukra sodhana – purifies the sperms or semen. Whereas, it is quoted as vajikara – augments the sexual vigour and quantity of semen (Sarngandhara Samhita). It is also classified as samsamana – neither it aggravates nor it eliminates the doshas from the body, but simply pacifies the aggravated doshas especially, pitta.

Surface: More or less smooth in fresh samples and longitudinal wrinkles on the dried ones

Fracture: Complete

Root Plant

Chemical constituents: Asparagus contains steroidal glycosides, bitter glycosides, asparagins and flavonoids. The plant contains four saponins, viz. Shatavarin I to IV. Shatavarin IV is a glycoside of Sarsasapogenin having two molecules of rhamnose and one molecule of glucose. It also contains mucilage and starch.

Shatavarin IV

Uses: Shatavari has been used in India for thousands of years for its therapeutic and tonic properties. It is an all-round tonic and rejuvenative which can be given to a person with any type, constitution, males or females,

youngsters or elders. A few more uses include:

Anti-oxytocic and anti-abortifacient

Galactogogue, diuretic and antidysenteric

Anti cancer, nutritive tonic and adaptogen.

It has been used in combination with Ashwagandha for accelerating the healing of fractures.

It improves the defense mechanism against infection.

KANTAKARI

Common name: Kateli

Biological source: It is the dried ripe fruits of Solanum xanthocarpum .

Family : Solanaceae

Fruit Plant Plant

Morphology: The plant occurs all around India, often in wastelands, on roadsides and in open scrublands. Kantakari, also known as Indian Solanum, is a prickly, branched perennial herb. The branches are densely covered with minute star-shaped hairs. The plant has yellow, shining prickles of about 1. 5 cm in size. It has very prickly, sparsely hairy, egg shaped leaves; purple flowers, round fruit, yellow colour with green veins and numerous smooth https://assignbuster.com/drugs-in-traditional-herbal-medicine/

Page 5

seeds. The fruit of the plant constitutes the drug. The fruits are globular drooping and loamy; yellow or white in colour with green veins surrounded by calyx. Seeds are very small and reniform; smooth yellowish brown in colour and the taste is bitter.

Chemical constituents: Steroidal alkaloids like solasodine and solanin; sterols such as cholesterol and phytosterol derivatives.

Solanin

Solasodine

Uses:

Kantakari is a valuable remedy in the treatment of dropsy, a disease marked by an excessive collection of fluids in the tissues and cavities or natural hollows of the body. The drug helps increase the secretion and discharge of urine.

It is also used as a steroidal precursor and an aphrodisiac.

It is found effective in throat disorders like sore throat and tonsillitis. An extract of the plant should be used as a gargle in such cases.

Kantakari root has been traditionally used in snake and scorpion bites. A paste of the root can be prepared by grinding it on a stone with lemon juice and applying to the affected part.

BAEL

Common name: Bilva, Shriphal

Biological source: Bael consists of the entire unripe or half ripe fruits of Aegle marmelos.

Family: Rutaceae

Plant Fruit Fruit

Morphology: It is a fruit-bearing tree indigenous to dry forests on hills and plains of central and southern India, southern Nepal, Sri Lanka, Myanmar, Pakistan, Bangladesh, Nepal, Vietnam, Laos, Cambodia and Thailand. It is cultivated throughout India, as well as in Sri Lanka, northern Malay Peninsula, Java and in the Philippines. It is also popularly known as Bilva, Bilwa, Bel, Kuvalam, Koovalam, Madtoum, or Beli fruit, Bengal quince, stone apple, and wood apple. The tree, which is the only species in the genus Aegle, grows up to 18 meters tall and bears thorns and fragrant flowers. It has a woody-skinned, smooth fruit 5-15 cm in diameter. The skin of some forms of the fruit is so hard it must be cracked open with a hammer. It has numerous seeds, which are densely covered with fibrous hairs and are embedded in a thick, gluey, aromatic pulp.

Type of fruit: Berry

Colour: Unripe fruits are green and ripe fruits are yellowish brown

Size: 7. 5 to 20 cm

Shape: Sub globose

Surface: Smooth but hard and woody

Epicarp: 3mm thickness, pulp containing mesocarp and endocarp is pale

red in colour.

Seeds: Numerous and sticky mucilage surrounding the seeds.

Odour: slightly aromatic

Taste: Mucilaginous

Chemical constituents: Coumarins like marmesin, Imperatorin,

alloimperatorin, xanthotoxol, scoparone, scopoletin, umbelliferone, psoralen,

marmelide, tannins, reducing sugars

Marmesin

Imperatorin

Umbelliferone

Uses:

Ripe bael fruit is regarded as the best natural laxative. The unripe or halfripe fruit is very effective in treating chronic diarrhoea and dysentery where there is no fever.

It is also beneficial in cases of sprue in irritable bowel syndrome, hyperacidity and flatulence.

The root of this tree is used as a remedy for curing ear problems. A stiff piece of the root is dipped in neem oil and lighted. The oil that drips from the burning end is a highly effective medicine for ear problems. An infusion of bael leaves is regarded as a valuable remedy for peptic ulcer.

Precautions- The ripe fruit should not be taken regularly at a stretch. When used without a break, it produces atony of the intestines or lack of normal elasticity and consequent flatulence in the abdomen. The bael fruit should also not be taken in excess at a time, as excessive intake may produce a sensation of heaviness in the stomach.

RASNA

Common name: Lesser galangal

Biological source: It consists of the rhizome of Alpinia officinarum obtained from 4-10 years old plants washed, trimmed and cut into segments and carefully dried. It consists of not less than 0. 5 % of volatile oils.

Family: Zingiberaceae

Plant Rhizome

Morphology :

Form: Cylindrical, irregularly branched and bent like knee

Size: 5-10cm long and up to 2cm thick

Colour: Copper red externally and cinnamon brown internally

Surface: Marked with fine annuli of lighter colour than the general surface

Colour: Copper red externally

Odour: Aromatic

Taste: Characteristic, spicy, aromatic and pungent

Fracture: Fibrous and tough

Chemical constitutents: Essential oils (0. 5-1 %), Cineole, alpha pinene, eugenol, sesquiterpenes and sesquiterpene alocohols; Alpinol resins or gelangol; tannins phlobaphenes and flavanoids -kaempferol, galangin – a dioxyflavonol. The volatile oil and acrid resins are the active principles.

Kaempferol

Uses:

Stomachic, stimulant and carminative, it is especially useful in flatulence, dyspepsia, vomiting and sickness at stomach, being recommended as a remedy for sea-sickness.

It tones up the tissues and is sometimes prescribed in fever.

It is used in rheumatism and catarrhal affections and

Also acts as an antibacterial and anti fungal.

GUDUCHI

Common name: Gulbel, Madhuparni, Amritha

Biological source: It consists of the stems and roots of Tinospora cordifolia.

Family: Menispermaceae

Stem Plant

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Morphology: Guduchi is a native plant from India, also known to be found in Far East, primarily in rainforests. The plant is a climbing shrub with heartshaped leaves. It has stems about 6 cm in diameter, with light grey, papery bark. The leaves are 7. 5-14 cm long, 9-17 cm broad, broadly ovate or orbicular, deeply heart shaped at the base. Tiny greenish yellow flowers occur in racemes 7-14 cm long. Flowers have 3+3 sepals in 2 layers; the outer ones are small, the inner large. Six stamens prominently protrude out. The plant flowers during the summer and fruits during the winter. Fruits are red when ripe, stems are closely with watery tuberoles and longitudinally fissured.

Gulbel prefers acid, neutral or basic alkaline soil. It can grow in semi-shade or no shade; it requires moist soil. Gulbel grows easily without chemical fertilizers, and use of pesticides.

Chemical constituents: Diterpenoids such as thiosporide, tinosporide and columbin; Sesquiterpenes like tino cordifolioside; Alkaloids berberine and jatrorhizine.

Tinosporaside

Uses :

The root, stem, leaves and sattva (starch) of guduchi are used for medicinal purpose externally. The medicated oil of the plant is effectively used to reduce the pain and oedema, in gout and skin diseases. Guduchi is the drug of choice amongst all the remedies in treating gout.

Drugs in traditional herbal medicine – Paper Example

Internally, guduchi is one of the most effective rejuvenatives. It works well on all the tissues and keeps the systems in balance. It accords longevity, enhances memory, improves health, and bestows youth, betters complexion, voice, energy and lustre of the skin.

It is immensely helpful in the digestive ailments like hyperacidity, colitis, worm infestations, and loss of appetite, abdominal pain, excessive thirst and vomiting.

It is also used in liver disorders like hepatitis.

Guduchi is one of the best bitter tonics useful in fevers especially of pitta origin.

It alleviates body heat, thirst, burning sensation of the skin and vomiting if any, due to pitta.

The starch (sattva) of guduchi is traditionally used as a household remedy, for chronic fever, to alleviate it as well as to reduce burning sensation and to increase the energy and appetite.

It is beneficial in tuberculosis and general debility also.

It also works well in the cutaneous rashes and condylomata, in the secondary stage of syphilis.

Guduchi is one of the most versatile rejuvenative herbs. It works on all the tissue elements in the body. The Sanskrit name guduchi means the one, which protects the body. It is also called as amrita or nectar, as it is extremely useful in strengthening the immune system of the body and https://assignbuster.com/drugs-in-traditional-herbal-medicine/ keeping the functions of its various organs in harmony. It possesses various synonyms like jvaranasi febrifuge, vayastha – promotes longevity, rasayan- a rejuvenatPacifies all the three Doshas and maintain their balance with each other i. e. why it is said to be having Rasayana character; besides it find important place in the herbs useful in management of diseases having Tridoshic origin. Guduchi should be always used fresh for good results.

KALIJEERA

Common name: Black cumin, Kalonji

Biological source: It consists of ripe seeds of Nigella sativa.

Family: Ranunculaceae

Plant Seeds

Morphology: Attractive herb, 20-30 cm height

Leaves: 2-5 cm in length, linearly lanceolate segments. They are pinnately arranged

Flower: Delicate, pale blue and white with 5-10 petals, on solitary long peduncles.

Fruit: The fruit is a large and inflated capsule composed of 3-7 united follicles, each containing numerous seeds.

Seeds: Trigonous and black in colour. Tubercular seeds containing yellowish brown volatile oil with an unpleasant odour.

Chemical constituents: Volatile oils with an unpleasant odour, carvone, dlimonene, cyamine and nigellone.

Nigellone

Uses :

It has been traditionally used for a variety of conditions and treatments related to respiratory health, stomach and intestinal health, kidney and liver function, circulatory and immune system support, and for general well-being.

It has been used to treat ailments including asthma, bronchitis,

rheumatism and related inflammatory diseases

Also used to increase milk production in nursing mothers

Helps to promote digestion and

Fights parasitic infections.

Its oil has been used to treat skin conditions such as eczema and boils and to treat cold symptoms.

GOKHRU

Common name: Gokshura, Land Caltrops, Puncture vine

Biological source: It consists of the fruits of Tribulus terrestris.

Family: Zygophyllaceae

Plant Fruits

Morphology: An annual herb with diffused or prostrate stems. The branches are flexuous, covered with silky thread like hairs.

Leaves: Pari-pinnate having 6 to 7 pairs of leaflets that are narrow-elliptic with round base and apex.

Flowers: Yellow flowers, borne solitary and axillary.

Fruit: Globose consisting of usually 5 hairy cocci each with 2 very long sharp rigid spines, several shorter spines and surface covered with many hairs .

Seeds: Several in each coccus with transverse partitition between them.

Chemical constituents: Steroid saponins and steroid sapogenins, furostanol glycosides – protodioscin which on acid hydrolysis yields spirostanol and diosgenin a trace of lipogenin, glucose and rhamnose, hecogenin and neotigogenin.

Furostanol

Protodioscin

Uses :

The roots and fruits are sweet, cooling and emollient.

It serves as an appetizer in anorexia and laxative; also good in dyspepsia

Also shows cardiotonic and styptic action

It is a lithontriptic and useful in strangury, dysuria, vitiated conditions of vata and pitta, renal and vesical calculi

Useful in cough and asthma.

The seeds are astringent, strengthening and are useful in epistaxis, hemorrhages and ulcerative stomatitis.

The ash of the whole plant is good for external application in rheumatoid arthritis.

Lithontriptic – having the quality of, or used for, dissolving or destroying stone in the bladder or kidneys.

Strangury is the symptom of painful, frequent urination of small volumes that are expelled slowly only by straining and despite a severe sense of urgency, usually with the residual feeling of incomplete emptying. These ' drops' of urine are ' squeezed out' in what sufferers describe as painful ' wrenching' spasms.

Epistaxis - nose bleed

SHILAJIT

Biological source: Its a herbomineral drug ejected out of fissures in the iron rich rocks during hot weather. In the raw form it is a bituminous substance, which is a compact mass of vegetable organic matter composed of dark red gummy matrix. It is bitter in taste, and its smell resembles cow's stale urine. The botanical name of Shilajit is Asphaltum (mineral pitch).

It is found to be produced naturally in mountainous area especially Himalayas, Vindhyas and other mountains in India and also in Nepal.. It is found in the Himalayas from Arunachal Pradesh in the east to Kashmir in the

Drugs in traditional herbal medicine – Paper Example

west. It is also found in Afghanistan, Bhutan, China, Nepal, Pakistan, Tibet, and Norway, where it is collected in small quantities from steep rock faces at altitudes between 1000 and 5000 m. It may also be found as tar in earth crust formed due to decomposition of vegetable substance Shilajit samples from different region of the world have different physiological properties. Before refinement, Shilajit is a semi-hard, brownish black to dark, greasy, black resin that has a distinctive smell and taste.

Different varieties :

Iron shilajit: Blackish brown

Copper shilajit: Blue variety

Silver shilajit : White variety

Gold Shilajit: Red variety

Chemical constituents: Aluminoids, fatty acid, trace elements waxes, minerals, methoxy carboxy biphenyls. Shilajit contains at least 85 minerals in lonic form as well as humic acid and fulvic acid.

Humic acid

Humic acid is one of the major components of humic substances which are dark brown and major constituents of soil organic matter humus that contributes to soil chemical and physical quality and are also precursors of some fossil fuels. They can also be found in peat, coal, many upland streams, dystrophic lakes and ocean water. Uses: Shilajit is a most important drug for many diseases. It was used as a drug in prehistoric periods. There is evidence of Shilajit (Silajatu) in the Indus civilization. Traditionally it is used as power increasing tonic. The following health properties are found in Shilajit:

Helps accelerate processes of protein and nucleic acid metabolism and stimulates energy providing reactions.

Counteracts Diabetes and regulates the blood sugar level.

Purifies blood, improves functioning of pancreas and strengthens digestion.

Reduces fat, dissolves tumours, and counteracts thirst.

Promotes the movement of minerals, especially calcium, phosphorous, and magnesium into muscle tissue and bone.

Stimulates the immune system and improves restoration (recovery) after exercise.

Increases levels of growth hormone in diabetic patients and is a potent antiulcer agent.

It is considered to be an aphrodisiac, for the treatment of impotence and infertility in men and women.

Used for strengthening the immune system.

ARJUNA

Common name: Koha, White marudah

Biological source: It consists of the dried bark of Terminalia arjuna.

Family: Combretaceae

Bark Tree

Morphology : Arjuna is a large, deciduous tree. The height of the Arjuna tree reaches upto 60 -85 feet. It is an evergreen tree with the yellow flowers and conical leaves. It has a smooth gray bark. Fruit is 2. 5 -3. 5 cm long, fibrous woody, glabrous with 5 hard wings, striated with numerous curved veins. It has a buttressed trunk and a vast spreading crown from which the branches drop downwards. Its leaves are dull green above and pale brown beneath. Arjuna flowers between March to June and fruits between September to November.

Shape: Flat, slightly curved

Size: About 15 cm length, 10 cm breadth and 1 cm thick

Colour: Ash coloured on the outer side but reddish and striated on the inner side

Surface: More or less smooth

Fracture: fibrous

Odour: None

Taste: Astringent

Chemical constituents: Tannins (12%) pyrocatechol tannins, large quantities of calcium salts and small traces of aluminium and magnesium salts. Arjuna glycosides, phytosterols, organic acids and organic esters and sugars, colouring matter etc. A saponin like substance is responsible for its diuretic activity.

Arjunolic acid

Uses:

It is used by Ayurvedic physicians for its curative properties in organic/functional heart problems including angina, hypertension and deposits in arteries. This has also been proved in a research by Dr. K. N. Udupa in Banaras Hindu University's Institute of Medical Sciences, Varanasi (India). In this research, they found that powdered extract of the above drug provided very good results to the people suffering from Coronary heart diseases. Research suggests that Terminalia is useful in alleviating the pain of angina pectoris and in treating heart failure and coronary artery disease; it may also be useful in treating hypercholesterolemia. The cardioprotective effects are thought to be caused by the antioxidant nature of several of the constituent flavonoids and oligomeric proanthocyanidins, while positive inotropic effects may be caused by the saponin glycosides.

In addition to its cardiac effects, Arjuna may also be protective against gastric ulcers, such as those caused by NSAIDs.

According to Ayurvedic texts, it also very useful in the treatment of any sort of pain due to a fall.

Also used in the treatment of sexually transmitted diseases such

as gonorrhoea.

CHIRATA

Common name: Indian Gentian, Bhunimba

Biological source: Chirata is the plant Swertia chirata collected in flowering stage and dried.

Family: Gentianaceae

Morphology:

The drug consists chiefly of the stem, which is quite glabrous, and contains large continuous pith. In the upper part it branches freely, bearing numerous fruits and flowers, together with a few opposite leaves with prominent curving lateral veins. The root is short, stout, and oblique.

Size of stem: About 1cm

Colour: Dark purplish brown.

Shape: Slightly wringed and much branched above branches slender opposite decussate leaves.

Leaves: Opposite, ovate, lanceolate, glabrous, entire.

Fruit: Bicarpellary but unilocular containing numerous minute brownish seeds

Odour: none

Taste: Extremely bitter.

Chemical constituents: The plant contains the two bitter principles, ophelic acid and chiratin. The latter occurs in the larger proportion, and yields, by boiling with hydrochloric acid, chiratogenin and ophelic acid, but no sugar. Neither ophelic acid nor chiratin has been obtained in crystals. It also contains a glycoside Amarogentin.

Uses: Chirata owes its action to its bitterness

it is used in dyspepsia to improve the appetite. At one time it was believed to exert a specific action upon the liver, but there is no evidence to confirm this. It is usually administered in the form of infusion. The preparations of Chirata are without tannin, and may, therefore, be prescribed with iron.

It is also used as a febrifuge.

TYLOPHORA

Common name: Indian Ipecac, Antamul

Biological source: It consists of the fresh and dried material of Tylophora indica.

Family: Asclepiadaceae

Morphology:

Perennial, small, slender, much branched pubescent twining or climbing herbs or under shrubs; sap yellowish, found in the sub-Himalayan tract from Uttar Pradesh to Meghalaya and in the central and peninsular India, ascending up to 1, 260 m. Height 1. 5 metres.

Leaves: 6. 0-10. 5 x 3. 8-6. 0 cm, ovate-oblong to elliptic-oblong, acute to acuminate, cordate at base, thick, pubescent beneath when young, glabrous above;

Flowers: Minute, 1-1. 5 cm across, in 2 to 3-flowered fascicles in axillary umbellate cymes.; Calyx divided nearly to the base, densely hairy outside; segments lanceolate, acute. Corolla is greenish-yellow or greenish-purple; lobes oblong, acute.

Fruit: a follicle, up to 7×1 cm; ovoid-lanceolate, tapering at apex forming fine mucro, finally striate, glabrous.

Seeds: 0. 6-0. 8 x 0. 3-0. 4 cm, broadly ovate or ovate-oblong, flat, brown, dark coloured in centre

Roots: Roots long, fleshy, with longitudinally fissured light brown, corky bark; sweet in taste, pleasant and aromatic odour.

Fracture: Brittle

Chemical constituents: Alkaloids like tylophorine, tylophorinine, tylophorinidine, septicine and isotylocrebrine; tannins, saponins and flavonoids.

Tylophorine

Septicine

Uses:

The leaves and roots have emetic, cathartic, laxative, expectorant, diaphoretic and purgative properties.

It has also been used for the treatment of allergies, cold, dysentery, hay fever and arthritis. It is traditionally used as a folk remedy in certain regions of India for the treatment of bronchial asthma, inflammation, bronchitis, allergies, rheumatism and dermatitis.

It has the reputation of being an alterative and a blood purifier, often used in rheumatism and syphilitic rheumatism.

The root or leaf powder is used in diarrhea, dysentery and intermittent fever

The dried leaves are emetic, diaphoretic and expectorant. It is regarded as one of the best indigenous substitute for Ipecacuanha.

The roots are suggested to be a good natural preservative of food.

It also seems to be a good remedy in traditional medicine as anti-psoriasis, seborrheic, anaphylactic, in leucopenia.

APAMARGA

Common name: Prickly chaff flower, Chirchidi

Biological source: It consists of the dried whole plant of Achyranthes aspera.

Family: Amaranthaceae

Morphology: Annual or perennial herb, 30 – 90 cm tall, often with a woody

base, branches obtusely 4 – angled, striate and pubescent.

Main root is long, cylindrical, thick secondary and tertiary roots are also present

Yellowish brown, sweet and mucilaginous

Stem: yellowish brown erect and branched, cylindrical, hairy, solid up to 60cm height

Leaf: Petiolate, alternate, elliptical or suborbicular, acute entire pubescent above and usually white and wooly beneath.

Flowers: Greenish white, numerous in axillary or terminal spikes. Bract and bracteole persisting and ending in spine.

Seeds: Sub cylindrical at apex, rounded at base, black and shiny.

Chemical constituents: Ecdysone, Ecdysterone, Inokosterone, triterpenoid saponins possessing oleonelic acid as an aglycone . It also contains alkaloids like Achyranthine and betaine, water soluble bases and saponin glycosides C & D.

Ecdysone

Ecdysterone

Uses: Used in abdominal, liver and birth related disorders

Acts as a blood purifier.

It is also used as an astringent and diuretic

The decoction of the plant is used in the treatment of pneumonia and dropsy.

It is also used in treatment of cancer.

SHANKPUSHPI

Common name: Dwarf morning glory, Shankhahuli

Biological source: It consists of the aerial parts of plant Evolvulus alsinoides and Convolvulus pluricaulis.

Family: Convulvalaceae.

Morphology: The plant grows wildly in open grassy places throughout India, upto 1800 meters elevation. It is a small, diffuse perennial herb, much branched, hairy, with prostrate branches. The plant flowers and fruits during May to December. The roots are 15-30 cm long, 1-1. 5 cm in diameter and greenish – white in color.

The plant is cultivated as an ornamental plant for its flowers. It is an erect annual with a winged stems and half a metre in length with decussate branches.

Leaves: Sessile, 2. 5 to 4cm in length, lanceolate and decussate with 3 prominent vertical lines, densely clothed with silky hair.

Flowers: Axillary white (C. pluricaulis) or light blue (E. alsinoides) in colour and mostly solitary in upper axils.

Fruits: Globose, 4- valve capsules and small.

Chemical constituents: The plant contains an alkaloid called Shankhapushpine. The fresh plant contains volatile oil and potassium chloride. It also contains a neutral fat, an organic acid and saline substances. Three alkaloids evolvine, betaine and an unidentified compound have also been isolated.

Uses: The whole plant of Sankhapushpi is used for medicinal purpose

Externally; the medicated oil of the herb is useful as a hair tonic, to promote the hair growth. Sankhapushpi hair oil prevents the premature graying and falling of hair.

Its paste is also applied externally in skin diseases.

Internally, the plant is used in a vast range of diseases. The whole plant juice is traditionally used in various mental disorders. As one of the best psychotropic drugs, Sankhapushpi was held in high esteem by the ancient sages of India.

In cases of minor memory disturbances, nervous debility and dementia, it is widely used as a brain tonic.

The fresh juice of the plant stimulates appetite, is a mild laxative and deflatulent.

It also works well as a mucolytic and is useful in cough and hoarseness of voice.

Sankhapushpi being a diuretic is useful in urinary disorders and hypertension.

It promotes conception in females and is rewarding as an aphrodisiac in sexual debility in males.

It is a great panacea for raktapitta, as it is styptic also.

Sankhapushpi is one of the best herbs used as a general tonic and rejuvenative.

It is also used as an antiviral against Ranikhet disease virus.