

DRUG PLANTS (INDIGENOUS AND EXOTIC) THAT CAN BE GROWN IN CEYLON—PART I

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DURING the war, the supply of drugs from abroad has been restricted. It is therefore desirable to make use of such drug plants as there are in Ceylon for the manufacture of drugs which are otherwise in short supply. It is proposed in these notes to give brief descriptions of plants growing in Ceylon from which useful drugs can be obtained.

ABSINTHIUM—Wormwood

This consists of dried leaves and flowering tops of *Artemisia Absinthium* Linn. (Fam. Compositae), a perennial native of Northern Asia and Europe. A suitable substitute for this is found in *Artemisia vulgaris* Linn. (S. *Wakkolundu*, T. *Machipattiri*, Skt. *Granthi-parni*) a perennial semi-shrubby plant with an erect stem and numerous, alteranate pinnatisect, sweetly aromatic leaves, glabrous above and white pubescent beneath. Flower heads are very small, arising in the axils of leaves forming a sort of a leafy inflorescence. The individual flowers are brownish yellow in colour. The plant occurs as a weed on the road-sides in Ceylon. It is also found in the Temperate regions of Asia and Europe and in Siam and Java.

Composition.—The oil from the herb *A. vulgaris* has a characteristic odour. According to certain observers it contains cineol.

Uses.—Absinthium is used for stimulation of cerebral hemispheres and is usually administered in the form of a tincture. Its use in wines is prohibited in most countries.

ACACIA—SUBST. GUMMI INDICUM

This consists of the exudation from the stems of *Anogeissus latifolia* Wall. (S. *Dawa*. T. *Vakkali*, Skt. *Dhara*), a moderate sized tree with an erect stem and smooth whitish grey bark belonging to the family *Combretaceae*. Its leaves are pale green, oblong-oval, rounded at the base with a pink midrib prominent on the lower surface and short petioles. It bears pale greenish yellow flowers on small dense heads. It is indigenous to India and Ceylon. In Ceylon it occurs in Talawa lands in lower Uva confined to gravelly soils.

The gum occurs in rounded masses or in long pieces brownish in colour, brittle when dry and malleable when moist and resembles the gum of Acacia.

Uses.—This gum is used as an emulsifying agent and forms practically a colourless mucilage with water.

ACALYPHA

This consists of the fresh or dried plant of *Acalypha indica* Linn. (S. *Kuppamēniya*, T. *Kuppamēni*, *Punairananki*, Skt. *Arittaminjayrie*) an annual herb one to two feet in height belonging to the family *Euphorbiaceae*.

Its leaves are rhomboid-ovate, three-veined, ashy green in colour with a serrate margin. It bears green sessile flowers in numerous erect spikes, male flowers clustered at the apex and female flowers at the base, each with a large funnel shaped leafy bract. It is indigenous to India and Ceylon where it may be found growing as a weed. It is also found in Asia and Africa.

History.—Ainslie described the root and leaves having been in use by the Hindus for a long time and given to children in worm cases. Dr. Bidie of Madras recommended it as a popular emetic for children. Dr. A. E. Ross spoke of it highly as an expectorant and especially handy in cases of Bronchitis in children.

Composition.—Acalypha contains an alkaloid acalyphane, a resin, tannin and a volatile oil.

Uses.—Acalypha is used as a substitute for ipecacuanha as a Gastro intestinal irritant, expectorant and an emetic.

ADHATODA

This consists of the leaves of *Adhatoda vasica*, Nees. (S. *Agaladara*, *Wanapala*, T. *Adatodai*, *Pavetta*, Skt. *Vasaka*, *Atarusha*), a shrub 3 to 6 feet in height with many ascending branches placed opposite to each other belonging to the family *Acanthaceae*. Its leaves are large, lanceolate, tapering towards the base, dark green and pale beneath. It possesses large white flowers in short dense axillary spikes. It is indigenous to Ceylon and India but also found in Malaya, wild or cultivated.

Composition.—The leaves contain vasicine (alkaloid), a volatile oil and probably a second alkaloid.

Uses.—It acts as an irritant to the alimentary canal and used as an expectorant. The leaves are dried and smoked for cases of asthma. Drs. Jackson and Dutt, the authors of the Pharmacopoeia of India employed it with considerable success in chronic bronchitis, asthma and other pulmonary and catarrhal afflictions.

AGAR

This is the solid residue obtained by concentrating a decoction prepared from *Gelidium corneum* (Huds) Lamouroux, *G. cartilagineum* Gaill (Fam. *Gelidiaceae*) and other algae belonging to the *Rhodophyceae*. These are collected off the coasts of Japan, bleached in the sun and boiled in acidulated water. This decoction is strained, subjected to a low temperature, so as to freeze off the water and the gelatinous layer thus produced is cut into thin strips and dried. Japan holds the monopoly for supplying the Empire with agar but it is possible to collect these weeds off the coasts of Ceylon and Malaya and supply the Empire's needs. In this country it needs a refrigerating plant as the material is purified by freezing. *Gracilaria lichenoides* Grev. popularly known as the 'Ceylon Moss' may be a suitable substitute.

Composition.—Agar contains an ethereal sulphate formed by the combination of the carbohydrate, gelose with calcium and sulphuric acid. It also contains traces of boron and arsenic.

Uses.—Owing to the fact that agar absorbs and retains moisture as the same time increasing in bulk, it is used in chronic constipation. It promotet

peristalsis in the intestines. Biscuits made from a mixture of agar and bran are given to diabetic patients. It is also employed widely for preparing culture media for use in bacteriology.

ALLIUM (GARLIC)

Allium is the fresh bulb of *Allium sativum* Linn. (S. *Sudu-lunu*, T. *Vellavengayam*, Skt. *Lasuna*), a herbaceous bulbous plant belonging to the lily family (*Liliaceae*). Its leaves are flat and slender, sheathing from the stem. Flowers occur in an umbel inflorescence surrounded by 1-3 membranous spathes. The plant is a native of Southern Europe but widely cultivated. Each bulb is made of eight to twenty smaller bulbs referred to as 'cloves' which are together enveloped in three to five in membranous scales. The 'cloves' are attached to a circular flattened disc which bears numerous thin roots on the under-side. Each clove is more or less three-sided and enveloped in two-papery scale leaves which in turn enclose two fleshy ones inside. In the centre of these fleshy scale leaves one or two yellowish green foliage leaves may be found.

History.—Garlic was known to the ancients. It has been found wild in Siberia. Herodotus spoke of Garlic being used in the diet of the ancient Egyptians. It was known in ancient Greece and Rome and was spoken of by Hippocrates and Dioscorides. In the Middle ages it was regarded as a cure for leprosy and an antidote against all poisons. Probably the Romans introduced it to Britain.

Composition.—The main constituent in garlic is the volatile oil which gives it the characteristic odour. In addition it contains inulin and starch. According to Semmler, the volatile oil contains diallyl disulphide, allyl propyl disulphide, diallyl trisulphide and another higher sulphide.

Uses.—Garlic is used extensively throughout Europe and India for flavouring dishes. It is known to contain vitamins B, C and D.

Medicinally it is employed as an antiseptic, diaphoretic, diuretic and an expectorant. Its juice is used in laryngeal tuberculosis and tuberculous lesions.

ALOE

This consists of the solid residue obtained by the rapid evaporation of the mucous fluid which drains out from the cut leaves of the various species of Aloe. (Fam. *Liliaceae*). The aloe plants are native to Eastern and Southern Africa, but they have been introduced into other tropical countries where they seem to flourish. They possess large fleshy leaves producing spikes of yellow or red flowers. In Ceylon *Aloe vera* var. *littoralis* (S. *Komarika*, T. *Kumari*, *Kattalai*, Skt. *Griha-kanya*) is found in abundance along the coast or in arid regions. It is about two to three feet in height and its leaves, each about twenty inches in length, tapering towards their apices are crowded together so as to form a sort of a crown. Flowers occur in dense racemes.

History.—Aloe was known to the Greeks as early as the fourth century B.C. as a produce from the island of Socotra according to the Arabian geographer Edrisi. Alexander the Great on the advice of Aristotle sought this island and conquered it. He removed the population of this island and substituted it with Ionians with strict instructions to preserve the plants which produced aloe, for without it certain sovereign remedies could not have

been prepared. Its use was known in Britain about the tenth century for it constituted one of the drugs recommended to Alfred the Great by the Patriarch of Jerusalem. A Boer named Peter de Wett was the first to prepare the drug in the Cape Colony of South Africa.

Composition.—The principal constituent of all varieties of aloe (excepting the Natal aloes) is the pale yellow crystalline glucoside barbaloin. Other constituents are resin and aloe-emodin in addition to water soluble substances of which nothing definite is known.

Uses.—Aloe is employed as a cathartic and is one of the most valuable purgatives for certain types of constipation.

ALSTONIA

This consists of the bark of *Alstonia scholaris* R. Br. (S. *Rukattana*, T. *Elilaippalai*, Skt. *Saptaparna*) a tall tree belonging to the family *Apocynaceae*. This tree bears a grey erect trunk with leaves in whorls of seven. Leaves are obovate-lanceolate tapering at the base. Flowers are small greenish white and occur in paniculate cymes. The tree is common in the wet low country up to an elevation of about 3,000 feet. It is indigenous to India and the Philippine Islands.

History.—Rheede (1678) and Rumphius (1741) mentioned that the bark of this tree was made use of by the native medical practitioners.

Composition.—The chief constituents are the alkaloids ditamine, echitamine and echitenine besides several others which may not be of therapeutic value.

Uses.—*Alstonia* is used in India for Malaria and as a remedy for chronic diarrhoea. It is inferior in value to cinchona bark but it may be a suitable substitute for it leaves no after-effects such as cinchonism.

AMYLUM—STARCH

This is obtained from the grains of *Zea mays* Linn. (S. *Iringu*, T. *Solon*,) a tall annual grass with broad flat leaves belonging to the family *Gramineae*. The male flowers occur in terminal racemed spikes, while the female ones are lower down in ensheathed, solitary, stout spikes. This is grown widely all over the world (and in the tropics) as a source of food.

Other sources of starch are grains of paddy, *Oryza sativa* Linn. tubers of potato, *Solanum tuberosum* Linn. and rhizomes of the arrowroot, *maranta arundinacea* Linn.

History.—Hughes in 1750 writing of Barbados described arrowroot as a very useful plant. The juice mixed with water and drunk, acted as a preservative against poison. Lunan in 1814 was very confident of the counter poison properties of the arrowroot.

Composition.—The constituents of starch are the polysaccharide amylose, amylo-pectin and amylo-hemicellulose.

Uses.—Starch is used either alone or mixed with zinc oxide, boric acid or other substances as a dusting powder. Boiled with sufficient water to form a stiff paste, it serves as an excellent poultice. Mucilage of starch is an antidote for poisoning by iodine.

ANCHUSA—ALKANA

This consists of the dried roots of *Alkanna tinctoria* Tansch (Fam. *Boraginaceae*) which is a deciduous herbaceous plant but with a perennial root stock. It usually occurs in sandy soils in Southern Europe, Hungary and Turkey. A very suitable substitute may be found in the roots of *Lawsonia alba* Lam. (S. *Marithondi*, T. *Maritonti*, Skt. *Rakta-garbha*) a much branched shrub, belonging to the family *Lythraceae*. The lateral branches of this plant terminate in spikes. Its leaves are small oval or lanceolate placed opposite. Flowers are small, very sweet scented occurring in long terminal panicles. This plant is found along the sea coast of Ceylon, Western India, Kabul and Persia.

Composition.—Alkanna contains two red colouring substances, viz., Anchusic and Alkannic acids. -

Uses.—Alkanna is used for colouring oils, ointments &c. In alcoholic solution the red colouring matter is made use of for microscopic detection of fats and oils.

ARECA

This consists of the dried ripe seeds of *Areca catechu* Linn. (S. *Puwak*, T. *Kamukai*, Skt. *Guvaca*) a tall palm with a slender erect trunk belonging to the family *Palmae*. Its leaves are pinnatisect 4 to 6 feet in length. The leaf joins the trunk in a sheath which encloses the spathe containing the inflorescence. Male and female flowers occur in the same inflorescence. This palm is extensively cultivated in Ceylon, India, Philippines and East Indian Islands.

History.—The areca palm was known to the Chinese as *Pin-lang*, a name probably derived from Pinang by which it was known in the Malay Islands whence they derived their supply of seeds. Emperor Wu-ti after the conquest of Yunan in B.C. 111 where he observed these remarkable trees, got 100 *pin-lang* planted in his Imperial Gardens.

Areca though highly esteemed among the Asiatics as a masticatory was not recognized as possessing any medicinal properties by the West until recently.

Composition.—Areca contains the alkaloids guvacine arecaidine, arecolidine, guvacoline, arecoline and arecaine. In addition it contains tannin, fat, resin and mucilage.

Uses.—It is used as a mild astringent and a vermifuge for tapeworm in veterinary practice. In the tropics it is widely used as masticatory with Betel leaves and lime.

ARISTOLOCHIA

This consists of the dried stems and roots of *Aristolochia indica* Linn. (S. *Sap-sanda*, T. *Perumaruntu*, Skt. *Arkamula*) a long slender slightly woody twining plant belonging to the family *Aristolochiaceae*. Its leaves are about four inches in length, linear-lanceolate and its flowers occur in shortly stalked corymbs. The perianth is tubular inflated at base, bent at right angles and opens in a trumpet shaped mouth. The inside of the mouth is hairy and blackish purple in colour. It is common in Ceylon in the low country towards the Western coast to an elevation of about 3,000 feet and throughout India.

History.—In the Sanskrit works it was known as a valuable medicine in the bowel afflictions of children who are teething and it enjoyed a reputation as a remedy for snake-bites.

Composition.—It contains a bitter principle which may be any alkaloid and a volatile oil, probably containing borneol. It also contains aristin, aristic acid, resin, tannin and starch.

Uses.—This is administered in the form of a tincture and its action resembles that of gentian and sepeyary. According to Dr. Dey, the seed crushed and macerated and mixed with other ingredients has been given with beneficial results in cases of cholera and leprosy.

[*To be continued.*]

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