

Ochna jabotapita Linn.**Synonym** ▶ *O. squarrosa* Linn.**Family** ▶ *Ochnaceae*.**Habitat** ▶ Assam, Bihar, Orissa and Deccan Peninsula. Often cultivated in parks and gardens.**Siddha/Tamil** ▶ Chilanti, Sherundi.**Folk** ▶ Kanaka Champaa. (Bhuinchampaa, Bhuumi-champaka (*Ochna pumila*).**Action** ▶ Bark—digestive tonic. Root—a decoction is used in asthma, tuberculosis and in menstrual disorders. Leaves—boiled and used as emollient cataplasm; used as a poultice in lumbago.

Isoflavones, along with beta-sitosterol and oleanolic acid, have been isolated from the heartwood.

A related species, *Ochna pumila* Buch.-Ham. ex D. Don., found in outer Himalayas and sub-Himalayan tract from Kumaon to Assam, is reported to exhibit antitubercular activity. Tetrahydroamentoflavone has been isolated from the leaves. The plant is also used for epilepsy in folk medicine.

Ochrocarpus longifolius

Bentb. & Hook. f.

Synonym ▶ *Mammea longifolia* Planch. & Triana.**Family** ▶ *Guttiferae; Clusiaceae*.**Habitat** ▶ Evergreen forests of Western India from Khandala southwards to Malabar and Coimbatore.**Ayurvedic** ▶ Surapunnaaga (Naagakeshara is equated with *Mesua ferrea*.)**Siddha/Tamil** ▶ Nagappu, Nagesarpu.**Folk** ▶ Laal-Naagakeshar. Surangi (Maharashtra).**Action** ▶ Flowerbuds—cooling, stomachic, analgesic, antibacterial; used for gastritis, haemorrhoids, blood diseases, leprosy, leucoderma.

Flower buds are popularly known as Naagakeshar.

Flowers exhibited potent hypotensive, anti-inflammatory and antispasmodic activity attributed to vitexin.

Leaves gave amentoflavone, quercetin and vitexin as major constituents.

Ocimum basilicum Linn.**Synonym** ▶ *O. caryophyllatum* Roxb.
O. minimum Linn.
O. pilosum Willd.**Family** ▶ *Labiatae; Lamiaceae*.**Habitat** ▶ Lower hills of Punjab; cultivated throughout India.**English** ▶ Sweet Basil, Basil Herb.

Ayurvedic ▶ Barbari, Tuvari, Tungi, Kharpushpa, Ajgandhikaa, Baabui Tulasi.

Unani ▶ Faranjmishk. (also equated with *Dracocephalum moldavica* Linn. by *National Formulary of Unani Medicine.*), Raihan (also equated with *O. sanctum*). (used as a substitute for Phanijjaka.)

Siddha/Tamil ▶ Tiruneetruppachhilai.

Folk ▶ Bana-Tulasi. Sabzaa (Maharashtra).

Action ▶ Flower—stimulant, carminative, antispasmodic, diuretic, demulcent. Seed—antidysenteric. Juice of the plant—antibacterial. Essential oil—antibacterial, antifungal, insecticidal.

(Because of high estragole content of the essential oil, the herb should not be taken during pregnancy, nursing or over extended periods of time.) (*German Commission E.*) Included among unapproved herbs by *German Commission E.*

The herb contains an essential oil; major constituents are linalool (up to 55%) methyl ether (estragole) up to 70% and eugenol; caffeic acid derivatives; flavonoids. Thymol and xanthomicrol were isolated from the leaves. Aesculetin, *p*-coumaric acid, eriodictyol, its 7-glucoside and vicenin-2 from leaves have been isolated.

The essential oil at concentration of 0.15% completely inhibited mycelial growth of twenty two species of fungi, including mycotoxin-producing strains of *Aspergillus flavus* and *A. parasiticus*. Leaves act as an insect repel-

lent externally; bring relief to insect bites and stings.

In homoeopathy, the fresh mature leaves are used to treat haematuria, inflammation and congestion of kidney.

Dosage ▶ Whole plant—50–100 ml decoction; seed—1–3 g powder. (CCRAS.)

Ocimum canum Sims.

Synonym ▶ *O. americanum* Linn.

Family ▶ *Labiatae; Lamiaceae.*

Habitat ▶ Plains and lower hills of India.

English ▶ Hoary Basil.

Ayurvedic ▶ Kaali Tulasi, Vana-Tulasi.

Siddha/Tamil ▶ Ganjamkorai, Nai-Tulasi.

Action ▶ Plant—stimulant, carminative, diaphoretic. Leaf—bechic, febrifuge; used in cold, bronchitis, catarrh, externally in skin diseases. Essential oil—antifungal. Seeds—hypoglycaemic; also used in the treatment of leucorrhoea and other diseases of urinogenital system.

The essential oil at the flowering stage contains citral as a major component along with methylheptenone, methylnonylketone and camphor.

Leaves yielded beta-sitosterol, betulinic acid and ursolic acid and flavonoids, pectolarigenin-7-methylether and nevadensin.

Seeds exhibited antidiabetic activity, improved glucose tolerance was observed in diabetic patients who were

given 30 g seed/day for 1 month, lowering of fasting plasma glucose level up to 30% was also observed.

Ocimum gratissimum Linn.

Family ▶ *Labiatae; Lamiaceae.*

Habitat ▶ Throughout India.

English ▶ Shrubby Basil.

Ayurvedic ▶ Vriddha Tulasi, Raam-Tulasi, Raan-Tulasi.

Siddha ▶ Elumicha-Tulasi, Peria-Tulasi.

Action ▶ Plant—used in neurological and rheumatic affections, in seminal weakness and in aphthae of children. Seed—used in cephalalgia and neuralgia. Essential oil—antibacterial, antifungal.

In homoeopathy, fresh mature leaves are used in constipation, cough, fever, nasal catarrh; also in gonorrhoea with difficult urination.

A heterotic hybrid 'Clocimum' (polycross of *gratissimum*) has been developed in India which yields 4.5–5.7% essential oil having a eugenol content up to 95%. Direct production of methyl eugenol and eugenol acetate from 'Clocimum' oil is reported.

Major constituents reported from 'Clocimum' oil are myrcene 8.87, eugenol 68.14, isoeugenol 13.88, methyl-eugenol 1.74%; other constituents are alpha-pinene, limonene, phellandrene, terpene 4-ol, alpha-terpineol, carveol, carvene, geranyl acetate, caryophyllone and caryophyllone oxide.

(At Regional Research Laboratory, CSIR, Jammu, a study was conducted

to assess the inheritance pattern of major chemical constituents of essential oils in hybrids produced by interspecific as well as intraspecific crosses of *Ocimum* sp.).

Ocimum kilimandscharicum

Guerke.

Synonym ▶ *O. camphora* Guerke.

Family ▶ *Labiatae; Lamiaceae.*

Habitat ▶ Native of Kenya. Cultivated on a small scale in West Bengal, Assam, Tamil Nadu, Karnataka, Kerala and Dehr Dun.

English ▶ Camphor Basil.

Ayurvedic ▶ Karpura Tulasi.

Action ▶ Plant—spasmolytic, antibacterial. Decamphorized oil— insecticidal, mosquito repellent.

Essential oil contains camphor, pinene, limonene, terpinolene, myrcene, beta-phellandrene, linalool, camphene, *p*-cymene, borneol and alpha-selinene. The Camphor content varies in different samples from 61 to 80.5%.

Ocimum sanctum Linn.

Synonym ▶ *O. tenuiflorum* Linn.

Family ▶ *Labiatae; Lamiaceae.*

Habitat ▶ Throughout India; grown in houses, gardens and temples.

English ▶ Holy Basil, Sacred Basil.

Ayurvedic ▶ Tulasi, Surasaa, Surasa, Bhuutaghni, Suravalli, Sulabhaa, Manjarikaa, Bahumanjari, Deva-

dundubhi, Apet-raakshasi, Shuulaghni, Graamya, Sulabhaa.

Unani ▶ Tulasi.

Siddha/Tamil ▶ Tulasi, Nalla-Tulasi.

Action ▶ Leaf—carminative, stomachic, antispasmodic, antiasthmatic, antirheumatic, expectorant, stimulant, hepatoprotective, antiperiodic, antipyretic and diaphoretic. Seed—used in genitourinary diseases. Root—antimalarial. Plant—adaptogenic, antistress. Essential oil—antibacterial, antifungal.

The Ayurvedic Pharmacopoeia of India recommends the use of the leaf and seed in rhinitis and influenza; the seed in psychological disorders, including fear-psychosis and obsessions.

Major components of the essential oil are eugenol, carvacrol, nerol and eugenolmethylether. Leaves have been reported to contain ursolic acid, apigenin, luteolin, apigenin-7-O-glucuronide, luteolin-7-O-glucuronide, orientin and molludistin.

Ursolic acid, isolated from leaves, exhibited significant protection of mast cell membrane by preventing granulation and decreased histamine release. The ethanolic extract (50%) of fresh leaves, volatile oil from fresh leaves and fixed oil from seeds showed antiasthmatic activity and significantly protected guinea-pigs against histamine and dyspnoea. They also showed anti-inflammatory activity against carrageenan-, serotonin-, histamine- and PGE-2-induced inflammation and inhibited hind paw oedema in rats.

The ethanol extract (90%) of the leaves showed hepatoprotective ef-

fect against paracetamol-induced liver damage.

The plant extract exhibited antiulcerogenic property against experimental ulcers.

Oral administration of alcoholic extract of leaves lowers blood sugar level in normal, glucose-fed hyperglycaemic and streptozotocin-induced diabetic rats. The activity of the extract was 91.55 and 70.43% of that of tolbutamide in normal and diabetic rats respectively.

Administration of the juice of the plant affected a significant reduction in the size of urinary brushite crystals.

A study of methanol extract and aqueous suspension of the leaves showed immunostimulation of humoral immunologic response in albino rats indicating the adaptogenic action of the plant.

Dosage ▶ Seed—1–2 g powder (*API*, Vol. IV); plant—50–10 ml infusion (*CCRAS.*).

Ocimum viride Willd.

Family ▶ *Labiatae; Lamiaceae.*

Habitat ▶ Native to Africa; introduced into India.

English ▶ Fever plant of Sierra Leone.

Folk ▶ Taap-maari Tulasi (Maharashtra).

Action ▶ Leaves—febrifugal. Used as a remedy for coughs and fevers. Oil—antiseptic.

Ocimum viride species, cultivated in Jammu-Tawi, gives maximum oil yield

(0.4%) at full bloom stage and highest percentage of thymol (55.12%) in the oil, which can be used as a substitute for thyme-ajowan oil.

Oenanthe javanica (Blume) DC.

Synonym ▶ *O. stolinifera* Wall. ex DC.

Family ▶ *Apiaceae; Umbelliferae.*

Habitat ▶ Marshy places and river banks in North India from Kashmir to Assam.

Folk ▶ Jateraa (Meghalaya); Pan-turasi (Bengal).

Action ▶ The plant extract showed strong antimutagenic and antitumour activity.

From the herb, beta-sitosterol glucoside, stigmasteryl glucoside, isorhamnetin and hyperin were isolated. The fruit yield 1.5% of an essential oil, containing phellandrene and myristicin.

Oenothera odorata Jacq.

Family ▶ *Onagraceae.*

Habitat ▶ Native to Chile; cultivated as a garden plant in South Australia. Introduced into Indian gardens.

English ▶ Evening Primrose (var.); Sundrop (var.).

Action ▶ Oil from seeds—prescribed for eczema (in children); premenstrual syndrome and cyclical breast pain.

Linalool (70.0%) was determined in the flower oil.

Evening Primrose is equated with *Oenothera biennis* L. (native to North America). The oil from seeds, known as Evening Primrose oil, contains about 70% *cis*-linolenic acid and about 9% *cis*-gamma-linolenic acid (GLA). Evening Primrose oil is one of the most widely prescribed plant-derived medicines in the world. Sold under the trade name Epogam, it is recognized by the governments of Great Britain, Germany, Denmark, Ireland, Spain, Greece, South Africa, Australia and New Zealand as a treatment for eczema. A combination, known as Efamol Marine, used for eczema, contains 80% Evening Primrose Oil and 20% fish oil.

Evening Primrose Oil has become a frontline treatment in Great Britain for initial treatment of cyclical breast pain and fibrocystic breast disease.

Olapax scandens Roxb.

Family ▶ *Olacaceae.*

Habitat ▶ Sub-Himalayas tract of Kumaon and Bihar, Orissa, Madhya Pradesh, Deccan and Western Ghats.

Ayurvedic ▶ Dheniaani, Karbudhaar (doubtful synonym).

Siddha/Tamil ▶ Malliveppam, Kadalranchi.

Folk ▶ Rimil-beeri (Bihar).

Action ▶ Bark—used in anaemia and as a supporting drug in diabetes; also in the treatment of fever.

Oldenlandia umbellata Linn.

Synonym ▶ *Hedyotis umbellata* (Linn.) Lam.

Family ▶ *Rubiaceae*.

Habitat ▶ Bihar, Orissa, Travancore. Cultivated on the Coromandel coast.

English ▶ Indian Madder, Chay-Root.

Siddha/Tamil ▶ Inbooral.

Folk ▶ Chiraval (Maharashtra).

Action ▶ Leaves and roots—used in bronchitis, asthma, consumption.

The plant gave anthraquinone derivatives. The root gave alizarin, rubichloric acid and ruberythric acid, also anthraquinones. Purpurin, pupur-oxanthin carboxylic acid, present in Madder (*Rubia tinctorum*), are almost entirely absent.

Olea europaea Linn.

Family ▶ *Olaeaceae*.

Habitat ▶ Native of Mediterranean region; cultivated in Jammu and Kashmir and Himachal Pradesh.

English ▶ Olive.

Unani ▶ Zaitoon.

Action ▶ Leaves and bark—febrifugal, astringent, diuretic, antihypertensive.

Oil—preparations are used for cholangiitis, cholecystitis, cholelithiasis, icterus, flatulence, meteorism, lack of bacteria in the intestines. Demulcent and mild laxative. Externally used

for wound dressing and for minor burns, psoriasis and pruritus. (Included among unapproved herbs by *German Commission E*.)

Chemical investigations of two varieties—*Ascotrinia* and *Ascolina*—grown in Jammu region have shown that the characteristics of fruits and their oils are similar to those of European varieties.

Leaves of *Olea europaea* gave iridoid monoterpenes including oleuropein and oleuroside; triterpenes including oleanolic and maslinic acids; flavonoids including luteolin and apigenine derivatives. The oil contains glycerides of oleic acid about 70–80%, with smaller amounts of linoleic, palmitic and stearic acid glycerides.

The leaves exhibited hypotensive, antiarrhythmic and spasmolytic activities in animal studies. The oil exhibited contraction of gallbladder due to raising of the cholecystokinin level in the plasma.

India's requirements of olive oil are met by imports.

Onosma bracteatum Wall.

Family ▶ *Boraginaceae*.

Habitat ▶ Kashmir and Kumaon.

English ▶ Borage.

Ayurvedic ▶ Gojihvaa, Kharpatraa, Darvipatraa, Vrishjihvaa.

Unani ▶ Gaozabaan (related species).

Siddha/Tamil ▶ Ununjil.

Action ▶ Cooling, astringent, diuretic, cardiac tonic. Used for cold,

cough, bronchial affections; insomnia, depression, mental exhaustion; constipation, misperistalsis, jaundice; dysuria, urethral discharges; fevers.

The name Gaozaban is applied to six different plants, belonging to five genera. According to *The Wealth of India*, Gaozaban is derived not from this plant but from *Anchusa strigosa* Labill, which occurs in Iran. Kashmiri Gaozaban is derived from *Macrotomia benthamii*. *Coccinia glauca* is also used as Gojihvaa.

Borage has been equated with *Borago officinalis* Linn. (*Boraginaceae*).

Dosage ▶ Dried leaves and stems, flowers—3–6 g powder.

Onosma echioides

C. B. Clarke non Linn.

Synonym ▶ *Onosma hispidum* Wall. ex D. Don.

Family ▶ *Boraginaceae*.

Habitat ▶ Kashmir and Kumaon up to 1,000–1,500 m.

Unani ▶ Ratanjot (equated with *Onosma echioides* Linn., according to *National Formulary of Unani Medicine*).

Action ▶ Astringent and styptic. Root—bruised and used as application to eruptions. An ingredient of ointments for ulcers, scrofula, burns. Flowers—stimulant, cardiac tonic.

Ursolic acid and naphthoquinones, onosone A and B have been isolated

from the root. Shikonin acetate is obtained from callus cultures of the plant.

The species, distributed in western Himalayas, is *Onosma echioides* C. B. Clarke non Linn.; *Onosma echioides* Linn. is an European species. A variety of this species, var. *kashmiricum* Johnson, is found in Kashmir. *Onosma hookeri* C. B. Clarke occurs in Sikkim and Bhutan.

Maharanga emodi (Wall.) DC., synonym *Onosma emodi* (Wall.) DC. (the Himalayas from Garhwal to Bhutan at altitudes of 3,500–4,000 m) is also known as Ratanjot and Shankhuli.

(Ratanjot is used in a generic sense to cover a range of red dye-yielding roots, rather than the root of a single species. As many as 15 plant species belonging to four different families are known as Ratanjot; five of them do not yield red dye. General properties and colour reactions attributed to Ratanjot resemble Alkanet from *Alkanna tinctoria* Tausch.)

Operculina turpethum

(Linn.) Silva Manso.

Synonym ▶ *Ipomoea turpethum* R. Br.

Family ▶ *Convolvulaceae*.

Habitat ▶ Throughout India up to 1,000 m; occasionally grown in gardens.

English ▶ Indian Jalap, Turpeth.

Ayurvedic ▶ Trivrta, Trivrtaa, Tribhandi, Tripputaa, Saralaa, Suvahaa,

Rechani, Nishotra, Kumbha, Kaalaa, Shyaama, Shyaamaa.

Unani ▶ Turbud, Nishoth.

Siddha/Tamil ▶ Karunchivadai.

Action ▶ Root—purgative, anti-inflammatory (particularly used in rheumatic and paralytic affections; also in fevers, oedema, hepatic and haemophilic diseases).

White Turpeth is preferred to Black Turpeth as cathartic; the latter produces drastic purgation and causes vomiting, fainting and giddiness. White Turpeth is derived from *Marsdenia tenacissima* in folk medicine.

The active principle of *O. turpethum* is a glycosidic resin present in the drug up to 10%. It is similar to jalap resin and is concentrated mostly in the root bark. It contains an ether insoluble glycoside, turpethin, which constitutes about half of the resin and two ether soluble glycosides, alpha- and beta-turpethin (8 and 6% respectively).

Dosage ▶ Root—1–3 g powder. (*API*, Vol. III.)

Ophioglossum vulgatum Linn.

Family ▶ Ophioglossaceae.

Habitat ▶ Moist meadows in Great Britain. Found in the Himalayas, Bihar, Assam, Pune (Maharashtra), Annamalai and Shevaroy hills (South India); up to an altitude of 2,700 m.

English ▶ English Adder's Tongue. Serpant's Tongue.

Action ▶ Fern—antiseptic, styptic, vulnerary, detergent, emetic. The mucilaginous and astringent decoction of the fern is used in angina in Reunion. An ointment, prepared by boiling the herb in oil or fat, is used for wounds.

Ophioglossum pendulum L. (Assam) is used in the form of a scalp ointment for improving the hair growth. American Adder's Tongue is equated with *Erythronium americanum* Ker-Gawl (*Liliaceae*). The fresh leaves gave alpha-methylenebutyrolactone.

Ophiorrhiza mungos Linn.

Family ▶ *Rubiaceae*.

Habitat ▶ Khasi Hills up to 600–700 m, in Western Ghats and the Andaman Islands.

English ▶ Mongoose Plant.

Ayurvedic ▶ Sarpaakshi. (Gandha-naakuli is a wrong synonym. It is equated with *Aristolochia indica*.)

Siddha/Tamil ▶ Keerippundu.

Folk ▶ Sarahati. Mungus-vel (Maharashtra).

Action ▶ Root—bitter tonic. Leaves—used for dressing ulcers.

The roots contain starch, a resin and small amounts of a bitter amorphous alkaloid. Beta-sitosterol, 5-alpha-ergost-7-en-3-beta-ol and 5-alpha-ergost-8 (14)-en-3 beta-ol (as an ester) have been identified in the root. Leaves and stems contain traces of hydrocyanic acid.

Opuntia cochinellifera Mill.

Synonym ▶ *Nopalea cochenillifera* Salm-Dyck.

Family ▶ *Cactaceae*.

Habitat ▶ Indian gardens. Introduced into India towards the end of the 18th century.

English ▶ Cochineal Cactus. (A host for cochineal insect, *Dactylopius cacti* Linn.)

Siddha/Tamil ▶ Puchikalli.

Action ▶ Fruits—emollient, bechic. Mucilaginous joints—used as poultices in cases of articular rheumatism, inflammations, scalds, burns and skin diseases.

Opuntia dillenii (Ker-Gawl.) Haw.

Synonym ▶ *O. stricta* Haw. var. *dillenii* (Ker-Gawl.) Benson.

Family ▶ *Cactaceae*.

Habitat ▶ Native of Mexico; well-acclimatized throughout India.

English ▶ Prickly Pear, Slipper Thorn.

Ayurvedic ▶ Naagaphani, Kanthaari.

Unani ▶ Naagaphani.

Siddha/Tamil ▶ Sappathikalli, Nagathali.

Action ▶ Leaves—applied as poultice to allay inflammation and heat. Fruit—baked and given in whooping cough.

Dried or fresh flowers of cactus (*opuntia* series)—astringent and haemostatic. An infusion is given in irritable

bowel, mucous colitis, and prostatitis. Ash of the aerial portion, mixed with sugar candy, is given for 21 days for birth control in tribal areas of Andhra Pradesh.

The Plant is recommended for growing in high pollution zones for abating sulphur dioxide pollution.

Pods contain a polysaccharide, arbinogalactan. Betanin has been isolated from ripe fruits. Flowers contain the glycosides of isorhamnetin and quercetin, with small amounts of the free flavonols.

Opuntia ficus-indica (Linn.) Mill., known as Prickly Pear or Indian Fig, is a spineless cactus, mostly cultivated in Indian gardens. Ripe fruits are nutritious. Flowers are astringent and reduce bleeding; used for diarrhoea and irritable bowel syndrome; also for enlarged prostate. The flower decoction exhibits a strong diuretic effect.

The cladodes are used as a topical anti-inflammatory remedy for oedemata and arthrosis, as regulators of smooth muscles in the treatment of whooping cough and as anti-infective agent.

The stem or their crude preparations showed hypoglycaemic effect in non-insulin-dependent diabetes mellitus patients (irrespective of its being heated or blended during preparation).

Neobetainin (14,15-dehydro betainin) is the major constituent in the fruit.

Opuntia vulgaris Mill.

Family ▶ *Cactaceae*.

Habitat ▶ Throughout the greater part of India.

English ▶ Prickly Pear.

Ayurvedic ▶ Naagaphani (var.).

Action ▶ In homoeopathy, a tincture made from the flowers and wood, is given for diarrhoea and splenomegaly.

The fresh stalks yielded calcium magnesium pectate which exhibited antihæmorrhagic action. A flavonoid has been obtained from dried flowers. It resembles rutoside in its action of inhibiting capillary fragility. The flavonoid on hydrolysis produces trihydroxy-methoxy-flavonol and glucose. The plant is reported to contain an alkaloid. It also yields a mucilage which gives arabinose and galactose.

to convalescents suffering from chronic diarrhoea and bilious fevers. Allays irritation of gastrointestinal tracts.

Orchis species (Salep) contain mucilage (up to 50%)–glucans, glucomannans (partially acetylated), starch (25%), proteins (5–15%).

The leaves of *Orchis latifolia* contain a glucoside, loroglossin. Most of the Salep used in Unani medicine is imported from Iran and Afghanistan.

Allium macleanii Baker (Afghanistan) is known as Baadashaahi (royal) Saalab, and is used as a substitute for Munjaataka.

Dosage ▶ Tuber—3–5 g powder. (CCRAS.)

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Orchis latifolia Linn.

Family ▶ *Orchidaceae*.

Habitat ▶ Kashmir to Nepal at altitudes of 2,500–5,000 m in damp places.

English ▶ Orchis, Salep.

Ayurvedic ▶ Munjaataka, Saalam-misri, Saalam-panjaa. (*Eulophia campestris* Wall. is also equated with Munjaataka.)

Unani ▶ Saaleb, Khusyaat-us-Saalab, Saalab Misri.

Siddha ▶ Silamishri.

Action ▶ Considered aphrodisiac and nerve tonic by Unani physicians. Tuber—nutritive, demulcent, restorative. Given

Origanum majorana Linn.

Synonym ▶ *Majorana hortensis* Moench.

Family ▶ *Labiatae; Lamiaceae*.

Habitat ▶ Native to Europe and Great Britain.

English ▶ Sweet Marjoram. (*Origanum vulgare* Linn., Wild Marjoram, occurs in Simla hills and in Kashmir valley.)

Ayurvedic ▶ Sukhaatmaka, Marubaka, Phanijjaka. (*Ocimum basilicum* is used as a substitute for Phanijjaka.)

Unani ▶ Marzanjosh.

Folk ▶ Maruae. Santhraa. Jangali Maruaa (*Origanum vulgare* Linn.).

Action ▶ Emmenagogue, antispasmodic, carminative, expectorant. Leaves and seed— astringent, antispasmodic. Warm infusion of herb—promotes suppressed menstrual flow.

The herb contains about 3% volatile oil comprising sabinene hydrate, sabinene, linalool, carvacrol, estrogole, eugenol and terpenes; flavonoids including luteolin-7-glucoside, diosmetin-7-glucoside, apigenin-7-glucoside; rosmarinic acid, caffeic acid; and triterpenoids such as ursolic acid, oleanolic acid, sterols.

Marjoram herb and oil exhibit antibacterial action. (*German Commission E.*) The herb contains arbutin and hydroxyquinone (a carcinogenic agent) in low concentrations. The herb is not suited for extended use. Topical application of hydroxyquinone leads to depigmentation of the skin. There is no reports of similar side effects with marjoram ointment. (*German Commission E.*)

Origanum vulgare Linn. (Wild Marjoram) contains volatile oil with a widely varying composition; major components include thymol, beta-bisabolene, caryophyllene, linalool and borneol; other constituents are similar to those of *O. majorana*.

The leaves of Wild Marjoram contain phenolic acids. The phenyl propionic acid and the phenyl glucoside showed antioxidant activity comparable to that of BHA, a synthetic antioxidant.

Wild Marjoram preparations are used for bronchial catarrh and dis-

turbances of the gastrointestinal tract in Unani medicine.

Sweet Marjoram shows stronger effect on the nervous system than Wild Marjoram and gives better results in anxiety, headaches and insomnia.

Both the species have been included among unapproved herbs by *German Commission E.*

Oroxylum indicum Vent.

Family ▶ *Bignoniaceae*.

Habitat ▶ Throughout the greater part of India.

English ▶ Indian Trumpet Flower.

Ayurvedic ▶ Shyonaaka, Shoshana, Tuntuka, Kutannata, Madhukparna, Patrona, Bhalluka, Prthushimba, Nata.

Siddha/Tamil ▶ Peruvaagai.

Folk ▶ Sonaa-paathaa.

Action ▶ Tender fruit—carminative, stomachic, spasmolytic. Seed—purgative. Root bark— astringent, antidiarrhoeal. Used for amoebic dysentery. Bark—antirheumatic, diuretic.

The leaves contained flavones and their glycosides including baicalein and scutellarein; also anthraquinone, aloe-emodin. Bark of the root gave chrysin, baicalein and oroxylin A. Bark also gave dihydrobaicalein. Heartwood yielded beta-sitosterol and an iso-flavone, prunetin.

Dosage ▶ Root—5–10 g powder; 25–50 g for decoction. (*API*, Vol. III.)

Orthosiphon grandiflorus Boldingh.

Synonym ▶ *O. aristatus* (Blume) Miq.
O. spiralis (Linn.) Merrill
O. stamineus Benth.

Family ▶ *Labiatae; Lamiaceae.*

Habitat ▶ Manipur, Naga and Lushai hills, Chota Nagpur, Western Ghats.

English ▶ Kidney Tea Plant, Java Tea.

Folk ▶ Mutri-Tulasi (Maharashtra).

Action ▶ Leaves—diuretic, used in nephrosis and severe cases of oedema. An infusion of leaves is given as a specific in the treatment of various kidney and bladder diseases including nephrocirrhosis and phosphaturia, also in rheumatism and gout.

Key application ▶ In irrigation therapy for bacterial and inflammatory diseases of the lower urinary tract and renal gravel. (*German Commission E.*)

Flower tops and leaves (samples from Indonesia) contained methyl rippariochromene A. In another sample, leaves also yielded several phenolic compounds including lipophilic flavones, flavonol glycosides and caffeic acid derivatives. Rosmarinic acid and 2,3-dicaffeoyl-tartaric acid (67% of total phenolics, 94.5% in hot water extract) were major compounds of caffeic acid derivatives.

The leaves also contain a high percentage (0.7–0.8) of potassium salts. Presence of orthosiphonin and potassium salts help in keeping uric acid and

urate salts in solution, thus prevents calculi and other deposits. The leaf extract lowers blood sugar in diabetics, but not consistently.

Orthosiphon pallidus Royle, equated with the Ayurvedic herb Arjaka and Shveta-Kutherak and known as Ajagur and Naganda-baavari in folk medicine, is used for dysuria and colic.

Orthosiphon tomentosus Benth. var. glabratus Hook. f.

Synonym ▶ *O. glabratus* Benth.

Family ▶ *Labiatae; Lamiaceae.*

Habitat ▶ Orissa, Gujarat, South India, ascending up to 1,000 m in the hills.

Ayurvedic ▶ Prataanikaa (non-classical).

Folk ▶ Tulasi (var.), Kattu-thrithava (Kerala).

Action ▶ Plant—a decoction is given in diarrhoea. Leaves—applied externally to cuts and wounds.

Oryza sativa Linn.

Family ▶ *Gramineae; Poaceae.*

Habitat ▶ Cultivated all over India as a food crop.

English ▶ Rice.

Ayurvedic ▶ Shaali, Vrihidhaanya, Tandula, Nivara.

Unani ▶ Biranj Saathi.

Siddha/Tamil ▶ Nell.

Action ► Rice-water (a water decoction of rice)—demulcent and refrigerant in febrile and inflammatory diseases and in dysuria. Also used as a vehicle for compound preparations used for gynaecological disorders. It is regarded as cooling in haematemesis and epistaxis, and as diuretic.

The green clum or stalks—recommended in biliousness. Ash of the straw—used in the treatment of wounds and discharges. Lixiviated ash of straw is used as anthelmintic and in nausea.

The *Ayurvedic Pharmacopoeia of India* recommends the dried root in dysuria and lactic disorders.

The pigments occurring in coloured types of rice are a mixture of monoglycosides of cyanidin and delphinidin. The dark Puttu Rice of India contains a glycosidic anthocyanin.

Dosage ► Root—50 g for decoction. (*API*, Vol. II.)

Osbeckia chinensis Linn.

Family ► *Melastomataceae*.

Habitat ► The Himalayas from Garhwal to Bhutan, North Bengal, Bihar and Khasi, Aka and Lushai hills.

Folk ► Bhui-lukham (Lushai).

Action ► Plant—anodyne, antipyretic, anti-inflammatory.

The plant contains the flavonoids, quercetin, kaempferol and hydrolysable tannins, besides gallic acid, methyl gallate and ellagic acid.

The flavonoids and tannins showed antioxidant activity. Ellagic acid suppressed increase in lipid peroxidation induced by CCl₄ and Cobalt-60 irradiation and this effect was more than that of alpha-tocopherol. Gallic acid showed anti-inflammatory activity against zymosan-induced acute footpad swelling in mice.

Osmanthus fragrans Lour.

Family ► *Obleaceae*.

Habitat ► Native to China and Japan. Found in Kumaon, Garhwal and Sikkim.

Ayurvedic ► Vasuka (Also equated with Brihat Bakula.)

Folk ► Silang, Silingi, Bagahul, Buuk.

Action ► Diuretic, genitourinary tract disinfectant.

Flowers—antiseptic, insecticidal. Used for protecting clothes from insects.

The flowers yield an oil containing oleanolic and urosolic acids, beta-sitosterol, glycosides and a wax (0.04%) composed mainly of triacontane. The leaves are reported to contain a phyllirin-like glycoside.

Osmanthus suavis King, known as Silingi in Nepal and Chashing in Bhutan, is found in eastern Himalayas at altitudes of 2,700–3,000 m and in Aka hills in Assam. It is used as a var. of Vasuka.

Dosage ► Flower—500 mg to 1 g powder. (*CCRAS*.)

Osmunda regalis Linn.

Family ▶ *Osmundaceae*.

Habitat ▶ The Himalayas, Khasi hills and the Western Ghats at altitudes of 1,500–3,000 m.

English ▶ Royal Fern.

Action ▶ Fern—antispasmodic, astringent, an aqueous extract is administered for intestinal gripe; used externally in rheumatism; also prescribed in muscular debility. Folds enter into diuretic drinks used for treating body swellings. Root—mucilaginous, styptic, stimulant.

The rhizomes contain phenolic, gallic, caffeic, *p*-coumaric, vanillic, salicylic, *p*-hydroxybenzoic and ferulic acids and catechol tannins (2.8%) which are responsible for fern's astringent activity. Biological activity of these tannins corresponds to that of 10% tannic acid.

Osyris wightiana Wall. ex Wight.

Synonym ▶ *O. arborea* Wall. ex DC.
O. quadriparita Salzm. ex Decne.

Family ▶ *Santalaceae*.

Habitat ▶ Sub-tropical Himalaya, Madhya Pradesh, Tamil Nadu.

Folk ▶ Popli (Maharashtra); Paral (Karnataka, Tamil Nadu); Jhuri (Nepal); Dalmi, Dalmia (Garhwal, Kumaon).

Action ▶ Leaf—emetic.

The leaf contains 20% tannin. It gave *cis*-4-hydroxy-L-proline, and exhibited antiviral activity.

The heartwood is faintly fragrant and reported to be used for adulterating sandalwood.

Ougeinia dalbergioides Benth.

Synonym ▶ *Ougeinia oojeinensis* (Roxb.) Hochr.

Family ▶ *Papilionaceae*; *Fabaceae*.

Habitat ▶ Outer Himalayas and sub-Himalayan tract from Jammu to Bhutan up to an altitude of 1,500 m, and extending through the whole of northern and central India into the greater part of Deccan Peninsula.

English ▶ Chariot tree, Punjab Kino.

Ayurvedic ▶ Tinishaa, Tinisha, Syandana, Nemi, Sarvasaara, Ashmagarbhaka, Vajjala, Chitrakrt.

Siddha/Tamil ▶ Narivengai.

Folk ▶ Saanan.

Action ▶ Bark—febrifuge, anti-diarrhoeal, spasmolytic.

The leaves and heartwood contained iso-flavonoids—dalbergion, hemoferitin and urgenin. Leaves, in addition, contained flavonoids—quercetin, kaempferol and leucopelargonidin. Stem bark gave triterpenes, lupeol and betulin.

Oxalis acetosella Linn.

Family ▶ *Oxalidaceae*.

Habitat ▶ Temperate Himalayas from Kashmir to Sikkim from 2,500 to 4,000 m and Nilgiris in Tamil Nadu.

English ▶ Common Wood-Sorrel.

Ayurvedic ▶ Chaangeri (related species).

Folk ▶ Tinpatiyaa, Amrul.

Action ▶ Diuretic and refrigerant. Used for urinary affections and fevers. (Sorrel is equated with *Rumex acetosa* Linn.)

Aerial parts gave 2''-O-(beta-D-glucopyranosyl) isovitexin. The whole flowering plant contains 0.3–1.25% oxalic acid (high in fresh leaves and roots).

Oxalis corniculata Linn.

Family ▶ Oxalidaceae.

Habitat ▶ Throughout the warmer parts of India.

English ▶ Indian Sorrel.

Ayurvedic ▶ Chaangeri, Am-lapatrikaa, Amlikaa, Chukraa, Chukrikaa, Chhatraamlikaa.

Unani ▶ Ambutaa bhaaji, Amutaa saag.

Siddha/Tamil ▶ Puliyarai.

Folk ▶ Tinpatiyaa, Ambilonaa.

Action ▶ Plant—boiled with butter milk is a home remedy for indigestion and diarrhoea in children. Used for tympanitis, dyspepsia, biliousness and dysentery; also for its anti-inflammatory, analgesic, antipyretic and antiscorbutic ac-

tivities. Leaf paste is applied over forehead to cure headache.

The leaves contain the flavonoids, vitexin, isovitexin and vitexin-2''-O-beta-D-glucopyranoside. The leaves contain 1.47% of lipid (dry weight), a rich source of essential fatty acids and alpha-and beta-tocopherol (1.58 and 6.18 mg/g dry basis, respectively.) They are a good source of vitamin C (125 mg/100 g), carotene (3.6 mg/100 g) and calcium (5.6% of dry material) but contain a high content of oxalates (12% of dry material).

The leaves and stem contain tartaric and citric acid; stems contain also malic acid.

An aqueous extract of the plant shows activity against *Micrococcus pyogenes* var. *aureus*. Expressed juice of the entire plant shows activity against Gram-positive bacteria.

Oxalis martiana Zucc. (native to America, naturalized in moist and shady plaeces in temperate parts of India) is equated with Wood-Sorrel. It is known as Khatmitthi in Delhi and Peria-puliyarai in Tamil Nadu.

Dosage ▶ Whole plant—5–10 ml juice. (API, Vol. III.)

Oxyria digyna (L.) Hill.

Family ▶ Polygonaceae.

Habitat ▶ The Himalayas from Kashmir to Sikkim, in the alpine region at altitudes of 3,000–6,000 m.

Folk ▶ Chohahak, Amlu (Punjab). Kailaashi (Kashmir).

Action ▶ Refrigerant, antiscorbutic.

Oxystelma secamone
(Linn.) Karst.

Synonym ▶ *O. esculentum* R. Br.
Sarcostemma secamone (Linn.)
Bennet.

Family ▶ *Asclepiadaceae*.

Habitat ▶ Throughout the plains and lower hills of India, including paddy fields and hedges near semi-marshy places.

Ayurvedic ▶ Dugdhikaa, Duudhilaata, Duudhialataa .

Folk ▶ Usipallai (Tamil Nadu); Dugdhani (Maharashtra); Jala-dudhi (Gujarat).

Action ▶ Herb—antiseptic, depurative, galactagogue; decoction used as a gargle in stomatitis and sore throat. Latex—vulnerary. Fresh root—prescribed in jaundice.

A pregnane ester oligoglycoside (oxysine), a pregnane triglycoside (esculentin), a cardenolide (oxyline), two more cardenolides, oxystelmoside and oxystelmine, have been isolated from the roots.