Health Series

Traditional Family Medicine

# Fragrant Herbs

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| Indian Borge | *Pathorchur* |
| Lavender | |
| Patchouli | |
| Mint | *Paudina* |
| Marjoram | *Murwa* |
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**BOOKS FOR ALL**
**Delhi-110052**

## INTRODUCTION

Fragrant or aromatic plants have a natural perfume in them which is one of the most wonderful, pleasing and quite often highly medicinal products of the Plant World. Their role in man's civilisation and history has been noteworthy and almost romantic. Even from the very ancient times man has been utilising these plants for his own pleasure and sense of well being as well as many other "necessities". The latter had been of an astonishing range: offering to deities, as an article of worship and decoration, for flavouring the food delicately and uniquely, for varied aesthetic purposes, as principal agents to embalm the dead, for preserving fabrics and grains against the damage by insects and, of course, as invaluable remedies for his own varied ailments.

From the very early days specially during the Greek and the Roman periods, there had been a large and flourishing trade here between India and the West. Even now quite a few of the Indian aromatic plant products are much praised all the world over. Such an aroma of a plant or parts of the plant is due to the presence of essential or volatile oils in them, everyone of which is often unique to a specific plant and characteristically so. Invariably these are present in the plants in small quantities. The precise role that they play in the life of the plants which produce them routinely as a bye product of their own metabolic activities is not at all clear. They may be a type of protection against being attacked by the insects or they may aid in regulating transpiration or loss of water from the surface of the plants. In such of the plants which secrete or excrete essential oils near the surface of their body, the moisture around the area is saturated with these essential oils and the whole area has thus a different heat conductivity from that of the general moisture by itself. As such, a plant that emits much perfume will be protected during the day from excessive transpiration and during the night from too great a reduction of temperature. It is relevant to note that many of the strongly aromatic herbs live in rather arid regions that are very sunny as well; they also have a profusion of hairs all over the body. For the plants producing them, the essential oils may also have a nutritive value because they are easily assimilated.

Though their role in their own source plants is not very obvious, there is no uncertainty as regards what these essential oils mean to mankind. They are used extensively and prevalently even in day to day life. A few uses of these oils and their derivatives are: manufacturing soaps, perfumery, cosmetics, pharmaceutical (viz. medicinal products by drug companies) preparations, confectionaries, aerated waters, disinfectants and detergents, "medicating" tobacco and cigarettes, incenses, toilet articles and so on. This list excludes the numerous other uses of these plants for varied medicinal purposes.

India has been historically reputed for its manufacture and distillation of high grade and very varied types of "*attars*" or scents, Kanauj in Uttar Pradesh being one of the most famous centres here. Indians have been known from very olden times for the luxurious perfumes that they had been employing for their personal pleasure, or, the worship of Gods or as necessary ceremonial ingredients. Sandal Wood was the most famous of these scents; its use and value have always been ample and the demand is ever increasing. Even the earliest records show that this was always an article of reverence (a *shrigandha*) and it also formed an article of bartar between India and the Mediterranean countries even thousands of years ago. Flourishing Indian perfumery industry (*saugandha dravya*) is mentioned in Sanskrit, Pali and Islamic literature. The Mogul Emperors were great patrons of Indian perfumes. Abul Fazl in *Aini*

*Akbari* extols that the court walls were scented continuously with ambergris, aloe and many compositions of ancient recipes; the incense, daily burnt in gold and silver censors and the sweet smelling flowers were all habitually used in great abundance. Queen Elizabeth is reported to have used Indian perfumes and Mary Queen of Scots used to get her baths delicately perfumed with these scents.

A great gift that India naturally has, is its variety of climates and altitudes as well as soils that can and do sustain a large variety of aromatic plants. The raw material for an extremely well flourishing essential oil industry is simply abundant with us. Moreover, in addition to the already existing profusion, a large number of exotic aromatic plants from many other countries can also be cultivated in suitable places of our vast and beloved land. According, to one modern authority raw materials from 1,000 different aromatic plants out of a total of about 1,500 varieties used in perfumery throughout the world are found in India. It is unfortunate to note however that modern industrialists of India have not utilised this wealth at our disposal to the extent that it richly deserves.

These oils are present in different organs and products of the plants. These may be gums (eg. peru balsams of South America, benzoins of Thailand, olibanum or frankincense from Africa and Myrrh of the Middle East), herbaceous plants

(eg. *Artimesia, tulasi, Mentha, Chenopodium* etc.), underground roots and rhizomes (eg. the scented turmerics viz. *Curcuma aromatica* - Kasturi manjal, *C.zedoaria*, kachroora; ginger oil), seeds (eg. cumin, dill, fennel, fenugreek etc.), trees (eg. sandal wood) and also leaves and flowers (eg. champak flowers, *Mimusops elengi* or *bakul*, cananaga, the fragrant Acacia or *A. farnesiana*, jasmine, tuberose (*rajani gandha*) chrysanthemums and the innumerable others).

We shall however restrict here to a discussion of just a few aromatic herbs that have their essential oils almost all over their aerial parts. These belong to two groups: *tulasi* and a host of other sweet scented herbs all belonging to one family Labiatae and another plant called Artimesia. The latter however belongs to a totally different family called Compositae or those herbs that bear their flowers in head like clusters as it happens in many of our very familiar garden flowers such as chryasnthemum, dahlias and zinnias.

All the numbers of the first group come under a family of plants called Labiatae, named so after the shape of the petals or corolla of their flowers which is characteristically bilipped (lip being "labium" in Latin). This is a very large group of aromatic herbs that have many values and uses, domestic, cultural, industrial and medicinal.

Members of this family are mostly herbs, rarely shrubs. They are often gland dotted. Leaves

are opposite to each other or they may occur in a group or a whorl around the stem. Flowers are hermaphrodite, with both the male and the female organs (the stamens and the pistil) occurring together in a single flower. They are solitary but more usually clustered in many characteristic types of inflorescences that are basically cymose viz. branched in a forking manner. Calyx has its sepals united. Petals also unite to form a gamopetalous corolla which is mostly and characteristically bilipped. Fruits are small, occurring as a group of one seeded nutlets at the base of the calyx.

We shall consider only the following plants in this family: *Ocimum* (*O. sanctum* Linn. the sacred *tulasi O.gratissimum* Linn. *Rama tulasi* and *O.basilicum* sweet basil used in kitchen), *Coleus amboinicus* Lour (Indian Borage, a kitchen herb which has become recently a commercial fragrant oil producer, even exported abroad), *Lavandula vera* DC (the lavender plant that produces the famous oil of Lavender), *Pogostemon patchouli* Pellet (very much liked by ladies for decorating the hair and producing the reputed *patchouli oil*), *Mentha arvensis* L. (the famous *pudina* or mint, a favourite kitchen "greens" and the source of mint oil), *Origanum* (*Origanum majorana* Linn and *O.vulgare* both well liked, decorative, sweet smelling cosmetic herbs) and *Thymus serpyllum* Linn (of the Himalayas and the source of the much prized thyme oil in India).

We include here *Artemisia* whose leaves are also fragrant and much liked for making the garlands, though this plant belongs to a separate family altogether viz. Compositae to which the common sun-flower besides many others belongs. The species included here are; *Artemisia pallens* Wall ex. DC and *A.vulgaris* L, the two garden herbs and also *A.maritima* L, the source of the santonin drug, a killer of worms.

## A. TULASI AND ITS VARIETIES

What popular conception regards as "varieties" of Tulasi are botanically different species of the genus *Ocimum* though they all do show such gross similarities with the sacred tulasi that one can easily understand as to why the lay public call them all as just varieties of tulasi. Botanically the plants of the genus *Ocimum* are all strongly scented throughout the aerial regions. The smell is mostly fragrant, pleasing and *tulasi* like as in all the species included here but sometimes strong but foul, as in *O.canum* Sims., rightly called the dog *tulasi*. Flowers are small, bilipped and arranged in 6-10 flowered whorls on an elongated cone like spike or *thyrses* as it is called technically. Calyx or the green cup below the petals is also bilipped, erect and persistent in fruit. In fact, it covers over the latter almost fully. Its lower lip usually has 4 mucronate or minutely pointed teeth, of which the 2 middle ones are the largest. Corolla is also 2 lipped, the tube or the portion

below the lips, being short. The upper lip is recurved and partly divided into four segments while the lower lip is hardly longer than the upper but flat or nearly so. Fruit is an inconspicuous cluster of 4 small, one seeded nutlets, that are dry but mucilaginous or slimy when moistened. They are almost wholly enclosed in the membranous, veined and the strongly recurved calyx.

The plants grow in tropical and warm temperature regions of the World.

In general, the genus as a whole is medicinally stimulant, stomachic (good for the stomach) antirheumatic (counteracting rheumatic pains of the joints), sudorific (promotive of sweat formation) and a febrifuge (a remover of fever).

The sacred tulasi *Ocimum sanctum* (the sacred) L. is the most famous of the *tulasi* species and that which is worshipped in every Hindu home. This is also known as *Sri tulasi* or *krishna tulasi* (dark tulasi). The other species are: *O.basilicum* L also called *kama kasturi, subja* plant or sweet Basil- much used in cooking; *O.basilicum L.var. pilosum Bth.* or *Rama tulasi* (much like *krishna tulasi*; but the leaves differ in being light green and not dark, hence, white *tulasi*) *O.gratissisnum* (Shrubly basil - lemon *tulasi*), *O.canum* Sims (Hoary Basil - dog *tulasi*) and *O.adscendens* Willd. a Tree tulasi. Besides these species of *tulasi* all of which are quite common in most places of India, there are two more that are not so common but quite

important. Camphor is distilled from the leaves of some species of *Ocimum* viz. *O.canum* (camphor is obtained from this species in Russia but the Indian species does not contain it) and *O.kilimandscharium*, a herb being successfully grown and utilised in Dehra Dun Research Station from the seeds secured from Kenya in Africa. *O.virde* is the tulasi whose leaves are used as an *anupana* or accompanying drug given along with the famous Ayurvedic medicine called *makaradhwaja* in fever and cough.

There are four more Indian species still: *O.longifolium* very common in Assam ('its tea is useful in kidney and bladder diseases - called Java tea, very popular there), *O.caryophyllatum* (*marubaka* or *gandha tulsi* in Sanskrit, and Bengali respectively, *gola tulasi* in Hindi; leaves smelling like cloves, the white variety here is medicinal and used in worms, shooting pains, loss of appetite and skin diseases), *O.minimum* (*maruvaka* in Sanskrit or Bush basil in English. This is found all over India, its flowers and leaves are aromatic and used for seasoning or flavouring food stuffs) and *O.pilosum* (*khara pushpa* in Sanskrit, Green Basil in English, *babestul* in Hindi and *tukameian* in Bombay. This is also much found throughout India. Seeds are mucilagenous, soothing and nutrient and given in kidney diseases. Jelly is given in spermatorrhoea or when sperms are discharged with urine).

**1. Ocimum Sanctum L.**

The sacred Text of Bhagavata declares that Lord Vishnu in His Vaikuntha, honours the fragrance of *tulasi* and likes the aroma of this herb much more than that of many other fragrant flowers of the heaven such as *mandara, kurabaka, mogra, kurubaka, utpala, punnaga, nagakesar, parijata* and lotus. He is decorated with a garland of *tulasi* leaves and the plant itself is called *vishnupriya*, beloved of Vishnu. *Tulasi* was a devotee of Vishnu who became finally married to him. Their marriage anniversary is celebrated as *utthana dvadashi* ever since then on the eleventh day of the first half of the month of Kartik. Every Hindu woman worships this *tulasi* specially for her husband's sake and the leaves are held so sacred that they often form an invariable article along with *tirtha* or the sacred water given to the devotee and also often constitute the last food given to the dying man. It is because of these reasons, that the plant is cultivated fondly by women in a special place called *brindavan* in the courtyard around which they carry out perambulations. Padmottara purana asserts that a house in whose front exists a garden of *tulasi* is itself a centre of the pilgrimage; neither the servants of Yama, the Lord of death nor any fatal disease can enter there. Wherever the fragrance of tulasi goes, the air gets immediately purified.

In view of all these, the herb is very commonly available in most Indian houses. Innumerable medicinal applications of this common herb exist-

many of them highly reputed in our household lore; a brief description of this aspect is given below. It is infact regarded as a great medicinal plant.

**Names**

There are many names for this plant in Sanskrit but the most famous is *tulasi* which is how it is called in most regional languages. Though this plant is well known by this name in Ayurveda also, it is very interesting to note that this name does not occur at all in all the three great classical authors, Charaka, Sushruta and Vagbhata, the three elders or the virddhatrayee; neither does this name appear to occur in the Vedas! The name seems to have become current only from the time of our mythological literature or the puranas. What these Ayurvedic authors call as *surasa* (full of juice) is usually considered as being this *tulasi* though this seems a little incorrect. There seems to be certain aspects of history here which need to be researched still.

The Sanskrit names are quite many and mean many different things so that they actually appear to mean many "varieties" in turn! They are: *ajaka* (goat like, does it refer to the goat like smell and therefore, a different variety?), *arjaka*, *amrita*, *apetarakshasi*, *bahupatri* (many leaved), *bharati* (the Indian - representative), *brinda* (related to a wife of Sri Krishna), *haripriya* (loved by Hari), *kathinjara krishnamula*, *krishnatulasi* (the dark *tulasi*; a *real* variety, the usual colour being rather

paler or whitish), *manjari* (the spike like flower cluster), *pavani*, *pavitra* (the holy), *shyama* (the dark) and *vishnupatni* (the wife of Vishnu), *lakshmi* and so on.

It is *kalatulsi*, *tulsi* in Bengali; *kari tulasi*, *tulasi* in Kannada; *ban tulsi*, *tulsi* in Punjabi: *surasa*, *tulasi* in Tamil; *krishna tulasi*, *tulasi* and *surasam* in Malayalam and *brynda*, *gaggera*, *krishna tulasi*, and *tulasi* in Telugu.

In English it is called Holy Basil, Monk's Basil, Rough Basil and Sacred Basil.

**Botany**

This is an annual much branched herb sometimes woody below. Stems and branches are green or usually purplish, more or less square like in cross section and clothed with soft spreading hairs throughout. Leaves are elliptic-oblong; the tip, obtuse or acute, entire or serrate (teeth like) at the margin, softly hairy on both the sides; minutely gland dotted; base, obtuse or acute; stalks, long and hairy. Flowers are arranged in close whorls on elongated racems (broad at the base, and gradually tapering upwards) as thyrses, as noted above. Calyx is bilipped, the upper lip broadly obovate or more or less orb like and much reflexed; lower lip, longer than the upper lip. Corolla is purplish, bilipped, upper lip, reflexed and purplish on the back; lower lip is flat. Nutlets are broadly ellipsoid, nearly smooth, yellow and provided with small black markings.

The plant occurs throughout India but is mostly cultivated. It does *not* seem to be a native of India.

**Medicinal Properties**

Leaves yield 71.3% eugenol, 3.2% carvacrol, 20.4%methyl eugenol and 1.7% caryophyllene. The plant has a pungent, bitter taste. Pharmacologically viz. in terms of its action as a drug in the body, it is stomachic (good for stomach), cholagoguic (evacuating to bile), anthelmintic (destroying helminth worms) and antipyretic (counteracting to fever). It is useful in the diseases of the heart and the blood; leucoderma; urinary retention or painful discharge; asthma and bronchitis (inflammation of the linings of the bronchial tubes of the lungs); vomiting and hiccup; foul smells in general; lumbago (rheumatic affections of the lumbar regions viz. the loins) and pains; painful eye and pus filled discharge from the ear.

The root is given in the form of decoction and as a diaphoretic viz. to induce sweating all over during the attacks of malarial fevers.

The leaves have a property of being expectorant viz. capable of inducing an expulsion of the phlegm by coughing; their fresh juice or decoction is commonly used in catarrh or common cold and also, bronchitis. The same preparation is applied over skin in ringworm and other skin diseases. An infusion of the leaves is used as setting right the stomach in gastric disorders in children, and also

in liver complaints. The dried leaves are powdered and employed as a snuff in ozaena (*peenas* in Hindi) or foul smelling discharges from the nostrils. They also serve effectively to dislodge maggots from the open wounds. The juice dropped into the ear is believed to be a good remedy for ear-ache.

The seeds are mucilaginous, becoming slimy when soaked in water and demulcent, or soothing, affording a relief in cases of irritation. That is why they are often added to cool drinks and *sherbets*. This is also prescribed for correcting the disorders of genito urinary system.

In Sri Lanka, the herb is used in decoctions for cough and catarrh (or the common cold), sometimes also chewed as a substitute for betel nut.

The fresh roots are ground with water and applied to the stings of bees and wasps and the bites of worms and insects. The bruised and well crushed roots, stems and leaves are applied to the bites of mosquitoes.

The fresh juice of the leaves or their decoction is considered to possess diaphoretic (sweat inducing), antiperiodic (destroying the periodic diseases, as malarial fever), stimulating and expectorant (expelling phlegm from the throat) properties. Every part of the plant is considered to be useful in treating snake bite, by all the classical authors on Ayurveda, though modern studies do not support this claim.

**Medicinal and Other Importance**

Modern medicine considers *tulasi* as demulcent (soothing), expectorant (expelling by cough) and antiperiodic (countering any periodic fever). The root wards of fever and the seeds are mucilaginous and soothing. Dried plant is stomachic (good for stomach) and expectorant. Leaves counteract catarrh (i.e. any excessive discharge), they are in addition expectorant and fragrant. They cure fever, cold, *vata* and *kapha* aggravation. The seeds are diuretic (promotive of urination).

Ayurveda considers dark *tulasi* as having similar properties. Both are hot, cause *pitta*; are good for heart, astringent, stimulative of digestion, light in digestion and are useful in destroying aggravation of *vayu* and *kapha*, breathing difficulty, cough, hiccup and germs. They are useful in a host of complaints such as: vomiting, foul smell, skin diseases, shooting pain at the sides, poison, difficult urination, blood vitiation, hysteria, tetanus, psychological troubles and fever.

**Tulasi and Fever**

The fresh juice has a wonderful property of destroying malarial germs. It has been recorded that when the Victoria Garden and the Albert Zoo were laid out in 1904 the workers were much troubled by a high incidence of malaria; this was over come successfully by developing *tulasi* gardens all around on the suggestion of a Hindu worker. That the dark *tulasi* was undoubtedly

antimalarial was declared as early as in 1907 in an Imperial Malaria Conference; the effect was also traced to the essential oil of *tulasi*. Sharngadhara, a reputed classical author of Ayurveda opines that typhoid fever can be cured by drinking 1-2 *tolas** of the juice of the leaves adding $1^1/_2$ - 3 *mashas* of black pepper powder.

*Tulasi* works very well specially in fevers where cold is a predominant factor. For fever its juice is given with black pepper but in pains at the joints and the sweelings there, this is given with *apamarga* (*Achyranthes aspera*) and *nirgundi* (*Vitex nigundo*). This is particularly effective in cold and fever. In phlegmatic fever, *tulasi* juice is given along with honey. In cases where swellings and pains at the joints accompany fever, a *fanta* or a cold infusion of the root of *tulasi* is given. For patiens suffering from constant fever for many days, massaging all over the body with *tulasi* juice gives a welcome relief; there will be no risk of additional complications. Developing *tulasi* garden in areas of malaria infestation is a recommended preventive measure.

**Tulasi and Digestic System**

In the intestine, *tulasi* acts as a germ killer and a destroyer of gases. Fresh juice stops the vomiting and cleanses the bowels. Its cold infusion is

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* Equivalents of the traditional units of measurements here are: 1 *ratti* = 1 *gunza* (the seed of *Abrus precatorius*, the *gunza* plant), 8 *gunzas* = 1 *masha*, 10 *mashas* = 1 *tola*; 24 *tolas* = 1 *ser*. 1 *tola* = 10 grams.

beneficial in the alimentary disorders of children and particularly so for their liver enlargements.

**Tulasi and Skin Diseases**

Thymol found in *tulasi* is successfully employed in skin afflictions. All the 5 organs of the herb (*pachanga*-root stem, leaf, flower and seed) are powdered, mixed with lime juice and applied beneficially in many skin diseases, such as itchings, scabies and eczema. Sprinkling the maggot infested ulcers with this powder will destory the maggots. Washing a wound with fresh leaf juice will see to it that it does not get infested with germ or maggots and the wound would also get healed quickly. *Tulasi* is useful even in advanced cases of leprosy where organs have started falling. In a Book on jungle drugs it has been written that such a leprotic patient was completely cured by giving him a drink of *tulasi* juice for one full year. A paste of *tulasi* leaves applied over the face will increase its lustre. In cases of white spots on the body, or warts and freckles on the face, *tulasi* juice proves beneficial. A specific recipe advised here is as follows: Take a copper vessel, fill it with lemon juice and keep overnight. Mix then with this an equal quantity of *tulasi* juice and that of black *kasaundi* (Kasamarda or *Cassia occidentalis* Linn.). Keep the whole mix in sun for sometime and when the juice gets somewhat thickened, apply this over the face. The spots and the warts will disappear and the face becomes lustrous. By constantly applying this, even the white spots of leucoderma would go!

**Tulasi and Snake Poison**

May ancient authors like Charaka, Sushruta, Vagbhata and also medieval authors like Bhavamishra, the author of Yogaratnakara and also modern instances support this claim. The life can be saved, if the patient is treated in time. As soon as bitten, the patient should eat 1-2 fistfuls of *tulasi* leaves and simultaneously the root of *tulasi* should be rubbed in butter and applied over the region of the bite. To start with the colour of this application is white, but it becomes darker and still darker soon, as it drags the poison out. As soon as it becomes dark, it should be removed and a fresh application of the paste should be made there; this is to be continued till such time that there will no longer be any darkening. Another case was reported where the treatment was carried out successfully even when it was commenced nearly after 8 hours of the bite. Here the juice of *tulasi* was applied over the head, the temples and the chest. This was followed by a good massaging and simultaneous drinking of some banana juice. This was continued for 6-8 hours when the patient started regaining consciousness. Even very hopeless cases of snake poison are said to respond well by such massaging with *tulasi* juice and an intermittent drinking of banana juice. Fresh juice of *tulasi* leaf is to be given for drinking and a paste of its root and inflorescence applied at the bitten place. If the patient has lost consciousness, a few drops of *tulasi* may be continued to be placed in his ears and nose.

**Tulasi and Impotency**

The seeds of *tulasi* have a reputed power of destroying impotency in man. This thickens and increases semen, develops real strength and *ojas* in body and destroys various aggravations of *vata* and *kapha*. A sure cure of impotency is to take the powder of these seeds or the root of tulasi mixed with old jaggery in a dosage of $1^1/_2$ to 3 *mashas* rendered into pills (1 pill in the morning and another in the evening) to be followed by a cup of fresh from the udder-cow's milk. All the complaints of the patient would be removed within 5-6 weeks of this treatment. He will also be free from any fear of getting premature old age.

*Some simple medications of tulasi*: Tulasi as a household remedy:

Cough: Giving the leaf juice of *tulasi* with that of *vasaka* (*Adhatoda vasaka* or *adhusa* in Hindi) is highly beneficial.

Pain of flatulence (gas collection in the belly and bloating): A decoction of the leaves of *tulasi* should be given to be drunk. This will largely mitigate the pain.

Children's liver complaints: A good remedy is the decoction of the leaves of *tulasi*.

Ear ache: Use as ear drop the fresh juice of *tulasi* leaves slightly warmed up. Pain will stop immediately.

Dry cough: Grind the inflorescence of *tulasi* and dry ginger in onion juice, add honey and give this

to be licked up as an electuary. This is very beneficial.

Tooth ache: Prepare a pill from a paste of black pepper and *tulasi* leaves and keep it at the aching tooth. The pain will stop.

Abortion: If a cup of a decoction of *tulasi* leaves is drunk every month after the period commences and done so for three days, the foetus will not stay.

Ozoena (*Peenas*): This is an exudation of foul smelling matter at the nose. Keep smelling a snuff made up of the powders of the inflorescence and the root of *tulasi*. This proves very beneficial. This will destroy the germs of the scalp and also stop the foul smell from the nose. Or, snuff thrice a day the strained powder of the dry leaves of the dark *tulasi*.

Swellings behind the ears: Grind *tulasi* leaves, tender shoots of castor plant and a little salt. Apply this paste after making it luke warm. The pain will subside and the swelling will also disappear.

Loss of consciousness: A beneficial procedure is to give a few drops of the juice of *tulasi* leaves added with a little *saindhav* salt in the nose. Consciousness will come back immediately.

Night blindness (*rataundhi*): Using the juice of *tulasi* leaves as an eye drop several times a day will prove beneficial.

Children's afflictions: Prepare a *sherbet* or a sweet drink from *tulasi* leaves and give it in a

dosage of 3 *mashas*. This proves beneficial in many afflictions in children such as cold and fever, cough, vomiting, bowel complaints and flatulence.

Dysentery: A remedy is to mix a powder of nutmeg with a cold infusion of *tulasi*.

Poison: In all cases of poisoning, drinking *tulasi* juice to the fill is advisable.

Wound: For any kind of fresh wound or any injury, grind *tulasi* leaves and apply. This will heal up and fill the lesion. For infested wounds, clean with water in which neem leaves are boiled and tie the area with cotton dipped in *tulasi* juice.

Pains: Applying and massaging with *tulasi* juice gives relief even in serious pains like those of arthritis (pains at the joints), osteoarthritis and the pains at the tendons.

Sinusitis: Sinuses are narrow places in the bones of the nasal region of the face. A blocking of them due to phlegm often takes place resulting in constant running nose specially during winter. Even in severe cases of this type where surgical operation is the usual remedy, treatment with *tulasi* for a fortnight may avoid the need of such a surgery.

Kidney diseases: Treating them with *tulasi* and simultaneously stopping or highly reducing salt intake would be greatly beneficial. This will set right the kidney functioning and overcome all pains during urination.

Leucorderma: Constant application of the juice may remove the spots soon or the latter would disappear gradually and the skin would assume its normal healthy appearance.

Slimming down: To remove the excess fat tissue and reduce the body to its healthy and slim shape, using *tulasi* would be helpful. This is also useful in feeble digestive ability, gas trouble and reducing the body weight and removing the acidity of the stomach. Gripings and colitis (or twisting pains in the stomach) also respond well.

A cosmetic treatment: If the face has become disfigured with freckles, black spots and the like, keep rubbing with the fresh juice of the leaves of the dark *tulasi*. When this gets dried after an hour or so, wash with water, apply thinly sandal wood oil or chaulmogra oil. A fortnight of this treatment will remove the disfigurements and restore the lustre. Any spot will disappear by 2-3 times of rubbing.

Typhoid fever: Regular giving of *tulasi* with the fresh juice of the black *tulasi* tea morning and evening should be adopted. Such a tea is prepared as follows. Take equal portions (*half a tola*), of the *panchanga* i.e. roots, branches, leaves, flowers and seeds) of *tulasi*, bruise them and cook in half a *ser* of water till the latter is reduced to a quarter, strain through a clean piece of cloth, add a fine powder of seven grains of black pepper and true *talamishri*. Give this in a rather warm state. This constitutes one dose. Repeat it in the evening.

When fever comes down after 5-6 days 2-4 spoonfulls of milk may be added with the tea.

Another useful preparation of *tulasi* is its *sherbet*. Its preparation is as follows. Take 5 *tolas* of the *panchanga* of *tulasi*; *trikatu* (dry ginger, *peepul* and black pepper), 8 annas worth; *gulbanafsa*, 10 annas worth; and borax (*suhag*), 5 annas worth. Boil them together in $1^1/_2$ *ser* of water till the latter is reduced to 5 *chataks* (one *chatak* is 1/4th of a *ser*). Strain through cloth, add 5 *chataks* of one years old country sugar and cook again till it reaches a consistency when you can draw one string out of it. Remove from fire, cool and store in a closed container. Taking a *tola* of this, morning and evening would reduce the distress. Fever will also get mitigated and the gas trouble removed.

A *tola* of this *sherbet* is very much soothing in high fever.

To reduce the violence of the fever and bring about a sweating, giving a decoction of *tulasi* would be useful. Such a decoction to which 4 *rattis* of dry ginger powder is added and taken at bedtime in the night would remove the pain all over the body.

An attack of heat wave or *lu*: Take a *chatak* of country sugar, ten drops of *arka karpur*, one *pav* of cold water and 2 *tolas* of the juice of either black or white *tulasi* leaves.

Take this as a *sherbet* once in two hours.

Leucoderma: Constant application of the juice may remove the spots soon or the latter would disappear gradually and the skin would assume its normal healthy appearance.

Slimming down: To remove the excess fat tissue and reduce the body to its healthy and slim shape, using *tulasi* would be helpful. This is also useful in feeble digestive ability, gas trouble and reducing the body weight and removing the acidity of the stomach. Gripings and colitis (or twisting pains in the stomach) also respond well.

A cosmetic treatment: If the face has become disfigured with freckles, black spots and the like, keep rubbing with the fresh juice of the leaves of the dark *tulasi*. When this gets dried after an hour or so, wash with water, apply thinly sandal wood oil or chaulmogra oil. A fortnight of this treatment will remove the disfigurements and restore the lustre. Any spot will disappear by 2-3 times of rubbing.

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Stomach pain: Mix a *tola* each of the juice of fresh ginger and *tulasi* leaves, add a pinch of black salt and take this once in 3 hours.

A simple recipe for indigestion and feeble digestion is the following. Take 2 *tolas* of one year old jaggary, 1 *tola* of strained dry ginger powder and $1^1/_2$ *tola* of the juice of the leaves of dark *tulasi* and keep this entire mixture in sun throughout the day. Give this as a *chutney* thrice a day in hot water.

One more recipe for *tulasi* tea: Take 3 *mashas* of dry leaves of dark *tulasi* (dried on low fire) and 2 *rattis* each of the powders of cardamom, *dalchini*, clove and liquorice (*mulethi*). Boil them together in half a *pav* of water, strain, add milk and sugar and use as tea. This is very helpful in tiredness of the body, cough, cold and fever, mild fever and distress at the throat. This will rectify the lost taste in the mouth and will also prove useful in stopping vomiting, thirst and griping or conjestion at the chest.

Continued foul smell in the mouth will disappear if a few leaves of *tulasi* are chewed regularly as a habit.

Head lice: Prepare a decoction from *tulasi* leaves, keep it over night exposed to the dew, rub the head with this in the morning. 2-4 days of treatment will cure the distress.

For teething trouble in children: Take the leaves of dark *tulasi*; boil in water till one simmer comes

about. Remove from the fire, and store. Strain and keep giving once in an hour and do so twice.

*Tulasi* juice mixed with *ajwan* and honey will set right persistent cough in children.

For infants who vomit out milk as soon as it is taken in, give six *mashas* of *tulasi* leaves of which 2 *rattis* of *sambhar* salt and 1 *ratti* of *javakhar* are added and the whole is to be drunk comfortably warmed up.

A very salutary decoction: Take one *tola* each of fresh *tulasi* leaves, *bael* or *bilwa* leaves (*Aegle marmelos*) and also the tender peepul leaves. Bruise them all well and prepare their decoction in half a *ser* of water by boiling them till the water becomes 1/2 *pav*. Add one *masha* of powdered black pepper. This is a dosage for the adults to be given only once in the morning. For children, half the quantity is enough. For infants less than 3 years old, give still half of this dosage. This will ward of fever due to all of the three *doshas* and also gas troubles and constipation.

### 2. Ocimum gratissimum Linn

**Names**

There are many names in Sanskrit, *ajaka* (goat like, in smell, referring really to the foul smelling species and not this plant which is fragrant, really) *doshakleshi* (removing the vitiations or the *doshas*), *nidralu* (inducing sleeping or stupour), *Ramatulasi* (rather whitish, as opposed to

*Krishnatulasi*, the dark or the dark purple, a variety of *Ocimum sanctum* L., see above), *shopha hari* (remover of morbid swellings, the *shopha*), *sugandhi* (the fragrant), *sukshma patraka* (leaves being small), *vanabarbarika* (the wild plant from the Barbars near Morocco), *vriddha tulasi* (the older *tulasi*).

In English, it is Large Basil, Lemon Basil, Shrubby Basil.

It is *bantulsi*, *malatulsi* (used for making garlands), *Ramatulasi* in Hindi; *Ramatulasi*, *rantulasi* in Marathi; *ban jere* in Punjabi; *elumicchan tulasi* (the lemon tulasi), *peruntulasi* (the bigger *tulasi*) in Tamil; *Ramatulasi* in Bengali; *nimbetulasi* (lemon tulasi) in Kannada; *nimba tulasi* (lemon tulasi), *Rama tulasi* in Telugu.

The very common name for this plant in regional languages is *Rama tulasi*; their other names stress the lemon like smell, the bigger size and the wilder habit of the plant.

**Botany**

This is a perennial much branched shrub, woody below. Stem and branches are more or less squarish in section; the young ones are with small hairs all over. Leaves are elliptic-lanceolate (long and lance like); tip, acute; margin, coarsely serrate (sharply teeth like) or crenate (where the teeth are rounded between sharp notches), hairy on both the sides and gland dotted; base, cuneate or wedge shaped, stalk, slender, long and hairy.

Flowers are arranged in simple or branched, rather short racemes, in somewhat close whorls; their axis is quadrangular and softly hariy. Bracts, the leaflike structures below the calyx form a sharp cup from a broad base. Calyx is persistent in the fruit, becoming twice longer then, hairy and glandular. It is bilipped, the upper lip is rounded, veined, curving inward in the fruit, longer than the lower; the lower lip is strongly nerved. Corolla is pale, greenish yellow, softly hairy outside; bilipped, the upper lip with 4 rounded teeth; lower lip, longer than the upper. Nutlets are small, completely enclosed, subglobose, rugose or wrinkled and brown in colour.

This is found all over India and is often cultivated. Its native country is not known for certain.

**Medicinal Properties**

Its constitutents are: thymol, eugenol and methyl chavicol. The plant has a pungent taste but a pleasant, lemon like flavour. It is *ushna* or heating and alexiteric (i.e. countering poison) and is useful in bringing vomiting as well as fits under control. It is used beneficially in skin diseases, erysipelas (irregular, painful and red, spreading skin affliction), inflammations in general and urinary retention or its painful discharge. But, its use is known to cause insomnia or sleeplessness. This is styptic (checks bleeding), stimulant, soothing and diuretic and also carminative (i.e.

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removes gas troubles in the belly). It is generally combined with other drugs for cough.

Yunani physicians consider it to be bitter and sharp in taste; and also as a carminative, helping in expelling the gases from the bowels and aphrodisiac, exciting the urge of sex. It is believed to be useful in the diseases of the brain, the heart and the liver and also spleen. It removes foul breath from the mouth, strengthens the gum and is good for griping as well (the twisting pains in the stomach) and also piles.

Aromatic bathing with the fumigations prepared from this plant is advised with profit in treating rheumatic pains and paralytic debilities. In the sores (apthae) of children, a strong decoction of the plant has been found to be beneficial.

A decision of the leaves taken in orally is of value in rectifying seminal weakness.

This also happens to be an esteemed remedy in gonorrhoea, the veneral disease.

The seeds are employed in treating headache and neuralgia or the nervous pains. Their infusion is given in 1/2 to 1 ounce dose in in gonorrhea, scanty urine or scalding urination. Leaf juice is also given then in rice water.

In the islands of La Reunion, the plant is considered a digestive and a good medicine for chest pains and a few other diseases of the chest. This is a very popular remedy in Madagascar.

where it is considered as aromatic, digestive and tonic as well as an antiemetic (stopping vomiting), antishasmodic (counteracting convulsive contractions) and antineurolgic (countering nervous pains). In addition, this is advised in chest diseases and pains. Some tribals chew the leaves for getting rid of the tooth-ache and sniff the juice of the leaves or the powdered seeds to overcome their headache.

In stomach ache the leaf juice and for vomiting in infants and children the seeds ground in honey are given. Baths and fumigation of the plant are beneficial in rheumatism. The aromatic roots are made into a paste and used like a soothing balm.

### 3. Ocimum basilicum Linn; the Kitchen Tulasi

**Names**

There are many names in Sanskrit for this plant, though the reference of their meaning to the plant is by no means clear in many cases. They are: *ajagandhika* (smelling like goat, though the plant has a strong and very pleasant smell), *apeta rakshasi, asurasa* (*not* full of juice, though the plant is juicy enough to form a regular culinary herb); *barba, barbari, barkara, varvara,* (coming from Barbar regions, near Morocco), *kharapushpa* (flowers, rather rough to touch), *manjariki* (referring to the flower cluster, *tulasi dvesha* (hating or countering *tulasi*), *tungi, vishva tulasi, varavaro, manjariki.*

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In English it is Basil, Common Basil, Sweet Basil and in French it is Basilic Culsinieres (the culinary basil used as a flavouring herb in kitchen) and Basilic cultive (the cultivated basil).

In Hindi it is *babruitulsi, babul, bahai* (all related to Barbara, see above), *sabzah* (the common vegetable) *tukhmerihan* (from Tukhmeria?); in Punjabi, *babri, furrunjmushk* (the foreign musk i.e. fragrant plant); in Bengali, *babritulasi, marva, sabja, tukhamariya; sabja,*; *kamakasturi* in Kannada; *tirnut patchi, tirunitru* in Tamil and *bhutulasi, rudrajada, vibutipatri* (smelling like vibhuti, the sacred ash) in Telugu.

The names in regional languages stress the sweet smell the foreigness (in use or nativity) and the use in kitchen of this plant.

**Botany**

This is an erect branching herb, glabrous (smooth) or more or less with hard (hispid) hairs all over. Stems and branches are green or sometimes purplish. Leaves are ovate; tip, acute; margin, entire i.e. uncut or more or less toothed or lobed; the base is wedge shaped and with a long stalk. Flowers are arranged in dense racemose (cone like, and elongated) clusters, the terminal clusters on the plant being usually longer than what grow laterally. Calyx is persistent in the fruit and infact becomes much larger but with a very short stalk; it is bilipped, the lower lip with two central teeth longer than the upper rounded lip. Corolla is white,

pink or purplish, smooth or variously hairy. Nutlets are small ellipsoid, black and the surface is provided with pit like marks all over.

The plant is considered botanically to be native in the lower hills of Punjab. It is cultivated throughout India more or less and also in Sri Lanka. This small annual herb or shrub is indigenous to Sindh and Persia also. It is well cultivated in many Indian gardens.

**Medicinal properties**

The plant is pungent, sweet smelling and dry (*ruksha*) in its action as a drug. It is stomachic, antihelmintic (destroying helminthic worms), alexipharmic (acting against poisons) and antipyretic (countering fever and its rise in temperature, lessening the latter). It improves taste and is useful in the disease of the heart and the blood; leucoderma; itches and burning sensations anywhere, quietening their severity. It is useful in curing biliousness, *kapha* and *vata* aggravations. The seeds are useful in quenching thirst; they can very well be added for cold drinks and squashes.

Unani physicians consider it as having a bitter, hot taste. It is diuretic and an emmenagogue, restoring menses. It is useful in the diseases of the heart and the brain; chronic pains in the joints; inflammations in general; asthma and the enlarged spleen. The juice gives lustre to the eyes and is also good for toothache, earache and headache. When this is mixed with a pinch of camphor and

applied to the nose, it stops the bleeding there immediately.

The roots are used in correcting the bowel complaints in children. The leaves are also useful in treating croup, when their fresh juice is warmed and given along with honey. Croup is an inflammation of larynx and trachea in children, associated with a peculiar ringing cough, present especially in diptheria.

This juice also forms an excellent - and favourite remedy for curing ringworm and the crushed leaves for stings of scorpion. It also happens to be an equally popular remedy for snake bite.

The flowers exhibit a stimulant, diuretic (helping in profuse urine flow) and demulcent, viz. soothing and refreshing, property. They can be very well soaked in cool drinks and squashes and then filtered to increase the delectability of the drinks.

The seeds are mucilaginous and cooling, also utilisable as the *tulsi* seeds for the drinks. An infusion of it is given in gonorrhoea as well as diarrhoea and dysentery. A cold infusion is believed to relieve the after pains of child birth. The seeds are washed, pounded and grounded as a paste and used as a poultice for curing unhealthy sores and sinuses or narrow cavities through which the pus is discharged. In the form of *sherbets* or cool drinks wholly made out of them, they are given as medicative drinks to cure habitual constipation and also the internal piles,

Dropping the seed juice in the ears cures the ear-ache and also dulness in hearing.

A decoction of the leaves and the stems is given in Guinea, in fevers, neuralgia or the nervous pain, common cold and also the kidney troubles. This is also used as a lotion for the eyes. In Annam, an infusion of the plant is considered antiemetic preventing vomiting and counteracting to diarrhoea. It is also given on pains in the head, and gouty or rehumatic joints. Its gargling will remove the foul breath from the mouth. An infusion of the seeds is given for fevers. In cases of snake bite, the seeds are chewed, one portion of it swallowed and the other portion applied to the bitten part.

Both the seeds and the leaves yield an essential or volatile and aromatic or sweet smelling oil. Leaves contain an yellowish green essential oil which on being kept for sometime crystallises and is then known as *Basil-camphor*. This oil also contains a terpene and the seeds have a large amount of mucilage.

Leaves are fragrant and aromatic; they are favoured seasoning material to special dishes. A teaspoonful of seeds soaked in water swells into a mucilaginous jelly. Adding a little sugar makes it an excellent drink which is also useful in kidney diseases as well as internal piles. Leaf is useful in treating croup; warm juice with honey is given then.

Leaves are dried, powdered and used as a snuff in ozena (*peenas*) disease. Such an use is very prevalent in Bengal where a 12 per cent decoction is also used to wash the nasal area beneficially.

Mixed with ginger and black pepper the leaf juice is given in cold stages of fever.

Root is used in bowel complaints among the children.

Sweet Basil is a popular seasoning herb in England as well as the Continent. The leaves are used in stews and dressings and as an ingredient of such famous European dishes as Mock turtle soup and the Fetterlance saussages; it is quite popular in French cooking. The golden yellow essential oil is used in perfumery and various beverage. it is produced commercially on a small scale in California; the oil is actually obtained from this and a few other species of *Ocimum*.

**Modern Trials**

Tulasi is one of those famous Ayurvedic plants where modern assessments have been found to be highly encouraging, so much so the plant continues to attract many modern pharmacological researches. A few of the promising areas well proved by animal experimentation and others are: antifertility, blood pressure, insecticidal and anti-bacterial activity, reduction of serum cholesterol and so on.

## B. PATHERCHUR-COLEUS

There are many plants called *pather chur* or *pashana bhedi* in Sanskrit referring to plants that can beak urinary stones. *Coleus* viz. *Coleus amboinicus* Linn. or *C.aromaticus* Benth is one such plant.

This has a camphor like smell, much praised in the kitchen.

**Names**

The is *pashana bhedi* in Sanskrit, referring to its alleged used as a breaker or crusher of renal stones.

It is called Indian Borage in English.

In Bengali, it is *patherchur;* Marathi, *owa, pathorchur;* Hindi, *patherchur;* Kannada, *dodda pathre soppu* (the greens with a large leaf) and Tamil, *karpuravalli* (the camphor creeper.)

**Botany**

This is a perennial herb which grows often along the ground rooting at many places, so that the vegetative propagation of the plant is easy, short rooted segments of the well grown stem cut and planted elsewhere growing into new plants, vigorously. The plant is shrubly below, roughly villous (i.e. with long, soft hairs) or tomentose (where the hairs are soft and matted into a cottony covering), all over the stem and its branches, specially the younger regions. Stem is fleshy, rounded and not quadrangular as in many other

herbs of the family. Leaves are stalked, broadly ovate or cordate (heart shaped); margin, crenate i.e. divided into rounded segments between sharp notches; fleshy and very aromatic with a tinge of camphor like scent added to it. The whole plant has a strong but pleasant *ajwan* like odour. Flowers have short stalks arranged in densely many flowered clusters, where however, the flowers occur in rather distant whorls. Calyx is billipped; upper lip, ovate acute and membranous while the lower tip is acuminate, i.e. the pointed tip is rather drawn out into a long projection. Corolla is pale, purplish, with the tube short while the throat is inflated, bilipped, but both the lips are short.

This is well cultivated throughout in India and Sri Lanka, often in the kitchen gardens; it is presumed to be a native of Molucca islands. It constitutes a much liked vegetable employed for many tasty side dishes. This is much used also to flavour alcoholic drinks. Leaves are its useful parts.

**Medicinal Properties**

The fleshy leaves are said to have a specific action on the bladder and are reputed to be useful in urinary diseases specially in dissolving the urinary stones, because of which reason the plant is called the stone breaker or crusher. They contain an essential oil having cavacrol. They are also used in correcting vaginal discharges. Their juice is mixed with sugar and given for children suffering from colic, an affliction where a severe

pain and flatulent distension of the abdomen occur without diarrhoea; here it acts as a powerful aromatic carminative, expelling the morbid collection of the gases there. Inspite of its somewhat intoxicative nature, people of Bengal employ it in colic and dyspesia or indigestion. In Sri Lanka a decoction of the leaves is regarded as beneficial in asthma and chronic cough. In Vietnam also the juice of the leaf is given to children as a carminative and for relieving their colicy pains. In addition, a decoction of the leaves is given for asthma and chronic bronchitis and also in epilepsy and convulsions.

Ayurveda regards it as light, dry, strong, bitter and somewhat astringent. This is useful in many affliction of digestive system such as tastelessness, feeble digestion, indigestion, constipation, stomach pain-even shooting pains, dysentery and *grahani* (intestinal mal absorption). Among the respiratory afflictions, hiccup, cough and breathing difficulties respond well for its treatment. For kidney diseases-specially the difficult urination and stones in urine this is an ideal drug. The herb is a pain reliever and brings about a normalcy in convulsion stages. It is somewhat intoxicating and counter acts poisons. The leaves prove beneficial in all disorders of urinary system. Juice of the leaves mixed with sugar is a powerful carminative given in indigestion and colicy pains of the stomach.

Some specific applications are as below:

*Urinary diseases;* A decoction of the leaves is given in case of difficult urination, bladder diseases, gravels and stones in urine; and also in chronic cough and bronchitis and, dropsy. This is effective in epilepsy, convulsions and even in coma stages.

*Conjunctivities*: A few drops of the fresh leaf juice on the eye-lids will quieten the pain.

*Headache and bites by the Centipedes*: Prepare a paste of the leaves and apply at the temples or the affected parts, respectively.

*Stomach pain in children*: 5-6 drops of the leaf juice are given mixed with sugar candy or sugar. For adults, ginger powder is sprinkled on this and then given.

*Urinary stones due to pitta*: A decoction of the leaves is given adding honey and *shilajit*.

*Leucorrhoea* or *white discharge in women*: Honey is added to the decoction of *tulasi* or *Coleus* leaves and then given.

*Intestinal malabsorption*: *Pakodas* are made out of the suculent leaves and given for eating.

*Intestinal worms*: Fresh juice of the leaves is drunk with water.

*Fresh wounds or injuries*: A poultice of the leaves and the tender shoots is tied.

*Cholera*: The fresh juice of the leaves of the herb is helpful in controlling the loose motion due to cholera quite quickly.

The dosage of the juice is 6 drops to 6 *mashas* or 1 *tola*. A greater dosage will however prove intoxicating. This is rather harmful to persons of *pitta* constitution. Punarnava or *Boerhaavia punarnava* is a substitute drug.

The thick leaves of the herb are eaten with butter and *roti*. They are also prepared in the form of curds dishes (*tambuli*) or as *bhajjis*. Expressed juice is applied around the eyes to relieve pain in conjunctivitis. This is also given in chronic cough, fever, epilepsy and other convulsive affections. This is called *ovapana* because of its aromatic taste and odour resembling *ajwan*.

**Household remedy**

Chewing a few leaves of *Coleus* with a couple of crystals of salt will improve digestive power.

Consuming the leaves for about a week will cure jaundice.

Frequent eating of these leaves in the form of a curds preparation or *tambuli* will ward of cough, breathlessness, indigestion, twisting pains of stomach or colic, mental upsets or even insanity. *Tambuli* is prepared as follows. Clean a few big sized leaves and fry lightly. Mash it in curds, add salt and season with mustards, some dried chillies and cumin seeds. This is a tasty and medicative side dish which is beneficial in all ailments connected with excess of *pitta* aggravation.

Take two to three big sized leaves, about four *tulasi* leaves, add one betel leaf as well and grind all of them together and squeeze out the juice. Mix this juice with honey and give it to the child. This will cure common cold and catarrh.

Grind *Coleus* leaves and turmeric into a smooth paste, apply this to all over the body and take bath after ten minutes in hot water. Eat on that day *tambuli* of *Coleus* and *chutney*, of *Coleus*. A measure like this for a few days will eradicate eruptions over the body that are caused by aggravations of *pitta*.

Go on consuming seven to eight days continuously four to fives leaves of Coleus raw along with salt, chewing it well and then taking in. This is very effective in curing jaundice.

### C. LAVENDER

Lavender is one of the highly praised and delicate perfumes that was being used in such ancient times as those of the Imperial Roman ladies who employed it abundantly in their baths. Even now it is one of the important scents of the world. The true lavender plant (*Lavandula officinalis*) is a native of Southern Europe and it occurs there on dry, barren soil in the wild though it is also well cultivated. It is a low shrub bearing terminal spikes or cone like clusters of very fragrant bluish flowers. It is grown at an altitude of 1500 to 1800 feet in South France. As it is cultivated for a long time, there are many horticultural forms and

hybrids. It has a very clean and refreshing odour and the dried flowers are used in sachets and to scent chest of drawers as well as clothes. This oil is an important constituent of the world famous. French scent, Eau de Cologne and other high grade perfumes. It is also used in soaps, cosmetics and in medicine, mainly as a mild stimulant. Lavender water, a mixture of its essential oil in water and alcohol is a highly popular toilet material in England.

There is an interesting industry in France based on lavender. This is the preparation of crystalised flowers of lavender. These are prepared by placing fresh flowers in baskets and allowing a sugar syrup to trickle over them until no more can be absorbed. They are then dried in the sun or with artificial heat. These edible confections have the flavour imparted by their respective essential oils. The other flowers used similarly are violets, rose petals, carnations, lilac and orange. The industry is centred in Greece and France. Lavender is thus one of the flavouring materials for food stuffs also.

*Lavandula latifolia* or Spite lavender is a coarser shrub and yields an inferior grade of lavender oil. This can be grown even in lower altitudes than the true lavender and is extensively cultivated in France and Spain. This is also used in perfumes and cosmetics and to flavour the meat jellies known as aspic.

The following species of *Lavandula* are available in India: *L.angustifolia*, *L.latifolia*, *L.spica* *L.stoechas* and *L.vera* or *L.officinalis*.

Of these, *L.stoechas* Linn is the Arabian or the French Lavender. It is known as *ustukhudusa* in Arabic and Bombay bazaars; *dharu, alaphajana dharu* in Hindi; *lavendra-na-phul* in Gujarati and *alphazema* in Portuguese. This is a native of Arabic and Mediterranean coasts to Asia Minor. It has a very agreeable aroma and resembles true lavender and is much used by Mohamedan physicians. There are two more species: *L.burmani* called *jangli lavendar* common in the West from Konkan region to Coorg in Western India where snakes abound and the plant is much reputed as a drug for snake bite. *L.carnosa* is the thick leaves lavender or *panjir kapat* in Hindi.

We shall discuss below a few of these Indian species:

The genus *Lavandula* has about 20 species and they are distributed from Mediterranean coast to India. Members of this genus are all aromatic, stimulant and carminative (capable of removing gases from the bowels), expectorant (causing cough) and antispasmodic (countering spasms or involuntary muscle contraction and expansion).

The following species are used medicinally: *L.dentata, L.spica, L.stoechas* and *L.officinalis*.

The flowers of the following are recognised officinal drugs in the pharmacopea of several European and other countries: *L.latifolia* (Italy), *L.officinalis* (in many countries), *L.spica* (Italy, Spain, Germany).

The oil from *L.latifolia*, *L.spica*, *L.officinalis* is an officinal drug in large number of countries; U.S.A. Britain, Japan, Russia, Continent and so on.

### 1. Lavandula burmanni Benth

**Names**

This is called *sarpanocharo* (a drug for snakes) and *asmini galgota* in Deccan and Gujarati; *jangli lavender* in Hindi.

**Botanical Aspects**

This is a slender, erect herb. Stems are simple or branched, leafy, quadrangular and finely pubescent or hairy. Leaves are stalkless or almost so, 3.8-10 c.m. long and nearly as broad and divided deeply in the form of almost separate leaflets; their lobes in turn are linear, entire or often cut or toothed further. They are smooth and non-hairy or sometimes pubescent above but always pubescent and pale coloured on the under surface. Flowers are arranged in spikes or cone like structures; they are usually simple but sometimes slightly branched. Corolla is blue or white and bilipped.

The plant is common in Mount Abu in Gujarat, Chota Nagpur, Jubbalpore and richly so in Konkan, Khandesh and Deccan region.

**Medicinal Importance**

The herb is abundant specially in those regions where snakes abound. It is believed to be an

antidote to snake bite. Powdered leaves are given for inhalation to the person stung by a serpant in order to keep him awake and prevent from sleeping; this measure aids in effecting a cure.

The roots are rubbed with water and a solution of the paste is applied all over the sting of wild and poisonous animals.

The essential oils expressed from its flowers and leaves are different from each other physically and also chemically.

The villagers and shepherds of Barda Hills in Kathiawar in Gujarat are reported to use this plant regularly as a medicine.

### 2. Lavandula stoechas Linn.

**Names**

This is called *dharu* or *ustu khudus* in Hindi; *stoikhados* in Yunani Medicine; *anisul arvah, hafizul arvah* in Arabic; *alphazan* in Bombay bazaar, and *tuntuna* in Bengali; *lavendar na phula* in Gujarati.

According to Dioscordies, the ancient herbalist of Greece, Yunani physicians designated this plant as 'stoechas' because it originated in the island clusters called Stoechades. This latter terms is derived from an Yunani terms *ustu khudus* which means *ojorashaka* in Sanskrit, or guarding or protecting *ojas* in the body that signifies vitality or vigour. The term *alphazan* is a corrupt from of the Portugese term *alphazema.*

**Botanical Aspects**

This is a small sized shrub that grows in barren soils of jungles and on hills. This grows to a height of 2 feet and the stem is coarse, bearing leaves in bunches. Leaves are like those of wild thyme or *saatar* (*Zataria multiflora*) but little longer and thinner. Flowers are generally violet or brinjal coloured, short stalked and found in the axils of heart shaped bracts, that are sweet smelling. They occur in many flowered bunches with prominent bracts that fall down. Flowers are actually white but mixed with blue added also with a little shade of yellow and red, the whole being velvety as they are covered with soft and fine hairs. They are thus delicatley picturesque. They give out a strong camphor like odour in addition. Smelling them deeply would produce a sneeze in fact. The taste is somewhat strong and pungent. This yields an oil that is reddish yellow and whose aroma reminds one of rosemary oil. Seeds are somewhat like bracelet in shape, fine, rather flat and blackish yellow. Rubbing them would give out a camphor like smell. Their taste is also strong and pungent. The plant growing in Hazaz, Rome and Arabia is more virile than the Indian counterpart.

The plant is abundant in Europe, Canary Islands, Portugal, Asia Minor and Arabia and also in India, specially in Bihar and Bengal.

Two "varieties" of this plant are available in India. They are known as *Kashmiri* (this is actually quite a different plant botanically and called

*Brunella vulgaris* Linn discussed below and producing bluish white and very fragrant flowers) and *jangli lavendar*. (This is *Lavandula burmanni* Benth discussed above).

**Medicinal and Other Importance**

This is much used by Mohamedan physicians who regard it as good for head, resolvent (helpful in breaking up), deobstruent (capable of overcoming obstructions) and carminative (removing gases from the bowels). It is prescribed in colicy or twisting pains of the stomach, as well as chest affections. It is regarded as expelling *kapha* and *pitta*. In a reputed work called Makhzan-el-adwiya it is called a "broom of the brain" sweeping away all of its *kapha* impurities and to strengthen brain powers, expel the crudities of brain and also clarify the intellect. It is a good stimulant and is also aromatic; a general carminative, diaphoretic (promoting sweat formation), expectorant and antispasmodic. Besides, it is an antiphlogistic (acting against heat and inflammation) and an emmenagogue (setting right the menstrual rhythm and its disorders).

An essential oil is distilled from its flowers. This is used in colic and chest affection and also to relieve biliousness and locally to get a relief from headache.

Fomentations with the flowers relieves rheumatic and neurolgic (i.e. nervous) pains.

Yunani physicians employ the drug mostly in cases of partial paralysis, facial paralysis, epilepsy, nervous tremors and amnesia or forgetfulness or loss of memory. It is much praised as a strengthener of brain-its tissues and nerves. It is also reputed to increase intelligence.

In cases of shooting pains of the nerves and torpor (*ama vata*), its docoction is regarded as beneficial. It helps in diseases of the chest and in the expulsion of *kapha* during bilious and phlegmatic complaints. But the best reputation of the drug is that it is an efficient "cleanser" of the brain.

Two deleterious effects of the use of this drug are that it may cause nausea and excessive thirst. Its administration is not advisable for persons of *pitta* or bilious constitution. A means to overcome the adverse effects of this herb is to employ lemon *sherbet*.

Modern medicine regards it as sweet, hot and dry. It expels gases, counteracts spasms or involuntary muscular contraction and expansion; it is also a stimulant and destructive of phlegm. This is given in phlegmatic complaints and digestive upsets. In dry cough a decoction of *ustukhudus, saunf, mulethi* (liquorice) and *Jufa* (*Hyssopus officinalis*) is administered.

Another common application of the drug is in cases of gas in bowels, shooting pains of the stomach and in psychotic seizures (*bhutonmada*).

We shall now discuss a few associated plants; all of them are regarded to be some "varieties" of lavender and all belong to the same family Labiatae but often to different species or even different genera. These plants are *Brunella vulgaris* (the *Kashmirir ustukhudus*), *Lavandula carnosa* now known as *Anisochilus carnosus* (the thick leaved Lavendar) and *Zataria multiflora* (*saatar* in Hindi).

### 3. Brunella Vulgaris

**Names**

This is called by many names in English: Black Man, Carpenter's Herb, Heal-all, Hook-heal, Self-heal and Sickle wort.

This is known as *anasulrawah* in Arabic; Brunetti in French; *dharu* in Hindi; *ustekhadus* in Persian; *austa khadus* in Punjabi and *ustu khudus* in the bazaars of Bombay.

**Botanical Aspects**

This is a thinly hairy erect or ascending and small sized herb. Leaves are stalked, ovate or oblong, 25.5 centimetres; the margin is entire or toothed and the tip is obtuse or acute. Flowers are, 1.32 cm long, violet - purple in colour and occur in whorls of 6, crowded in erect, terminal spikes that bear a pair of stalkless leaves at the base. Floral leaves are bract like, hairy, purple margined, broadly ovate, overlapping and attractive. Calyx is also tinged with a purple colour, bell shaped and

bilipped. Corolla tube is broad, slightly longer than the calyx, 2 lipped; the upper lip is hood like and notched.

The plant is distributed in temperate Himalayas from Kashmir to Bhutan at an altitude of 4,000 - 11000 feet and Khasia Hills in Assam at 4,000 to 6,000 ft. It is also found in the hills of South such as Nilgiris, Pulneys and those of Kerala.

**Medicinal and Other Importance**

Yunani physicians utilise the drug more commonly. They regard the seeds as having a sharp, bitter taste; these are antipyretic (bringing down the heat of fever), laxative and tonic. They are also diuretic, provoking much urination and can kill parasitical germs. They are useful in inflammations, diseases of the heart, difficult breathing; lung troubles, bronchitis and muscular pains. They are beneficially employed in giddiness of the head and also insanity. A very important use is in removing white patches in the cornea and weakness of the eye due to old age.

Hill tribes in Punjab regard this as an expectorant (cough inducing) and antispasmodic drug. The green leaves are smeared over with castor oil and warmed on the fire and then applied externally to the anus in cases of painful piles.

In China and Malaya the plant is used for fever and coughs. It is regarded there as useful in rheumatic complaints and also as a good alterative

(capable of bringing about desirable alterations in the vital functions of the body) and a tonic drug.

The essential oil from this herb consists mainly of d-camphor and fen d-chone and traces of fenchyl alcohol.

### 4. Anisochilus carnosus Wall

Sanskrit calls this as *ajapada, utpala bheda* and *indupami.*

In English it is Thick leaved lavendar.

**Names**

This is known as *panjurika pat, sitaki* in Hindi; *ajamanupatru, ajama, ubhoratavelio* in Gujarati; *kapurli, karpuravalli* in Marathi; *doddapatri, karavaeru* in Kannada; *karpuravalli* in Tamil; *chomara, kattukuska* in Malayalam; *karpuravalli, roga chettu* (a plant for disease) in Telugu.

**Botanical Aspects**

This is an annual, erect herb growing to a height of 50-60 centimetres. Stem is stout, bluntly quadrangular, smooth and non-hairy or finely hairy and the stem is often tinged with a reddish hue. Leaves are broadly ovate, with an obtuse tip and a margin that is thrown into a series of curls. The blade is thick and fleshy, usually hairy beneath and the base of the leaf is rather heart shaped. Flowers are stalkless and occur in dense. cylindrical spikes that elongate when fruits are

formed. Bracts are also broadly ovate, with an auminate or a drawn out tip; these are hairy and glandular with cilia or minute series of hairs at the margin. These bracts fall down very quickly. Calyx is bilipped with the upper lip recurved in the fruit over the lower lip and closing the mouth. Corolla is pale purple, hairy on the outside; its tube is narrow below, but inflated and bilipped above.

The plant occurs in Western Himalayas, Bengal, Madhya Pradesh and in Tamil Nadu and elsewhere also in the South eg. Mysore and Malabar.

**Medicinal and Other Importance**

Leaves and the essential oil of the plant are used medicinally. The volatile oil is a stimulant, diaphoretic (sweat promoting) and expectorant (cough inducing). Infusion of leaves and stem is useful in cough and colds. An antihistamine activity of the oil was found on the smooth muscles of both the uterus and the intestines in guinea pigs.

Fresh juice of the leaves is mixed with sugar candy and given for curing coughs in children: Tamil physicians prefer this for treating diseases of the throat.

Mixed with gingiley oil and sugar it forms a cooling liniment (i.e. a thin layer of ointment) for the head.

Volatile oil is given in dose of 1-3 minims on loaf sugar.

### 5. Zataria multiflora Boiss

**Names**

This is known as *saatar* in Hindi as well as Indian bazaars and also amongst yunani physicians. It is called *alsathar* in Arabic.

In English it is called Wild Thyme.

**Botanical Aspects**

This is a very small but much branched shrub. The branches are somewhat stiff, slender, whitish and provided with very minute hairs all over. They pass almost gradually into inflorescences or flower clusters that are cone like or spikes of stalkless flowers or sometimes much branched panicles. Leaves are very small, stalked, round like an orb, leathery, often spotted with white glands all over and almost smooth and non-hairy. The final flower clusters may be globe like, dense or all reduced to stalk like and very close clusters as in *Leucas*, the very common member of the family Labiatae. Bracts are oblong and as long as the calyx or sometimes shorter. Calyx is membranous. Corolla is whitish and slightly longer than the calyx. Flowers are small, usually reddish or blue.

The dried thin branches mixed with the flowers are available in the Indian bazaars specially at Bombay under the name of *saatar*.

The plant is available in Arbia, Iran, Khorasan, Afghanistan, Baluchistan and Western India.

There are three varieties in this plant under the names : *jangali* (wild), *pahadi* (of the hills) and *bagi* (or garden viz. cultivated).

**Medicinal and Other Importance**

The leaves contain an essential oil smelling like mint leaves or *pudina*. They also have a red coloured, tasteless acidic resin and a certain amount of tannic acid.

Yunani physicians employ this drug more. They use it commonly in the form of a distillation called *ark saatar*. It is regarded as 2nd degree hot and dry.

The drug removes obstruction in the body for its actions, dissolves oedemas or swellings and regulates alimentary system. It allays pain, expels phlegm, removes urinary stones, promotes urination and menstrual flow and kills worms in the stomach, specially the tapeworms. It cleanses liver, intestines and stomach. It is particularly effective as an aphrodisiac (promoting the urge of sex), an increaser of hunger and a promoter of taste in the mouth. It is thus a commendable seasoning herb to flavours culinary dishes. This is also a cure for stomach ache.

To remove enlargement of the spleen this is ground with vinegar and applied or it is soaked in vinegar and given as a drink.

In tooth-ache, a gargling is done with its decoction.

To reduce oedematous swellings it is ground, mixed with honey and applied.

In case of cough, breathing difficulty and to expel phlegm from the lungs this is applied externally ground with dried figs.

To destroy urinary stones it is given along with other suitable drugs.

Its juice dropped in ear will relieve ear-ache.

This is contraindicated for patients of lung diseases. Counteracting agents for this purpose are vinegar and honey.

Modern medicine considers it as an useful aromatic drug that is stimulative, excitatory and sweat promoting.

## D. PATCHOULI

Patchouli is a fragrant essential oil obtained from the fleshy leaves and young buds of a plant botanically known as *Pogostemon cablin*. This is a small shrub that grows wild in South eastern Asia and is cultivated in China. The leaves are first fermented in heaps and then the aromatic oil is distilled. The oil is dark brown in colour and has a powerful odour resembling that of sandalwood. It is also one of the best fixatives for heavy perfumes as it is having a very low rate of evaporation and this aspect vastly increases the value of patchouli oil in the future growth of the industry of aromatic oils. This is also used in making soaps, hair tonics and in scenting tobacco for high grade cigarettes. It is

responsible for the characteristic odour of the export quality of the Cashmere shawls which are always shipped in patchouli scented containers.

The genus *Pogostemon* contains about 35 species and they are mostly distributed in Indo Malayan regions. The following species occur in India. They are P.*plectranthoides* Derf, *P.purpurascens* Dalz, *P.parviflorus* Benth and *P.patchouli* Pellet that yields the patchouli oil in India. Among these, *P.plectranthes* has similar properties to those of *P.parviflorus* and sometimes the two are regarded as just synonymus.

The genus *Pogostemon* thus includes two medicinally useful and aromatic plants, *P.parviflorus* Benth which is not so famous and *P.patchouli* Pellet which yields the famous "oil of patchouli" the perfume of great commercial value. Both do not seem to have any name in Sanskrit. Chambers English dictionary however traces its name *patchouli* to a Tamil word *patchhai* green and *ilai* the leaf, referring to its rich green leaf.

### 1. Pogostemon parviflorus Benth.

**Names**

It is called *pangra, pangla* in Marathi.

**Botany**

This is a shrubby plant. Stems and branches are obtusely quadrangular, usually purple, smooth, shining or sometimes slightly and softly hairy.

Leaves have a strong odour of black currants or grapes when bruised; they are broadly ovate; tip, acute or acuminate (sharply drawn out); margin, coarsely and irregularly but doubly toothed; surface, smooth or slightly hairy; base, wedge shaped. Flowers are arranged in dense spikes in turn forming pyramid like loose panicles or much branched elongated clusters. On the axis, the flowers occur in whorls, usually closely packed with bracts, or the leaf like structures below the calyx. The latter are much pronounced and almost equal in size to the calyx, which is hairy and glandular. Corolla is bilipped, the upper lip white, soft with purple, 3-lobed, the middle lobe, narrower than the two laterals; the lower lip is entire and white. Nutlets are small, ellipsoid, with their upper surface, rounded, smooth, shining and black.

The plant occurs throughout India mostly.

**Medicinal Properties**

The fresh leaves are crushed and ground into a paste and applied as poultice to clean the wounds and promote healthy granulation or new tissue formation. In Satara, in Maharashtra, the juice is given in colic and fever.

The root is reputed as a remedy in preventing haemorrhage or bleeding and has been beneficially administered in uterine haemorrhage.

The roots are used in Ratnagiri, another district of Maharashtra, where snakes abound, as an

antidote to the poison of *Echis carinata*, the viper which is a common poisonous snake there. Fresh roots of the size of an almond is given internally thrice a day and the paste of the roots or poultice of the leaves is applied simultaneously at the spot of the bite.

Sushruta prescribes this plant along with other drugs as an antidote to snake bites and scorpion stings, though some modern investigations do not support this claim.

The plant contains an alkaloid called pogostemonene, which is an yellow varnish of a slightly bitter taste and musk like odour, trimethylamine, a volatice oil with an odour like that of cedar wood, another resin and an astringent matter.

Medicinally this is styptic (i.e. helping in stopping bleeding) and stimulant.

**2. Pogostemon patchouli** Pellet (previously *P.heyneanus Benth*)

**Names**

This is known as *pacholi* in Hindi; *patchauli, patchapal* in Bengali; *pacha* in Gujerati; *kattam* in Malayalam and Tamil; *patche tene* in Kannada.

**Botanical and Medicinal Aspects**

This is a shrubby herb common all over India, specially in the Western Ghats and Nilgiris. It

Leaves have a strong odour of black currants or grapes when bruised; they are broadly ovate; tip, acute or acuminate (sharply drawn out); margin, coarsely and irregularly but doubly toothed; surface, smooth or slightly hairy; base, wedge shaped. Flowers are arranged in dense spikes in turn forming pyramid like loose panicles or much branched elongated clusters. On the axis, the flowers occur in whorls, usually closely packed with bracts, or the leaf like structures below the calyx. The latter are much pronounced and almost equal in size to the calyx, which is hairy and glandular. Corolla is bilipped, the upper lip white, soft with purple, 3-lobed, the middle lobe, narrower than the two laterals; the lower lip is entire and white. Nutlets are small, ellipsoid, with their upper surface, rounded, smooth, shining and black.

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**Botanical and Medicinal Aspects**

This is a shrubby herb common all over India, specially in the Western Ghats and Nilgiris. It

occurs wild and is also abundantly cultivated particularly in Madhya Pradesh and Maharashtra. The leaves are dark green, heavily scented, hairy and rather thick and so are the dense spike like flower clusters that bear small, essentially bluish flowers in great abundance. These spikes are used in preparing heavy fragrant garlands.

Fragrance is heavy and stable. Taste is appetising. This is a strongly aromatic herb found in Western Ghats from South Kanana southwards in open forest land. It is often cultivated when however it frequently runs wild.

The plant is diuretic, regulatory to alimentary system and germicidal.

The most important product is the oil from the leaves or more properly from the dried tops; this is comparable in all ways with the *patchouli oil* of the foreign origin. This is also much used in preparing essences and many other cosmetic materials.

The leaves, flowering spikes or dried tops and roots are used in medicine.

The plant is diuretic (promotive of urination) and is generally given along with *tulasi* seeds in cases of scanty urine and also in biliousness.

This is one of the much reputed insecticidal and insect repellant plants of India. As an insecticide the herb is kept in the ward robe to drive away flies, ants, moths, gnats and mosquitoes. It is also used as a perfume to prevent the ravages of moths

and other insects in shawls and woollen clothes. The dried leaves are very effective and much used in protecting all kinds of woollen fabric from insect attacks and also in scenting them very aggreeably.

### E. MINT

The genus *Mentha* (named so, as it is a Latin name for 'mint', a term which stands for any aromatic herb of the aromatic labiate genus mentha, such as spearmint, peppermint) includes four species of value in India. The genus has 25 species all distributed in the Old World. The Indian species are: *Mentha arvensis* Linn, the famous *pudina*, *M. viridis*, Linn, another *pudina*, *M. piperita* Linn, the peppermint and *M. sylvestris* Linn, the spearmint or the wild mint or *pahadi pudina*, pudina of the hills. They are all strong scented perennial herbs with a creeping rootstock.

The genus *Mentha* is medicinally a tonic, stomachic (good for stomach troubles), carminative, expelling gases from the bowles, emmenagogue rectifying menstrual disorders, sudorific provoking sweat formation, antispasmodic, counteracting involuntary and reptitive muscular contractions and anthelmintic, destroying worms.

We shall now discuss these four plants beginning from the most well known.

1. **Mentha arvensis** Linn, the famous *pudina* for preparing chutney.

**Names**

There is no name in Sanskrit for this plant.

In English it is mint, marsh mint. It is called *pudina* in Marathi, Kannada, Tamil, Telugu, Gujarati, Persian; *podina* in Bengali and *bhudina* in Burmese. This name is therefore the commonest name of the plant though it is not clear from which language, it comes originally.

**Botany**

It has scented, much branched stem growing rather along the grounds and rooting at many places. Vegetative propagation is therefore quite easy, small rooted segments of the stems being the usual mode of producing new plants. Stem is short, much branched with short hairs, dense and turned back. Leaves are ovate, toothed and rather fleshy. Flowers are lilac or light purple in colour and arranged only in axillary distant whorls with none at the top. Calyx is bell-shaped with triangular, short teeth, all equal in breadths and length; at its throat, it is naked and not having hairs. Corolla is lined with hairs and has hairs on the outside also. Nutlets are dry and smooth.

This is a common garden plant cultivated throughout India and very abundantly in China. It is a native of the Northern and Western Himalayas and Kashmir where it occurs wild. Still, it is believed to have been brought to India from the Arab as a medicinal plant. As such it is not

mentioned at all in the ancient Sanskrit Ayurvedic Texts.

**Medicinal and Other Importance**

It is a very favourite medicated herb for the kitchen used in chutney and for seasoning. It is an expectorant, expelling phlegm from the throat efficiently, emmenagogue, correcting menstrual disorders, tonic to the kidney and is also regarded by the Yunani physicians as being useful in the diseases of the liver and the spleen, asthma and joint pains.

The dried plant is cooling, good for stomach, stimulant and provokes profuse urination. It is also antispasmodic countering involuntary muscular contractions and an emenagogue. It is beneficially used in jaundice as well as to stop vomiting.

These four plants are easily distinguishable by a few clearly visible features. A key for such an identification is as follows.

1. Leaves are stalkless, lance like to oblong in shape, their margin is closely toothed and the blade is smooth above and glandular below.
*M.viridis*

2. Leaves are stalked, the margin is coarsely serrate (i.e. the points of the teeth are all inclined towards the tip of the leaves, not as in the above, where they are just facing outwards); leaf blade is smooth above, and only rarely and sparingly hairy on the nerves below. *M.piperita*

3. Leaves are nearly stalkless, margin is sharply toothed, upper surface is densely hairy while the under surface has hairs that are smaller and white (viz.tomentose). *M.sylvestris*

4. Leaves are narrowed below, stalked and ovate in shape or even lanceolate (i.e. lance like); margin is toothed. *M.arvensis*

An essential oil is obtained by steam distillation of the leaves, flowering tops and stems. This is similar to peppermint oil that is a recognised drug of British pharmacopoea. There also occurs another valuable substance stearoptin, known more familiarly as menthol or pepperment. Camphor is also secured by keeping this oil for some time. The oil from this very common herb compares very well with the oil from *Mentha piperila* which is the official and the costly mint oil of international commerce; it does so in taste, odour and physical characteristics as well. The usual amount of the oil obtained from whole dried plants from Kashmir is 0.18-0.2 per cent. Extracting from fresh leaves would give a better yield. It has also been seen that if the leaves are collected during the budding and flowering stages, the yield of the oil is much higher than obtained otherwise.

*Pudina* herb is very much praised in India as an aromatic, carminative, stimulant and stomachic (good for stomach) plant. It is also esteemed as being antispasmodic and as an emenagogue.

This is most favouritely used in making *chutneys.*

A decoction or a vapour of its tea is largely used with lemon grass (*Citronella*) as a curative in fevers. This is also given beneficially in hiccup. The oil and the menthol also have the same properties. Minthol is an invaluable anti-neuralgic (i.e. reliever of nervous pain) and is applied externally in alcoholic solution or in the form of what is popularly called as "menthal cone."

Yunani physicians who employ this herb for many medicinal purposes have recognised three "varieties" in *pudina; jungli pudina* - this is wild or Horse Mint in English and *Mentha sylvestris* of the Western Himalayas from an altitude of 4,000 - 12,000 feet. Its fragrance and taste are like those of the kitchen *pudina* or *M.arvensis; pahadi pudina* of the Hills. This is *mentha spicata* or *M.viridis;* and *naharipudina,* of the water channels, or *Mentha aquatica,* sometimes regarded as being the same as the garden mint or *M.arvensis,* also called Marsh or Hair mint in English.

Chinese soil is presumed to be most fertile for *pudina;* that is why, *pudina* from there is the most fragrant.

Yunani physicians suggest that it is not advisable to prepare a decoction of this herb and administer as it will then prove difficult to be digested. In case it is necessary to give it in the form of decoction, fresh ginger or, if not available,

black pepper is to be added and then given. They regard it as second degree hot and dry. Ayurvedists regard it as of hot virility.

The following medicinal actions are attributed to this familiar herb: digesting all collected and dense vitiation, dissolution of oedema or swellings, thinning down of the vitiation, colouration of the skin, controlling pain, promotion of urination and menstruation, provoking sweat formation, regulating alimentary functioning by being mildly laxative, destroying germs and being stimulative. Chinese employ an infusion of the leaves and the stems as a carminative, to expel gases from the stomach, and as a sudorific, to cause sweating and also as an antispasmodic. In Annam in Myanmar the plant is regarded as an excellent diaphoretic and is therefore given in fevers, indigestion and pains in the head. Leaf juice is applied to the sting or bite or poisonous animals. Pounded fresh leaves along with slat is a household remedy for the whitlow.

*Pudina* is given predominantly for patients of digestive upsets, for instance, weak stomach, feeble digestive ability, shooting pains in the stomach and constipation. Its distillation (*arka*) or decoction is given as a drink to control vomiting and the disorders of the humors. Drinking its fresh juice or using the latter as an enema would destroy intestinal worms. This can also be used as a nasal or an ear drop to destroy the germs there. This is a very powerful drug for promoting menstrual flow.

Placing a swab of it would cause therefore an abortion.

This is good in cough and breathing difficulty, as it thins down the phlegm and aids in its expulsion.

As it is sweat promoting it is believed to be beneficial in jaundice; the vitiation is expelled in that manner.

Applied along with liquor or vinegar it removes the blemishes of the skin such as its blackness and will restore a healthy colouration.

Applied over the stings of wasps and scorpions it removes the poison and mitigates the pain.

The essence of *pudina* famed in Yunani as *sat pudina* is employed abundantly in the diseases of the stomach.

Ayurveda regards *pudina* as bitter in taste, hot in virility, taste promoting and digestive. It is utilised in overcoming the aggravations of *vayu* and *kapha*; vomiting; pains in the stomach as well as belching. It is also destructive of worms.

Modern medicine considers it as hot, dry, stimulative, promotive of menstruation, excitatory and warding off for convulsive reactions. It is advised in indigestion, mal digestion, shooting pains of the stomach, flatulence (bloating of the belly due to gas) and also in vomiting. In fever after child birth, fresh juice of *pudina* is given daily in a dose of 1-2 *tolas* with beneficial results.

Administration of its freshy extracted juice proves highly effective and beneficial in cases of phlegmatic fever, inability of stomach, dysentery, urinary stones and *vatic* or nervous disorders.

**Some Commercial, Pharmaceutical Aspects**

A number of *Mentha* species are native and grow wild in the Himalayan regions. In addition to this, a few exotic species from other countries have also been introduced recently and are also well grown on some commercial scale. The indigenous species are *M.arvensis, M.sylvestris* and its varieties called *M.sylvestris var incana* and *M.sylvestris var royleana. M. viridis* Linn. (spearmint), *M.piperita* Linn. (peppermint) and *M.aquatica* have been introduced in this manner and all of them are well established in India now. Quite recently Japanese peppermint is being introduced as a promising new addition. This is botanically known as *M.canadensis var piperascens.*

*M.arvenns* grows wild in Northern and Western Himalayas. This drug was well known to the Greek and Romans who had used them both for flavouring food and also as a medicinal herb. Though many species of this plant occur in India. Ayurvedic physicians had been unaquainted with its value; and this knowledge was brought to India only by the Arabs, as noted above.

The Himalayan *M.arvensis* yields an oil that is similar to the pepperment (so named because it also has a pepper like smell) oil which is the official

drug. This is largely used in India to mask the taste of evil smelling and unpleasant drugs and also as a carminative. It finds in addition a great use to flavour confections and dentifrices or dental medications.

This drug has a good demand in Indian markets because of its principal use as a flavouring herb. However, it is unfortunate to note that no attempt has been made for production of its oil in India and for oil we consume much of only imported stuff.

Peppermint oil of commerce is derived from two plant sources i) The European oils is from *M.piperita var vulgris* the black mint and *M.piperita var officinalis* the White mint. ii) The Japanese oil is from *M.canadenses var. piperascens.* The English peppermint oil is from the former species grown in England and is unique, admittedly superior to any other kind and the costliest consequently.

Both Japan and United States of America derive a large profit from the sale of peppermint oil. Many other countries like France, England, Italy and Germany also possess flourishing industries of mint oil.

There is simply no reason why India should not utilise this opportunity to great benefits. We have abundant natural resources of this herb in our country. We have many varieties that are growing wild in our diverse soils. We can and have also grown many exotic plants successfully in our fields

and gardens. And, the average price of peppermint oil is always on the increase. India should not lag behind at all now. Cultivation of mint in suitable localities and also its distillation into oil are both highly remunerative and are worthy of serious consideration by our Industrial entrepreneurs. A report of 1946 had indicated that despite this abundance of the plant with us India imports Rs.75,000 worth of peppermint oil annually.

### 2. Mentha viridis Linn.

**Names**

Its names in English are Garden mint, Mackerel, Mint, Spearmint.

In Hindi and Punjabi it is *pahadi pudina* (the hill pudina) or *pudina* in Marathi; in Telugu, *pudina*.

**Botany**

This is a perennial herb with a pungent smell; aerial portions form leaf stolons viz. segments of stems that root all along and serve for quick vegetative propagation. Leaves are smooth, as the rest of the plant and without any stalk, lanceolate or lance like in shape and oblong; tip, acute; margin, coarsely dentate or cut into teeth like edges, smooth above and glandular below. Flowers are light purple in colour and arranged in loose cylindrical, slender spikes which are broken at intervals with distant whorls.

The plant looks to be a cultivated form of *Mentha sylvestris*, the true mint of the hills. This is very commonly cultivated in gardens all over India.

**Medicinal Properties and Use**

This is a very common household medicine in Europe being considered a stimulant, carminative and antispasmodic. It forms a usual ingredient for many a medicamint because of its carminative property and a pleasant taste. For troubles in children, its sweetened infusion is an excellent and much liked medicine. A distilled water prepared from the plant is an effective drug to relieve hiccup, flatulence (swollen state due to gas collection) and also in curing giddiness of indigestion.

Leaves are given in fever and bronchitis and its decoction is used as lotion in apthae or sores of the mouth.

The seeds are mucilaginous.

An aromatic oil is extracted from this plant but this is used less than the oil of peppermint.

Leaves and flowering tops contain a volatile oil composed of thymol (similar in composition to peppermint but differing from it in odour and flavour), resin, gum and tannin.

Infusion of the leaves and tops and watery preparation or aqua made from the oil (1 in 500 water) are used for their carminative, stomachic and stimulant properties. They are therefore given

in hiccup, bilious vomiting, flatulence, colicy pains, and also cholera.

Leaves of spearment, drydate, black pepper, rock salt, resins and cumin are all taken in equal parts and ground together to form a chutney, with lime juice. This is an excellent electuary (a *lehya* or lickable medicine) for removing the bad taste that follows fevers.

In colic the mint juice is given with a little black pepper powder and honey.

Juice mixed with honey relieves pain in the ears. This is applied to the temples to get red of the headache. Applied to bruises, injuries and sores this proves highly healing and also soothing.

Oil of spearmint is a local anaesthetic (a desensitiser) and is used to calm down the pain of superficial neuralgias (nervous pains) and more importantly in cases of the very painful herpes zoster.

The oil is also a powerful antiseptic drug killing the parasitic disease causing bacteria.

It relieves the tooth ache when applied to the hollow of the decarying tooth.

Its odour is reputed to be a good repellent to mosquitoes.

Like many volatile oils, the oils of peppermint and separmint are said to reduce the number of the white blood corpuscles by diminishing the activity of the intestinal absorbents.

### 3. Mentha piperita Linn

**Names**

It is called in English as Brandymint and Peppermint, the source of peppermint oil. Though the plant is well cultivated in Indian gardens, no regional Indian language seems to have a name for it. This is well known all over Europe and also China where it is called *po ho.* In Hindi it is sometimes known as *paparaminta.*

**Botany**

This is a smooth, hairless, perennial and strong scented herb. Leaves have stalks; they are acute or obtuse at the tip; margin is serrate i.e. toothed coarsely, surface is smooth above, rarely and sparsely hairy on the nerves below; shape, ovate or lanceolate i.e. lance like. The upper leaves are small and look like bracts subtending the flowers. Flowers are clustered as whorls on spikes which are cylindrical. Calyx is often red.

The plant seems to be a cross between *M.viridis* Linn. and *M.aquatica* Linn.

**Medicinal Properties and Use**

The volatile sweet scented oil called the peppermint oil from this plant is well known in medicine for its antiseptic, stimulant and carminative properties. In Europe this is considered as a stimulant, a stomachic and a carminative. This is much used for mitigating

nausea, flatulence (swelling due to morbid gas collection), sickness and vomiting.

The fresh leaves, crushed and applied externally will relieve local pains and headache. A hot infusion of the leaves taken as tea soothes stomach-ache and is also helpful in general sickness and colicy diarrhoea. This is good to relieve the twisting pains or the colics of menstrual cycle.

Leaves contain a volatile oil, menthol, resin, tannin and gum. The peppermint oil is obtained by distillation. This is a colourless, viscid liquid that becomes brown on exposure. It has a peculiar pungent camphor like odour and hot taste. It contains chiefly a crystalline stearoptin or the menthol or mint camphor (obtained by cooling the oil) and a liquid turpene, glacial acetic acid and carbon bisulphide.

Medicinally the oil is antiseptic, deodorant (removes obnoxious odours), stimulant and carminative. It is generally used as an external application in congestive headaches, rheumatism, and neuralgia. It is largely used in pharmaceutical industry to mask the taste of evil smelling and unpleasant drugs and as a flavouring material in confections and dentifrices.

Leaves and their oil are aromatic, stimulant, carminative and antispasmodic.

Leaves are used as infusion (1 in 10 parts) or their oil or a tincture (viz. an alcoholic preparation)

is employed in a dose of 5-20 minims or aqua in 1/2 to 2 ounces in cases of vomiting (specially during pregnancy), colicy pains in the stomach, cholera, diarrhoea and flatulence. This is also given in disordered mensturation (dysmenorrhoea), along with tea. This is useful in hiccup and palpitation of the heart. Another use is to give it along with other purgatives for preventing gripings that usually accompany administration of purgatives. Locally applied, this is a powerful anodyne (pain reliever), anaesthetic, antiseptic and germicidal. This is much useful in herpes zoster (a painful skin disease with spreading cluster of vesicles on an inflammed base) and pruritis (an itching skin disease).

In pthisis or consumption it is used as an antiseptic inhalation and in diptheria as a curative paint.

It also relieves tooth-ache due to caries.

The essence of *pudina* or *sat pudina* is alleviative of ulcerous pains. It is anaesthetising and a remover of the vitiation of skin. It is employed in overcoming general disorders, flatulence, sickness and vomiting. As it is stimulative and an alimentary regulative drug this is given in cases of indigestion, mal absorption and shooting pains of the stomach. For vomitings due to indigestion, dysentery and cholera as well as stomach pain 2-5 drops of this oil are mixed with sugar and given.

The oil is a good material to be employed for massaging in any case of nervous pain.

### 4. Mentha sylvestris Linn.

**Names**

This does have a few names in Sanskrit, *ajirnahara* (removing indigestion), *pudina, rochani* (pleasant), *ruchishya* (taste inducing), *shakha shobhana* (an excellent vegetable), *sugandhi patra* (scented leaves), *vantihara* (removing vomiting), *vyanjana* (a culinary condiment).

In English, it is Horse-Mint.

In Urdu and in Pakistan, it is *pudina.*

**Botany**

This is a strong scented, erect or diffuse herb producing creeping rootstock by which vegetative propagation is easily accomplished; stem is hoary and pubescent. Leaves are nearly stalkless, lanceolate (lance like and rather elongated) or oblong or ovate; tip, acute; margin, sharply toothed; upper surface, hoary-pubescent; lower surface, white, tomentose. Flowers are small, light purple in colour and arranged in large whorls that are crowded on axillary and terminal, cylindrical, tapering spikes. Calyx is hairy, bell shaped and acutely 5 toothed. Corolla tube is small enough to be included within the calyx.

This is distributed in Western Himalayas and is more a plant of Europe and of temperate Asia.

**Medicinal Properties**

Ayurveda regards the plant as astringent (constipative to bowels) and anthelmintic. It is seen to be useful in the heart diseases, bronchitis, loss of appetite, diarrhoea and dysentery.

The plant is famous mainly in the Yunani system which distinguishes two types in this *pudina*:

(i) *fudanajhabak* type. The plant is dry and hot; diuretic and diaphoretic, causing sweating and strengthens the kidney. The seeds have a bitter, sharp taste and are useful in the diseases of the blood, the liver and spleen. It lessens the burning sensations, vomiting tendency and flatulence or distended belly with gas collection inside. It is good for the sore eyes and scabis and strengthens teeth.

(ii) *fudanjnana* type. This plant also is hot and dry. It is diuretic, diaphoretic and strengthens the kidney. The seeds are bitter and sharp in taste. it is alexiteric and anthelmentic and is useful in the following diseases: mental illness, deafness, throat troubles, leucoderma, vomiting, hiccup, skin eruptions, dropsy and dyspepsia.

Leaves soaked in water give an infusion which is drunk as a cooling, soothing drug. In Europe, the herb finds use as a carminative and a stimulant.

## F. MARJORAM

Marjoram is another very fragrant herb of India belonging to the family of Labiate and a herb that

has been known from great antiquity. It is known and referred to as *marubaka* in Sanskrit. The leaves and tender twigs are well known for their aroma and they constitute valuable ingredients of special, decorative garlands. There occur two species or two kinds. One is known as sweet majoram (*Majorana hortensis* or *Origanum majorana*). This is a native of the Mediteranean region and represents a savoury herb of very ancient times. It is a sacred plant in India and is also popular in both Europe and United States. The leaves, the flowers and the tender stems are all used for flavouring syrups, stews, dressings and sauces. The aromatic oil is distilled from the whole herb and is used in soap making and perfumes. The other is called pot marjoran (*Origanum marjoran*) and is also used similarly.

### 1. Origanum majorana Linn

**Names**

This has many names in Sanskrit, *ajanmasurabhi patra* (leaves, fragrant from the very birth), *bahuvirya* (of manifold virility), *gandha patra* (leaf, fragrant), *jambira*, *kharapatra* (rought leaves), *maricha*, *maru*, *marubaka; phani; phanijjaka* and so on.

In English, it is Sweet Scented Marjoram, Sweet Marjoram.

It is *murrie* in Bengali, *murwa* in Hindi, *marru* in Tamil, *maruga* in Kannada.

Regional language names stress *maru* after the Sanskrit *marubaka* as the common base.

**Botany**

This is a shortly creeping herb with a perennial root stock. Stems are erect, more or less hairy. Leaves are stalked, ovate or ovate-lanceolate and slightly toothed at the margin. Flowers are purple or rarely white and arranged in globular compact heads which form a terminal thrice forking panicle i.e. a much branched loose cluster.

The herb is a native of Mediterranean regions of Europe and Africa but is extensively cultivated in India.

**Medicinal Properties**

The plant is pungent and bitter in taste and hot (*ushna*) in its action. It is stomachic, anthelmintic and alexipharmic or strongly counteracting poisons. It is useful in the diseases of the heart and the blood and also in fever, leucoderma, pruritis (a skin eruption causing great itching), bad taste in the mouth, asthma, inflammations in general, flatulence (morbid gas collection and swelling) and pain. It brings about biliousness. Yunani physicians regard it as carminative, expectorant and as a tonic to the liver. It is carminative, stimulant, sweat promoting, tonic and regulative of menstrual cycle.

It lessens inflammations and also quietens alcoholic intoxication. It brings back consciousness

and is good for the brain. It checks vomiting and relieves pain.

Leaves and seeds are regarded as being astringent and a remedy for colic. The volatile oil from the leaves is used for hot fomentations in acute diarrhoea.

In the Mediterranean Coast, an infusion prepared from the fresh plant is given to secure relief in nervous headaches. Externally the herb is applied in cloth bags as a hot fomentation in cases of painful swellings, rheumatic pains and colicy distresses.

This oil is regarded as excellent for an external application in sprains and bruises. This oil is distilled from the whole plant and is known as *Oleum majoranae* and is soluble in alcohol and consists mainly of terpene and a bitter substance. It is a stimulant and used in colic, indigestion, flatulence and disorders of menstruation.

The plant is used in some parts of Punjab as a pot herb much like mint and some what as it is the practice in European countries.

Like the peppermint or mentha oil it is beneficially used locally in rheumatism, or gets applied on the abdomen in its colicy pains, temples in one sided head-ache and to the ear that is painful. Infusion of the plant (1 in 10) is beneficial in internal administration. Externally it is often used for a fumigation.

**2. Origanum vulgare L.**

**Names**

There does not appear to be any name for this in Sanskrit.

In English, it is Common Marjoram, Orgament, Pot Marjoram.

**Botany**

This is an erect herb more or less clothed with short hairs all over. Leaves are stalked, ovate; margin, entire. Flowers are small, pink and crowded in numerous 4-sided spikes. They are clustered in turn at the ends of the branches, sometimes forming terminal panicles. Calyx is bell shaped and enlarged in fruit.

The plant is essentially Himalayan, ranging from Kashmir to Sikkim.

**Medicinal Properties**

It is regarded by the Yunani physicians as bitter in taste and is useful in inflammations, cold, headache and also paralysis. The leaves (as fresh juice or decoction) are useful in earache, bronchitis and asthma. They enrich blood. The flowers are beneficial in hemicrania or one sided headache. The oil is a reputed drug for rheumatic pains.

The whole herb is medicinal and contains a volatile oil, which is extracted by distillation. Its warm infusion produces profuse and pleasant

perspiration and is also reputed to promote the menstrual flow, specially when the latter is suppressed by cold. The oil is a stimulant and rubrifacient, a drug that reddens the skin when applied externally. It is often used as a liniment or thin ointment over open wounds. It is given as a stimulant and tonic in colic, diarrhoea and hysteria. It is quite beneficial in chronic rheumatism, tooth-ache and ear ache.

Chinese consider the herb as an excellent refrigerant viz. a cooling and soothing drug.

## G. THYME

Thyme is a much praised European aromatic herb famed well in its literature. This belongs to a genus *Thymus* of the family Labiatae. It consists of low, half shrubby plants with two lipped corolla and calyx. It has two important species: the fragrant Garden thyme-T. *vulgaris* and Wild thyme *T.serpyllum*. Thymol is an antiseptic phenol obtained from the oil of thyme by distillation and this represents one of the very famous soothing medicinal drugs used in mouth washes, tooth paste and also as a fungicide destroying fungi, externally. Internally it is particularly active against hookworm. This is also useful in industry.

*T.vulgaris* is a native of Mediterranean region where it is still common as a wild plant. It is well cultivated in most countries but usually escapes and runs wild in the nearby fallow regions. Thyme was used by the Greek as an incense in their

temples and by Romans in cooking and also as a source of honey. Its fresh or dried green parts are now used in soups, sauces, dressings and gravies. Its oil is much praised in perfumery industry.

### Thymus serpyllum Linn., the Thyme

**Names**

There is no Sanskrit name for this plant, nor do regional languages have any names excepting in Punjabi which calls it *marizha, masho, kalandarzatar.* In Hindi it is *ipar bonajowan.*

But the plant is quite a famous one yielding the sweet scented oil of thyme.

**Botany**

This is an aromatic, hairy, often tufted and delicate shrub more or less procumbent or lying along the ground. Branches are very tender and delicate. Leaves are almost stalkless, gland dotted, oblong-ovate; margin, entire and the tip, acute. They are quite small and numerous. On them occur glandular hairs and cotton like fine hairs. Flowers are small, purple, sometimes male or female and arranged in small whorls that are in turn crowded in short, terminal spikes. Calyx is hairy, gland dotted and 2 lipped. Its mouth is hairy within. Upper lip is broad, 3-toothed, lower lip 2-parted, segments, linear. Corolla tube is as long as the calyx, 2 lipped, upper lip nearly erect, flat and notched; while the lower lip is spreading and 3 lobed.

This occurs in Western temperate Himalayas from Kashmir to Kumaon at an altitude of 5,000 to 13,000 feet. It is common in Europe, North Africa and West Asia.

**Medicinal Properties**

The plant has a sharp, pleasant taste.

Yunani physicians regard it as an emmenagogue, alexiteric (counteracting poison) and anthelmintic. They find it beneficial in liver complaints; and, pain in the liver, spleen and chest.

It is useful in asthma and bronchitis; it thins phlegm and blood. Leaves are laxative, stomachic and toxic. They are good for the kidney and also the eyes and their troubles. They are useful in bronchitis and they purify blood. Their decoction cures itches and skin diseases.

In Punjab, the herb is given in weak vision, stomach and liver complaints as well as in cases of suppression of urine and menstruation. On the banks of Chenab river, the seeds find a good use as a vermifuge, expelling worms.

The oil forms a remedy in tooth-ache.

In Europe, the herb is considered anti-spasmodic, carminative and a tonic. Its infusion is administered in curing convulsive coughs, whooping cough; catarrh (common cold) and sore throat. It is good for nervous or hysterical headaches and the headache that follows inebriation or excessive

liquour consumption. The infusion is also beneficial in curing various skin eruptions.

The oil has a charming smell. There also occurs an astringent matter.

## H. ARTEMESIAS

Santonin is one of the best known remedies for intestinal worms and has been used for this purpose for centuries. It is a small semishrubby perennial and a native of West Asia first introduced to Europe by the crusaders but now well known the world over because of its unfailing, specific effect. It comes from a few species of the genus *Artimesia* coming under the family Compositae that bear their small flowers in a characteristic head like cluster as seen in familiar garden flowers of Sunflower, Dahlia, Chrysanthemum, and Zinnia. The genus *Artimesia* contains many species, only a few of them have this santonin. Others are fragrant herbs of their own value.

### 1. Artimesia martima Linn.

**Names**

This is given a Sanskrit name *gadadhar* but this is a very recent name, the plant being unknown in ancient Texts. In English it is Wormseed, Santonin. It is called *kirmala* in Hindi, *kirmani owa* in Bombay bazaars; *ship, sariqun* in Persian and *afsantinul bahr* in Arabic.

**Botany**

This is a small sized shrub with woody root and stem, greyish in colour. Leaves are small, ovate and rather white. Flowers form rose coloured heads. Leaves and flowers have a camphor like smell and a pungent taste. Its unopened buds are sold in Bombay bazaars as *kirmani ajwain* or *kirmani ova.*

**Medicinal Importance**

Artimesia is a very ancient remedy that was used extensively by the Greek and the Romans to expel intestinal worms and a useful drug for the stomach. The old Arabian and the Iranian physicians also used it similarly and later introduced it to India. Even now the flowering tops are given for this purpose by Tibbi (Mohammedan) medicine-mostly powdered and in doses of 2-4 drachms. It is also a remedy for dropsy (morbid water collection in the body). Its decoction is used as a heart and respiratory stimulant.

*A.maritma* grows abundantly in the high altitude of the Himalayas from Kashmir to Kumaon at 4,000 to 12,000 ft. Its growth is more in Baluchistan, Chitral and Afghanistan (where particularly it is so ample that it forms a packmaterial for the fruits from Kandahar). It is important to know that inspite of this abundance its value was not known to Ayurveda and neither we have utilised this wealth in modern times. Its important drug of santonin was not manufactured

in India. Till recently it was just imported - a situation which improved only slightly from World War I. However, after Partition, most regions of its cultivation went to Pakistan and the santonin Factory established at Baramulla in Kashmir does not have much raw material. There is much evidence nodoubt that extensive surveys of the various areas of Uttar Pradesh where *Artemsia* grows naturally have shown that we have here adequate quantities of santonin yielding *Artimesias*. Better strains of the plant can also be introduced and their successful cultivations can then be undertaken.

Santonin is one of the most expensive drugs. For mass application in a developing country like India, it is necessary that some source from where santonin can be obtained at a cheaper price should be found out. Santonin of Indian origin is shown to be as effective as that of Russian, which had held its monopoly for a long time and which had also been our import source. The incidence of round worm and oxyuris infection in our population for which santonin is the best remedy is very heavy, specially where the rainfall is large as in Bengal, Tamil Nadu etc. 0.65 per cent of the population are affected in these places. Even in the drier Rajasthan the incidenc is quite considerable. It is because of these reasons there is a huge demand for santonin in our country. As such a flourishing santonin industry is a dire need of our planning.

**Medicinal Importance**

The flower buds are given for eating and are also applied as a paste on the belly to expel intestinal worms. Or, the oil is rubbed around the navel or boiled and given alone or with honey. The worms will die and get out through the stools.

They are burnt into ashes and then mixed with bitter almond oil and applied on the head; this is beneficial in baldness.

Other applications of the flower and its oil are; difficult breathing, cold and fever, fever due to mixed vitiations, diseases due to cold, swellings at the stomach and ascitis or *jalaodara* (water collection at the abdomen) and also in scorpion stings. This heals up the wounds and is useful in gripes and colics. Bathing with its water gives relief to back pain and pains at the loins.

The "seed" is a household remedy being given with honey or treacle. The "seed" is actually the dried flower bud; it is usually given at night in a dose of 0.6 to 2 grams. This is particularly suitable for worms in children. As such it has no purgative effect. Therefore the powdered unopened flowers are give with jaggery in the night without giving meals. This is followed by castor oil in the morning. But an overdose of santonin always shows adverse effects of poisoning. It should be therefore given only under competent medical care.

This is also used against infantile spasms, eclampsia and neuropathy. Cases of whooping

cough, distaste in food and bed wetting also respond well to its treatment.

### 2. Artemesia absinthium Linn

**Names**

English calls this also as Wormwood and the Absinth. In Hindi it is known as *vilayati afsantin*; in Arabic, as *afsantin, khaturak*.

**Botany**

This is a small much branched herb covered with dense white hairs and bearing numerous leaves that are also covered with silky hairs. Flower head is yellowish white, smelling very strongly but unpleasantly and very purgent in taste.

Leaves and flowered tender shoots are the useful parts.

This is found in South America, North Africa, Hilly regions of Europe, Siberia, Mangolia, Khorasan, many hilly regions of India, Kashmir, Garhwal and so on. There is an exclusively Indian relative also for this plant, called *Artemisia Indica* Willd.

**Medicinal and Other Importance**

This contains a white or yellowish brown coloured crystalline glucoside, very bitter and known as absinthin. This is highly soluble in alcohol and chloroform but scantily so in ether or water. The chief use of the essential oil is as a

liniment but it is no longer recommended as it causes an addiction.

The whole herb is steeped in hot vinegar and then bound around a sprain or a bruise. Its expressed juice is applied to prevent convulsions. The herb is used as a fumigation to the head in headache and the painful joints in gout and rheumatism. The herb is recommended and given in hysteria, spasmodic affections, epilepsy and nervous irritability, nervous depression and mental exhaustion.

A strong decoction of the herb is given for worm expulsion in the adults; its weak decoction is given for children in measles.

Externally it is used as fomentation in skin diseases and foul ulcers.

An industrial use of the oil is to flavour a costly liquour called absin the liquour.

### 3. A few other species of Artemesia

The genus has a very large number of species. A few that are Indian and have gained some importance are as follows:

(i) *A. dracunculus* Linn. : A perennial herb of the Western Tibet and Lahul valley in India (14,000 - 16,000 feet). It contains about 0.3 per cent of the essential oil which has an anise like odour. Leaves and this oil are used to flavour vinegar and as a spice.

It is much cultivated in France for its oil known as the oil of taragon-used for perfuming toilet articles.

(ii) *A. pallens* Wall; known as *davana* in Marathi, Kannada and Tamil. This is an aromatic annual small herb with branches of greyish narrow and heavily fragrant and fleshy leaves found in certain parts of South India. It is cultivated around Pune (Jejuri) and in old Mysore State. Its fragrant leaves are used in floral decorations and garlands. The oil yield is 0.22-0.58 per cent. This oil is very popular in perfumery trade in America.

(iii) *A. sacrorum* Ledeb of Western Tibet and Kumaon valley (10,000 to 20,000 feet).

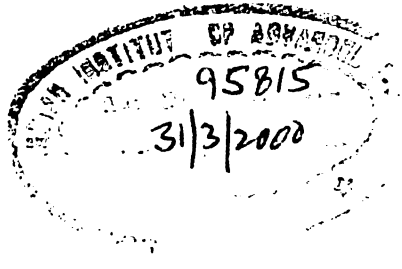
It is said to be given for horses for affections of the head.

(iv) *A.sivusiana* Ehr, an annual herb, similar to *A.absinthium* of Western Himalayas from Kashmir to Lahul (8,000 to 10,000 feet). It is a good fodder and also a medicinal herb.

(v) *A.vulgaris*. This is known as *nagadavan* in Hindi *dhordavana* in Marathi and *machi patre* in Kannada and Tamil. This is a tall aromatic shrub in all mountainous districts of India and growing upto the altitude of 12,000 feet in Western Himalayas and also in Khasia, and other Hills of Assam even in 5,000 to 8,000 feet. It is quite common in the South where it enters into floral decorations much like the *davana*.

In Indian Medicine the leaves and the flov tops are given as an infusion in nervous spasmodic affections. It is also said t antiseptic, expectorant and anthelmintic (i.e. killing). The plant has a 0.2 oil content volatile oil is a good larvicide, killing the lar the mosquitoes much like the kerosene, thc is but a feeble insecticide.

(vi) *A.scoparia* Waldst and kit. This is *dona, jan* in Punjabi and *churisaroj, d* Marathi. The plant is quite common in t stretches of the uncultivated plains in Punjab and Uttar Pradesh. It is called *I yavani* in Sanskrit. This is used for ear-a its smoke is considered as a good fu treatment in burns. Its infusion is a purgat



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