CHAPTER V

TAXONOMY AND MEDICOBOTANY
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TAXONOMY AND MEDICO BOTANY

In this chapter account of 592 plant species from Pune and neighbouring districts is dealt with. Here the families are arranged according to Bentham and Hooker's system (1862 - 1885) with slight modifications as per their present delimitations. Genera and species in the main text are arranged alphabetically for easy location of plants.

Each species is described in a set pattern as follows:

Taxonomy: The botanical nomenclature of the plants have been checked and brought up-to-date as far as possible with the help of recent literature. Along with original reference of the valid species, appropriate citations and illustrations have been made from various published works relevant to medicinal plants. A brief morphological description of each species has been given along with flowering and fruiting time, local name and locality. Citation of voucher specimens include locality, collector's name, and accession number of relevant herbarium.

Medico-botany: Medicinal uses of plant species are described
here. Plant part(s) used as a medicine is followed by the uses given in literature. Data regarding local traditional uses are given separately as folk-medicine. All the efforts have been made to locate the real economic potentials of the species under study.

The descriptions following abbreviations are used in the text:

AHMA - Agharkar Herbarium, Maharashtra Association for the Cultivation of Science, Pune 4.

AS - Aushadhi Sangrah (Marathi), by Dr. V.G. Desai, 1975.

Blatter - Blatter Herbarium, at St. Xavier's College, Bombay.

BSI - Botanical Survey of India, Western Circle, Pune 1.


FBI. - Hooker, J.D.; Flora of British India (1872-1896).

Fl. - Fl. - Flowering and fruiting time.


Ill. - Illustration.


M. - Marathi name.

S. - Sanskrit name.


RANUNCULACEAE

Clematis L.

1. Leaves simple
   1. Leaves trilobed


Glabrous climbers; stem groves; leaves pinnately compound; flowers in decompound panicles, yellowish green; achenes hairy with long feathery tails. Fl - Fr: October - November. Local name: Mor-vel (M.); Murva (S.). Locality: Mahabaleshwar, Shimashankar, Kalsubai. Common along the ghats.
Medico-botany: Part used - Whole plant. Literature - Plant
deointment is used in skin diseases. Fresh leaf juice mixed
with leaf juice of *Wrightia tinctoria* (Kali kadai) is used
as eye drops. Febrifuge.
Specimens examined: Raireshwar - Vartak (6, AHMA);
Harishchandragad - Vartak (32, AHMA).

FBI. 1 : 3; C. 1 : 2; KB. 1 : 4; GIMP : 70; GBMP : 67; AS :
1 : 50. Ill. KB. : 2.

Extensive climbers; whole plant is tomentose; leaves
trilobed; flowers in axillary panicles, white; achenes
compressed, silky-villosose with feathery tails. Fl - Fr :
September - November. Local name: Morvel, Ranjai (M.);
Common element of ghats.

Medico-botany: Part used - whole plant. Literature -
Bitter astringent, used in skin diseases and fevers. Exter-
nally applied on boils. Folk medicine - The stem is claimed
to be used for teeth decay. The gum is ruptured near the
decaying teeth and a piece of stem is inserted inside. It
is moved to and fro. It is claimed that infection within
teeth comes out and teeth become again white.
Specimens examined: Witthalwadi (Pune) - Vartak (19, AHMA);
Panchgaon Parvati (Pune) - Kulkarni (16059, AHMA).
MAGNOLIACEAE

Michelia L.

Michelia champaca L. Sp. Pl. 536. 1753; FBI. 1 : 42; C. 1 : 8; KB. 1 : 56; GIMP : 166; GBMP : 142; AS 1 : 53.

Small evergreen trees, many times cultivated for fragrant flowers. Fl - Fr: August - October. Local name: Chapha, Pivla chapha, Sonchapha (M.); Champak (S.).
Locality: Pune, Kashele. Evergreen tree, commonly cultivated.

Medico-botany: Parts used - Bark, root, leaves, flowers.

Literature - Bark is febrifuge. Root suspension in curd is applied on abscesses. Leaf juice is colic. Flower decoction is used in urinal problems. Folk medicine - Flowers are crushed, mixed with coconut oil and applied on swellings. Raw flowers, one a day eaten after three days of menses for the family planning.

The fresh flowers are sold in market. During festivals and religious seasons, it is prices at 50 paise to 1 rupee per flower.

Specimens examined: Karnala - Vartak (64, AHMA); Pune - Ghate (17272, AHMA); Pune - Upadhya (17296, AHMA).
ANNONACEAE

*Annona* L.

1. Fruit tubercled .. *A. squamosa*

1. Fruit smooth, slightly areolate .. *A. reticulata*


Small evergreen trees; fruit subglobose, yellowish red when ripe. Fl - Fr : June - October. Local name : Ramphal (M.). Locality : Occasionally cultivated for edible fruits.

Medico-botany : Parts used - Fruit, leaves, bark. Literature-Bark is astringent. Fruit is sweet, useful in blood complaints. Folk medicine - Crushed leaves are applied on decaying wounds.

Specimens examined : Karnala - Vartak (67, AHMA); Alibag - Sane (14937, AHMA); MACS garden (Pune) - Upadhye (17297, 17298, AHMA).


Small trees, naturalized throughout the area. Fruit
globose, yellowish green when ripe, areoles well marked.

Fl - Fr : May - September. Local name : Sitaphal (M.); Gandha-gatra (S.). Locality : Pune, Mulshi, Katraj, Baneshwar. Cultivated for edible fruits. Many times found escaped.

Medico-botany : Parts used - Root, seed, fruit. Literature-
Root is purgative. Fruit is a good tonic, enriches blood, relieves vomiting. Folk medicine - seed powdered with coconut oil is applied to destroy the lice. It is applied during night and hairbath is taken in the next morning.

It can be grown on any type of soil. It also requires less water, hence it is a good crop for drought prone areas.

Specimens examined : Katraj - Vartak (79, AHMA); Mapgaon - Sane (14935, AHMA); Pune - Ghate (16824, AHMA).

MENISPERMACEAE

1. Ovaries three or more

2. Seed globose .. Tinospora

2. Seed horseshoe shaped .. Cocculus

1. Ovary solitary

3. Sepals free

4. Petals of male and female
   3-5 free .. Stephania
3. Sepals connate. 

**Cissampelos L.**


*pareira* L.; FBI 1: 103; C. 1: 24; KB. 1: 95; GIMP 66; GBMP 64; AS 1: 59. 

Climbing shrubs; leaves peltate; flowers minute, greenish yellow, male in axillary cymes, female in solitary or twin axillary racemes; fruit drupe. **Fl - Fr:** July - September. Local name: Pahad-vel, Patha, Pahad-mul (M.); Laghupatha (S.). Locality: Karnala, Sinhagad, Panchgaon-Parvati, Mira Donger. A common element of deciduous forests.

**Medico-botany:** Part used - Root. **Literature:** Root is extensively used during urinary troubles. It is bitter, stomachic, diuratic, purgative. Also used in snake bites. 

**Folk medicine:** Root is antidysenteric. Root is pounded in butter milk and suspension is recommended specifically for male child as antidysenteric.

The Patha or Pahad-vel or Pahad-mul is a controversial herbal medicine (see Chapter 27).

Specimens examined: Mahabaleshwar - Vartak (96, AHMA);
Kalsubai - Vartak (98, AHMA); Khopoli - Datar (101, AHMA); Torna - Upadhye (17299, AHMA).

Cocculus DC.


Climbers with wrinkled bark; leaves variable, five nerved; flowers in panicles, yellow, fragrant; fruit drupe, transversely rugose. F1 - Fr : December - January. Local name : Vasan-vel, Jal-jamni (M.); Patalgarudi, Vatsadani (S.). Locality : Kashele, Bhimashankar, Bhandardara, Karnala. Common on hilly slopes and road-sides.

Medico-botany : Part used - Whole plant. Literature - Root is tonic codling, enriches the blood, used in veneral diseases. Folk medicine - Plant is crushed in water, it forms jelly like substance. Little sugar and salt is added to it and given as a cure for gonorrhoea. Root extract in goat-milk alongwith other fragrant condiments (Pimpli and Suntha) is recommended in joint pains and skin diseases. Root suspension in water along with fruit of Caesalpinia cristata (Sagargota) is given as a cure for stomach-ache in case of small children.
Specimens examined: Varandha - Vartak (110, AHMA); Kanakeshwar - Sane (14940, AHMA); Alibag - Gunjatkar (15840, AHMA); Dakhachi rai (Mulshi) - Upadhye (17300, AHMA).

Cyclea Arnott


Climbing herbs; leaves peltate; flowers minute, in panicles; fruit drupe, pilose. Fl - Fr: December - January. Local name: Pad, Patha (M.); Rajpatha (S.). Locality: Bhandardara, Ambavne, Khandala. Occasionally found road-side and hilly areas.

Medico-botany: Parts used - Roots, Leaves. Literature - Root is antidysenteric, febrifuge and stomachic. Folk medicine - It is used in place of true Pahad-vel. Leaves of this plant and leaves of Loranthus are crushed together and applied on fracture.

Specimens examined: Raigad - Vartak (119, AHMA); Karnala - Datar (124, AHMA); Kanakeshwar - Sane (14942, AHMA).

Stephania Lour.

Cissampelos hexandra
Roxb. ; AS 1 : 60. Ill. KB. : 40; Wt. Ic. 939.

Climbing shrubs, glabrous; leaves coriaceous, ovate acute; flowers in axillary umbels, greenish white, sessile, deciduous; fruit drupe. Fl - Fr : July - August. Local name : Aknadi, Patha, Khandodaki (M.); Patha, Vantikktika (S.). Locality : Kashele, Wadeswar, Karnala, Mahabaleshwar. Occasionally found.

Medico-botany : Part used - Root. Literature - Root is used in place of Cissampelos pareira. It is astringent, used in fevers, diuratic and purgative. Folk medicine - The underground root is claimed to be anticancerous. It is claimed by one Ayurvedic Vaidya that root paste of this plant is applied externally on tongue cancer and person got relief during movements of jaw.

Specimens examined : Torna - Razi (137, AHMA); Mahabaleshwar-Vartak (140, AHMA); Karnala - Datar (145, AHMA).

Tinospora Miers

1. Leaves tomentose, woolly, endocarp distinctly tuberculate ... T. sinensis
1. Leaves glabrous, endocarp round, smooth ... T. cordifolia
**Tinospora cordifolia** (Willd.) Hook. f. & Thoms. Fl. Ind.

183. 1855. FBI. 1 : 97; C. 1 : 20; KB. 1' : 77; GIMP : 243; GEWP : 213; AS 1 : 57. **III.** KB. : 35.

Extensive climbers; glabrous; bark shining; leaves membranous; flowers in lax racemes, yellowish green; fruit drupe, red when ripe. Fl - Fr : April - June. Local name : Gul-vel, Guduchi (M.); Guduchi, Amruta (S.). Locality : Mulshi, Ambavne, Bhimashankar, Mahabaleshwar, Karnala, Katraj. Common. It is believed that climber on Nim tree (**Azadirachta indica**) is therapeutically more effective.

**Medico-botany** : Part used - Starch from whole plant. **Literature** - Bitter, stomachic, tonic, expectorant, used in chronic fever, skin diseases, diuretic, enriches blood and urethral discharges. **Folk medicine** - Bitter tonic. A starch is prepared from fresh stem. The stem is crushed, mixed with water and allowed to stand for a day or two; filtered and filtrate is kept over night. On next day supernatant is decanted and starch is dried in shade. Fresh decoction (i.e. fait) is used in malaria fever. The fresh juice (i.e. swaras) is very powerful diuretic. It is also prescribed to cure gonorrhoea.

In the market pieces of 1-2 cm are available as crude drug. It is observed that the other species i.e. **T. sinensis** is adulterated or substituted in market sample. On the
anatomical characters both species can be separated.

Specimens examined: Katraj - Vartak (152, AHMA); Karnala - Mandavgane (156, AHMA); Pune - Upadhye (17301, AHMA); MACS Campus (Pune) - Upadhye (17302, AHMA).


Magnificent climbers; leaves cordate, tomentose; flowers dioecious, in racemes; fruit drupe, red when ripe.

Fl - Fr: November - January. Local name: Gul-vel (M.); Amruta, Guduchi (S.). Locality: Dakhnichi rai, Vardainichi rai, Somjaichi rai, Mariaichi rai, Bhairobachi rai, Kalkaicha ben (Mulshi taluka); Vardainidevicha rahat, Shirkaicha rahat (Velhe taluka). Not very common.

Medico-botany: Parts used - Whole plant. Literature - Used in place of *T. cordifolia*. Good tonic, alterative, anti-periodic, emetic and antipyretic. Folk medicine - Very good tonic. Used along with other herbs in several ayurvedic preparations. Fresh leaf juice is given in joint pains.

Gul-vel is a very good ayurvedic tonic. In a sacred grove of Dakhni a huge climber was noticed. Very thick
rope-like stems of 9 cm thickness and 20 meters of height were observed. This specimen deserves to be declared as a natural national monument.

Specimens examined : Kanakeshwar - Sane (14946, AHMA).

NELUMBONACEAE

Nelumbo Adanson


Aquatic herbs; leaves arising from under ground rhizome; petiole long, warty; flowers raised above water, pinkish white; torus spongy, receptacle funnel like; seeds bony, 6-12 mm long. Fl - Fr : July - November. Local name : Kamal (M.); Ambuj, Pundrik (S.). Locality : Pashan (Pune), Kurul lake. Seen in open tanks, cultivated in private gardens.

Medico-botany : Parts used - Every plant part. Literature - Plant is sweet, cool, removes worms, allays thirst; stem is used in blood complaints, vomiting and leprosy; flower is
cooling, febrifuge; anthers are used in diarrhoea; seeds are astringent, aphrodisiac, sedative to the pregnant uterus, useful in burning sensation of body. The petiole is edible. Seeds are sold in the market by the name 'Kamalkakdi'.

Specimens examined: Pune - Vartak (158, AHMA); Kurul - Sane (14947, AHMA).

NYMPHAEACEAE

Nymphaea L.

1. Leaves glabrous on both surfaces .. N. nouchali
1. Leaves densely hairy on the lower surface .. N. pubescens

Nymphaea nouchali N. Burman Fl. Ind. 120. 1768; Fl. Hassan dist. : 57. N. stellata Willd.; FBL. 1 : 50; C. 1 : 27; KB. 1 : 113; GIMP : 177; AS 1 : 71. III. KB. : 49; Wt. Ic. : 178.

Rootstock ovoid; leaves peltate, orbicular, glabrous on both surfaces, floating at water level, petiole smooth; flower white or pale blue. Fl - Fr : Throughout the year. Local name : Krishna-kamal, Kamal (M.); Nilotpala (S.). Locality : Pune Pashan lake, Kurul lake. Planted in Empress Garden, Pune. Cultivated.
Medico-botany: Part used: Whole plant. Literature - Cooling, alterative, improves taste, strengthens the body, promotes the hair growth. Rootstock, rhizomes, flowers and unripe fruits are edible.

Specimens examined: Pashan - Tadphale (162, AHMA); Pashan - Gunjatkar (1584, AHMA).


Rootstock tuberous, short, erect; leaves orbicular or reniform, pubescent on both surfaces; flowers white to rose; fruit ripening beneath the water; seeds arilet, aril white.

F1 - Fr: Throughout the year. Local name: Kamal, Lal-kamal (M.); Aravind (S.). Common aquatic throughout the plains.

Medico-botany: Parts used - Rootstock, leaves, flowers.

Literature - Flower is acrid, cooling, removes blood impurities, febrifuge. Leaves used in cough and vomiting. Powdered rootstock is given in dyspepsia, diarrhoea and piles.

Fresh flowers are sold in the market during festivals.

Specimens examined: Karnala - Mandavgane (165, AHMA); Bhor Garden - Vartak (164, AHMA).
PAPAVERACEAE

Argemone L.


Prickly herbs with yellow juice; leaves sessile, spinuatuspinatifid; flower bright yellow, capsule 2-4 cm long, prickly; seeds blackish, reticulato-scrobiculate.

Fl - Fr : August - April. Local name : Pivla dhotra (M.); Swarnakhiri (S.). Locality : Throughout the area. Abundant, originally from tropical America, occurs as a troublesome weed in the cultivated land and along road sides.

Medico-botany : Parts used - Root, leaf juice. Literature - Root is alterative, used in all skin diseases. Seeds expe­ctoant, demulecent, emetic. Yellow juice is used in dropsy and cutaneous affections. Seeds are antidote to snake poison. Folk medicine - Water extract of roots is febrifuge. Leaves are crushed and juice with Til-oil (Sesamum indicum) is applied on swellings. Yellow juice of plant is given in jaundice. Yellow juice is always given along­with butter or ghee.

Argemone seeds are morphologically identical with Brassica seeds to naked eye. Due to similarity Argemone
seeds get adulterated with Brassica seeds. Fresh oil causes diarrhoea and vomiting. In Madhya Pradesh once due to consumption of such adulterated oil in food, many persons suffered from swelling at joints.

Specimens examined: Karnala - Mandavgane (168, AHMA); Panchgaon-Parvati (Pune) - Kulkarni (16063, AHMA); Pune - Upadhye (17303, AHMA).

FUMARIACEAE

Fumaria L.


Diffuse herbs; stem and branches glabrous, leaves multifid, segments flat; flowers in racemes, rose with purple tip; capsules globose. Fl - Fr: January - February. Local name: Pittapapada, Shatara (M.); Parpataka (S.). Locality: Hol, weed in cultivated fields. Commonly occurs after harvest of Triticum sp. in fields as a weed.

Medico-botany: Part used - Whole plant. Literature - Dried plant is enthelmentic, diuretic, diaphoretic. Water decoction with black pepper is given as febrifuge. It acts on liver.
It is one of the controversial drug 'Pittapapada' used as febrifuge (please see Chapter VI).

Specimens examined: Pune - Vartak (171, AHMA).

**BRASSICACEAE**

1. Flowers yellow
2. Stamens 2-4

1. Flowers white
2. Stamens 6

. Brassica
. Lepidium
. Raphanus

**Brassica L.**

1. Leaves sessile
2. Leaf margin undulate
2. Leaves with entire margin

. B. juncea
. B. olderacea
. B. campestris var. rapa


An annual erect herbs; stems tinged with purple; leaves pinnatifid or sinuate, lyrate; flowers white; pods 5 cm long, seeds many, brown. Fl - Fr : August - October.
Local name: Mohori, Hai (M.); Rajika (S.). Locality: Pune, Mulshi, Bhor. Cultivated for oil seed.

**Medico-botany**: Part used - Seed oil. **Literature** - Seeds aid to digestion, stomachic. Oil is applied to skin on eruptions and ulcers.

Seeds are used in cooking. Oil is also used for cooking. Seeds are sold in market under market name Mohori.

Specimens examined: Mutha river side (Pune) - Vartak (172, AHMA).


Cultivated for thickened fleshy, edible root. Plant binomial, petals pale yellow. Local name: Naval col (M.); Bhutaghana (S.). Cultivated as Rabi and hot weather crop.

**Medico-botany**: Part used - Seeds. **Literature** - Seeds are mixed with hot water and applied as a poultice, is an efficient counter-irritant. Oil from seeds is mixed with camphor and applied on rheumatic pains.

Specimens examined: Pune - Upadhye (17686, AHMA).

Basal and lower cauline leaves are large; flowers in racemes, yellow. Fl - Fr : March - June. Local name : Kobi (M.); Dalamalini (S.). A large number of varieties of this are grown in gardens.

Medico-botany : Parts used - leaves, seeds. Literature - Leaves are stomachic, cardio-tonic. Seeds are diuretic, laxative, anthelmintic.

Specimens examined : Pune - Upadhye (17687, AHMA).

Lepidium L.


An erect, glabrous, annuals; leaves pinnatisect; flowers white; pods broadly elliptic, winged above. Fl - Fr : July - October. Local name : Halim, Aliv (M.); Chandrashur (S.). Locality : Pune, Mulshi, Kashele. Cultivated for seeds.

Medico-botany : Parts used - Seeds, leaves. Literature - Seeds have got galactogenic properties. Seeds are boiled in milk and given alongwith sugar. Given in inflammation.
and spleen affections. **Folk medicine** - Seeds are cooked in water and applied on boil as a poultice. Seeds are sold in market named as Halim.

Specimens examined: Fergusson College Botanical Garden (Pune) Vartak (189, AHMA); Kothrud - Upadhye (17305, AHMA).

**Raphanus L.**


Annuals; leaves hairy, pinnatifid, flowers in racemes, white with yellow or purple veins; pod cylindrical, seeds sessile. Fl - Fr : December - February. Local name : Mula, Dingri (M.); Bhumika-kshara (S.). Locality : Kashele, Bhandardara, Mulshi, Sinhagad. Cultivated as vegetable.

**Medico-botany** : Parts used - Leaves, seeds, root. **Literature** - Root is used in inflammations, piles. Useful in heart diseases. Seeds are diuretic. **Folk medicine** - Fresh leaf juice is laxative. Vegetable is sold in market.

Specimens examined: Donje - Vartak (188, AHMA); Bhandardara-Upadhye (17306, AHMA).
CLEOMACEAE

Cleome L.

1. Flowers in racemes
   - C. viscosa
1. Flowers in cymes
   - C. gynandra


Hairy annuals; leaves 2-5 foliante, elliptic; flowers in corymbose cyme; pinkish white; seeds muricate, dark brown.

Medico-botany : Parts used - Root, leaves, seeds. Literature - Root is febrifuge. Leaves are applied externally on boils to prevent formation of pus. Seeds are anthelmintic. Folk medicine - Fresh leaf juice is applied on ringworm. Also used for other skin diseases; inflammations and rashes.

Specimens examined : Karnala - Mandavgane (229, AHMA); Witthalwadi (Pune) - Gunjatkar (16073, AHMA).

Cleome viscosa L. Sp. Pl. 672. 1753; FBI. 1: 170; C. 1: 41;
Erect annuals; stems grooved; leaves 3-5 foliate; flowers in axillary racemes, yellow; fruit capsule; seeds subglobose, striate. Fl - Fr: September - June. Local name: Pivli tilvan, Hur-Hur (M.); Aditya-bhakkta (S.). Locality: Karnala, Katraj, Pune. Common weed throughout the area.

Medico-botany: Parts used - Seeds, leaves. Literature - Seeds are stomachic, laxative, diuretic, anthelmintic, used in inflammations. Leaf juice with oil is used as ear drop. Folk medicine - Leaves are crushed and applied on boils which helps in early ripening and smooth draining.

Specimens examined: Karnala - Vartak (244, AHMA); Katraj - Gunjatkar (16068, AHMA); Pune - Upadhye (17308, AHMA).

CAPPARACEAE

1. Leaves trifoliate  .. Crateva
1. Leaves simple
2. Stamens 4-6  .. Cadaba
2. Stamens 8-10  .. Capparis

Cadaba Forsk.

Isles 3 : 415. 1914; Fl. Tamil. Car. 1 : 37. \textit{C. indica}
Lamk. jFBI. 1 : 172; C. 1 : 45; GIMP : 43. \textit{C. farinosa}
Forsk.; KB. 1 : 193. Ill. KB. : 71A (under \textit{C. indica}).

Straggling much branched shrubs; flowers dirty white, in terminal one sided racemes; fruit irregularly torulose, dehiscent; seeds with orange-red aril. Fl - Fr : November - March. Local name : Habab (M.); Ballga (S.).
Locality : Pune, Kanakeshwar, Babhulsar. At Babhulsar, near forest office cultivated. Occasionally found.

Medico-botany : Parts used - Leaves, roots. Literature - Leaves and roots are purgative, enthelmintic. Folk medicine - Leaves are warmed and used as a poultice.

Specimens examined : Kanakeshwar - Sane (14950, AHMA);
Babhulsar - Ghate (17311, AHMA).

\textbf{Capparis L.}

1. Flowers solitary, axillary or in fascicles of two or three
2. Prostrate shrub, leaves orbicular, thorns hooked \quad .. \textit{C. spinosa}
2. Erect shrub, leaves elliptic-lanceolate thorns straight \quad .. \textit{C. zeylanica}
1. Flowers corymbose
3. Leaves linear \quad .. \textit{C. decidua}
3. Leaves oblong, elliptic
4. Flowers 2.5 cm in diameter: Tree  .. C. grandis

4. Flowers less than 2 cm in diameter: Climber  .. C. sepiaria


Straggling, glabrous shrubs; older branches leafless, flowers in cymes, red; fruit globular, beaked. Fl - Fr: November - March. Local name: Nepti, Kari (M.); Karira (S.). Locality: Pune, Babhulsar. Throughout the drier parts of the area.

*Medico-botany*: Parts used - Bark, fruit. *Literature* - Bark and fruit has an acrid, hot taste, analgesic, laxative, anthelmintic, used in vomiting and piles.

Specimens examined: Nagar road (Pune) - Ghate (16894, AHMA); Pune - Ghate (17315, AHMA).

*Capparis grandis* L. f. Suppl. 283. 1781; FBI. 1 : 176; C.2 : 50; KB. 1 : 199; GIMP : 49.

Medico-botany: Parts used - Bark, leaves. Literature - Infusion of bark and leaves is used on swellings.

Specimens examined: Parvati (Pune) - Vartak (204, AHMA); Satara road (Pune) - Kumbhojkar (14901, AHMA).

*Capparis sepiaria* L. Syst. ed. 10: 1071. 1759; FBI. 1: 177; C. 1: 51; KB. 1: 199; GIMP: 49; AS 1: 89. Ill. KB.: 76.

Woody climbers; leaves oblong, elliptic, glabrous; stipular spines, hooked; flowers in umbels, white; fruit berry, black when ripe. Fl - Fr: February - June. Local name: Kanther (M.); Kakadani (S.). Locality: Katraj, Pune. Common in drought-prone areas.

Medico-botany: Part used - Whole plant. Literature - The plant is febrifuge, alternative, tonic and used in skin diseases.

Specimens examined: Kanakeshwar - Sane (14951, AHMA); Bhandardara - Upadhye (17320, AHMA).


Diffuse shrubs; leaves variable, pubescent, stipules two, hooked, thorns orange coloured; flowers solitary, axillary, white; fruit ribbed, red when ripe. Fl - Fr:

Medico-botany: Parts used - Root, leaves. Literature - Root is tonic, diuretic, anthelmintic, used in rheumatism. Leaves are used as poultice.

Specimens examined: Raireshwar - Vartak (218, AHMA); Conical hill (Lonavala) - Upadhye (17321, AHMA).


KB. : 77 (under *C. horrida* L.f.)

Rigid shrubs; young shoots glabrous; leaves coriaceous, broadly elliptic; flowers solitary, axillary, white; fruit irregularly ovoid. Fl - Fr: February - May. Local name: Wagati, Govindphal (M.); Vyaghranakhi (S.). Locality: Karnala, Sinhagad, Pune, Vishalgad, Alibag. Common element of open forest.

Medico-botany: Parts used - Root, leaves. Literature - Root bark is sedative, stomachic. Leaves are used as counter-irritant. Folk medicine - Leaves are crushed and applied on swellings. Specimens examined: Sinhagad - Vartak (219, AHMA); Alibag - Sane (14953, AHMA); Vishalgad - Gunjatkar (16069, AHMA).
Small trees, much branched; leaves trifoliate; flowers in terminal corymbs, yellowish white; fruit berry, red when ripe. Fl - Fr: April - June. Local name: Vayavarna (M.); Varuna (S.). Locality: Karjat, Kashele area. Cultivated as ornamental plant in private gardens and also near temples.

Medico-botany: Parts used - Stem bark, leaves. Literature - Bark is bitter, astringent, stomachic, laxative, tonic, used in urinary disorders, expectorant, used in diseases of blood and chest. Folk medicine - Fresh leaf juice is used during stomach pain and vomiting. Dried, powdered stem bark is applied on cuts and wounds. In the market dried stem bark is sold under name Varun-Sal.

Specimens examined: Fergusson College Botanical Garden (Pune) - Vartak (251, AHMA); MACS Campus (Pune) - Tadphale (259, AHMA); MACS Campus (Pune) - Upadhye (17322, AHMA).
BIXACEAE

Bixa L.


Small, evergreen trees; leaves ovate, glabrous; flowers in terminal panicles, pink; fruit capsule, clothed with long, soft prickles; seeds covered with red pulp. Fl.-Fr : August - September. Fruits upto February. Local name: Shendri (M.); Sinduri (S.). Locality : Pune. Cultivated for beautiful flowers. Native of America.

**Medico-botany** : Parts used - Fruit, root, seeds.

**Literature** - Fruit is astringent, purgative. Root is febrifuge. Seeds are astringent, febrifuge and very good remedy for gonorrhoea. A red dye is obtained from pulp surrounding seeds.

Specimens examined : Karnala - Datar (266, AHMA); Pachgaon Parvati (Pune) - Kulkarni (16077, AHMA); Jawahar Garden (Pune) - Upadhye (17323, AHMA).

COCHLOSPERMACEAE

*Cochlospermum* Kunth

*Cochlospermum religiosum* (L.) Alston in Trimen, Fl. Ceylon
69

C. gossypium DC.; FBI. 1 : 190; C. 1 : 56; KB. 1 : 214;
AS 1 : 93. Ill. KB. : 82.

Trees with smooth bark; leaves at end of the branches,
palmately lobed, glabrous above; flowers large, showy,
bright yellow; fruit capsule; seed with white silky cotton.
Fl - Fr : February - April. Local name : Ganeri, Pili
Kapas (M.); Suvarna karpaa, Suvarnapushpa (S.). Locality :
Pune, Katraj. Found on hilly slopes, often cultivated.

Medico-botany : Part used - Gum, Literature - Gum is used
in cough. Very good remedy for gonorrhoea. Diuretic, seda­
tive, cooling. Folk medicine - Gum with sugar is recom­
ded in uterus pains. Crushed leaves are rubbed on head as
astringent. Gum is mild purgative.

In the market gum is sold under market name 'Kathalya
gond'. It never absorbs moisture from air and does not
have gumy texture. The seeds of this plant are edible.
It has sweet, oily taste.

Specimens examined : Katraj ghat - Vartak (269, AHMA);
Pachgaon-parvati (Pune) - Kulkarni (16078, AHMA); Katraj -
Ghate (17015, AHMA).
FLACOURTIACEAE

1. Flowers bisexual
   .. Casearia

1. Flowers unisexual
   .. Flacourtia

**Casearia Jacq.**


Small trees, bark yellowish-white; leaves coriaceous, stipulate; flowers in clusters; fruit orange-yellow, arilate. Fl - Fr : May - August. Local name : Modi (M.); Saptarange (S.). Locality : Khandala. Found in moist forests of Konkan.

**Medico-botany** : Part used - Root. **Literature** - Root is astringent, cathartic, promotes action of liver. Root decoction is used in piles and diabetes.

Specimens examined : Khandala - Upadhye (17688, AHMA).

**Flacourtia Comm.**

Small trees; leaves glabrous, elliptic; thorns axillary; flowers in racemes, glabrous, greenish-yellow, fruit globose, dark brown or purple. Fl - Fr: March - July. Local name: Kaker, Pan-avala (M.). Locality: Pune, Karnala. Common on hilly slopes.

Medico-botany: Parts used - Gum, fruits. Literature - Fruits are given in jaundice and enlarged spleen. Gum is given with other ingredients in cholera.

Specimens examined: Karnala - Datar (275, AHMA); Pavana Dam area - Ghate (17017, AHMA).

PITTOSPORACEAE

Pittosporum Banks


Small trees; leaves coriaceous, undulate; flowers in compound corymbs, yellow; fruit capsule, pisiform, seeds angular, black. Fl - Fr: April - October. Local name: Vekhari (M.). Locality: Baneshwar, Raireshwar. Common along the Western ghats.

Medico-botany: Parts used - Bark, oil. Literature - Bark is bitter, aromatic, used as febrifuge, good expectorant.
Specimens examined: Raireshwar - Vartak (281, AHMA).

**POLYGALACEAE**

**Polygala L.**

*Polygala arvensis* Willd. *Sp. Pl.* 3: 876. 1802; *P. chinensis* L., *FBI.* 1: 204; *C. 1*: 64; *KB.* 1: 233; *GIMP*: 199; *AS* 1: 100. *ILL.* *KB.*: 91B.

Erect annuals, glabrous; leaves thick, variable, coriaceous; flowers in axillary racemes, yellow; fruit capsule; seed with three membranous basal appendages. *Fl* - *Fr*: October - June. Local name: Phutani, Negali (M.).

Locality: Pune. Very common.

Medico-botany: Part used - Root. Literature - Root is given in fever and dizziness.

Specimens examined: Bhor - Vartak (284, AHMA); Katraj - Datar (289, AHMA).

**CARYOPHYLLACEAE**

**Polycarpaea Lamk.**


Erect annuals; dichotomously branched; leaves narrow

Medico-botany : Part used - Whole plant. Literature - Herb is used in urinary calculi, inflammatory swellings, ulcers. Plant ash is mixed with pepper and applied on ulcers and swellings externally. Leaf juice is mixed with concentrated viscous sugarcane juice (Kakvi) and given in jaundice. Folk medicine - Infusion of plant is given as febrifuge. It is one of the controversial plant Pittapapada (see Chapter VI).

Specimens examined : Katraj - Vartak (336, AHMA); Mapgaon - Sane (14955, AHMA).

PORTULACACEAE

Portulaca L.

1. Flowers in clusters
   1. Flowers solitary


Succulent prostrate herbs; stem reddish, swollen at nodes; leaves fleshy, spangled when fresh with glistening
dots; flowers in clusters, sessile, yellow; fruit capsule.  

**Medico-botany** : Parts used - Whole plant, seeds, leaves.  
**Literature** - Seeds vermifuge, leaves stomachic, laxative, used in urinary discharges, cures diarrhoea and piles.  
**Folk medicine** - Fresh plant is crushed and applied on swellings. It is very good pot herb. Vegetable is recommended in fevers.

Specimens examined : Karla - Vartak (347, AHMA); Karnala - Mandavgane (348, AHMA); Sinhagad - Gunjatkar (16085, AHMA).

**Portulaca quadrifida** L. Mant. 73. 1767; FBI. 1 : 247; C. 1 : 12; KB. 1 : 244; GIMP : 202; AS 1 : 102. KB. : 96A.

Annuals; stem filiform, leaves fleshy, stipules a ring of silvery hairs; flowers solitary, yellow; fruit capsule. Fl - Fr : November - February. Local name : Bhuighol (M.); Loni (S.). Locality : Pune. Common weed.

**Medico-botany** : Parts used - Leaves, seeds. **Literature** - Plant is bitter, laxative, used in cough, urinary discharges, skin diseases. Seeds are vermifuge.

Specimens examined : Pune - Vartak (353, AMHA).
TAMARICACEAE

Tamarix L.


Small dioecious trees with short trunk; leaves alternate, scale like; flowers in spikes, drooping, pink. Fl - Fr: November - February. Local name: Jhau, Lal-Jhau (M.); Jhauk (S.). Locality: Nagaon, Pen. Often found in marshy or sandy places and stream beds.

Medico-botany: Part used - Twigs and insect galls on leaves.

Literature - Twigs and galls are used as astringent.

Specimens examined: Bhor - Vartak (354, AHMA); Thal - Sane (14956, AHMA).

CLUSIACEAE

1. Lateral nerves on leaves conspicuous, closely parallel at right angles to mid-rib ............. Calophyllum

1. Lateral nerves not as above

2. Calyx bursting into two valves ............. Mammea

2. Calyx of 4-5 sepals, not bursting into two valves ............. Garcinia
A - *Tamarix ericoides* Rottl. found in river beds.

B - *Calophyllum inophyllum* L. an evergreen tree.
**Calophyllum L.**

KB. : 106. (Plate 5.11).

Handsome, middle sized glabrous trees; flowers white, fragrant; fruit globose, drupe. Fl - Fr : September - February.

Medico-botany : Parts used - Oil, bark, gum, leaves. Literature - Bark is astringent. Bark juice is powerful purgative. Gum from the wounded branches mixed with leaves and bark strip is steeped in water. The oil which rises to surface is useful remedy for indolent-ulcers. Crushed leaves are applied to inflamed eyes. Oil extracted from seed kernels is used for skin diseases and rheumatic pains externally. This is controversial plant, dried flower buds are used as Nag-Keshar (see Chapter VI).

Specimens examined : Revdanda - Sane (14958, AHMA); MACS Campus, Pune - Ghate (16903, AHMA); MACS Campus, Pune - Upadhye (17324, 17325, 17326, AHMA).

**Garcinia L.**

*Garcinia indica* Choiss. in DC. Prodr. 1 : 561. 1824; FBI. 1 : 1.

Medico-botany: Parts used - Fruit, Bark, Oil. Literature - Fruit is cooling, demulcent. Bark astringent. Oil is soothing, used as base for several skin ointments. Oil is white, thick. Fruit decoction is used in hyper acidity. Fruits are boiled in water and water extract is given in bloody stools. The oil called as kokam oil or kokam butter is used for external applications on ulcers, fissures of lips and wounds. Folk medicine - A serbet made-up of fruits in cold water is recommended as a household remedy. Cold water decoction of fruit with salt, sugar and jire (seeds of Cuminum cyminum) is recommended during high fevers due to heat, burning sensation in throat, loss of appetite. Kokam butter is used as a base for making ointment.

The dried fruit rids are salted and sold in market as Amsul. The kokam butter is sold in market as kokamtel or amsultel. Amsul is extensively used in cooking.
Specimens examined: Karnala - Mandavgane (368, AHMA).

**Mammea L.**


Large trees; leaves coriaceous, oblong, fluently pointed; flowers in axile of fallen leaves, white with redish-pink streaks; fruit berry. Fl - Fr: February - June. Local name: Surangi, Nag-keshar (M.); Punnag (S.). Locality: Karnala. Commonly found in Konkan.

Medico-botany: Parts used - Flowers, buds. Literature - Flowers are astringent, aromatic, carminative. Used in dyspepsia. Flowers buds are sold in market at Tambda Nag-keshar. It is a controversial drug. (See chapter VI).

Specimens examined: Karnala - Mandavgane (371, AHMA).

**MALVACEAE**

1. Fruit capsule

2. Seeds comose
   
   **Gossypium**

2. Seeds not comose

3. Capsules winged, tree
   
   **Kydia**
3. Capsules not winged, herb or shrub
   4. Calyx woody
      .. Thespesia
   4. Calyx thin
      .. Hibiscus

1. Fruit a schizocarp
   5. Epicalyx present
      .. Urena
   5. Epicalyx absent
      6. Mericarps 1-seeded
         .. Sida
      6. Mericarps 2-3 seeded
         .. Abutilon

*Abutilon* P. Miller


Woody under shrubs; leaves cordate; flowers axillary, yellow, fruit carcerule. Fl - Fr : January - April. Local name : Petari, Mudra, Atibala (M.); Atibala (S.). Locality : Pune, Mulshi, Wadeshwar, Sinhagad. Common element on waste places and canal sides.

Medico-botany : Parts used - Leaves, seeds, bark, root.

Literature - Leaves demulcent; infusion of roots is febrifuge; bark astringent, diuretic, seeds laxative. Folk medicine - In Pune district leaves are said to be used to control diabetes. Seven leaves are eaten for seven days and it is claimed that blood sugar comes down.
For ayurvedic plant 'Bala' there is a controversy for herbal resource (see Chapter VI).

Specimens examined: Sinhagad - Vartak (393, AHMA); Pune - Tadphale (396, AHMA); Pune - Upadhye (17329, AHMA).

Gossypium L.

1. Flowers yellow or yellow with purple base, cotton adherent to the seeds .. G. herbaceum
1. Flowers purple or yellow with purple base, cotton easily separable from seeds .. G. arboreum


Perennial shrubs; branches purple, hairy; leaves 5-7 lobed, coriaceous, stipules lanceolate; flowers solitary, purple. Fl - Fr : Throughout the year. Local name: Deokapas (M.); Karpus (S.). Locality: Bhor, Pune. Cultivated near temples and gardens.

Medico-botany: Parts used - Root, seeds, petals, cotton. Literature - Roots are used in fever, crushed leaves are applied on wounds. Petals squeezed and soaked in human or cow's milk and applied on eye during conjunctivities. Seeds are used in gonorrhea. Folk medicine - Cotton is burnt and ash is applied on wounds. Seeds roasted on ghee and boiled
in milk is galactogogue.

Specimens examined: Bhor - Vartak (406, AHMA).


Annuals, stems green, less hairy; leaves cordate, 3-5 lobed, yellow with purple base; capsule ovoid, globose. Fl - Fr: February - March. Local name: Kapas (M.); Karpasi (S.). Locality: Pune. Cultivated.

Medico-botany: Parts used - Seeds, root, cotton. Literature:
Seeds got galactogenic properties. Fresh root decoction is given after child birth. It helps in regaining original shape of uterus.

Specimens examined: Pachgaon-parvati (Pune) - Kulkarni (16090, AHMA).

Hibiscus L.

1. Flowers red .. H. rosa-sinensis
1. Flowers yellow

2. Epicalyx segments spreading or reflexed .. H. cannabinus
2. Epicalyx segments closely appressed to calyx .. H. sabdariffa

Shrubs with prickly stems; leaves glabrous, cordate, 3-5 lobed; flowers yellow with purple center; capsules beaked, hairy; seeds brown with scales. Fl - Fr : January - May. Local name : Ambadi (M.); Latakasturika (S.). Locality : Pune. Largely cultivated for vegetable and fibre.

Medico-botany : Parts used - Flowers, seeds. Literature - Flower juice with sugar and black pepper is given during acidity. Seeds are laxative. Seed poultice is externally applied on paining areas.

Specimens examined : Pune - Vartak (408, AHMA); Pashan (Pune) - Kulkarni (17331, AHMA).

Hibiscus rosa-sinensis L. Sp. pi. 694. 1753; FBI. 1 : 344; C. 1 : 120; KB. 1 : 335; GIMP : 133; GBMP : 144; AS 1 : 120. Ill. KB. : 134A.

Arborescents; leaves ovate-lanceolate, flowers large, red, staminal tube exserted beyond the petals. Fl - Fr : Throughout the year. Local name : Jasvand (M.); Japa (S.). Locality : Pune, Alibag, Karnala. Many horticultural varieties are cultivated throughout the area for showy flowers.
Medico-botany: Parts used - Root, leaves, flowers.

Literature - Root is extensively used during cough. Root juice is given in gonorrhoea. Crushed leaves are applied on swellings. Crushed leaves are said to be helpful in hair growth and it also helps in blackening of hair. Infusion of petals is given in fever. Folk medicine - Flowers are fried on ghee and given in excess menstruation.

Specimens examined: Alibag - Sane (14964, AHMA); Pachgaon-parvati (Pune) - Kulkarni (16092, AHMA).


Medico-botany: Parts used - Leaves, flower, seeds. Literature - Leaves are sedative. Flower decoction with salt and pepper is given in acidity. Succulent calyx is boiled in water and given in bilious conditions. Seed decoction is useful in dyspepsia and debility.

Specimens examined: Pune - Upadhye (17689, AHMA).
Kydia Roxb.


Medico-botany : Part used - Leaves. Literature - Leaves are made into paste and applied on rheumatic pains.

Specimens examined : Mahabaleshwar - Vartak (445, AHMA); Karnala - Datar (449, AHMA); Sinhagad - Ghate (17018, AHMA).

*Sida* L.

1. Stem with soft prickles .. *S. spinosa*
2. Stems smooth, without prickles
   1. Leaves cordate .. *S. cordifolia*
   2. Leaves linear-lanceolate
      3. Leaves glabrous on both sides .. *S. acuta*
      3. Leaves glabrous on upperside .. *S. cordata*

Branched shrubs; leaves lanceolate, serrate, stipulated; flowers axillary, yellow. Fl - Fr: Throughout the year. Local name: Bala, Janglimethi, Lahan Chikna (M.); Kajbala (S.). Locality: Pune, Kashele, Bhimashankar, Bhandardara, Mulshi. A common weed on road sides and waste places.

Medico-botany: Parts used - Root, leaves, seeds. Literature- Root is cooling, tonic, used in urinary disorders, febrifuge, stomachic. Leaves are mixed with rice and given to alleviate bloody flux. Seeds are given in gonorrhoea. Folk medicine - Crushed leaves are applied on wounds. Bandage from crushed leaves is made on minor fractures, especially for pet animals.

Specimens examined: Pashan (Pune) - Vartak (465, AHMA); Mapgaon - Sane (14971, AHMA); Pune - Upadhye (17328, AHMA).


Medico-botany: Parts used - Leaves, stem, root. Literature - Powdered leaves are applied on wounds. Root is used in rheumatism. Stem is demulcent.

Specimens examined: Gunjvani - Vartak (470, AHMA); Karnala - Datar (4740, AHMA).


Medico-botany: Parts used - Root, whole plant. Literature - Decoction of root with ginger is febrifuge. Root with sesame oil and milk is effective in curing cases of facial paralysis. Root bark powder with milk and sugar is recommended in frequent menstruation. Folk medicine - Leaf juice is applied on weeping wounds and abscess.

Specimens examined: Khandala - Upadhye (17690, AHMA).


Medico-botany: Parts used - Root, leaves. Literature: Tonic, used in urinary disorders and skin infections. Decoction of root, bark is given in ganorrhoea. Leaves are demulcent.

Specimens examined: Pune - Vartak (484, AHMA); Sinhagad - Vartak (485, AHMA).

All above Sida sp. are used as a controversial herbal drug 'Bala' (see Chapter VI).

**Thespesia Sol.**

1. Trees; leaves entire .. *T. populnea*
1. Shrubs; leaves 3-lobed .. *T. lampas*


Shrubs; leaves cordate, trilobed; flowers in axillary racemes, yellow turning crimson on maturity; fruit capsule. Fl - Fr: August - January. Local name: Hanksapas, Nanbhendi (M.); Van kapas (S). Locality: Kasara ghat; Murbad, Kashele. Abundent.
Medico-botany: Part used - Root. Literature - Root is used in gonorrhoea.

Specimens examined: Raireshwar - Vartak (494, AHMA);
Karnala - Datar (497, AHMA).


Small trees; leaves entire, stipules deciduous; flowers yellow with purple base; capsule globose. Fl - Fr: Throughout the year. Local name: Bhand, Bhindi-ke-khar (M.). Locality: Chikkhalgaon, Bhandardara, Pune. Common.

Medico-botany: Parts used - Root, fruit, flower. Literature - Root is acrid, good in heart troubles. Fruit yields yellow juice, it is used for local applications on scabies. Flowers are employed in the cure of itch.

Specimens examined: Bhor - Vartak (501, AHMA); Rewas - Sane (14975, AHMA).

Urena L.

A - *Urena lobata* L. (Mahabala) used on rheumatic pains and paralysis.

B - A white flowered variety of *Bombax ceiba* L.
Erect herbs; leaves cordate, serrate, lobed; flowers in axillary clusters; subsessile, pinkish purple; fruit capsule with blunt spines. Fl - Fr: September - May. Local name: Van-bhindi, Maha-bala (M.). Locality: Kashele, Mira donger, Murbad, Bhandardara, Mulshi. Common.

Medico-botany: Part used - Whole plant. Literature - Root is diuretic. Whole plant infusion is given in weakness after fever. Folk medicine - Whole plant is boiled in sesame oil and this 'Bala-tel' is applied on rheumatic pains and paralysis.

This is one of the controversial herbal drug Bala (see Chapter VI).

Specimens examined: Raigad - Vartak (503, AHMA); Mapgaon - Sane (14977, AHMA); Dakhnichi rai (Mulshi) - Upadhye (17332, AHMA).

BOMBACACEAE

1. Flowers red
   1. Flowers white
   2. Flowers large, 10-12 cm in diameter .. Bombax
   2. Flowers small, 2-4 cm in diameter .. Adansonia

   .. Cieba
Adansonia L.

*Adansonia digitata* L. Sp. pl. 1190. 1753; FBI. 1: 348; C. 1: 126; KB. 1: 351; GIMP: 6; GEMP: 8; AS 1: 123.

Middle sized trees; trunks with large diameter; leaves digitate, glabrous; flowers pendulous; fruit woody, 30-50 cm long, pulpy. Fl - Fr: August - April. Local name: Gorakh-chinch (M.); Gorakhi (S.). Locality: Poona University Campus, Kanakeshwar. Cultivated.

Medico-botany: Part used - Fruit. Literature - Fruit pulp is astringent, demulcent, useful in dysentery. Water decoction is used medicinally.

In Pune market fruits are sold under name Gorakh-chinch.

Specimens examined: Kanakeshwar - Sane (14948, AHMA); Poona University Campus - Ghate (16859, AHMA).

Bombax L.


Tall deciduous trees with hard conical prickles; leaves digitate, stipulate, flowers near ends of branches,
bright red; fruit capsule; seeds ovoid embedded in silky cotton. Fl - Fr: February - May. Local name: Kate Savar, Savar (M.); Shalmali (S.). Locality: Bhandardara, Pune, Kashele. Common in dry areas.

Medico-botany: Parts used - Root, bark, flowers, gum, prickles. Literature - Root is sweet, demulcent, diuretic. Bark is acrid, tonic, astringent, antidiysenteric. Gum is aphrodisiac, astringent, tonic, diuretic. Flower is bitter, cooling. Fruit purifies blood. Folk medicine - Gum is used as antidiysenteric. Prickle is dried, powdered and applied externally as good remedy for pimples. Crushed leaves are applied on swellings. The gum is sold in market as 'Mochras'.

The white flowered variety of this species is said to be more effective. It is observed only at one place near Karnala on Bombay-Goa highway. It is observed that the bark of this plant is often peeled and taken off by local people.

Specimens examined: Katraj - Vartak (536, AHMA); Khandala - Ghate (16865, AHMA); Pune - Upadhye (17333, AHMA).

*Ceiba P.Mill.*

Tall trees; leaves 5-9 foliate elliptic, oblong; flowers at the end of branches, dirty white; capsules fusiform. Fl - Fr: January - May. Local name: Savar, Pandhri savar (M.); Swet-simul (S.). Locality: Pune. Seen only in cultivated form.

Medico-botany: Parts used - Gum, roots. Literature - Gum is used to cure diseases of liver, spleen and blood. Roots are tonic, diuretic, root juice is used in diabetes.

Specimens examined: Pune - Datar (533, AHMA); Bhandarkar Road (Pune) - Chhate (16863, AHMA).

STERCULIACEAE

1. Petals present
   2. Petals white .. Pterospermum
   2. Petals coloured
      3. Petals red .. Helicteres
      3. Petals yellow
         4. Petals with bifid blade .. Guazuma
         4. Petals entire .. Eriolaena
   1. Petals absent .. Sterculia

Eriolaena DC.

Eriolaena quinquelocularis (Wt. and Am.) Wt. Ic. t.: 882. 1844-45; FBI. 1: 371; C. 1: 140; KB. 1: 377; GIMP: 109. Ill. KB.: 151B.
Small trees with spreading branches, leaves cordate, silvery white beneath; flowers in cymes, yellow; fruit capsule, 10-valved, woody. Fl - Fr: May - August. Local name: Budjari-dhaman (M.). Locality: Khandala, Mahabaleshwar, Thane, Sinhagad. Found throughout hilly, high altitude areas.

Medico-botany: Part used - Root. Literature - Root poultice is used to heal up wounds.

Specimens examined: Thane - Kumbhojkar (17020, AHMA); Sinhagad - Ghate (17021, AHMA).

**Guazuma Plum, ex Adans.**


Small trees; leaves cordate; flowers in panicals, axillary or terminal, yellow; fruit capsule, covered with blunt tubercles. Fl - Fr: March - September. Local name: Rudrakhi (M.) Locality: Pune. Planted along the roadsides.

Medico-botany: Part used - Bark. Literature - Bark is tonic demulcent, used in skin diseases.
Specimens examined: Pune - Vartak (556, AHMA); Pune - Ghate (17026, AHMA).

_Helicteres L._


Shrubs; shoots with stellate hairs; leaves crenate; flowers in axillary clusters, bilabiate, red; pod twisted together as a screw. Fl - Fr : July - November. Local name : Murudshing, Kewan (M.); Avartant (S.). Locality : Karnala, Kanakeshwar, Kashele, Khandala. Abundant undergrowth in thick forests. Pure stand formed by this shrub is located near fort Sinhagad.

Medico-botany: Parts used - Fruit, root. Literature - Root is expectorant, demulcent, cures scabies, used in stomach affections and diabetes. Fruits are made into liniment for sores of the ear and are administered internally as colic.

Folk medicine - Whenever there are pains in abdomen with twisting sensation called as 'Murda', water decoction of pods is given. An ingredient in Bal-guti, given every day to children. In the market fruit is sold under name 'Murudshinge'.

Specimens examined: Karnala - Datar (608, AHMA); Lohagad -
Vartak (560, AHMA); Kashele - Upadhye (17334, AHMA);
Sinhagad - Upadhye (17335, AHMA).

**Pterospermum Schreb.**

*Pterospermum acerifolium* Willd. Sp. pl. 3 : 729. 1800; FBI.

1 : 368; C. 1 : 137; KB. 1 : 374; GIMP : 206. III. KB. : 150.

Large trees; young parts pubescent; leaves oblong, variously lobed, clothed beneath with tomentum, stipulate; flowers solitary axillary, white; fragrant; fruits capsule.


Medico-botany : Part used - Flowers. Literature - Flowers are bitter, laxative, cure ulcers and urinary discharges. Useful tonic. Flowers and bark charred and mixed with Kamala, are applied in suppurating small-pox.

Specimens examined : Kanakeshwar - Sane (14987, AHMA); Pune - Chate (17028, AHMA); Pune - Upadhye (17336, 17337, AHMA).

**Sterculia L.**

1. Leaves entire .. *S. guttata*
1. Leaves digitate or lobed

2. Flowers rusty-yellow; bark smooth; follicles with stinging hairs .. *S. urens*
2. Flowers flesh-coloured; bark rough; follicles glabrous .. *S. foetida*


Large trees with whitish bark, leaves digitate; flowers in panicles, got strong arms; fruit woody, bright red when ripe. Fl - Fr : February - June. Local name : Pun, Jangli badam, Goldar (M.). Locality : Pune. Not very common; often planted in public gardens.

**Medico-botany** : Parts used - Leaves, fruits, seeds. 
**Literature** - Leaves are repellent. Oil from seeds is laxative, carminative. Fruit is astringent.

Specimens examined : Pune - Vartak (581, AHMA).

*Sterculia guttata* Roxb. ex DC. Prodr. 1 : 482. 1824; FBI. 1 : 355; C. 1 : 132.

Tall trees; bark cracked; leaves entire, glabrous; flowers in racemes, polygamous; follicles orange red. Fl - Fr : January - April. Local name : Kukar, Goldar (M.). Locality : Pune, Bhandardara, Katraj, Karnala, Ambavne. Common on ghats.

**Medico-botany** : Parts used - Stem, bark, seeds. Folk
medicine - Stem bark along with phangli leaves (leaves of *Pogostemon parviflorus*) and maka leaves (leaves of *Eclipta alba*) are crushed and juice is given as remedy for fevers. Seeds are sedative.

Specimens examined: Karnala - Datar (584, AHMA); Ambavne - Ghate (17030, AHMA).


Medico-botany: Part used - Gum. Literature: Gum is known as Karai-gond and it is used as substitute for gum tragacanth, used in throat affections. Folk medicine: Gum is applied externally on scorpion bite. For the athlete's foot, foot are rubbed on stem of this tree.

Specimens examined: Sinhagad - Vartak (591, AHMA); Kanakeshwar - Sane (14990, AHMA); Pen - Ghate (17055, AHMA); Varsai - Upadhye (17339, AHMA).
TILIACEAE

1. Trees or shrubs ... Grewia
1. Herbs
2. Fruits with prickles ... Triumfetta
2. Fruits smooth ... Corchorus

Corchorus L. (Plate 5.3)

1. Capsule globose, beak absent ... C. capsularis
1. Capsule elongate, beaked
2. Capsule cylindrical, beak long ... C. olitorius
2. Capsule triangular, beak short ... C. trilocularis


Annuals, glabrous, leaves lanceolate with apendage; flowers in cymes, capsule globose. Fl - Fr : September - December. Local name : San (M.); Kalshak (S.). Locality : Kashele, Murbad, Katraj. Cultivated for fibre.

Medico-botany : Parts used - Root, leaves, fruit. Literature- Infusion of leaves is stomachic, demulcent, carminative. Decoction of dried root is given in diarrhoea. During dysentery leaves are eaten with raw rice.

Specimens examined : Katraj - Vartak (616, AHMA); Karnala - Vartak (617, AHMA).
Plate 5.3

Corchorus

Capsularis

C. oiltorius

C. trilocularis
Corchorus olitorius L. Sp. pl. 529. 1753; FBI. 1 : 397; C. 1 : 159; KB. 1 : 399; GIMP : 77; AS 1 : 130. Ill. KB. : 161A.

Annuals; stems glabrous; leaves lanceolate; flowers in cymes, yellow; fruit capsule, 5-valved; seeds trigonous, black. F1 - Fr : September - November. Local name : Mothechoche (M.); Nadik, Ebuhakchanchu (S.). Locality : Pune, Bhor, Katraj, Mulshi, Aarnala. Common.

Medico-botany : Parts used - Whole plant. Literature - Whole plant infusion is given in fevers. Leaves are demulcent, tonic, diuretic, removes abdominal pains, cures piles.

Specimens examined : Ambavde - Vartak (623, AHMA); Karnala - Mandvagne (626, AHMA); Dakhni - Upadhye (17340, AHMA).

Corchorus trilocularis L. Montiss. 77. 1767; FBI. 1 : 397; C. 1 : 158; KB. 1 : 401; GIMP : 77; AS 1 : 130. Ill. KB. : 162.

Annuals; less hairy; leaves elliptic - lanceolate with appendages, rough; flowers in cymes; fruit capsule, beaked, 3 valved. F1 - Fr : September - December. Local name : Kadu-chocne, Choche, Chanchu (M.); Katu-chanchu (S.). Locality : Kashele, Bhor, Baneshwar, Karnala. Common element of dry deciduous forests.
Medico-botany: Part used - Seeds. Literature - Seeds are febrifuge. It is given in abstraction of the abdominal viscera. Folk medicine - Seeds are dried and powdered. It is given with hot water during fevers.

Specimens examined: Nasarapur - Vartak (636, AHMA); Karnala - Vartak (638, AHMA).

Grewia L.

1. Shrubs  
   .. G. villosa

1. Trees
   2. Stipules leafy, auricled  .. G. tillifolia
   2. Stipules linear - lanceolate  .. G. subinaequalis


Small trees, clothed with stellate hair; leaves ovate, tomentose, 5-6 nerved; flowers in umbellate cymes, yellow; fruit drupe. Fl - Fr: April - June. Local name: Phalsa (M.); Parushak (S.). Locality: Pune, Kashele. Cultivated for edible fruits.

Medico-botany: Parts used - Root, bark, fruit. Literature - Fruit is sweet, cooling, tonic. Bark is used in urinary troubles. Root is used in rheumatism. Folk medicine - Root paste is applied on fractures as a plaster. Fruit
decoction in water is given as tonic. Cultivated for fruits which are used for making syrup.

Specimens examined: Gunjatkar - Junnar (16103, 16104, AHMA).


KB. : 155.

Trees with pale brown bark, leaves ovate, acuminate, pubescent; flowers in umbellate clusters, white; fruit drupe, globose, black. Fl - Fr : June - September. Local name : Dhaman, Thadsal (M.); Danvan (S.). Locality : Sinhagad, Katraj, Pune, Bhandardara. Common in deciduous forests.

Medico-botany: Part used - Stem bark. Literature - Bark is acrid, aphrodisiac, heal up wounds, useful in throat and nose complaints. Folk medicine - Dried stem powder is used as remedy in dysentery.

Specimens examined: Pune - Vartak (689, AHMA); Junnar - Gunjatkar (16102, AHMA).

Shrubs; leaves round, ovate, tuft of hair at the apex, 5 nerved; flowers in axillary cymes, yellow; fruit drupe, yellowish-red. Fl - Fr: May - August. Local name: Kharmati (M.). Locality: Pune. Common in dry areas.

**Medico-botany:** Parts used - Fruits, bark. **Literature** - Fresh bark juice with sugar and water is used for gonorrhoea and urinary complaints. Fruit is cooling.

Specimens examined: Ambegaon - Chate (16694, AHMA).

**Triumfetta L.**


Herbs, pubescent; leaves variable; flowers in terminal or leaf opposed cymes, yellow; fruit with glabrous spines. Fl - Fr: September - January. Local name: Jhinjhira (M.); Jhinjharita (S.). Locality: Pune, Mulshi, Aatraj, Bhandardara, Karnala. Common.

**Medico-botany:** Parts used - Leaves, root, bark. **Literature** - Leaves are mucilaginous, demulcent, given in gonorrhoea. Root is bitter, diuretic. Bark and fresh leaves used in diarrhoea and dysentery. **Folk medicine** - Hot root infusion is given to facilitate childbirth.
Specimens examined: Kalsubai - Vartak (727, AHMA); Karnala-Datar (730, AHMA).

LINACEAE

Linum L.

Linum usitatissimum L. Sp. pl. 277. 1753; FBI. 1 : 410; C. 1 : 164; KB. 1 : 408; GIMP : 154; GBMP : 133; AS 1 : 133.
Ill. KB. : 164A.

Annuals, corymbose branched; leaves linear-lanceolate; flowers in corymbose panicles; whitish-blue; fruit capsule; seeds smooth, dark brown, shining. Fl - Fr: February - May. Local name: Javas, Alshi (M.); Atasi (S.). Locality: Pune, Bhor, Bhandardara. Cultivated for oil and fibre.

Medico-botany: Parts used - Bark, leaves, oil, flower, seeds. Literature: Seeds are hot, oily, tonic, remove biliousness, inflammations, heal ulcers. Leaves are useful in asthma. Bark and leaves are good for gonorrhoea. Flowers are brain and heart tonic. Oil is useful in wound healing and for ringworm. Folk medicine - Seed mucilage with honey is given in cold and cough. Seed poultice is externally applied on boils, it helps in early ripening of boil. Seeds are sold in market under name Alshi or Javas. Seeds are edible, a nice chatny is made and it is a common food in the area under study.
Specimens examined: Pune - Vartak (763, AHMA).

MALPIGHIACEAE

Hiptage Gaertn.


Woody climbing shrubs; young parts silky; leaves entire, glabrous; flowers in racemes, very fragrant, white; fruit winged. Fl - Fr: January - March. Local name: Madhavlata, Madhumalti, Madhavi (M.); Atimukta, Malti (S.). Locality: Dakhani, Pune, Karnala. Grows abundantly near moist places.

Medico-botany: Parts used - Bark, leaves. Literature - Bark and leaves have got insecticidal properties. Used in cough, burning sensation, cures skin diseases. Folk medicine - Crushed leaves are applied externally on scabies and rheumatic pains.

Specimens examined: Karnala - Datar (782, AHMA); Pune - Ghate (14517, AHMA); Hadapsar - Upadhye (17342, AHMA); Dakhni - Upadhye (17341, AHMA).
ZYGOPHYLLACEAE

1. Leaves 1-3 foliate
   .. Fagonia

1. Leaves pinnate, leaf-lets
   3-6 pairs
   .. Tribulus

Fagonia L.


Spiny undershrubs, glandular; leaves opposite, 1-3 foliate, stipulate, pair of short thorns; flowers axillary, pink; fruit 1 seeded, cocci hairy. Fl - Fr : October - January. Local name : Dhamasa (M.); Dusaparsha (S.). Locality : Pune, Saswad, Mulshi. Very common weed in cultivated areas.

Medico-botany : Parts used - Whole plant. Literature - Plant is cooling, used in fevers, reduces asthma, cures dysentery and purifies blood. Bark is used in scabies. Infusion in hot water is febrifuge. Externally applied on swellings.

Folk medicine - Plant is excellent febrifuge. Whole plant is sold in market.

Specimens examined : Baramati - Vartak (13862, AhMA).
A - *Fagonia cretica* L., a crude drug source of 'Damasa'

B - *Nothapodytes foetida* (Wt.) Sleumer - abundantly found species, may get good commercial value in future.
Tribulus L.


Procumbent herbs with silky hairs; leaves pinnate, opposite, stipulate; flowers solitary, yellow; fruit globose, mucronate, woody cocci each with two pairs of hard, sharp spines. Fl - Fr: Throughout the year. Local name: Gokhru, Sarata (M.); Shudhra, Gokhura (S.). Locality: Karnala, Aanakeshwar, Bhimashankar, Pune. Abundent weed of drier parts.

\textbf{Medico-botany}: Part used - Fruit. \textbf{Literature} - Fruit is aphrodisiac, alterative, useful in urinary discharges, alleviating burning sensation, reduces inflammation, cures skin and heart diseases; useful in piles, tonic, cures gonorrhoea. \textbf{Folk medicine} - Mucilaginous water rendered by the plant is drunk as remedy for impotency, gonorrhoea and urinary disorders. Fruits are sold in market. An ayurvedic preparation Gokhuradhigugul, a mixture of this plant and Gugul is very famous remedy for urinary disorders.

Specimens examined: Karnala - Mandavgane (790, AHMA); Pashan (Pune) - Gunjatkar (16117, AHMA); Pune - Upadhye (17343, 17344, AHMA).
OXALIDACEAE

1. Leaves trifoliate; flowers axillary .. Oxalis
1. Leaves pinnate; flowers dimorphous, in umbles .. Biophytum

Biophytum DC.


Annuals; glabrous; leaves sensitive, pinnate; flowers yellow; fruit capsule. Fl - Fr : October - January. Local name : Lajri (M.); Lajjalu (S.). Locality : Pune, Sinhagad, Katraj, Khandala, Wadeswar, Raireshwar, Kanakeshwar. Common during rainy season.

Medico-botany : Parts used - Leaves, seeds. Literature - Leaves diuretic. Powdered seeds are applied on wounds.

Specimens examined : Katraj - Vartak (804, AHMA); Raireshwar-Vartak (807, AHMA); Kanakeshwar - Sane (15007, AHMA).

Oxalis L.

Small herbs; leaves trifoliate; flowers axillary, yellow; fruit capsule. Fl - Fr: September - February.

Medico-botany: Part used - Whole plant. Literature: Leaves are easy to digest, appetiser, cure skin diseases and fevers, cooling. Crushed with water are applied on inflamed parts. In Konkan, plant juice with onion juice is applied on head in bilious headache. Folk medicine - Plant juice is used by medicos-practioners for ayurvedic preparations - 'Bhasma'.

Specimens examined: Pune - Vartak (820, AHMA); Karnala - Mandavgane (814, AHMA).

**BALSAMINACEAE**

**Impatiens L.**


Annuals, stems pubescent; leaves alternate, serrate; flowers purple-red, spur incurved, fruit capsule, tomentose seeds reticulate. Fl - Fr: August - November. Local name: Terda (M.). Locality: Sinhagad, Torna, Karnala, Bhor, Mapgaon. Many ornamental varieties are cultivated in gardens.
Medico-botany: Part used - Whole plant. Literature - Plant is used in joint pains, emetic. Flowers are cooling, tonic.

Specimens examined: Bhor - Vartak (837, AHMA); Mapgaon - Sane (15011, AHMA).

RUTACEAE

1. Herbs
   1. Shrubs or trees
      2. Climbing shrubs
         3. Leaves trifoliate
         3. Leaves 7-foliate
   2. Trees
      4. Leaves unifoli ate
      4. Leaves tri- or many- foliate
      5. Flowers in panicles
         6. Panicles terminal
         6. Panicles axillary
            7. Stamens > 30
            7. Stamens 8-10
      5. Flowers in cymes

   .. Ruta
   .. Toddalia
   .. Zanthoxylum
   .. Citrus
   .. Limonia
   .. Aegle
   .. Glycoamis
   .. Murraya

   Aegle Corr.

Aegle marmelos Corr. in Trans. Linn. Soc. 5: 223. 1800;
FBI. 1: 516; C. 1: 204; KB. 1: 499; GIMP: 8; GBMP: 10;
AS 1: 147. Ill. KB.: 201.
Medium sized trees, spiny; leaves trifoliate; flowers in axillary panicles, greenish white; fruit berry, pulp orange red. Fl - Fr: April - November. Local name: Bel (M.); Bilva (S.). Locality: Sinhagad, Bhimashankar, Pune, Kanakeshwar. Commonly cultivated near Shiv Temples.

Medico-botany: Parts used - Root, fruit, leaves. Literature - Fruit pulp is cooling. Unripe fruit is used extensively in diarrhoea, astringent, stomachic. Root bark decoction is given in fevers. Fresh leaf juice is febrifuge. Root is one from famous ayurvedic 'Dashmula'. Folk medicine - Fruit pulp is preserved with sugar, an ayurvedic preparation called as 'Muramba' is prescribed in chronic cases of diarrhoea and dysentery.

It is a religious tree. The leaves are used to worship God 'Shiva', hence often planted near his temple. The dried roots are sold in Pune herbal drug shops.

Specimens examined: Kankeshwar - Sane (15013, AHMA); Pune - Ghate (17041, AHMA); Pune - Upadhye (17345, AHMA).

Citrus L.

Shrubs or small trees; petioles winged, leaves simple; flowers white, fragrant; fruit berry, yellow when ripe. Fl - Fr: Throughout the year. Local name: Mahalunga Limbu (M.); Bijapuro, Matulunga (S.). Locality: Pune. Cultivated widely throughout the area. Many varieties are cultivated as commercial crop.

Medico-botany: Parts used - Fruit, flowers, root. Literature - Root is anthelmintic, flowers are astringent. Fruit juice is refrigerant, distilled water of fruit is used as sedative. Marmalade is made from fruit rind and is prescribed in dysentery. Either alone or in combination is prescribed in snakebite. Oil can be extracted from seeds.

Specimens examined: Pune - Upadhye (17346, AHMA).

_Glycosmis Corr._

_Glycosmis pentaphylla_ (Retz.) DC. Prodr. 1: 538. 1824; PBI. 1: 499; C. 1: 192; GIMP: 126.

Small trees; leaves trifoliate, leaflets polymorphous; flowers in clusters, white; fruit berry, globose. Fl - Fr: January - April. Local name: Kirmira (M.); Ashvashakota (S.). Locality: Khandala. Grows on rich soil and high rainfall.
Medico-botany: Part used - roots. Literature - Root powder is mixed with sugar and given in low fevers.

Specimens examined: Khandala - Vartak (49, AHMA).

\textbf{Limonia Linn.}


Trees with sharp spines; leaves alternate, imparipinnate, winged; flowers in panicles, dull red; fruit globose, hard, rough. Fl - Fr : January - April. Local name : Kavath (M.); Kapittha (S.). Locality : Pune, Kashele, Bhandardara. Cultivated.

Medico-botany: Parts used - leaves, fruit. Literature - Fruit is acrid, astringent, refrigerant, aphrodisiac, cures cough, dysentery, vomiting, removes blood impurities, stomachic. Folk medicine - Leaf juice with black pepper is carminative. Pulp of ripe fruit is aromatic. Pulp with salt and spices forms chatny or sherbat is good stomachic. Jam can be made up from pulp. In market 'Kapitthaashtaka Churna' is sold which is used in chronic diarrhoea.
Specimens examined: Katraj - Vartak (951, AHMA); Pachgaon-parvati (Pune) - Kulkarni (16226, AHMA).

**Murraya** Koen. ex L.

1. Leaves 10-20 foliate  ..  *M. koenigii*
1. Leaves 3-7 foliate  ..  *M. paniculata*


Small trees aromatic; leaves imparipinnate; flowers in cymes, white; fruit ovoid. Fl - Fr: February - May. Local name: Kadhilimb (M.); Surabhinimba (S.). Locality: Ambavne, Mulshi, Karnala, Sinhagad. Cultivated for curry leaves, also found wild.

**Medico-botany**: Parts used - Root, leaves. Literature - Root is bitter, acrid, cures pile, allay heat of the body. Used as stimulent, externally used to cure eruptions. Leaves stomachic. Root and leaves are externally applied on bites and allergies. Folk medicine - Fresh leaf juice is used in distenfancy. Carminative. Leaves are used in curries as flavouring agent. An infusion of fried leaves is used to stop vomiting. In the market fresh leaves are sold with vegetables. Dried leaf powder is used in spices mixture and sold in market.
Specimens examined: Sinhagad - Vartak (954, AHMA); Karnala - Datar (956, AHMA); Pune - Upadhye (17347, 17348, AHMA).


Evergreen trees; leaves imparipinnate, ovate; flowers in corymbs, white; fragrant; fruit berry, red when ripe.

Fl - Fr: June - September. Local name: Kunti (M.).

Locality: Bhandardara, Pune, Kaigad. Sometimes cultivated as hedge plant.

Medico-botany: Part used - Leaves. Literature - Decoction of leaves is given in dropsy. Powdered leaves are applied on fresh cuts. Folk medicine - It is claimed that 7 raw leaves are eaten every day, to cure rheumatic pains.

Specimens observed: Raigad - Vartak (957, AHKA); Pune - Vartak (958, AHKA); Pune - Upadhye (17349, 17350, AHMA).

*Ruta L.*


Herbs with strong aroma; leaves decompound; flowers
in corymbs, yellow; fruit capsule. Fl - Fr: December - March. Local name: Satap (M.); Vishapaha (S.). Locality: Pune, Torna. Cultivated as medicinal and ornamental plant.

**Medico-botany: Parts used - Leaves, oil. Literature - It is acro-narcotic poison, diuretic, abortifacient, anti-aphrodisiac. It is given internally in hysteria, epilepsy and colic. Externally used as rubefacient. Oil is stimulant to uterine and nervous systems. It is not prescribed to pregnant women in any form. The dried leaves are used as fumigatory for children suffering from catarrh. Leaf juice is given to children as a remedy for worms. Plant juice has got antispasmodic and expectorant properties.**

**Folk medicine - Fresh leaf-tea is recommended in asthma. Leaf juice with equal part of honey is remedy for cough and bronchitis. Rue-oil is available in market. It consists of 90% of methylnonylketone.**

Specimens examined: FCBG (Pune) - Vartak (960, AHMA); Torna - Nipunage (17351, AHMA).

**Toddalia Juss.**

Prickly shrubs; leaves trifoliate, midrib prickly; flowers in cymes, white, unisexual; fruit globose, grooved, orange-red. Fl - Fr : September - January. Local name: Jangli Aali Mirchi (M.); Vrikkhamirach (S.). Locality: Khandala, Ambavne, Varandha. Found in high rainfall tract.

Medico-botany: Parts used - Root, bark, leaves, fruits. Literature - All parts are very pungent. Root bark is aromatic, tonic, febrifuge. Fresh leaves are eaten raw to get relief from pains in bowels. Unripe fruit is rubbed in oil and applied on rheumatic pains.

Specimens examined: Dhup-rahat - Vartak (961, AHMA).

Zanthoxylum L.


Middle sized trees with sharp curved prickles; leaves crowded at the end of branches, pinnate, leaflets opposite, lanceolate, glabrous; flowers in terminal paniculate cymes, yellow; fruit globose, black, shining. Fl - Fr : May - November. Local name: Tirphal, Chirphal (M.); Tabaru (S.). Locality: Dakhni, Dhup-rahat, Vishalgad, Lavarde, Chikkhalgaon. Common in moist deciduous forests.
Medico-botany: Parts used - Fruits, roots. Literature -
Fruit is aromatic, stomachic, astringent, digestive, relieves hiccups, prescribed in dyspepsia. Root bark is purgative.
Folk-medicine - Fruit is given with honey in rheumatic pains. It is a well-known spice and sold in market. It is very good digestive for non-vegetarian persons.

Specimens examined: Dhup-rahat - Vartak (963, AHMA); Vishalgal - Gunjatkar (16128, AHMA); Chikkhalgaon - Upadhye (17352, AHMA).

SIMARUBACEAE

Ailanthus Desf.


Tall trees, leaves pinnate, long; flowers in panicles, small; fruit samara. Fl - Fr: January - March. Local name: Maharukh (M.); Mahanimb, Mahavrukha (S.). Locality: Pune, Katraj, Kashele. Common on dry hilly tracts of low-rainfall area.

Medico-botany: Parts used - Bark and leaves. Literature - Bark is bitter, anthelmintic, febrifuge; used in dysentery and skin diseases. Bark and leaves are good tonic, used
especially in debility after child-birth. **Folk medicine** - Leaf juice is anthelmintic used internally as well as externally.

Specimens examined: Katraj - Vartak (971, AHMA); Pachgaon-parvati (Pune) - Kulkarni (16131, AHMA).

**BALANITACEAE**

**Balanitis Del.**


Small trees, armed with axillary or superaxillary sharp spines; leaves alternate; flowers in axillary clusters, white, fragrant; fruit drupe. Fl - Fr: March - September. Local name: Hinganbet (M.); Ingudi (S.). Locality: Pune. Distributed in dry hilly areas.

**Medico-botany**: Parts used - Bark, fruit, seeds. **Literature** - Bark, unripe fruit and leaves are purgative. Seeds are expectorant, colic. Plant is used in snake-bite.

Specimens examined: Vetal hills (Pune) - Vartak (972, AHMA).
BURSERACEAE

1. Drupe dehiscent; seeds winged .. *Boswellia*

1. Drupe indehiscent; seeds not winged

2. Deciduous trees; calyx 5 fid .. *Garuga*

2. Evergreen trees; calyx 3 fid .. *Canarium*

*Boswellia* Roxb.


Deciduous middle sized trees; leaves imparipinnate, crowded at the end of branches; flowers in axillary racemes, dull pinkish-white; drupe trigonous. F1 - Fr : February - March. Local name : Salphali, Salai (M.); Salakki (S.). Locality : Katraj, Sinhagad. Distributed along dry hilly slopes in dry deciduous forests or open scrubs.

Medico-botany : Parts used - Gum, bark, flowers. Literature - Bark is acrid, tonic, cures dysentery, purifies blood. Flowers are useful in piles. Gum is hot, antidysenteric, used in skin diseases, asthma, expectorant, heal wounds. Folk-medicine - Dried leaves are powdered and mixed with coconut oil, said to be good wound healer. The gum is said to be very useful on rheumatic pains. The drug made from it is known as 'Sallaki' and sold in the market.
Specimens examined: Katraj - Vartak (975, AHMA); Pune - Ghate (16867, AHMA); Pune - Upadhye (17362, AHMA).

Canarium L.


Large trees; young branches and leaves tomentose; leaves coriaceous; flowers in short, branched panicles; fruit drupe. Fl. - Fr: February - July. Local name: Hal-dhup, Kala damar (M.). Locality: Dhup-rahat (Varandha ghat). Rare, only recorded from a sacred grove at Dhup-rahat in Varandha ghat.

Medico-botany: Part used - Gum. Literature - Gum is used with gingeli oil in rheumatic pains and chronic skin diseases. 'Kala-damar' i.e. Gum resin of the tree is sold in the market. These are black, shining crystals with mild fragrance.

Specimens examined: Dhup-rahat - Vartak (977, 978, AHMA); Hirdoshi - Vartak (980, AHMA); Dhup-rahat - Upadhye (17364, AHMA).

Garuga Roxb.

Garuga pinnata Roxb. (Hort. Beng. 33, 1814. et); Cor. pl. 3 : 5, t. 208. 1819; FBI. 1 : 528; C. 1 : 211; KB. 1 : 524; GIMP : 123; AS 1 : 165. Ill. KB. : 210.

Medico-botany: Parts used - Fruits, leaves. Literature - Fruits are edible, stomachic. Pickle of fruits is recommended in stomach disorders. Leaf juice along with leaves of Adulsa (Jasticia adhatoda) and Mirgudi (Vitex negundo) is mixed with honey and recommended in asthma. Folk-medicine - The insect galls on leaves are used by local people as 'Kakadshingi', as it occurs on the Kakad tree (Local name). It is claimed that these galls are genuine 'Kakadshingi'. The water paste of the drug is antidysentric. This is one of the controversial herbal drug 'Kakad shingi' (See Chapter VI).

Specimens examined: Karnala - Datar (984, AHMA), Khandala - Ghate (16967, AHMA), Malshej ghat - Upadhye (17363, AHMA).

MELIACEAE

1. Shrubs
2. Trees

Turraea
3. Petals 5-6; disk annular
   .. Melia
3. Petals 5; disk absent
   .. Azadirachta
2. Leaflets entire
4. Anthers free, on orange disk
   .. Toona
4. Anthers in staminal tube
5. Anthers included
   .. Aphanamixis
5. Anthers exserted
   .. Chukrasia

Aphanamixis Bl.

Aphanamixis polystachya (Wall.) Parker in Indian Forest.
Wt. & Arn. ; FBI. 1 : 559; C. 1 : 224; AS 1 : 170. Ill.
KB. : 223.

Evergreen trees, young parts silky; leaves imparipinnate, leaflets inequalateral; flowers dioecious, male
flowers in axillary panicles, female flowers in spikes;
fruit capsule. Fl - Fr : July - December. Local name :
Rohida (M.); Rohitaka (S.). Locality : Pune, Malshej ghat,
Karnala, Kaigad. Often seen cultivated in gardens.

Medico-botany : Parts used - Bark, seed oil. Literature -
Bark is astringent, used in enlargement of spleen. Seed
oil is used as stimulating liniment in rheumatism. Folk-
medicine - Bark paste in cold water is applied externally
on boil, it helps in early ripening and draining of boil.
Specimens examined: Raigad - Vartak (996, AHMA); Karnala - Mandavgane (997, AHMA); Malshej ghat - Upadhye (17356, AHMA).

**Azadirachta Juss.**

t. 2. f. 5. 1832; C. 1 : 220; KB. : 1 : 536; GIMP : 31;

Large trees with straight trunk; leaves pinnate, crowded at end of the branches; flowers in axillary panicles, white, fragrant; fruit drupe. Fl - Fr : March - August. 
Local name: Kadu-nimb (M.); Neem (S.). Locality: Pune, Katraj, Kashele, Bhandardara. Occasionally seen wild, often planted near villages.

**Medico-botany:** Parts used - Every part is used medicinally. 
**Literature** - Bark is astringent, tonic, relieves burning and vomiting sensation, febrifuge, used in Malaria in place of Cinchona. Leaves are anthelmintic, insecticidal, good in skin diseases, used as poultice on boil and ulcers, urinary discharges. Flowers are bitter, tonic. Unripe fruit is purgative, cures urinary discharges and skin diseases. Also useful in eye diseases. Oil from seeds is bitter alternative, extensively used in skin diseases. Gum is demulcent, tonic. **Folk-medicine** - The tree is believed to be advantageous to health when planted around villages.
Bark decoction is used in intermittent fevers, convalescence and loss of appetite. Hot decoction of leaves is valuable healing lotion. The leaves are dipped in hot water and water is recommended to bath especially for small children after mescals. Fruits are used internally as anthelmintic. Fresh leaf juice is given internally as anthelmintic. It is also rubbed on scabies. The wood paste in water is applied on face for fair complexion. The tender twigs are used as tooth-brush and are believed to keep the breath and mouth clean. Leaf juice is given for 3 days after delivery. This tree is also called as Balant-nim at some places as extensively used after delivery. Hindus on their New Year celebration eat tender leaves with jagery and it is believed that this keeps healthy throughout the year. It is a divine tree as every part is used medicinally. This tree also gives very good shed. Sometimes planted on roadsides, gives good avenue. The species is resistant to all types of climate, hence useful for aorestation programme.

Specimens examined: Katraj - Vartak (997, AHMA); Kankeshwar - Sane (15018, AHMA).

Chukrasia Juss.

Chukrasia tabularis Juss. in Mem. Mus. Par. 19. 251, t. 22. fig. 27. 1830; FBI. 1 : 568; C. 1 : 229; KB. 1 : 560; GIMP : 63. Ill. KB. : 229.
Tall trees, young branches lenticellate; leaves pinnate, leaflets 5-8, upper larger than lower; flowers in terminal panicles, fruit capsule, seeds winged. Fl - Fr: March - August. Local name: Lal-devdar, Palasa (M.).
Locality: Pune, Bhimashankar. Found scattered in moist forests on hilly areas.

Medico-botany: Part used - Bark. Literature - Bark is astringent.

Specimens examined: Khandala - Santapau (1353, Blatter); Matheran - Irani (4003, 4004, Blatter).

**Melia L.**

1. Petals lilac; staminal tube purple .. *M. azadarach*
1. Petals greenish-white; staminal tube white .. *M. dubia*


Large trees; leaves pinnate, opposite, ovate, lanciolate; flowers in panicles, fragrant, lilac; fruit drupe.

Medico-botany: Parts used - Whole plant. Literature -
Medicinal properties are same as Azadirachta indica. Root is acrid, used in tumours; blood impurities, uterine pains after delivery. Seed oil is used in rheumatism. Leaves and bark are externally used for skin diseases. Bitter tonic. Folk medicine - Fresh leaf juice is given internally as anthelmintic. It is also applied externally on scabies, rashes due to worms and bacteria.

Specimens examined: Bhor - Vartak (1010, AHMA); Pune - Ghate (16935, AHMA); Pune (Khind) - Upadhye (17353, AHMA).


Handsome trees, clothed with stellate hairs; leaves bipinnate, leaflets opposite; flowers in panicles, fragrant; fruit drupe. Fl - Fr: February - May. Local name: Limbara, Kala-khajur (M.). Locality: Pune, Bhimashankar, Aankeshwar, Mira donger. Distributed in moist deciduous forests.

Medico-botany: Part used - Fruit. Literature - Fruit pulp is colic. Juice of green fruit with sulphur and curds is warmed and applied on skin diseases.

Specimens examined: Bhimashankar - Ghate (16937, AHMA).
Toona (Endl.) Roem.


Deciduous trees; leaflets sub-opposite, ovate; flowers in panicles, white, fragrant; fruit capsule, 5-valved; seeds winged. Fl - Fr : February - May. Local name: Tun (M.); Tuni (S.). Locality : Khandala, Karnala, Pune. Found on hilly slopes in moist deciduous forests.

Medico-botany : Parts used - Bark, flowers. Literature - Bark is astringent, tonic, used in chronic dysentery. Externally applied on ulcers. Flowers emmenagogue.

Specimens examined : Pune - Kulkarni (14904, AHMA); Pune - Chate (16933, AHMA).

Turraea L.


Large shrubs; leaves membranous; flowers in axillary umbels, yellow; fruit capsule. Fl - Fr : September - January. Local name : Kapurbhendi (M.). Locality : Wadeshwar, Haigad, Kankeshwar. Occasionally found.
Medico-botany: Part used - Root. Literature - Root paste is applied to fistulas and administered internally in leprosy.

Specimens examined: Haigad - Vartak (1023, AHMA); Mankeshwar - Sane (15020, AHMA).

ICACINACEAE


Small, evergreen trees; leaves ovate, crowded at the end of the branches; flowers in terminal cymes, dirty yellow, with foetid smell; fruit drupe. Fl - Fr: August - December. Local name: Narkya, Ghanera, Amruta, Hadaki (M.). Locality: Mahabaleshwar, Gutke (Ambavne), Sajjangad, Mulshi. Distributed in semi-evergreen and evergreen forests. In Pune at Gutke (Ambavne) a sacred grove, natural regeneration is recorded.

Medico-botany: Part used - Seeds. Recently anticancerous activity has been reported in seeds. If it is proved by clinical practices, this species is likely to be most promising among the local medicinal plants.
Specimens examined: Mahabaleshwar - Vartak (1042, AHMA); Ambavne - Vartak (17264, AHMA).

OLACACEAE

Olax L.

Olax scandens Roxb. Cor. Pl. 2: 2, t. 102. 1898; FBI.1: 575; C.1: 234; KB.1: 567; GIMP: 179. Ill. KB.: 232B.


Medico-botany: Part used - Bark. Literature - Bark is used in anaemia.

Specimens examined: Karnala - Datar (1038, AHMA); Ambavne - Vartak (17250, AHMA).

CELASTRACEAE

1. Fruit indehiscent
   1. Fruit dehiscent
      2. Unarmed shrubs without thorns
      2. Spinose shrub
         .. Cassine
         .. Celastrus
         .. Maytenus
Cassine L.


Small trees; leaves very variable; flowers in cymes; fruit drupe, obovoid. Fl - Fr : February - September.

Local name : Bhuskut, Bhutpala, Tamruj (M.). Locality : Bhandardara, Sinhagad. Distributed along low hill slopes in deciduous forests.

Medico-botany : Parts used : Leaves, roots. Literature - Powdered leaves are used as fumigatory snuff to relieve headache. Water paste of root is applied externally on swellings.

Many mysterious beliefs are associated with the wood of this tree. The Thakars keep stick made of wood from this species in the house to keep away evil souls. Mahadeokolis made tiwada (i.e. stand for separating grains from husk) from this wood only. In all the areas under study tribals believe that it is worth to tie pet animals to nail made from wood of this species.

Specimens examined : Sinhagad - Vartak (1052, AHMA); Bhandardara - Ghate (16971, AHMA).
Celastrus L.


Climbing shrubs; young branches with pale lenticular warts; leaves alternate, elliptic; flowers unisexual, yellowish-white in terminal panicles; capsule subglobose, bright yellow; seeds with fleshy, scarlet coloured aril. Fl - Fr : November - February. Local name : Malkanguni, Kanguni, Jyotishmati (M.); Kongoni (S.) Locality : Pune, Sinhagad, Khandala. Common along hills.

Medico-botany : Parts used - Seeds, stem bark, leaves. Literature - Stem bark is abortifacient. Leaves are emmenagogue. Seeds are emetic, laxative, powerful brain tonic, cures abdominal complaints. Seeds, yield oil as Kanguni oil. Oil is used on skin diseases. It cure sores, increases intelligence. Its chief interest lies in the fact that by destructive distillation along with benzoin, cloves, nutmegs and mace is obtained oleum nigrum of pharmacy which is used in the treatment of beri-beri. Folk medicine - Seed oil is used during measles. Rubbed on joints in rheumatic pains, skin diseases. In some areas this oil is used for lighting and it is edible also.
Specimens examined: Mutha riverside (Pune) - Vartak (1058, AHMA); Sinhagad - Vartak (1061, AHMA); Jawahar Garden (Pune) - Upadhye (17366, AHMA); Khandala - Upadhye (17365, AHMA).

Maytenus Molina


Shrubs; leaves variable; flowers in axillary cymes, bractate, white; fruit capsule, purple when ripe; seeds arillate. Fl - Fr: October - January. Local name: Hekal (M.); Bahuphala (S.). Locality: Mulshi, Bhimashankar, Karnala, Murbad, Haigad, Kankeshwar. Common.

Medico-botany: Parts used - Bark, fruit. Literature - Water paste of bark is applied on head to destroy lice. Fruit is sweet, edible, stomachic.

Specimens examined: Haigad - Vartak (1069, AHMA); Karnala - Datar (1072, AHMA); Kankeshwar - Sane (15027, AHMA).

Rhamnaceae

1. Leaves 3-5-ribbed; with thorns; fruit fleshy, stone
2. Leaves simple; stipulate; fruit dry, winged

.. Zizyphus
.. Ventilago
Ventilago Gaert.


Woody climbers; leaves elliptic-ovate, stipulate; flowers in panicles, greenish-yellow, fragrant; fruit dry, winged. Fl - Fr : December - March. Local name : Lokhandi, Madavlata (M.); Naktavalli (S.). Locality : Dakhni Pune, Karnala, Raireshwar. Common climber in deciduous forests.

Medico-botany : Parts used - Bark. Literature - Bark is carminative, stomachic, used in debility, dyspepsia and mild fever. Dried bark powder mixed with gingelly oil is applied externally on skin diseases.

Specimens examined : Raireshwar - Vartak (1086, AHMA); Karnala - Datar (1092, AHMA); Hadapsar Garden (Pune) - Upadhye (AHMA).

Zizyphus Mill.

1. Leaves 3-nerved at base; flowers in axillary cymes
   .. Z. mauritiana

1. Leaves 5-nerved at base; flowers in paniculate cymes
   .. Z. rugosa

Zizyphus mauritiana Lam. Encycl. 3 : 319. 1789; Fl. Tamil. Car. 1 : 271; Z. jujuba (L.) Gaert.; FBI. 1 : 632; C. 1 :
Small trees; leaves trinerved at base; flowers in axillary cymes, greenish-yellow; fruit drupe, fleshy. Fl-Fr: August - January. Local name: Bor (M.); Badari (S.). Locality: Katraj, Mapgaon, Pune, Sagargad, Khandala. Common element of scrub jungles all over the area. A pure stand of this species is observed at Sagargad.

Medico-botany: Parts used - Fruit, root, seeds. Literature - Fruit is mucilagenous, aids digestion, good in blood diseases, Natural sources of vitamins. Root decoction is recommended in fevers. Powdered root is applied on wounds. Folk medicine - Fruits are dried and a decoction along with other ingredients (Pimpli, Jeshtamadh, Gulvel) is given in thrust during high fevers. Stem bark paste in water is applied externally on swellings.

Many horticultural varieties are cultivated. Now a days it is very important commercial crop in dry areas as water requirement is less.

Specimens examined: Katraj - Vartak (1104, AHMA); Mapgaon-Sane (14782, AHMA).

*Zizyphus rugosa* Lamk. Encyc. 3. 319. 1789; FBI. 1 : 636; C.
Straggling shrubs, tomentose; leaves elliptic, 5 nerved at base; flowers in paniculate cymes; fruit drupe.

Fl - Fr: February - May. Local name: Toran (M.).


Medico-botany: Part used - Flowers. Literature - Flowers are used in gonorrhoea.

Specimens examined: Karnala - Mandavgane (1117, AHMA); Kankeshwar - Sane (15034, AHMA).

VITACEAE

1. Flowers in paniculate cymes
2. Tendril on inflorescence peduncle
3. Berries 1 seeded

Ampelocissus Planch.

Large, woody climbers; bark tinged purple; tendrils forked; leaves simple, 3-7 angled or lobed, flowers red; fruit globose, black. Fl - Fr: June - September. Local name: Golinda (M.). Locality: Dakhni, Pune, Bhor. Distributed in moist forests.

Medico-botany: Part used - Roots. Literature - Root paste is applied on wounds.

Specimens examined: Bhor - Vartak (1142, AHMA); Pachgaon-parvati (Pune) - Kulkarni (16153, AHMA).

Cayratia Juss.


Succulent climbers; tendrils short, branched; leaves trifoliate, pubescent, stipulate; flowers in cymes; fruit berry, seeds tringular. Fl - Fr: August - October. Local name: Ambet-vel (M.). Locality: Sinhagad, Dakhni. Not common.

Medico-botany: Part used - Root. Literature - Roots are astringent, cooling.
Specimens examined: Atkarwadi - Vartak (1115, AHMA); NACS Campus (Pune) - Kumbhojkar (1161, AHMA).

Cissus L.

1. Leaves trifoliate
2. Leaves simple
3. Leaves with orange-red pubescence
4. Leaves glabrous
5. Stems angled
6. Stems terete
7. Stems woody below
8. Stems weak, trailing


**Medico-botany**: Part used - Root. **Literature** - Decoction
of root is diuretic, used as blood purifier. Dried, powdered root is applied on cuts.

Specimens examined: Raigad - Kumbhojkar (1164, AHMA); Atkarwadi - Vartak (1165, AHMA).


Climbing shrubs; tendrils simple; leaves pale green, cordate, the margins with distinct glandular in curved serratures; flowers in umbellate cymes. Fl - Fr: June - October. Locality: Pune, Kankeshwar. Not common.

Medico-botany: Part used - Root. Literature - Roots are used in rheumatic pains and also applied on swellings.

Specimens examined: Jejuri - Vartak (1179, AHMA); Kankeshwar - Sane (15041, AHMA).


Stems leafless when old, quadrangular; flowers in umbellate cymes; fruit berry, red when ripe.
There are two other biotypes, one with triangular stem and the other with two-angled stem, which are cultivated in gardens. Fl - Fr: July - September. Local name: Hadsandhi, Kandvel, Chaudhari Kandvel (M.); Asthisandhana (S). Locality: Kashele, Pune. Cultivated.

Medico-botany: Part used - Whole plant. Literature - Stem is bitter laxative, useful in piles and chronic ulcers. Stem juice is useful in irregular menstruation. Stem beaten into a paste is given in asthma; boiled in lime water - it forms a preserve useful as a stomachic. Leaves and shoots are alterative. Folk medicine - Stem is crushed and applied on wounds, burns and fractures. Plant infusion is purgative. Plant is edible. Crushed plant is used in chatny and papads by local people. Plant ash is used as substitute for baking powder. Plant yields fibre.

Specimens examined: FCBG (Pune) - Vartak (1184, AHMA); MACS (Pune) - Kumbhojkar (1186, AHMA).


Branches subterete when fresh, angled when dry; tendrils weak, leaf-opposed, forked; leaves membranous; flowers in umbellate cymes; seed berry, one seeded. Fl -
Fr: January - April. Local name: Basiji.
Locality: Karnala, Kankeshwar. Found in evergreen and semi-evergreen forests.

Medico-botany: Part used - Whole plant. Literature - Plant is applied on ulcers, boils and small abscesses.
Specimens examined: Karnala - Kumbhojkar (1196, AHMA); Karlikhind - Sane (15043, AHMA).


Whole plant is clothed with scattered, glandular, bristly hairs; leaves succulent, sessile, trifoliate; tendrils leaf opposed, forked, long; flowers in cymes; fruit berry, hispid, scarlet. Fl - Fr: November - January. Local name: Khajagolicha-vel (M.). Locality: Pune, Katraj.

Medico-botany: Part used - Leaves. Literature - Leaves stimulant, applied externally for extraction of guinea worms.
Specimens examined: MACS garden (Pune) - Kumbhojkar (1200, AHMA).
Vitis L.


Large deciduous climbers; tendrils long, bifid; flowers in paniculate cymes, green; fruit berry. Many agricultural hybrid varieties are cultivated. It is a commercial crop in the area under study. Fl - Fr : December - March. Local name : Angur, Draksha (M.); Drakhsha (S.). Locality : Ahmednagar, Pune. Widely cultivated.

Medico-botany : Parts used - Stem, leaves, fruit. Literature - Sap from young branches is applied on skin diseases. Leaves astringent. Juice of unripe fruit is used in throat affections. Dried fruit is demulcent, cooling, laxative, useful in thirst, cough. Used in compound ayurvedic preparations as digestive.

Specimens examined : MACS garden (Pune) - Kumbhojkar (1277, AHMA); Pune - Gunjatkar (16160, AHMA).

LEEACEAE

Leea L.

1. Leaves simple .......... L. macrophylla
1. Leaves pinnate .......... L. indica


Medico-botany : Parts used - Roots, leaves. Literature - Root is diuretic, colic, relieves thirst. Leaves are roasted and applied on the head in vertigo.

Specimens examined : Mahabaleshwar - Vartak (1217, AHMA); Karnala - Datar (1222, AHMA).


Medico-botany : Part. used - Root. Literature - Root is employed in the cure of guinea-worm. Leaves are edible.

Specimens examined : Karnala - Vartak (1234, 1235, 1236, AHMA).
1. Fruit a capsule, membranous
   2. Climbers; capsules inflated .... Cardiospermum
   2. Shrubs; capsules winged .... Dodonaea
1. Fruit a drupe or a schizocarp
   3. Fruit not lobed .... Schleichera
   3. Fruit lobed
      4. Leaflets trifoliate; seeds with short aril .... Allophylus
      4. Leaflets even pinnate; seeds without aril .... Sapindus

**Allophylus L.**


Shrubs, often scandent; leaves trifoliate; flowers in spikes, white; fruit schizocarp, red when ripe. Fl - Fr : May - September. Local name : Tifan (M.). Locality: Mahabaleshwar, Raigad, Bhimashankar, Varandha, Khandala. Common in the ravines of high rainfall region.

Medico-botany : Parts used - Leaves, root. Literature - Root is astringent. Folk medicine - Leaves are dried and powdered. This powder is pressed on deep wounds and cuts.
Specimens examined: Varandha - Vartak (1283, AHMA); Mahabaleshwar - Vartak (1286, AHMA); Khandala - Upadhye (17375, AHMA).

**Cardiospermum L.**


Annuals or perennials; branches straight, glabrous; leaves deltoid, leaf segments lanceolate in cisoserrate; flowers in umbellate cymes, white; fruit a capsule with heart-shaped aril. Fl - Fr: December - January. Local name: Kan-futi, Kapal-fodi, Tejovati (M.); Karna-sphosta (S.). Locality: Pune, Baneshwar, Lonavla. Common all over the area.

Medico-botany: Parts used - Root, leaves. Literature - Plant is used in rheumatism. Leaf juice promotes the menstrual flow. Used as demulcent in gonorrhoea. Root is diuretic. Leaves with castor oil are used externally as well as internally in rheumatic pains. Folk medicine - Leaf juice is dropped into ears to cure ear-ache. Whole plant is crushed with milk and applied externally on swellings.

Specimens examined: Parvati (Pune) - Vartak (1288, AHMA); Nasarapur - Vartak (1290, AHMA).
Dodonaea Mill.


Shrubs or a small trees; leaves elliptic-lanceolate; flowers unisexual or polygamodioecious, in axillary or terminal cymes, greenish-yellow; fruit capsule, compressed, orange-brown. Fl - Fr : November - February. Local name : Jakhmi, Bandari (M.). Locality : Pune, Bhandardara, Bhor. Many times cultivated on hedges. Often escaped and run wild.

Medico-botany : Parts used - Leaves, bark. Literature - Leaves are febrifuge. Powdered leaves are applied on wound, heal it without leaving a white scar. Used in rheumatism. Bark is astringent, used to take bath and fomentations. Folk-medicine - Leaves are laxative. Leaves are warmed, crushed and applied on wounds and burns.

Specimens examined : Bhor - Vartak (1293, AHMA); Pune - Upadhye (17370, 17371, 17372, 17373, AHMA).

Sapindus L.

Sapindus emarginatus Vahl, Symp. Bot. 3 : 54. 1794; Fl. Tamil. Car. 1 : 299. S. laurifolius Vahl. ; FBI. 1 :
Trees; leaves pinnate, leaflets subopposite, lanceolate, glabrous; flowers in panicles, dirty white; fruit trilobed; seeds black. Fl - Fr: November - March. Local name: Ritha (M.); Arishtaka (S.). Locality: Siddheshwar, Bhimashankar, Pune, Karnala, Kanakeshwar. Occurring in moist deciduous forests. Sometimes cultivated.

Medico-botany: Parts used - Fruit, root. Literature - Fruit is emetic, abortifacient, sedative to uterus. Root is expectorant. "As an emetic: nauseant and expectorant. The pericarp or pulp of sope-nut is quite equal to Ipecacuanha, if not superior to it, and is very useful in all the affections in which latter is indicated. The emetic action of sope-nut always relieves asthma to more or less extent and generally more speedily, than ipecacuanha and Tylophora indica". (Kirtikar & Basu, 1935). Folk medicine - Viscus solution of fruits is applied externally on skin diseases.

The sope-nuts are also used to wash clothes, hairbath and gold ornaments. It is now-a-days used in cosmetics. Oil from seed is a rich source of n-eicosanic acid.

Specimens examined: Karnala - Mandavgane (1300, AHMA); Kanakeshwar - Ghate (1694, AHMA); Khandala - Upadhye (17368, AHMA); Pune - Upadhye (17369, AHMA).
Schleichera Willd.


Trees with grey bark; leaves pinnate, pubescent; flowers in axillary racemes, yellowish-green; fruit dry, pointed; seeds with pulpy edible aril. Fl - Fr : February - June. Local name : Kosimb (M.); Koshamra (S.). Locality : Kashele, Raireshwar, Baneshwar. Common in dry and moist deciduous forests.

Medico-botany : Parts used - Bark, fruit, leaves. Literature - Bark is astringent, mixed with oil and used as a cure for itch. Fruit is used in biliousness, increases appetite. Fruit oil is tonic, stomachic, anthelmintic. Folk medicine - Fresh leaf juice is applied on skin diseases. Bark powder is boiled in oil and applied externally to promote hair-growth.

Specimens examined : Raireshwar - Vartak (1302, AHMA); Baneshwar - Upadhye (17454, 17355, AHMA).

ANACARDIACEAE

1. Leaves simple
2. Drupes seated on fleshy receptacle
3. Main nerves 10-12, finely reticulate
   .. Anacardium
3. Main nerves 15-25, making an angle with, sometimes horizontal
   .. Semecarpus
2. Drupes not seated on fleshy receptacle
   .. Anacardium occidentale
4. Drupes small, not fleshy
   .. Bachnania
4. Drupes large, fleshy
   .. Mangifera
1. Leaves compound
   .. Lannea
5. Leaf base oblique
   .. Spondias
5. Leaf base not oblique

Anacardium Rottb.


Medico-botany : Parts used - Bark, leaves, flowers, fruits. Literature - Fruit is aphrodisiac, anthelmintic. Bark is alterative. Root is purgative and fruit is antidiarrhoeal.
Tar from bark is counter-irritant, used for external applications on ringworms, corns and ulcers. Kernel yields oil which can be used in place of almond oil. Nut shell yields black oil which is subefacient and vesicant. A liquor from fruits is applied externally on rheumatic pains. **Folk-medicine**: A water paste of nut with kernel is applied on abscesses which helps in early ripening of it. Nut is used in confectionery and hence promising tree for improving economy of backward farmers.

Specimens examined: Karnala - Mandavgane (1311, AHMA); Nagaon - Sane (15051, AHMA); Karjat - Ganjatkar (16168, AHMA).

**Buchanania Spreng.**


Medium sized trees; leaves coriaceous, oblong; flowers in panicles, sessile, greenish white; fruit drupe, lentiform. Fl - Fr: January - May. Local name: Charoli, Chircharoli (M.), Char (S.). Locality: Katraj, Sinhagad, Karnala.

Common in open dry forests.
Medico-botany: Parts used - Leaves, seeds. Literature - Leaf juice is digestive, expectorant, purifies blood. Seeds are tonic, stomachic, seed oil is used as base in medicinal preparations. Folk medicine - Oil is used for external applications on skin diseases. In confectioneries seeds are substituted for almond. Promising species for aforestation programme.

Specimens examined: Katraj - Vartak (1313, AHMA); Karnala - Mandavgane (1315, AHMA).

Lannea A. Rich


Large trees; leaves crowded at the end of the branches, leaflets ovate, oblong, glabrous; flowers in terminal panicals, greenish yellow; fruit drupe, purple when ripe. Fl - Fr: February - June. Local name: Shimti, Koya, Mogerri (M.); Jingini (S.). Locality - Katraj, Sinhagad, Bhandardara, Karnala, Kashele. Very common. Major element associated with Anogeissus - Bowellia community in dry deciduous forests.
Medico-botany - Parts used - Bark, leaves, gum. Literature - Bark is astringent. Gum is antidysenteric. Gum is mixed with coconut milk, and applied on local swellings and pains. Leaves are crushed and applied on swellings. Folk-medicine - Bark decoction is used for gargling, cures cough and toothache.

Specimens examined: Katraj - Vartak (1325, AHMA); Karnala - Datar (1328, AHMA).

Mangifera L.


Large, evergreen trees; leaves coriaceous, oblong-lanceolate; flowers monoecious, in panicles; fruit drupe, fleshy, pyriform. Fl - Fr : February - June. Local name: Amba (M.); Amra (S.). Locality: Pune, Bhimashankar, Shandardara, Karnala, Kanakeshwar. Distributed in evergreen to dry deciduous forests. Many horticultural varieties are cultivated. A great variation in the fruit types in the wild forms is recorded at Bhimashankar.

Medico-botany: Parts used - Bark, leaves, flowers, gum. Literature - Bark infusion is used in menorrhagia and bleeding piles. Bark juice is antisyphilitic. Leaves
are smoked in throat affections. Decoction of dried flowers is used to cure chronic dysentery. Gum is applied on cracked feet. Ripe fruit is laxative, tonic. Fruit kernel is astringent and cures local discharges. Folk medicine - Stem bark paste in water is antidysenteric. Leaf latex is used in eye diseases and also applied on cracked feet. Ripe and unripe fruit is much valued for edible purpose. Many recipes are made and consumed in the area. It is also eaten raw. Leaves are used during religious purpose.

Specimens examined: Karnala - Vartak (1331, AHMA); Kanakeshwar - Sane (15054, AHMA).

Semecarpus L.f.


Small trees; leaves ovate, rounded at apex; flowers in panicles, greenish-white, fruit drupe, black, shining when ripe, with fleshy receptacle. Fl - Fr: May - August. Local name - Bibba, Bhilva (M.); Bhallataka (S.). Locality - Pune, Bhandardara, Mulshi, Sinhgad, Varandha, Karnala. Common element of dry deciduous forest along hilly slopes.

Medico-botany: Parts used - Nut, rind, gum. Literature - Fruit is anthelmintic, aphrodisiac. Kind of fruit is
stomachic, laxative. Seed oil is used in leucoderma, coryza, epilepsy. Tonic. Oil is vesicent, externally used on rheumatic pains. Gum is used in nervous debility.

Folk medicine - Medical practitioners use nut with care as the nuts are allergic. The nuts are kept in cow dung for seven days and dung is changed every day. Then it is washed carefully. The nuts are roasted. In the nut a sharp needle is inserted and nut is heated on lamp. The oil that comes out is collected drop by drop carefully. This fresh oil is collected in the milk and is recommended as tonic. This oil is used externally on skin diseases. This drug should be taken very carefully, whenever drug is to be administered, ghee is applied inside the mouth and also taken in. Oil is applied on wounds, it helps to heal up wounds early. Crushed leaves are applied on wounds to keep away flies. The nuts are collected by tribes. The fleshy receptacle is edible.

Specimens examined: Atkarwadi (Sinhagad) - Vartak (1339, AHMA); Karnala - Mandavgane (1343, AHMA).

*Spondias* L.

Glabrous trees; leaves imparipinnate, leaflets oblong-elliptic; flowers in terminal panicles, pinkish-green; fruit drupe, ovoid, yellow. Fl - Fr: February - June. Local name: Ambada (M.); Ambratsaka (S.). Locality: Kashele. Occasionally found in Thane and Raigad districts.

Medico-botany: Parts used - Bark, fruit, leaves. Literature - Fruit is astringent, used in dyspepsia. Leaf juice is used in earache. Bark paste in water is applied on muscular rheumatism. Bark is refrigerant and useful in dysentery. Folk medicine - Bark is cooling. Bark paste in water is applied on skin rashes.

Specimens examined: Kashele - Upadhyc (17691, AHKA).

**MORINGACEAE**

**Moringa Lam.**

1. Leaves tri-pinnate, 1.2-3 cm long .. *M. oleifera*
1. Leaves bi-pinnate, 2.1-3.3 cm long .. *M. cocanensis*


Glabrous trees; leaves bipinnate; flowers in panicle, yellow with red veins; fruit capsule, pod three-angled.
Fl - Fr: October - March. Local name: Kadu shevga (M.).
Locality: Bhandardara, Kashele.
Not very common. In both above mentioned localities only observed in the area under study. Found on farm boundaries.

Medico-botany: Part used - Roots. Literature - Roots are used in place of M. oleifera. Folk medicine - Root is used as external application on rheumatic pains. Root paste in water is boiled and applied externally on rheumatic pains.
Pods are very bitter and hence named Kadu-shevga.

Specimens examined: Bhandardara area - Ghat (16975, 16976, AHMA).


Middle-sized trees with cracky bark; leaves tri-pinnate, flowers in panicles, whitish yellow; pods ribbed; seed 3-angled, winged. Fl - Fr: January - May. Local name: Shevga (M.); Shobhanjan (S.). Locality: Pune, Bhandardara, Katraj, Bhimashankar, Mulshi, Wadeshwar. Commonly cultivated for pods. A horticultural variety which gives pods throughout the year is also cultivated in some regions.
Medico-botany: Parts used - Root, Bark, fruit, gum, seed oil. Literature - Root is stomachic, used in paralytic affections, fevers, epilepsy and rheumatism. It is also used in nervous debility, hysteria and flatulence. Bark is abortifacient. Fruit is recommended in diseases of spleen. Seed oil is applied externally on rheumatic pains. Gum with sesamum oil is poured into the ears for the relief of otalgia. Fresh root is a good remedy in bites of rabid animals. Folk medicine - Leaf juice is applied on scorpion bite. Fresh leaf juice is used as eye drops. Pods are used in curries. Young leaves and flowers are used as vegetable.

Specimens examined: MACS Campus, Pune - Lugade (14758, 14759, AhWA).

FABACEAE

1. Trees
2. Pods jointed
2. Pods continuous
3. Leaves paripinnate
4. Leaves trifoliate
5. Pods terete
5. Pods strap shaped
4. Leaves abruptly pinnate, leaflets more than 3

.. Ougeinia
.. Erythrina
.. Butea
.. Sesbania
3. Leaves imparipinnate

6. Flowers small, whitish or reddish
   .. Dalbergia

6. Flowers large, yellow
   .. Pterocarpus

1. Herbs or shrubs

7. Pods geocarpic
   .. Arachis

7. Pods aerial

8. Anthers diamorphic

9. Pods smooth
   .. Crotalaria

9. Pods with irritant bristles
   .. Mucuna

8. Anthers uniform

10. Pulvinus reduced or zero

11. Nerves extending to serrations of leaflets

12. Stipules free

13. Leaves pinnate
   .. Cicer

13. Leaves 1 foliate
   .. Taverniera

12. Stipules adnate to petioles
   .. Trigonella

11. Nerves arched with margins

10. Pulvinus prominent
   .. Psoralea

14. Stamens nine
   .. Abrus

14. Stamens ten

15. Anthers appendaged
   .. Indigofera

15. Anthers not appendaged

16. Pods jointed

17. Stipules and bracts striated, nerved
18. Calyx glumaceous, pods symmetrical
   .. Alysicarpus
18. Calyx not glumaceous, pods convex
   .. Desmodium
17. Stipules and bracts smooth without striations
19. Pods with glochidiate prickles
   .. Zornia
19. Pods without prickles
   .. Smithia
16. Pods not jointed
20. Leaves many foliate; flowers terminal
    .. Tephrosia
20. Leaves trifoliate; flowers axillary
21. Leaflets gland-dotted
    .. Cajanus
21. Leaflets eglandular
22. Styles flattened or coiled
23. Styles dimorphic, basal thin and upper thick
    .. Vigna
23. Styles uniform
24. Pods ovoid
    .. Melilotus
24. Pods flat
    .. Macrotyloma
22. Styles terrate and glabrous
25. Flowers resupinnate
    .. Clitoria
25. Flowers other than resupinnate
26. Inflorescence nodulose; seeds diverse
    .. Canavalia
26. Inflorescence other than nodulose; seeds smoother or granular

27. Pods hooked

Teramnus

27. Pods not hooked

Pueraria

_Abrus_ (L.) Adans.

_Abrus precatorius_ L. Syst. Nat. ed. 12 : 472. 1767; FBI. 2 : 175; C. 1 : 382; KB. 1 : 764; GIMP : 1; GBMP : 3; AS 1 : 203. Ill. KB. : 313A.

Slender, deciduous twiners; leaves paripinnate; flowers in racemes, pinkish-white; pods dehisce naturally; seeds red with black eye. Fl - Fr : August - February. Local name : Gunj (M.); Gunja (S.). Locality : Pune, Murbad, Bhimashankar, Karnala, Kashele, Torna, Sinhagad, Dakhni. Common in deciduous open forests of medium rainfall.

The variation in the seed colour is observed. Seeds may show dark pink to scarlet red colour with black spot and very rarely white without spot. But white variety is supposed to be more effective than red one.

Medico-botany : Parts used - Roots, leaves, seeds. Literature- Seeds are acrid, aphrodisiac, used in nervous disorders and cattle poisoning. Seed poultice is used to bring abortion.
Roots are used in place of liquorice as expetorant. Seed paste is used in skin diseases and inflammation externally. 

**Folk medicine** - Leaves are given in loss of appetite. Leaves are chewed in sour throat.

The leaves are sweet and used in preparation of 'Pan' (*Piper betel*) along with other masticatures. Sold in market.

Specimens examined: Sinhagad - Vartak (318, AHMA); Karnala-Mandavgane (924, AHMA).

*Alysicarpus* Neck. ex Desv.


Herbs; leaves unifoliate with prominent veins; flowers in racemes, pinkish-orange; pods exserted, indehiscent. Fl - Fr: September - November. Local name: Jangligailia (M.). Locality: Pune. Fairly common in open grasslands.

**Medico-botany**: Part used - Hoot. **Literature** - Hoot is used in place of liquorice. In the pharmacognostic studies (Surange & Deokule) it is suggested that this plant cannot be used as a substitute for liquorice (Abstract, Proceed-
ing of the Seventyfifth session of the Indian Science Congress, Pune, 1988, pp. 152).

Specimens examined: Kasarwadi (Pune) - Tosh (17592, AHMA); Nashuri - Tosh (17591, AHMA).

**Arachis L.**

Ill. KB. : 387.

Annual, cultivated herbs; leaves paripinnate; flowers yellow; pods geocarpic. Fl - Fr : August - December. Local name : Bhui-mug (M.); Bhumi-mughdha (S.). Locality : Mulshi, Raigad. Cultivated as kharif crop.

**Medico-botany** : Part used - Seed. **Literature** - Seeds and its oil are astringent to bowels. Oil can be used as substitute for olive oil. Seeds are good lactagogue. Oil is said to has healing property. Very good edible oil. Oil cake is also a good food for cattles and is used as manure.

Specimens examined: Bavdhan ghat - Upadhye (14912, 14913, 14914, 14915, AHMA); Raigad - Chate (16716, AHMA).
Butea Roxb.

1. Trees

1. Climbers


Medium sized trees; leaves trifoliate, leaflets obovate; flowers in racemes, orange or salmon coloured; pods flat. Fl - Fr : February - May. Local name : Palas, Palaspapadi (M.); Palasha (S.). Locality : Pune, Khandala, Mulshi, Sinhagad. Very common in deciduous forests.

Medico-botany : Parts used - Gum, seeds, flowers, leaves, bark. Literature - Seeds are anthelmintic. Gum is astringent, flowers diuretic. Bark is used in snake-bite. Leaves and flowers contain glycoside. Folk medicine - Salt is extracted from flowers which is diuretic. Seed powder is given with warm water to expel the worms. Gum is applied externally on scorpion bite. Flowers and pods are sold in Pune market. A red dye is extracted and local people use it to colour clothes. Flowers are eaten by monkeys.
A - *Butea monosperma* (Lam.) Taubert, common element of secondary forest, flowers and pods with market potential.

B - *Pterocarpus marsupium* Roxb., a substitute to 'Hakkta-chandan'.
Specimens examined: Sinhagad - Vartak (1467, AHMA);
Khandala - Ghate (16979, AHMA); Pachgaon-parvati (Pune) - Upadhye (17376, AHMA).


Climbing shrubs; leaves trifoliate; flowers orange.
Fl - Fr: February - May. Local name: Palasvel (M.); Lata-Palasha (S.). Locality: Malshej ghat, Karnala. Occurs in semi-evergreen and moist deciduous forests.

Medico-botany: Part used - Leaves. Literature - Leaf juice is given with curds and yellow zedoary in heat-eruptions of children.

Specimens examined: Siddeshwar - Tosh (17623, AHMA);
Karnala - Tosh (17624, AHMA).

*Cajanus* DC


Annual or perennial shrubs; leaves trifoliate; flowers in racemes, yellow. Fl - Fr: September - December.
Local name: Tur (M.); Adhaki (S.). Locality: Pune, Bhandardara, Mulshi. Cultivated as kharif crop along with jowar or bajra. It enriches the soil by root nodules.

**Medico-botany** - Parts used: Seeds, leaves. **Literature** - Seeds are acrid, astringent, anthelmintic. Leaves are applied on swellings and piles. Leaf paste is applied on mammae to stop milk secretion. Seeds are used in snakebite. **Folk medicine** - Leaf juice is given in jaundice along with rock salt.

Specimens examined: Bhor - Upadhye (15749, 17377, AHMA); Sinhagad - Upadhye (17378, AHMA).

*Canavalia* Adans.


Small twiners; stem and branches glabrous; leaves stipulate; flowers in axillary racemes; pods 15-30 cm. long. Fl - Fr: August - December. Local name: Abai (M.). Locality: Pune, Khandala, Kankeshwar, Sinhagad. Cultivated as a vegetable.

**Medico-botany** - Part used: Pod. **Literature** - Pod is tonic, eaten in abdominal complaints, colic.
Specimens examined: Atkarwadi (Sinhagad) - Vartak (1275, AHMA); Karlikhind - Sane (15064, AHMA).

*Cicer* L.


Annuals; leaves imparipinnate; flowers bluish-purple. Fl - Fr: November - January. Local name - Harbara, Chana (M.); Chanaka (S.). Locality - Pune, Bhor, Mulshi. Cultivated as Rabi crop.

Medico-botany: Parts used - Leaves, seed. Literature - Leaves are sour, astringent. Seeds are tonic, cures skin diseases, anthelmintic. Acid exudation is astringent. Used in constipation. Folk medicine - Acid exudation is locally called as 'Amb'. It is colic. Given in stomach-ache.

Young leaves are used as vegetable. Grain is eaten raw and dried grains is a chief pulse.

Specimens examined: Bhor - Vartak (1478, AHMA); Pune - Upadhye (17379, AHMA).
**Clitoria L.**


Perennial twiners; leaves imparipinnate; flowers axillary, solitary, blue or white; pods flat, beaked.

Fl - Fr : Throughout the year. Local name : Gokarna, Supli, Shankhpushpi (M.); Aparajita, Giri-karnika (E.). Locality - Pune. Commonly planted in gardens.

**Medico-botany :** Parts used - Seeds, root. **Literature** - Root is purgative, diuretic, emetic. Seeds are purgative. Plant is used in snake-bite. **Folk medicine** - Dried flowers are used in medicine to reduce blood pressure.

It is one of the controversial plant (see Chapter VI).

Specimens examined : Pachgaon-parvati (Pune) - Kulkarni (16187, AHMA).

**Crotalaria L.**

1. Corolla bluish purple

2. Petioles long; stipules minute or 0.

3. Petioles very short; stipules subulate

   .. **C. verrucosa**

   .. **C. juncea**

   .. **C. retusa**

Annual herbs with bright yellow flowers, mainly cultivated for fibre, throughout the India. Fl - Fr : September - January. Local name - Tag (M.); San (S.). Locality : Pune, Karnala, Karylikhind. Cultivated as fibre crop and green manure crop.

Medico-botany - Parts used - Seeds, leaves. Literature - Seeds are blood purifier. Leaves are cooling, used externally as well as internally to cure skin diseases.

Specimens examined : Sinhagad - Vartak (1515, AHMA); Karlikhind - Sane (15069, AHMA); MACS Campus - Upadhye (17380, AHMA).


Medico-botany: Part used - whole plant. Literature - Plant is applied on scabies.

Seeds of this species is poisonous to poultry.

Specimens examined: Karlikhind - Sane (15077, 15078, AHMA).

**Crotalaria verrucosa** L. Sp. Pl. 715, 1753. FEB. 2 : 77; C. 1 : 319; KB. 1 : 694; GIMP : 81; AS 1 : 207. Ill. KB. : 288 B.

Annuals; branches silky pubescent; leaves linear; flowers in racemes, purple. Fl - Fr : October - January. Local name - Khulkhula (M.). Locality - Kankeshwar, Nagaon. Common along the coastal areas.

Medico-botany: Part used - Leaves. Literature - Leaf paste is used internally and externally on scabies.

Specimens examined: Nagaon - Upadhye (17692, AHMA).

**Dalbergia** L. f.

1. Climbing shrubs
2. With curved, clustered spines .. **D. sympatetica**
2. Without spines .. **D. volubilis**
1. Trees
3. Stamens 10 .. **D. lanceolarias**
3. Stamens 9
4. Leaflets acuminate .. D. sissoo
4. Leaflets obtuse .. D. latifolia


Large trees; bark grey; leaves stipulate, stipules caducous, leaflets glabrous; flowers in panicles. Fl - Fr: March - September. Local name - Dandas, Harrani (M.). Locality: Pune, Katraj, Khandala, Kashele. Fairly common on ghats, cultivated as roadside tree, rare in Konkan.

Medico-botany: Parts used - Bark, seed oil. Literature - Bark decoction is used in fevers. Oil from seeds is applied on rheumatic pains. Folk medicine - Leaf juice is applied externally on wounds. Bark is chewed for mouth ulcers. Bark decoction is given twice a day to relieve cough.

Specimens examined: Katraj - Vartak (1657, AHMA); Pune - Ghate (16982, AHMA).


Trees; leaves imparipinnate, glabrous; flowers in axillary lax panicles, yellowish-white. Fl - Fr: July - October. Local name - Shisham, Biti (M.); Shishapa (S.).
Locality - Katraj, Pune, Karnala, Raireshwar, Sinhagad. High priced wood, commonly called rose wood or black wood.

**Medico-botany**: Part used - Plant. **Literature** - Plant is bitter tonic, stomachic, used in leprosy and worms.

Specimens examined: Raireshwar - Vartak (1660, AHMA); Karnala - Vartak (13903, AHMA).


Large trees; young parts tomentose; leaves alternate, rachis zigzag; flowers in axillary panicles, pale yellow.

Fl - Fr: March - October. Local name: Sisvi (M.); Shingshupa (S.). Locality: Pune, Sinhagad. Generally planted, occasionally found in wild state. Wood valuable for boat-building and furniture.

**Medico-botany**: Parts used - Leaves, wood, root. **Literature** - Wood is bitter, abortifacient, expectorant, anthelmintic. Roots are astringent. Leaf decoction is given in gonorrhoea.

Specimens examined: Sinhagad - Vartak (1674, AHMA); MACS Campus - Upadhye (17386, AHMA).


Medico-botany : Part used - Leaves. Literature - Leaves are alterative and also used as blood purifier.

Specimens examined : Khandala - Tosh (17657, AHMA).


Woody climbers; branches modified into hooks; flowers in axillary or terminal panicles, pale blue; pods glabrous. Fl - Fr : February - November. Local name : Alai (M.). Locality : Khandala, Kanakeshwar, Kashele, Pune, Raigad. Common in semi-evergreen and moist deciduous forests.

Medico-botany : Parts used - Bark, root. Literature - Bark decoction is used as a gargle in sore throat and mouth
ulcers. Root juice with *Cuminum* seeds and sugar is given in gonorrhea.

Specimens examined: Raigad - Vartak (1676, AHMA); Karnala - Mandavgane (13916, AHMA).

**Desmodium Desv.**

1. Leaves tri-foliate .. *D. triflorum*
2. Leaves one-foliate .. *D. triquetrum*
3. Petiole winged .. *D. velutinum*
4. Petiole without wings .. *D. gangeticum*


Shrubs, branches angled, hairy; leaves stipulate, ovate, with wavy margin; flowers in axillary racemes. Fl - Fr: June - September. Local name: Salvan (M.); Salparni (S.). Locality: Khandala, Sinhagad, Kashele, Kansakeshwar, Katraj. Commonly found as undergrowth in moist deciduous forests.

**Medico-botany**: Part used - Root. **Literature**: Root is one of the ingredients in 'Deshmula'. It is tonic, diuretic,
used in chronic fevers, cold and cough. **Folk medicine**: Root decoction is recommended in fevers.

Specimens examined: Katraj - Vartak (1714, AHMA); Karnala - Datar (1721, AHMA).

**Desmodium triflorum** (L.) DC. Prodr. 2: 334. 1825; FBI. 2: 173; C. 1: 378; KB. 1: 760; GIMP: 94; AS 1: 208. Ill. KB.: 310B.

- Perennial herbs; leaves trifoliate; flowers 1-3, axillary, pink. Fl - Fr: September - December. Local name: Ran-methi (M.). Locality: Kashele, Sinhagad, Karnala, Murbad. Common throughout the area.

**Medico-botany**: Part used - Leaves. **Literature**: Leaves are used to cure dysentery and convulsion. It also has galactogenic properties. **Folk medicine**: Leaves are boiled in milk and milk is given to nursing mother as galactogogue.

Specimens examined: Atkarwadi (Sinhagad) - Vartak (1709, AHMA); Pune - Vartak (1770, AHMA).

**Desmodium triquetrum** (L.) DC. Prodr. 2: 326. 1825; FBI. 2: 163; C. 1: 378; GIMP: 95.

- Erect shrubs; branches triquetrous, grooved; petioles winged; flowers in racemes, violet. Fl - Fr: September -
January. Local name: Kakganga (M.). Locality: Mahabaleshwar, Kaireshwar, Sinhagad, Karnala, Harischandragad. Common in the forest edges as undergrowth and also in forest clearings.

Medico-botany: Part used - Leaves. Literature - Leaf extract is useful in piles.

Specimens examined: Harischandragad - Vartak (56?, AHMA); Mahabaleshwar - Vartak (1775, AHMA).


Undershrubs; branches terete, hairy; leaves 1-foliolate; flowers in terminal or axillary racemes, purple; pods clothed with hooked hairs. Fl - Fr: July - October. Locality: Pune, Sinhagad. Fairly common as undergrowth in rainfall zones.

Medico-botany: Part used - Root. Literature - Root is mixed with hot peppers and given during blood in urine.

Specimens examined: Khadakwasla (Pune) - Vartak (1734, AHMA); Sinhagad - Vartak (1735, AHMA).
Erythrina L.


Trees, with conical prickles; terminal leaflet largest; flowers in dense racemes, bright red, pods torulose. Fl - Fr : February - June. Local name : Pangara, Farang (M.). Locality : Pune, Mulshi, Bhandardara, Murbad. Planted throughout the area as a quick growing tree.

Medico-botany : Parts used - Bark, leaves, root. Literature: Leaves are bitter, stomachic, anthelmintic. Root bark is used in dysentery. Leaves are applied externally to relieve pain. Folk medicine - Stem bark is crushed and mixed with water, water decoction is given as vermifuge. White flower variety is found sometimes, where flowers are pounded and given with cold milk as an aphrodisiac.

Specimens examined : Pachgaon-Parvati (Pune) - Kulkarni (16201, AHMA); MACS Campus (Pune) - Upadhye (17381, 17382, 17383, AHMA).

Indigofera L.

Hairy shrubs; leaves stipulate, becomes blackish on drying, rounded, glabrous; flowers in spikes, pink; pods glabrous, not torulose. Fl - Fr: November - February.
Local name: Nil, Guli (M.); Nilini (S.). Locality: Sinhagad, Bhandardara, Hajur. Widely cultivated, found escape.

Medico-botany: Part used - Whole plant. Literature - Plant is used in epilepsy, nervous disorder, cures fever, enlarged spleen. Root with sugar and milk is given to cure cough. Crushed leaves are applied on wounds. For a dog-bite leaf-juice is given for three days and also applied externally. The oil is hair growth promoter. Folk medicine - Seed powder in alcohol is applied to destroy lice. Plant is claimed as a cure for hydrophobia, it is named as 'Vedya Autrache Zad' in vernacular.

Specimens examined: Hajur - Vartak (1917, AHMA); Sinhagad - Vartak (1925, AHMA).

Macrotyloma Verdc.


Medico-botany : Part used - Seed. Literature - Seeds are hot, antipyretic, anthelmintic, cures asthma, used in urinary discharges and abdominal complications. Folk medicine - Seeds are roasted and then used. Seed decoction is given to regularize menstruation. When given in higher doses causes abortion.

Specimens examined : FCBG (Pune) - Vartak (1796, AHKA).

*Melilotus* Juss.


Annuals; leaves trifoliate; flowers in racemes; pods glabrous, tapering towards both ends. Fl - Fr : December - February. Local name : Ran-methi, Van-methi (M.); Ban-methika (S.). Locality : Pune, Bhor, Kanakeshwar, Nagaon.

Medico-botany : Part used - Whole plant. Literature - The properties are similar to those of *Trigonella foenum-graecum* (Methi). Plant is carminative. Crushed plant is applied on swellings. Powdered seeds are used as gurgle.
Specimens examined: Bhor - Vartak (1953, AHMA); Nagaon - Sane (15106, AHMA).

Mucuna Adans.

1. Pod 1-seeded .... M. monosperma
1. Pod 4-6-seeded .... M. pruriens


Large perennial twiners; young parts with rusty tomentum; leaflets ovate; flowers in racemes, purple; pods round, covered with deciduous, irritant bristles; seed circular, dark brown, shining. Fl - Fr: December - March.
Local name: Choti garbi (M.). Locality: Bhandardara, Raisenwar, Ambavne. Large climbers are seen in deo-rais from Mulshi areas.

Medico-botany: Part used - Seeds. Literature - Seeds are tonic, used as expectorant, sedative. Folk medicine - Seed paste in water is applied externally on skin diseases.

Specimens examined: Raisenwar - Vartak (1958, AHMA).

Mucuna pruriens (L.) DC. Prodr. 2: 405. 1825. FBI. 2:
187; C. 1: 389; KB. 1: 778; GIMP: 171; GBMP: 148;
Annual twiners; leaves trifoliolate, hairy; flowers in racemes, purple; pods turgid; clothed with bristles.
Common after monsoon, throughout the area.

Medico-botany: Parts used - Pods, seeds, root, leaves.

Literature - Root extract in water is diuretic. Hair on pods is vermifuge. Seeds tonic. Root is tonic and used in diseases of the nervous system. Root acts as emmenagogue, its smoke accelerates delivery and lessens the pain. Folk medicine - Hair on pod is mixed with jaggery and given as vermicide. Crushed leaves are applied on wounds. Seed is an excellent tonic. Seeds form chief ingredient in making Laldopal-Idopal tablets which are recommended in Parkinsons. Seeds are sold in the market.

Specimens examined: Karnala - Datar (1961, AHMA); Chondi - Sane (15108, AHMA).

Ougeinia Benth.

Trees with crooked trunk; leaves trifoliolate, stipulate; flowers in fascicled racemes, whitish pink; pods reticulately veined. Fl - Fr: December - June. Local name: Kalapalas, Tiwas (M.); Tinisha (S.). Locality: Katraj, Bhor, Bhandardara. Occasionally found wild, also found cultivated.

Medico-botany: Part used - Bark. Literature - The bark offers 'Kino' used medicinally. Used in dysentery, urinary discharges and skin diseases. Bark has febrifugal property.

Specimens examined: Katraj - Vartak (1963, AHMA); Bhor - Vartak (1967, AHMA).

Pongamia Vent.


Trees with spreading branches; leaves stipulate, leaflets pale green; flowers in axillary racemes, pinkish white; pods with a mucro at apex. Fl - Fr: April - December. Local name: Karanj (M.); Karanj (S.). Locality: Pune, Bhandardara, Khandala, Bhimashankar, Baneshwar, Nagaon, Kashele, Malshej ghat. Common throughout the area.
**Medico-botany**: Parts used - Leaves, seeds, flowers, root, bark. **Literature** - Seeds are useful in external applications on skin diseases. Oil from seed is useful in cutaneous affections and scabies, also used in rheumatism. Fresh bark is recommended in bleeding piles. Leaf poultice is applied on ulcers. Root juice is used for cleaning ulcers and wounds. Root extract in water with coconut milk and lime water is given in gonorrhoea. **Folk medicine** - Oil from seed is believed to have insecticidal properties. Stem bark paste in water is applied externally on skin diseases and scabies. Seed oil with camphor is applied on hair to destroy lice. Leaf-bed of these leaves is made and sleeping on it for whole night is recommended during high fever. Seed paste with honey is given in cough. Flowers and leaves with *Vitex negundo* leaves are crushed and applied on swellings.

The seeds and oil is sold in the market. Oil is used in different ointments useful in skin diseases. In Bhimashanker and Murbad area oil is purchased in exchange of Hirda and Moha seeds by tribals.

Specimens examined: Rewas - Sane (10585, AHMA); Karnala - Chate (16996, AHMA); Khandala - Upadhye (17387, 17388, AHMA).

*Psoralea* L.

*Psoralea caryifolia* L. Sp. Pl. 764. 1753. FBI. 2 : 103;
Erect annuals, stems grooved, with glands and white hair; leaves elliptic, hairy, gland-dotted; flowers in racemes, bluish-purple; pod closely pitted, black. Fl - Fr: September - December. Local name: Bavchi (M.); Bakuchi (S.). Locality: Throughout the area. Common on waste places.

Medico-botany: Parts used - Root, leaves, seeds. Literature
Root is useful in cleft of teeth. Leaves are recommended in diarrhoea. Fruit is used in vomiting, asthma, difficulty in menstruation, piles, bronchities, and inflammation.

Seeds are stomachic, anthelmintic, used in leprosy, leucoderma and other skin diseases. Folk medicine - Seed paste in cow-urine is applied on leucoderma. Seeds have good aroma and also improves skin complexion, hence used for applications on skin. Seed powder is used for hair bath.

The seeds are sold in local market.


Pterocarpus L.

Large trees with crooked stem; leaves glabrous, shining; flowers in racemes, golden-yellow; pods single seeded, winged. Fl - Fr: September - February. Local name: Bibla, Rakthachandan (M.); Bijak (S.). Locality: Sutarwadi near Pune, Dakhnichi rai and Chikkhalgaon near Paud, Kashele. Found in moist-deciduous forest.

Medico-botany: Parts used - Stem, gum, leaves. Literature - The tree supplies gum kino used as astringent in diarrhoea, anthelmintic, used in blood diseases and urinary discharges. Leaves are crushed and applied on skin diseases. Folk medicine - In diabetes, water placed in vessel (wooden cup) made from stem of this tree at night and is taken in the morning. The wood is sold in Pune market and it is used by diabetic patients. Stem bark powder is applied on cuts and wounds. Stem bark decoction is recommended in painful menstruation.

Specimens examined: Sutarwadi (Paud Road) - Ghate (17056, 17057, AHMA); Dakhnichirai - Upadhye (17389, AHMA).

Pueraria DC

Pueraria tuberosa DC. Prode. 2: 240; 1825; FBI. 2: 197; C. 1: 399; KB. 1: 792; GIMP: 207; AS 1: 212. Ill. KB.: 321.
Large twiner with tuberous root; leaves trifoliate, glabrous; flowers in lax racemes, bluish; pods flat, hairy.


Medico-botany: Part used - Tuber. Literature - Tuber is cooling, tonic, diuretic, given in fevers, peeled and bruished into cataplasm is used to reduce swellings, lactagogue. Folk medicine - Tuber is dried and powdered. It is given with milk and sugar as a tonic. It is also given after delivery to increase milk and restore energy. This is one of the controversial drug 'Vidarikand' (See Chapter VI).

Specimens examined: Raigad - Vartak (2013, AHMA); Kanakeshwar - Sane (15122, 15123, AHMA).

Sesbania Scop.

1. Trees; leaflets 25-30 pairs .. S. grandiflora
1. Shrubs; leaflets 15-20 pairs .. S. sesban

Sesbania grandiflora (L.) in Lam. Encycl. 7 : 127. 1806.
A - *Sesbania grandiflora* (L.) Poir. - rarely found dark purple coloured flowers.

B - *Taverniera nummularia* Dc. substitute for true *Glycyrrhiza*. 
Small trees; flowers large, white; pods long. Fl - Fr: January - March. Local name: Agastha, Hatga (M.); Agasttha (S.). Locality: Pune, Kashele; Pen, Varsai. Extensively cultivated.

Medico-botany: Parts used - Bark, flowers, fruits, leaves. Literature - Bark is astringent. Leaves anthelmintic, used in epilepsy. Flowers are cooling used in fevers. Fruit is laxative, used in night-blindness. Flower juice is applied on headache and remedy for nosal catarrh. Folk medicine - Crushed leaves are applied on swellings. In Pen-Varsai area, leaf-juice is used to purify 'Vivshlochane' i.e. Salicyclic acid collected from axile of Bamboo. The leaves for purification are used from the tree with dark violet flowers. Red flower variety is also observed.

Flowers and fruits are edible and also got good market value.

Specimens examined: Varsai (Pen) - Ghate (17058, AHMA); Varsai (Pen) - Upadhye (17390, AHMA).


Small trees; leaves stipulate, leaflets petiolated,

**Medico-botany:** Parts used - Root, bark, leaves, seeds.

**Literature** - Root is carminative, anthelmintic, applied on swellings, used in fevers and ulcers. Bark is astringent. Leaves are purgative, anthelmintic. Seeds are stimulant, astringent. **Folk medicine** - Crushed leaves are applied on boil for easy ripening. Leaf-juice is anthelmintic.

Specimens examined: Rajgad - Vartak (2035, AHMA); Katraj - Vartak (2037, AHMA).

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Smithia conferta Sm. in Rees, Cyclop. 33, 2. 1819. C. 1: 358; KB. 1: 746; GIMP: 228. *S. geminiflora* var. *conferta* Baker; FBI, 2: I 49.

Annuals; stems not bristly, branches straggling; flowers solitary, yellow. Fl - Fr: November - February. Local name: Laxamana (M.). Locality: Bor, Pune, Bhandardara, Wettalwadi. Occasionally found.

**Medico-botany:** Part used - Whole plant. **Literature** - Plant
is laxative, used in ulcers and sterility in women. Laxmana is well known Ayurvedic medicine.

Specimens examined: Bhor - Vartak (2060, AHMA); Wettalwadi - Ghate (2066, AHMA).

**Taverniera DC.**


Branched shrubs; leaves stipulate, variable, obovate; flowers in axillary racemes, red. Fl - Fr : November - March. Local name : Je mad (M.). Locality : Pune, Katraj, Kankeshwar, Narayangaon. Weed on waste places, on slopes.

Medico-botany: Parts used - Leaves, root. Literature - Leaves are used as poultice on ulcers. Folk medicine - Root is sweet to taste and used as substitute to *Glycyrrhiza glabra* i.e. true liquorice.

Specimens examined: Katraj - Vartak (2117, AHMA);
Kankeshwar - Sane (15806, AHMA).

**Tephrosia Pers.**

*Tephrosia purpurea* Pers. Syn. Pl. 2 : 329. 1807. FBI. 2 :
Perennial herbs; leaves stipulate, glabrous; flowers in leaf-opposed racemes; pods linear, mucronate. Fl - Fr: October - March. Local name: Shankhavali, Shankhpushpi, Unhali (M.); Sharphunkha (S.). Locality: Kashele, Karnala, Sinhagad, Bhandardara, Katraj. Occurring commonly throughout the area after monsoon.

Medico-botany: Part used - Whole plant. Literature - Plant is extensively used in liver diseases, spleen, heart, blood, tumours, ulcers, leprosy and asthma. Root is diuretic, used in thirst, cures diarrhoea. Root bark with black papper is recommended as colic. Seed paste in water is externally applied on scabies. Folk medicine - Plant juice is recommended during hot season. Dried plant powder is given with hot water. It is anthelmintic.

This is one of the controversial plant 'Shankhpushpi' (see Chapter VI) used as brain tonic.

Specimens examined: Katraj - Vartak (213A, AHMA); Karnala - Mandavgane (2145, AHMA).

_Teramnus_ Sw.

Twining herbs; leaves trifoliate, stipulate; flowers in axillary racemes, red; pods hairy with stout beak. Fl - Fr: August - February. Local name: Rān-udid (M.); Mashparni (S.). Locality: Pune, Wadewhar, Bhandardara, Kanakeshwar, Sinhagad, Alibag. Very common throughout the area.

Medico-botany: Part used - Pod. Literature - Pod is astringent, stomachic, febrifuge, useful in nerve diseases and rheumatism.

Specimens examined: Alibag - Gunjatkar (16236, AHMA); Pachgaon-parvati (Pune) - Kulkarni (16237, AHMA).

Trigonella L.


Herbs, cultivated throughout the area as a green vegetable and also for seeds. Fl - Fr: January - April. Local name: Methi (M.); Methica (S.). Locality: Throughout the area. Cultivated.

Medico-botany: Parts used - Leaves, seeds. Literature - Leaves are cooling, externally applied on swellings in form of poultice. Seeds are mucilagenous, diuretic, aphrodisiac,
tonic, carminative, used to increase flow of milk, promotes hair growth. **Folk medicine** - Green vegetable is used as a stomachic and tonic, recommended after child-birth as galactogogue. The Aloe leaf is cut in middle on plant itself and the seeds of *Trigonella* are placed in it. After 2-3 days seeds show germination. These seeds are then taken out and boiled in coconut oil and oil is used for application to prevent the hairfalling. Seed powder is recommended after child-birth as carminative and tonic. Green vegetable is sold in market seasonally. Dried seeds are available in the local market.

Specimens examined: Pune - Upadhye (17693, AHKA).

**Vigna Savi**

1. Leaflets deeply lobed
2. Leaflets 3-lobed .. *V. trilobata*
2. Leaflets more than 3 lobed .. *V. aconitifolia*
1. Leaflets not lobed
3. Pods hairy; seeds black .. *V. mungo*
3. Pods puberulose; seeds green, yellow .. *V. radiata*

*Vigna aconitifolia* (Jacq.) Marechal in **Bull. Jard. Bot.**

Extensively cultivated throughout the area. Sown in June/July and harvested in November. Local name: Math (M.); Moth (S.).

**Medico-botany**: Part used - Seeds. **Literature**: Seed is tonic, stomachic, used in fevers and vomiting. Seeds are available in the market as food pulse.

Specimens examined: Junner - Tosh (17694, AHMA).


Erect herbs, largely cultivated as pulse crop in June and harvested in October - November. Local name: Udid (M.).

**Medico-botany**: Part used - Seeds. **Literature**: Seeds are cooling, cures blood diseases, throat infection, used to strengthen the eye. **Folk medicine**: Seeds forms good diet in fevers. Seeds are regularly sold in market and forms a main pulse in diet.

Specimens examined: Bhandardara - Upadhye (17695, AHMA).


Annuals, largely cultivated, sown in June and harvested in September. Local name: Mug (M.).

Medico-botany: Part used - Seeds. Literature - Cooling, astringent, tonic. Recommended in blood diseases. Seeds are sold in market which forms main pulse food.

Specimens examined: Kotimbe - Gunjatkar (16245, AHMA).


Twining herbs, prostrate, hairy; leaves trifoliate; flowers in racemes, red. Fl - Fr: October - January. Local name: Jangli-math, Ran-mug (M.); Mudraparni (S.). Locality: Pune, Bhandardara, Wadeshwar, Murbad, Karnala, Katraj, Pachgaon-parvati. Very common, found on borders of cultivated fields.

Medico-botany: Parts used - Leaves, seeds. Literature - Seeds are aphrodisiac, anthelmintic, used in burning sensation,
thirst, dysentery and cough. **Folk medicine** - Crushed leaves are applied externally on eye diseases.

Specimens examined: Katraj - Vartak (13026, AHMA); Pachgaon-parvati (Pune) - Kulkarni (16249, AHMA).

**Zornia Gmel.**


**Medico-botany:** Part used - Whole plant. **Literature** - It is given to induce sleep in children. **Folk medicine** - Plant is tonic. Infusion of whole plant is given with sugar to care gonorrhea.

Specimens examined: Pashan - Vartak (2215, AHMA); Pachgaon-Parnvati (Pune) - Kulkarni (16250, AHMA).

**CAESALPINIACEAE**

1. Leaflets 2
2. Petals present…………………………………. Bauhinia
2. Petals absent……………………………………Hardwickia
1. Leaflets many
3. Leaves pinnate
4. Stamens 3………………………………………Tamarindus
4. Stamens 5 or 10……………………………Cassia
3. Leaves 2 pinnate
5. Trees………………………………………….. Saraca
5. Straggling shrubs
6. Flowers sessile………………………………Waratia
6. Flowers stalked……………………………Caesalpinia

Bauhinia L.

1. Climbers………………………………………. B. vahlii
1. Trees or shrubs
2. Flowers white………………………………B. racemosa
2. Flowers coloured
3. Flowers yellow; stamens 10………………. B. tomentosa
3. Flowers not yellow; stamens 3-5
4. Petals similar……………………………..B. purpurea
4. Petals dissimilar…………………………..B. variegata

Small trees; leaves divided 1/3 or 1/2 way down into 2 obtuse lobes; flowers in terminal or axillary corymbose racemes. Fl - Fr : August - December. Local name : Rukth-Kanchan, Dev-Kanchan, Koral (M.); Vanaraj (S.). Locality : Pune, Kashele, Khandala. Rarely found in forest. Commonly cultivated as roadside or garden tree.

Medico-botany : Parts used - Root, leaves, flowers, bark.

Literature - Root is carminative. Bark is used as astringent in diarrhoea. Flowers are laxative. Root bark paste in rice water is applied on boils and abscesses. Folk medicine - Stem bark paste in water is applied on swellings as well as cuts and wounds.

Specimens examined : Pune - Vartak (2333, AHMA); MACS Campus (Pune) - Gunjatkar (16253i, AHMA).


Medico-botany: Parts used - Gum, flowers, bark, root, leaves. Literature - Bark is antipyretic, astringent, vermicidal, used in urinary discharges. Pod is diuretic. Crushed young leaves are applied to cure headache in malarial fevers. Folk medicine - Bark decoction is given internally to cure stomachache. Bark paste in water is applied on cuts and wounds.

Specimens examined: Sinhagad - Datar (2337, AHMA); Khandala - Upadhye (17420, AHMA).


Shrub with crooked downy branches; leaves bilobed; flowers in axillary peduncles, yellow; pods tomentose. Fl - Fr: July - October. Local name: Kanchan, Pivla-kanchan (M.); Anuphushpaka (S.). Locality: Pune. Often planted as an ornamental shrub.

Medico-botany: Parts used - Fruit, bark, flowers. Literature - Bark is vermifuge also applied on wounds. Flowers are prescribed in dysentery. Fruit is diuretic. Plant is used in snake-bite and scorpion-sting.

Specimens examined: Pune - Ghate (16879, AHMA); Pune - Upadhye (17418, 17419, AHMA).

Giant climbers with circinate tendrils; leaves sub-orbicular, tomentose beneath; flowers in corymbose racemes, white. Fl - Fr : April - December. Local name : Chambel (M.). Locality : Khandala, Pune, Kankeshwar. Seen in moist forests.

Medico-botany : Parts used - Seeds, flowers. Literature - Seeds tonic, aphrodisiac. Leaves are demulcent and mucilaginous.

Specimens examined : Empress Garden (Pune) - Vartak (2335, AHMA); Siddeshwar - Upadhye (17415, 17416, 17417, AHMA).


Small trees; leaves bilobed; flowers in racemes, large, purple, appearing when tree is leafless. Fl - Fr : September - March. Local name : Kachnar, Kovidar (M.). Locality : Pune. Cultivated in public gardens.

Medico-botany : Parts used - Bark, buds. Literature - Bark is alternative, tonic, astringent, used in skin diseases. Young buds are used in piles, dysentery and worms.
Specimens examined: Bhandardara - Ghate (16972, 16973, AHMA).

Caesalpinia L.

1. Pods with prickles
2. Plants unarmed
3. Pods straight
4. Plants armed with prickles
4. Trees
4. Shrubs

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Extensive climbers; armed with hooked, straight, hard, yellow prickles; flowers in long dense peduncled terminal and supraaxillary racemes; pods shortly stalked, oblong.
Fl - Fr : July - October. Local name: Gajga, Sagargota (M.); Kubrakshi, Putikaranj (S.). Locality: Kashele, Murbad, Varandha, Mulshi, Katraj, Bhor.
Fairly common throughout the area.
Medico-botany: Parts used - Seeds, leaves, root, bark, oil.

Literature - Root bark is good for tumers and for removing the placenta. Leaves are anthelmintic and applied externally for dispersing swellings. Seeds are antipyretic, astringent, aphrodisiac, anthelmintic and cure urinary discharges. Leaves are febrifuge and anthelmintic. Oil from seeds is used as embrocation to remove freckles from the face and for stopping discharges from the ear. Folk medicine - Seeds are excellent febrifuge. Seeds are specially used after delivery, in fever and indigestion. It also helps to regain original shape and size of uterus. The seeds are roasted and powdered with black papper and give with warm water. Fresh leaf juice acts as antidysenteric and anthelmintic. Water suspension of seed is used to stop vomiting. Oil from seed is applied on wounds externally. The seed is one of the drugs from 'Bai-guti'. Seeds are sold in market as 'Sagargota' or 'Gajga'. These seeds are also used by girls for playing.

Specimens examined: Katraj - Vartak (2422, AHMA); Ehor - Vartak (2423, AHMA); Kashele - Upadhye (17414, AHMA).


Small trees; native of America; leaves pinnate; flowers in terminal panicles, yellow; pods flat, twisted. Pl - Fr:
Throughout the year. Local name: Libi-dibi (M.). Locality: Pune, Sinhagad. Previously cultivated as a source of tannin but now rarely cultivated as ornamental plant.

Medico-botany: Parts used—Pods, bark. Literature—Pods are rich in tannin and used to cure bleeding piles. Bark is used as febrifuge.

Specimens examined: Sinhagad—Vartak (2413, AHMA); Poona University—Vartak (2412, AHMA).


Shrubs, armed with sharp, yellow prickles; leaves with crisped margins; flowers in axillary racemes, yellow; pod with a long beak. Fl—Fr: February—October. Local name: Chilhar (M.). Locality: Throughout the area. Very common hedge plant.

Medico-botany: Parts used—Leaves, root. Literature—Leaves are laxative, tonic, carminative, used as emmenagogue. Root is purgative.

Specimens examined: Mutha riverside (Pune)—Vartak (2430, AHMA); Pune—Vartak (2433, AHMA).

Small trees; flowers in racemes, red or yellow; pods thin. Fl - Fr : Throughout the year. Local name : Shankasur, Shankeshwar (M.); Krishnachuda (S.). Locality : Throughout the area. Commonly cultivated in gardens.

Medico-botany : Parts used - Leaves, bark, flowers. Literature - Leaves are stimulant, purgative, bark is emmenagogue, used as abortifacient. Infusion of flowers is febrifuge, used to cure bronchietis.

Specimens examined : Karnala - Vartak (2462, AHMA); Pachgaon-parvati (Pune) - Kulkarni (16257, AHMA).


Small trees, stems prickly, leaves pinnate, leaflets inequilateral, glabrous above; flowers in panicles; pods woody. Fl - Fr : October - February. Local name : Patang (M.); Patanga (S.). Locality : Pune. Sometimes cultivated in gardens.

Medico-botany : Part used - Wood. Literature - Wood decoction
is used to cure diarrhoea and dysentery. It is extensively used in case of internal bleeding.

Specimens examined: Poona - Vartak (2472, AHML).

*Cassia* L.

1. Foliar gland absent
   2. Herbs
      3. Pilose gland absent
   2. Shrubs or trees
      3. Pods winged
      3. Pods without wings
1. Foliar gland present
   4. Leaflets 2-5 pairs
      5. Gland solitary; leaflets 3-5 pairs
      5. Gland more than one; leaflets 2-4 pairs
         6. Leaflets 2 pairs
         6. Leaflets 3-4 pairs
         6. Leaflets more than 5 pairs
         7. Leaves with more than one gland
            8. Upper one pair without gland
            8. Glands present between all pairs
            7. Leaves with only one gland
               9. C. senna
               9. C. alata
               9. C. fistula
               9. C. occidentalis
               9. C. absus
               9. C. tora
               9. C. surattensis
               9. C. auriculata
               9. C. sophera
Cassia ubsus L. Sp. Pl. 376. 1753. FBI. 2 : 265; C. 1 : 451;

Erect branched annuals; stems and branches clothed with spreading viscous glandular hair; leaves petiolated, rachis grooved; flowers in terminal or leaf opposed few flowered raceme; pods ligulate clothed with bristly hair.
Fl - Fr : September - December. Local name : Chinole, Chimar (M.); Vanya Kulatha (S.). Locality : Pune, Karnala, Mulshi, Katraj. Common throughout the area.

Medico-botany : Parts used - Leaves, seeds. Literature - Leaves are bitter, astringent, used to cure cough. Seeds are astringent, used to cure conjunctivitis. Folk medicine - Seeds are roasted and powdered. This powder is applied over the eyelid to cure opthalmia.

Specimens examined : Katraj - Vartak (2474, AHMA); Pune - Vartak (2430, AHMA); Karnala - Datar (2477, AHMA).

Cassia alata L. Sp. Pl. 378. 1753. FBI. 2 : 264; C. 1 : 454;

Shrubs with thick, downy branches; leaves subsessile; rachis narrowly winged; flowers in racemes; pods membranous.
Medico-botany: Parts used - Leaves and flowers. Literature -
A high repute remedy for ringworms, used in skin diseases.
Leaves are also used to cure asthma and cough. Folk medicine -
A decoction of leaves and flowers are used to wash skin
disease and administered internally to cure asthma. Crushed
leaves with jelly is an excellent ointment for ringworms.

Specimens examined: Pune - Vartak (2484, AHMA).

*Cassia auriculata* L. Sp. Pl. 379. 1753. FRI. 2: 263; C. 1:
443; KB. 2: 367; GIMP: 54; GBMP: 56; AS 1: 22h. [III.
KB.]:354P.

Tall, branched shrubs; rachis densely fulvous - pubescent with an erect linear gland between each pair of leaflet;
stipules large; flowers in terminal or axillary racemes,
yellow veined orange; pods thin, flat, papery. Fl - Fr:
January - July. Local name: Tarvāl, Aval (M.); Avartaki

Medico-botany: Parts used - Bark, root, leaves, seeds.
Literature - Bark and roots are astringent. Root is used to
cure skin diseases. Leaves and seeds are anthelmintic.
Seeds are used in diabetes and chylous urin. Folk medicine -
Bark decoction is used as gargle in throat infection. A tea
is made with use of flower and is recommended in diabetes.
Leaf-decoction is febrifuge. Bark powder is rubbed on gum
to strengthen it. The leaf poultice is applied on swellings and pains of joints.
The leaf and bark is available in the market as Tarvad-pala or Tarvad-sal.

Specimens examined: Jejuri - Vartak (2493, AHMA);
Chandanapuri ghat - Upadhye (17413, AHMA).


Small trees; bark smooth, pale grey; leaves stipulate, ovate; flowers in racemes, yellow; pods 1-2 ft. long.
Fl - Fr: March - July. Local name: Bahava, Bava, Amlavetas (M.); Suvarnaka (S.). Locality: Throughout the area. Found wild as well as cultivated in gardens and as a roadside tree.

Medico-botany: Parts used - Leaves, flowers, fruit pulp, bark. Literature - Root, seed and flowers are laxative, fruit is cathartic, leaf juice is used to cure skin diseases. Flowers with bitter taste, cooling, astringent. Bark decoction is given to cure tonsils. Bark decoction is applied externally on paralysis. Folk medicine - Fruits are buried for two months and then pulp is separated. This sweet pulp with very little almond oil is stored. The
pulp is mild purgative and can be given safely to pregnant woman also. The crushed leaves are applied externally on rash due to any type of allergy. Root decoction is used in snake bite. Fruits are sold in market as a name ‘Pahavachi sheng’.

Specimens examined: Katraj – Vartak (2500, AHMA); Bhor – Vartak (2502, AHMA).


Annual undershrubs; leaf rachis glabrous, single sessile gland near base; flowers in racemes, corymbose, yellow; pods recurved. Fl - Fr : December - May. Local name : Ran-Takala, Kasvinda (M.); Kas-marda (S.). Locality : Kashele, Chandanapuri-ghat, Pune. Abundant, exotic, occurs along roadside.

Medico-botany: Parts used - Root, leaves, seeds. Literature Plant is purgative, tonic, febrifuge. Root is used for skin diseases, diuretic. Seeds are used to cure cough. Folk medicine: Fresh leaf-juice is applied on cuts, wounds and burns. The seeds of this species are used in place of Coffee. It is said that it gives typical taste of coffee but there is no other side effect.
Specimens examined: Pune - Vartak (2597, 2598, AHMA).


Shrubs; leaflets ovate-lanceolate; flowers in racemes; pod short, flat. Fl - Fr: Throughout the year. Local name: Sonamukhi (M.). Locality: Cultivated throughout the area. Widely cultivated for leaves and pods.

**Medico-botany:** Parts used - Leaves, pods. **Literature** - Leaf paste is applied on skin diseases. Pods and leaves are laxative. It is said to be a good remedy in constipation, liver complaints, abdominal troubles and bronchities. **Folk medicine** - Pods are used as purgative. Leaf paste in water is externally applied on skin diseases. This plant has got good export value. It is used raw as well as in compound Ayurvedic preparations. In herbal drug market dried pods and leaves are available as 'Sonamukhi-shenga' or 'Sonamukhi-pala'.

Specimens examined: Pune - Vartak (2438, AHMA).

Shrubs, annual or perennial; leaves glabrous, conical gland at base, leaflets lanceolate; flowers in corymbose racemes, yellow, perfect stamens 7; pods recurved; seeds brown. Fl - Fr: November - February. Local name: Ran-takala, Dadmard, Kala-kasvinda (M.); Kas-mardra (S.). Locality: Pune, Kashele, Malshej ghat. Common weed on uncultivated lands.

Medico-botany: Parts used - Bark, leaves, seeds. Literature - Plant is used as a substitute for C. occidentalis. Expectorant, cathartic, used to cure skin diseases. Folk medicine - Leaf juice is applied externally on burns and scabies.

Specimens examined: Pune (Mutha river side) - Vartak (2650, AHMA).


Small trees, glabrous; leaf rachis with clavate gland between each of 2-3 lower pair of leaflets; flowers in axillary corymbose racemes; pods flat. Fl - Fr: September - May. Local name: Motha-tarvad (M.). Locality: Pune. Cultivated in gardens.
Medico-botany: Part used - Bark. Literature - Bark is prescribed in diabetes and gonorrhoea.

Specimens examined: Narsapur - Vartak (2659, AHMA); Pune - Vartak (2660, AHMA).


Annual herbs; leaf rachis grooved, conical gland between each of the two lowest pairs of leaflets, leaflets ovate, glaucous; flowers axillary, yellow, perfect stamens 7; pods subtetragonous; seeds rhomboedral. Fl - Fr: November - March. Local name: Takla, Tarata (M.); Chukranar (S.). Locality: Throughout the area. Very common weed, throughout the area.

Medico-botany: Parts used - Leaves, root. Literature - Root paste is applied on ringworm. Leaves are applied on skin diseases, laxative. Folk medicine - Fresh leaf juice is applied on burns. Dried plant powder is mixed with karanj-oil (oil from seeds of *Pongamia pinnata*) and applied externally on scabies and on all types of skin diseases. Young leaves are used as vegetable.

Specimens examined: Baneshwar - Vartak (2681, AHMA);
Rewas - Sane (15131, 15132, AHMA).

**Hardwickia Roxb.**


Middle-sized trees; leaves alternate, rachis with minute deciduous bristles, bippinate; flowers in terminal or axillary panicles. Fl - Fr: October - March. Local name: Ajan (M.). Locality: Pune. Cultivated.

**Medico-botany:** Part used - Balsam. **Literature** - The balsam is used to cure gonorrhoea.

Specimens examined: Pune - Vartak (2727, AHMA); Vetal hills (Pune) - Ghate (16887, AHMA).

**Saraca L.**


Glabrous trees; leaves stipulate; flowers in corymbbs, orange-red; pods compressed, tapering to both ends. Fl - Fr: December - May. Local name: Ashok, Sitacha ashok (M); Ishok (S.). Locality: Ambavne, Bhor, Kankeshwar.
Found wild as well as cultivated in gardens throughout the area.

**Medico-botany**: Parts used - Bark, flowers, seeds. Literature - Bark is acrid, anthelmintic, astringent used to cure urinery infection, discharges from uterus. Flowers are given in dysentery. Seeds are useful in urinery discharges. Folk medicine - Bark decoction is used in female complications. The bark is valued in Ayurvedic medicine. It is extensively used in Ayurvedic preparation 'Ashokarishta' which is very good remedy in all complaints of menstruation. The bark is also sold in local market as 'Ashok-sal'.

Specimens examined: Pune - Ghate (16890, AHMA); Ambavne - Upadhye (17410, AHMA).

**Tamarindus L.**


Trees with spreading branches; leaves pinnate, stipulate leaflets subsessile, glabrous, flowers in racemes, bracteate, yellow with brown stripes; pods 3-5 inch long; seeds brown shining. Fl - Fr: April - November. Local
name: Chinch (M.); Amla (S.). Locality: Throughout the area. Exotic, found to be naturalized in the area, natural regeneration is observed. Also found cultivated.

Medicinal-botany: Parts used - Bark, leaves, flowers, fruits and seeds. Literature - The bark is used in loss of sensation during paralysis, also given in urinary discharges and gonorrhoea. Leaves are applied on swellings and earache. Flowers are applied externally on eyes and given internally to purify blood, juice is given in bleeding piles. Ripe fruit is refrigerant, digestive, carminative. Tamarind water is recommended in sore-throat as a gargle. Seeds are astringent. Folk medicine - Poultice made up of ripe fruit pulp is applied externally on swellings. Fruit pulp mixed with fried onion is a good remedy to cure dysentery. A decoction with sugar and salt is given as astringent. Seed paste in water is applied on scorpion sting. In many Indian recipes the tamarind is used. The ripe fruits are chosen, rind and seeds are separated, it can be preserved for year or two. This preservation is a common practice. Seeds and fruit rind is valued in different industries. This tree can grow throughout the area well. The roasted seeds are eaten.

Specimens examined: Nagaon - Sane (15140, AHMA); Pachgaon-parvati (Pune) - Kulkarni (16273, AHMA).
**Wagatea Dalz.**


Robust climbers; prickles recurved; leaves bipinnate; flowers in dense spikes, orange-scarlet red; pods oblong, constricted. Fl - Fr : January - May. Local name : Wagati, Wakeri (M.); Guchi-karanj (S.). Locality : Mira dongar, Karnala, Mahabaleshwar. This is monotypic genera endemic to Western ghats. Common in moist deciduous forests.

**Medico-botany** : Parts used - Bark, root. Literature - Roots are given in pneumonia. Bark is applied on skin diseases.

**Folk medicine** - Root decoction is febrifuge. Bark paste in water is applied externally on scabies and ringworm. It is a well known remedy on skin diseases. The bark is sold in market as 'Vakeriche bhate'.

Specimens examined : Karnala - Vartak (2822, AHMA); Mira dongar - Upadhye (17409, AHMA).

**MIMOSACEAE**

1. Herbs
   
   .. *Mimosa*

1. Shrubs or trees
2. Prickles present
3. Stamens indefinite
4. Inflorescence in two colours
5. Flowers in globose heads
2. Prickles absent
6. Climbers
7. Stamens definite

<table>
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<tr>
<th>Classification</th>
<th>Species</th>
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<td>2. Flowers in panicles</td>
<td>A. pennata</td>
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<tr>
<td>1. Erect trees or shrubs</td>
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<td>2. Flowers in heads</td>
<td></td>
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<td>3. Flowers in spikes</td>
<td>A. ferruginea</td>
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<td>A. polycantha</td>
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<tr>
<td>4. Pinnae more than 10 pairs</td>
<td>A. chundra</td>
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<tr>
<td>5. Bark white</td>
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<tr>
<td>5. Bark brown</td>
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Acacia Willd.
Small trees with dark coloured bark; leaves bipinnate with glands between many of the pairs of pinnae and large conspicuous gland near middle of the petiole; spines hooked; flowers in axillary spikes, pale yellow; pods flat, brown.

Fl - Fr : June - December. Local name : Khair, Kath, Lal-khair (M.); Khadir (S.). Locality : Throughout the area. Common in open, dry deciduous forests throughout the area.

Medico-botany : Part used - Bark. Literature - Bark is astringent. Bark decoction is used to cure cough, also recommended as a tonic after confinement and to promote secretion of milk. Locally applied in sponginess of gum. Folk medicine - Bark decoction is locally known as 'Kath'. It is given internally as a tonic after child birth and also
recommended in female complications. The fresh bark suspension is used as a wash for wounds. Dry powder with cow's ghee is mixed well and an ointment is used for external application on deep wounds. Bark decoction in water is used as mouth wash. Bark-paste in water is externally applied on scabies.

In the market 'Kath' a dry concentrated bark suspension is sold.

In the herbaria specimens labelled as A. catechu are not catechu but A. chundra.

In the area under study a tribe 'Katkari' are the tribal people who reside in dry-deciduous area. They are supposed to be the people who know this art of preparing 'Kath' from the bark of this plant.

Specimens examined: Katraj - Vartak (2846, AHMA); Law College Hill (Pune) - Upadhye (17396, AHMA).


Low trees; leaves bipinnate, stipules spinescent; flowers in globose heads, fragrant, yellow; pods turgid. Fl - Fr: August - March. Local name: Deo-babhul (M.).
Found escaped along stream banks, cultivated.

Medico-botany: Parts used - Bark, gum. Literature - Bark is hot, anthelmintic, cures teeth diseases. Gum is sweet, tonic.

Specimens examined: Mutha river side (Pune) - Vartak (2948, AHMA); Pachgaon-parvati (Pune) - Upadhye (17394, AHMA).


Small trees with rough, rusty bark; leaves with a gland on petiole and in between upper most pair of pinnae, stipules short, hooked; flowers in axillary spikes, pale-yellow; pods flat, reticulately veined. Fl - Fr: January-June. Local name: Pandhra-Khair (M.); Somsara (S.).
Locality: Pune, Sutarwadi, Mulshi. Occasionally found.

Medico-botany: Parts used - Bark, gum. Literature - Bark is astringent. Gum is demulcent, nutrient.

Specimens examined: Sutarwadi (Near Mulshi) - Upadhye (17397, 17398, AHMA).

Spreading trees; young parts pubescent; leaves bi-pinnate, cup-shaped gland between each pair of pinnae; flowers in panicle heads; pods flat. Fl - Fr: December - May. Local name: Hivar (M.). Locality: Pune, Katraj. Common along hill sides.

**Medico-botany:** Part used - Bark. **Literature:** Bark is astringent.

Specimens examined: Pachgaon parvati (Pune) - Kulkarni (16280, AHNA); Purandhar Road - Ghate (16999, AHNA)


Crooked trees; leaves bipinnate, spines sharp; flowers in heads, yellow; pods moniliform, compressed. Fl - Fr: June - December. Local name: Babhul (M.); Babbul (S.). Locality: Throughout the area. Typical element of scrub jungles, planted along the road sides.

**Medico-botany:** Parts used - Bark, gum. **Literature:** Bark is astringent, anthelmintic. Pods are cooling. Gum is expectorant, liver tonic, useful in diabetes.
mellitus, urinary discharges. Folk medicine - Bark decoction is used to strengthen the gum and teeth. Bark juice with milk is used as eye drop in conjunctivites. Gum is fried with ghee and used as excellent tonic especially after child birth. It is also used in cases of sexual debility. Stem twigs are used as tooth brush.

This is a valuable tree as gum has got good market value. The stem has also got fuel value. It is slow growing tree but can be grown in dry hilly regions. The bark and gum both are sold in the crude drug market.

Specimen examined: Karnala - Mandavgane (2857, AHMA); KACS garden (Pune) - Upadhye (17393, AHMA).


Climbing shrubs with armed prickles; leaves bipinnatifid; pinnae subsessile; flowers in terminal panicles; pale-yellow; pods thin and flat. Fl - Fr: June - January. Local name: Shemb, Shemet, Shembati (M.); Ari (S.). Locality: Pune, Bhor, Purandhar, Raireshwar, Bhandardara. Common, throughout the area.

Medico-botany: Parts used - Leaves, bark. Literature - Leaf juice is recommended in indigestion and diarrhoea.
Leaves with cow milk, cuminum seeds and sugar is a remedy for scalding of urine. Bark is bitter and cures blood diseases. Folk medicine - Leaves are chewed in bleeding gums. It is chewed with cuminum seeds and sugar. Leaf-juice is also recommended in indigestion.

Specimens examined: Sinhagad - Vartak (12499, AHMA); Kanakeshwar - Sane (15144, AHMA).

_Acacia polyacantha_ Willd. Sp. Pl. 4: 1079. 1806. Fl.

Small trees with white bark; leaf rachis pubescent, glands between many pairs of pinnae and a large conspicuous gland at middle of the petiole; flowers in spikes, white; pods flat beaked. Fl - Fr: March - May. Locality: Pune, Khandala, Rajgad, Bhor. Found along stream sides, near moist places. Native of Australia.

Medico-botany: Part used - Bark. Literature - Bark is astringent. The gum can be obtained from this tree which is official in several countries. The extract catechu may be obtained from the heart wood of the tree and bark is used as tan.

Specimens examined: Katraj - Vartak (12500, AHMA); Aundh Road (Pune) - Ghate (17002, AHMA).

Climbing shrub with hooked prickles; leaves bipinnate, leaflets subsessile, flowers in heads; pods linear, wrinkled when dry, brown red colour. Fl - Fr : February - May. Local name : Shikakai (M.); Satla (S.). Locality : Bhimashankar, Bhandardara, Murbad, Pen. Common in dry and mixed deciduous type of forests.

Medico-botany : Parts used - Leaves, pods. Literature - Pod is bitter, cooling detergent, purgative, expectorant. Folk medicine - Leaves with black paper are given in jaundis. Pod decoction is expectorant. Pods are extensively used as 'Shikakai' with other aromatic ingredients for hair bath. Pods and powder both are sold in market. From the area under study, Thakar especially Thakar-women collect mature pods from jungles. They sold it or exchange in place of salt or chillies. It is a normal practice.

Specimens examined : Bhor - Upadhye (17400, AHMA); Ambavne - Upadhye (17401, AHMA).
Adenanthera L.


Medico-botany: Parts used - Leaves, seeds. Literature - Leaf decoction is used to cure rheumatism. Seeds are used to cure inflammation. Folk medicine - Seed paste is prepared by rubbing seeds in water and is applied externally on swellings.

Specimens examined: Pune - Ghate (17003, 17004, AHMA).

Albizia Durazz.

1. Flower heads in panicles
   2. Pods dehiscent .... A. procera
   2. Pods indehiscent .... A. odoratissima
1. Flower heads not in panicles
   3. Pinnae 2-4 pairs .... A. lebbeck
   3. Pinnae 6-20 pairs .... A. amara

Unarmed trees; leaves abruptly bipinnate, small gland about the middle of the petiole and other at upper most pair of pinnae; flowers in paniculated heads, fragrant; pods thin, flat. Fl - Fr : April - October. Local name : Lalai, Kalashirish (M.); Krishna-Shirish (S.). Locality : Katraj, Mulshi, Wadeshwar. Common in dry forests.

Medico-botany : Parts used - Seeds, flowers, leaves.

Literature - Seeds are astringent, given to cure piles and gonorrhoea. Flowers are externally applied on boils and ulcers. Leaves are useful in opthalmia.

Specimens examined : Katraj - Vartak (2877, AHMA); Sutarwadi (Near Mulshi) - Upadhye (17402, AHMA).


Large trees; leaf rachis pubescent, a large gland on the petiole and near base of upper most pinnae; flowers in umbrellate heads, greenish-white, fragrant; pod yellow, reticulately veined, shining. Fl - Fr : March - July.
Local name: Shirish (M.); Shiras (S.). Locality: Throughout the area. Cultivated as roadside tree.

**Medico-botany:** Parts used - Root, bark, leaves, seeds, flowers. **Literature** - Bark is bitter, cooling, anthelmintic. Leaves are good in opthalmia. Flowers are aphrodisiac, emollient. Root is used to strengthen the gums. Seeds are tonic and used to cure gonorrhoea. **Folk medicine** - Bark is astringent and decoction is given in piles. Crushed flowers are externally applied on swellings.

Specimens examined: Pune - Vartak (2880, AHMA); Avasarighat - Ghate (17005, AHMA).


Tall, unarmed trees; leaves with large sessile gland on petiole; flowers in terminal panicles, sessile, fragrant, yellowish-white; pods glabrous, reticulately veined.

Fl - Fr: April - October. Local name: Pandhara-Shirish, Chinchuda (M.). Locality: Khandala, Katraj, Kashele. Commonly found in moist deciduous forests.

**Medico-botany:** Parts used - Leaves, bark. **Literature** - Bark is applied externally on inveterate ulcers. Leaves
boiled in ghee are considered as expectorant.

Specimens examined: Katraj - Vartak (12506, AHMA);
Bhandardara - Ghate (17006, AHMA).

1844. FBI. 2 : 299; C. 1 : 482; KB. 2 : 942; GIMP : 11;
AS 1 : 233.

Unarmed trees; pinnae 6-20 in pairs; flowers in terminal panicles; pods orange-brown, thin. Fl - Fr : May - November. Local name: Kinai (M.). Locality: Pune.
Occasionally seen.

Medico-botany: Parts used - Leaves. Literature - Leaves are insecticide, a poultice of leaves is applied on ulcers.

Specimens examined: Sinhagad - Vartak (2882, AHMA).

*Dichrostachys DC.*

*Dichrostachys cinerea* Wight & Arn. Prodr. 271. 1834. FBI.

Thorny shrubs; leaves stipulate, pinnae sessile; flowers in axillary and extra axillary spikes, upper half yellow and lower half pinkish-red; pods flat subarticulated. Fl - Fr : September - February. Local name: Sigam-kuti,

Medicinal: Part used - Root. Literature - Root is hot, improves appetite, used in rheumatism and diseases of uterus and pains in joints.

Specimens examined: Law College Hills (Pune) - Upadhye (17395, 17403, AHMA).

Entada Adansoni


Large woody climbers; leaves bipinnate, grooved, generally ending with bifid tendrils; flowers in elongated spikes, yellow; pod very large; after dehiscence pods remain as an empty frame. Fl - Fr: May - November. Local name: Gardel, Garbi (M.). Locality: Ambavane, Khindala, Mulshi, Varandha ghat. Commonly found in the well preserved forests and in sacred groves.

Medicinal: Part used - Seed. Literature - Seed is externally used on swellings, internally used as an emetic. Plant is used as fish poison. Seeds are tonic and
enthelmintic. Folk medicine - Seed paste in water is applied on skin diseases. Seeds are roasted and eaten by local people.

The seeds are commonly sold by the footpath vendors. These persons attract the people by giant size and shining nature of the seed. According to them seed is excellent tonic and can cure any skin disease when externally applied by rubbing with water.

Specimens examined: Karnala - Vartak (2894, AHMA); Kanakeshwar - Sane (15146, AHMA).

**Mimosa L.**


Diffuse under shrubs; branches prickly, clothed with glandular hairs; leaves sensitive, leaflets 15-20 pairs; flowers in head, pink; pods flat, with 3-5 one-seeded joints. Fl - Fr : September - December. Local name: Lajalu, Lajari (M.); Lajjalu (S.). Locality: Pune, Mulshi, Sinhagad, Bhandardara, Kashele. Introduced from tropical America, naturalized throughout the area.

**Medico-botany**: Parts used - Root, leaves, seeds.
Literature - Root decoction is useful in gravelly complaints. Root is bitter given in dysentery, uterine complaints, inflammations and blood diseases. Leaves and roots are used in piles and fistula. Folk medicine - Seeds are emetic. Leaf paste in water is applied to hydrocele. Crushed leaves are applied on wounds. Seeds are sold in market.

Specimens examined: Bhor - Vartak (2903, AHMA); MACS Garden (Pune) - Upadhye (17392, AHMA).

Prosopis L.


Trees with prickles; leaflets sessile; flowers in axillary spikes and terminal panicles, yellow; pods turgid. Fl - Fr: December - June. Local name: Shami (M.).

Locality: Cultivated. Cultivated near God Ganapati temples as leaves are used to worship God. Rare.

Medico-botany: Parts used - Bark, pod, flower, plant ash. Literature - Pod is astringent. Bark is used to cure rheumatism. Crushed flowers with sugar are eaten during pregnancy to avoid miscarriage.

Specimens examined: Bhor - Vartak (2912, AHMA).
Xyla Benth.


1891. Fl. Karnataka : 96; GIMP : 259. _Xyla dolabriformis_
Benth.; FBI. 2 : 286; C. 1 : 465; KB. 2 : 905.

Tall trees; leaves bipinnate, leaf-lets sub-
coriaceous, glabrous; flowers in heads, sessile, yellowish-
white; pods woody. Fl - Fr : April - December. Local name:
Jambha, Yerul (M.); Kanakakuli (S.). Locality : Karnala,
Pen. Occasionally seen in dry deciduous forests.

Medico-botany : Parts used - Bark, oil from seeds. Literature-
Bark decoction is given in worms, vomiting, gonorrhoea and
ulcers. Seed oil is used in rheumatic pains and piles.

Specimens examined : Karnala - Ghate (17011, AHMA).

ROSACEAE

_Rosa_ Tourn. ex L.

FBI. 2 : 364; KB. 2 : 980; GIMP : 215; GIMP : 182.  ill.
KB. : 397.

Perennial shrubs with hooked prickles; leaflets
usually 5, sometimes 7; flowers in corymbose, red, pink or
white. Fl - Fr : Throughout the year. Local name : Gulab
(M.); Tarani (S.). Locality: Throughout the area. Cultivated in gardens.

Medico-botany: Part used - Flowers. Literature: Flower is bitter, acrid, cooling, laxative, aphrodisiac, improves appetite. Buds are astringent, used in preparation of 'Gulkand'. Rose water is extracted and used in many lotions and syrups. It is also used in perfuming emollients. Folk medicine - Crushed petals are externally applied on eyes. Extensively cultivated for ayurvedic preparations, as well as an ornamental plant.

Specimens examined: Pune - Upadhye (17696, AHMA).

GRASSULACEAE

Kalanchoe Adans.

1. Flowers red

1. Flowers yellow


Succulent herbs; leaves variable, deeply pinnatifid; flowers in paniculate cymes, yellow. F1 - Fr: December - March. Local name: Jakham-hayat (M.); Hamesagar (S.). Locality: Cultivated in gardens.
Medico-botany: Part used - Leaves. Literature - Leaves have got healing properties.

Specimens examined: Pune - Vartak (2934, AHMA); Pune - Badve (14554, AHMA).

KB. 2 : 999; GIMP : 147. Bryophyllum calycinum Salisb.; FBL. 2 : 413; C. 1 : 494; GBMP : 45; AS 1 : 243. IIL.
KB. : 404.

Succulent, glabrous herbs; stems with reddish tinge; leaves variable; flowers in panicles, red, carolla is swollen at base. Fl - Fr: December - March. Local name: Lag-pan, Pan-phuti, Khokli (M.); Parnabij (S.). Locality: Pune, Sinhagad, Bhandardara, Kashele, Revdanda. Found wild as well as cultivated in gardens.

Medico-botany: Part used - Leaves. Literature - Leaves are used to coagulate blood. It is given in dysentery and diarrhoea. It is applied on wounds. Folk medicine - Leaves are warmed and applied on swellings, boils or wounds in form of poultice. Crushed leaves are applied on wounds. It has got healing properties. Raw leaf is eaten as a cure to cough hence locally called 'Khokli'.

Specimens examined: Karnala - Mandavgane (2944, AHMA); Revdanda - Sane (15150, AHMA).
RHIZOPHORACEAE

**Rhizophora L.**


Small trees, young branches are marked with scars of fallen leaves; leaves elliptic, mucronate; flowers in cymes; white; fruits indehiscent, germinate on tree i.e. show viviparous germination. Fl - Fr : August - January.

**Medico-botany** : Part used - Bark. **Literature** : Bark is astringent and used to cure diabetes.

Specimens examined : Bombay - Vartak (2959, 2960, AHMA).

COMBRETACEAE

1. Climbers
2. Fruits winged
   2. Fruits without wings
1. Trees
   3. Flowers in heads
   3. Flowers in racemes or spikes

.. *Calycopteris*
.. *Quisqualis*
.. *Anogeissus*
.. *Terminalia*
Anogeissus Wall.


Middle sized trees; leaves oblong, elliptic, sub-opposite; flowers in heads, sessile, yellowish-green.
Fl - Fr: May - January. Local name: Dhavda (M.); Dhav (S.). Locality: Katraj, Khandala, Mulshi, Sinhagad, Kashele, Murbad. Common throughout the area. Generally found with Terminalia sp. in dry and moist deciduous forests.

Medico-botany: Parts used - Gum, bark. Literature - Bark is pungent, improves appetite, used in anaemias, urinary discharges and applied on skin diseases. Folk medicine - Gum is extensively used by local people. Gum is powdered and mixed with sugar. It is given in weakness. This is also given as tonic in back-pain and after child-birth. The gum is sold in the local herbal market.

Specimens examined: Karlikhind - Sane (15151, AHMA); Khandala - Ghate (16909, AHMA).
Calycopteris Lamk.


Straggling lianas; leaves opposite; flowers in terminal panicles, yellowish-green; fruits five-ribbed, tomentose, crowned by persistent calyx. Fl - Fr: March - July. Local name: Ukashi (M.). Localities: Pune, Khandala, Kashele, Karnala, Raireshwar. Common throughout the ghats in moist deciduous forests.

Medico-botany: Parts used - Leaves and roots. Literature - Leaves are bitter, astringent, laxative, anthelmintic and colic. Leaf-juice is given in puerperal fever. Applied externally on ulcers. Folk medicine - The leaf-juice is extensively used to cure fever after child birth. The juice is given along with other aromatic ingrediants. Root paste in water is applied on swelling. Sometimes on the leaves of this species, insect galls are observed. These galls are collected by local people and ash is made. This ash is mixed with coconut oil and an ointment is made which is applied on cuts and burns.

Specimens examined: Karnala - Vartak (2973, AHMA); Khandala - Upadhye (17421, AHMA); Kashele - Upadhye (17422, AHMA).
**Quisqualis L.**


Climbing shrubs, native of Java, flowers in spikes, red or white, very showy. Fl - Fr : Throughout the year. Local name : Rangunchi-vel, Lal-chameli, Madhumalati (M.). Locality : Cultivated. Extensively cultivated in gardens for showy, fragrant flowers.

**Medico-botany** : Part used - Seeds. **Literature** - Seeds are anthelmintic.

Specimens examined : Pune - Vartak (2992, AHMA); Karnala - Mandavgane (2993, AHMA).

**Terminalia L.**

1. Fruits winged
   2. Gland on petiole
      3. Leaves subopposite
         4. Glands present
            4. Glands absent
      3. Leaves in clusters at the end of branches
   2. Gland at the base of blade
      3. Glands present
      4. Glands absent

   .. **T. arjuna**
   .. **T. crenulata**
   .. **T. chebula**
   .. **T. cattapa**
   .. **T. bellerica**

Trees with greenish-white bark; leaves subopposite, elliptic, oblong; flowers in spikes; fruit drupe with five wings. Fl - Fr : January - May. Local name : Arjun, Arjun-sadada (M.); Arjun (S.). Locality : Pune, Pen, Bhandardara. Occasionally seen, sometimes cultivated.

Medico-botany : Part used - Bark. Literature - Bark is astringent, febrifuge, used in ulcers and blood diseases. It is expectorant and heart tonic. Bark has healing properties. Bark is as good as Degetalis in heart diseases. Folk medicine - Dry bark powder is boiled with milk and jagary. This is recommended in heart diseases. Fresh bark is warmed and then powdered. This powder is mixed with oil and 1/4 amount of 'Ambe-haldi' (i.e. powder of Curcuma amada). This mixture is filled in deep cuts. It was recommended by the people that cuts which needs stitching can also be healed with help of this ointment.

'Arjun-sal' is reputed medicine of ayurveda. 'Arjunarishta' is well known preparation which is recommended in heart and blood diseases. Dry park is sold in crude drug market.

Specimens examined : Pune - Ghate (16921, AHMA).
Terminalia bellerica (Gartn.) Roxb. *Cor. Pl. 2 : 54.
1798. FBI. 2 : 445; C. 1 : 508; KB. 2 : 1017; GIMP : 241;

Handsome trees; leaves alternate, elliptic, rounded;
flowers in spikes, greenish-yellow; fruit short stalked,
drupe. Fl - Fr : January - July. Local name : Beheda,
Yela (M.); Bibhit (S.). Locality : Karnala, Kanakeshwar,
Bhandardara, Ambavde, Ambavane. Common throughout the
area.

Medico-botany : Parts used - Bark, fruit, seed. Literature-
Bark is used in anaemia. Fruit is laxative, anthelminthic,
used in sore-throat, inflammation. Seeds are used in
vomiting. It is used in Ayurvedic preparation 'Triphala'.
Folk medicine - Fruit bark is dried and powdered, it is
applied on cuts. The seeds are ruptured and boiled in
oil, this oil is used for healthy hair growth. The fruit
with honey is recommended in cough.

The fruit is an ingredient of famous ayurvedic preparation
'Triphala' and many other compound preparations. The fruits
are available in market. It is collected as minor forest
product by tribals.

Specimens examined : Kanakeshwar - Sane (15156, AHMA);
Ambavde, Upadhye (14423, AHMA).
A - *Terminalia bellerica* Roxb. - reputed ayurvedic remedy fruits are collected from area under study.

B - *Syzygium cumini* Skell. - Bark and seeds are drug source.


Medico-botany: Parts used - Oil, bark, leaves. Literature - Oil is substituted for almond oil. It is used internally as well as externally. Leaf juice is employed to prepare an ointment which is used to cure scabies. The bark is mild diuretic and with fairly potent cardiac tonic properties.

Specimens examined: Pachgaon parvati (Pune) - Kulkarni (16290, AHMA).


Branched trees, leaves alternate, acute, hairy when young, with 2 glands near their summit; flowers in terminal spikes; fruits drupe, ellipsoid with broad base, ribbed. Fl - Fr: February - June. Local name: Hirda, Hirad (M.). Haritaki (S.). Locality: Kashele, Pune,
Bhimashankar, Mahabaleshwar, Hirdoshi. Abundant along the ghats.

**Medico-botany**: Parts used - Fruit, bark. **Literature** - Bark is diuretic and cardiac tonic. Fruit is healing, stomachic, carminative, expectorant, anthelmintic. Used internally in thirst, vomiting, hicough, eye diseases, diseases of heart and bladder, bleeding piles, anaemia and constipation. It is also used to apply on ulcers and wounds. Powdered fruit is smoked in asthma. Fruit is a constituent in many Ayurvedic preparations e.g. Triphala, Gandhavaharitaki, Sukhasarak churna, Abhayarishta etc. **Folk medicine** - Powdered fruit is mixed with honey and used to cure continuous coughing. The fruits are fried in castor oil and powdered. This powder with warm water is recommended during constipation. Fruit paste is applied in mouth ulcers.

'Hirda' is a valued, reputed drug of Ayurveda. It is used in many preparations. According to stage of harvest fruit is named differently. Very young fruits called as 'Bal hirda' and costs more. A healthy, much matured fruit of bigger size, called as 'Survari hirda'. The Hirda is valued in tannin industry. 'Hirda' was previously used for coating Railway Compartments when coal engine was used.
This fruit is extensively collected by tribals as minor forest product. Bhimashankar area is very famous area and collection centre for collection of Hirda fruits. In Mahabaleshwar at locality called as Hirda bungalow, this species is dominant. Hirdoshi is a small village in Varandha ghat which is named after this fruit as that locality was crowded with this species. But today the population of the species at Hirdoshi is less, may be due to indiscriminate cuttings of forests.

On the leaves of this species insect galls are framed. These galls are named as 'Kakadshingi'. The drug 'Kakadshingi' is also available in the market and is extensively used to cure dysentery, especially in case of small children. These galls are also collected by tribal people. This 'Kakadshingi' is a controversial drug. (Please see Chapter VI). 'Hirda' and 'Kakadshingi' both are available in drug market.

Specimens examined: Mahabaleshwar - Vartak (3003, AHMA); Khandala, Wadeshwar, Bhandardara - Upadhye (17424, 17425, 17426, AHMA).

Trees with rough bark, yellowish-brown; leaves alternate, elliptic, coriaceous, tomentose; flowers in spikes, hermaphrodite; fruit drupe with five wings.

Fl - Fr : April - August. Local name : Ain, Asana (M.); Asan (S.). Locality : Throughout the area. It is common element in the area forming Tectona-Terminalia community.

**Medico-botany** : Part used - Bark. **Literature** - Bark is astringent, tonic applied to ulcers. **Folk medicine** - Bark paste in water is applied externally on ulcers.

This species is much valued for its timber.

Specimens examined : Katraj - Vartak (3014, AHMA);
Wadeswar, Khandala - Upadhye (17427, 17428, AHMA).


Large trees, young parts rusty tomentose; leaves oblong, acuminate, coriaceous with two glands near base of midrib below; flowers in compact panicles, sessile; fruit rusty, tomentose, winged. Fl - Fr : July - September. Local name : Kinjal (M.); Marub (S.). Locality : Throughout the area. Common element of Anogeiesus-Terminalia community.
Medico-botany: Parts used - Bark, flowers. Literature - Fresh flower juice with roots of Cocculus villosus is recommended in cholera. The bark has diuretic and cardiotonic properties. Folk medicine - Bark is boiled in ghee and an ointment is made. It is applied externally on abscesses.

Specimens examined: Hirdoshi - Vartak (3020, AHMA); Sinhagad - Vartak (3027, AHMA).

MYRTACEAE

1. Flowers in panicles
   .. Syzygium

1. Flowers 1-3 together, axillary

2. Leaves 7-14 cm long
   .. Psidium

2. Leaves 2.5 - 3.5 cm long
   .. Myrtus

Myrtus (Tourn.) L.

Myrtus communis L. Sp. Pl. 471. 1753. C. 1 : 529; KB.

Sweet-scented herbs; leaves lanceolate, fragrant; flowers solitary, axillary, white; fruit berry, black when ripe. Fl - Fr: January - May. Local name: Vilayati-mendi (M.). Locality: Pune. Occasionally cultivated in gardens and also as hedge plant.
Medico-botany: Parts used - Leaves, fruit. Literature -

Oil is extracted from leaves and used in medicine. Ripe fruit is supposed to be brain tonic, enriches blood, used in bronchitis. Leaf decoction is employed as mouth wash in cases of aphthae.

The dried fruits are sold in market under the name 'Hab-el-ass'.

Specimens examined: Shahu - Uddhana (Pune) - Upadhye (17429, AHMA).

Psidium L.


Subdeciduous, small trees; bark pinkish-brown; leaves elliptic-oblong, 7-15 cm long; flowers axillary, white; fruits globose or pyriform, berry. Fl - Fr: June - November. Local name: Peru, Amrut (M.);

Dridhabija (S.). Locality: Cultivated at many places in Pune district. Native of America, naturalised throughout tropical India. Horticulturally improved varieties are cultivated as valued for large-sweet fruits.

Medico-botany: Parts used - Leaves, flowers, fruit, root.
Literature - Leaves are applied on ulcers, remedy in toothache. Root is cooling, especially used in diarrhoea of children. Flowers are cooling, used in bronchitis.

Folk medicine - Root bark decoction is applied to the 'Prolapsus ani' of children. Ripe fruit is roasted on fire and upper skin is peeled out. It is then mixed with sugar and eaten as a remedy for cough.

Fruits are sold in market seasonally.

Specimens examined: Sinhagad - Vartak (16737, AHMA); Sinhagad - Ghate (17073, AHMA).

 moderated.

1. Petals calyptrate .. Syzygium cumini
1. Petals free .. Eugenia jambolana


Large trees; leaves variable, elliptic-hanceolate, shining; flowers in paniculate cymes, fragrant, dirty white; fruit subglobose, dark purple when ripe. Fl - Fr: February - June. Local name: Jambhul (M.); Jambu (S.). Locality: Throughout the area. Common
along river banks, moist areas and semievergreen forests.

**Medico-botany :** Parts used - Bark, fruit, seeds. **Literature** - Bark is astringent, anthelmintic, decoction is used for gargles during sore-throat. Fruit is sweet, cooling, stomachic, carminative. Seeds are diuretic. Seed is useful in diabetes. **Folk medicine** - Bark decoction is antidysenteric. Seeds are dried and powdered. Administration of this powder is said to control quantity of sugar in urine in diabetes.

Specimens examined : Bhimashankar - Vartak (3058, AHMA); Bhandardara - Ghate (17069, AHMA).


**Medico-botany :** Parts used - Bark, fruit. **Literature** - Bark is astringent. Fruit is sweet, used in liver complaints.
Specimens examined: Pune - Vartak (3075, AHMA); Ambavne - Upadhye (17430, AHMA).

LECYTHIDACEAE

1. Flowers white .. Careva
1. Flowers scarlet .. Barringtonia

Barringtonia Forst.

Barringtonia acutangula Gaertn. Fruct. 2 : 97. 1791.
FBI. 2 : 508; C. 1 : 528; KB. 2 : 1058; GIMP : 34;

Glabrous trees; leaves elliptic, margins denticulate; flowers in racemes, scarlet; fruit bluntly quadrangular with a persistent calyx. Fl - Fr: September - February. Local name: Samudra-phal, Tivar, Ingli (M.). Locality: Throughout the area. Found near moist places.

Medico-botany: Parts used - Root, fruit, leaves.

Literature - Leaf juice is given in dysentery. Fruit is astringent, used in blood diseases, bitter tonic, used in headache. Root is emetic. It has supposed to be similar to cinchona is properties.

Fruit is sold in market under name 'Samudra-phal' or
'Sat-phal', used in Bal-guti.

Specimens examined: Mapgaon - Sane (15161, AHMA); Alibag - Ghate (16844, AHMA).

**Careva Roxb.**


FEI. 2 : 511; C. 1 : 529; KB. 2 : 1061; GIMP : 51;

Middle sized trees; leaves sessile, glabrous, denticulate; flowers in spikes, yellowish-white; fruit berry, fleshy. Fl - Fr : February - May. Local name: Kumbha (M.); Kumbhi (S.). Locality: Pune, Ambavne, Kanakeshwar, Karnala, Khandala. Common in deciduous forests.

**Medico-botany:** Parts used - Bark, flowers, fruits.

**Literature** - Bark is astringent, fresh bark decoction with honey is recommended in cough and cold. Fruit is demulcent. **Folk medicine** - Infusion of flowers is given after childbirth. Fruit is good astringent and given to new born babies. A market drug 'Kumba' is comprises of a overy portion. It is one of the ingredient of the 'Bal-guti'.

Specimens examined: Kanakeshwar - Sane (15160, AHMA);
Karnala - Kulkarni (17083, AHMA).

MELASTOMACEAE

1. Flowers in corymbos panicles
   - Melastoma

1. Flowers in umbellate cymes
   - Memecylon

Melastoma L.


Shrubs; leaves rigid, lanceolate, 5-nerved; flowers in terminal, corymbose panicles; fruits berry.


Common in Konkan. Found near moist places.

Medico-botany: Part used - Leaves. Literature - Leaves are antidiysenteric, diuretic.

Specimens examined: Konkan - Vartak (3096, AHMA).

Memecylon L.

Small trees; leaves ovate, dark green, shining above, with transparent margin; flowers in umbellate cymes on old wood, purple; fruit berry, purplish-black.

Fl - Fr: January - June. Local name: Anjan, Kunku, Yaliki(M.); Anjani (S.). Locality: Mahabaleshwar, Bhandardara, Bhimashankar, Ambavne, Hirdoshi, Kanakeshwar. Commonly found in evergreen patches.

**Medico-botany**: Parts used - Leaves, bark. **Literature** - Leaves are cooling, astringent. Leaf-infusion is given internally in leucorrhoea and gonorrhoea. **Folk medicine** - Bark is crushed with Ajwan, black-pepper and ambe-haldi; this is warmed and applied externally on swellings and muscle pains.

Specimens examined: Bhimashankar - Vartak (3103, AHMA); Kanakeshwar - Sane (15164, AHMA).

**LYTHRACEAE**

<table>
<thead>
<tr>
<th>1. Herbs</th>
<th>1. Shrubs or trees</th>
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<tr>
<td>2. Flowers in cymes</td>
<td>2. Flowers in panicles</td>
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<td>3. Petals white</td>
<td>3. Petals purple</td>
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<tr>
<td><strong>Ammannia</strong></td>
<td><strong>Woodfordia</strong></td>
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<td><strong>Lawsonia</strong></td>
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</tbody>
</table>
**Ammannia L.**


Glabrous herbs; leaves opposite, linear-lanceolate; flowers in axillary clusters, subsessile; fruit capsule.

Fl - Fr: November - February. Local name: Bhar-jambhul (M.); Agni-patri (S.). Locality: Throughout the area. Very common throughout the area on moist places, especially found in rice field after harvest.

**Medico-botany**: Parts used - Leaves, whole plant.

**Literature** - Leaves are used as blistering agent. Plant is febrifuge, used to cure skin diseases. Folk medicine - Leaves are crushed with water and paste is applied externally on rheumatic pains and swellings.

Specimens examined: Ambavde - Vartak (3123, AHMA); Nagaon - Sane (15166, AHMA).

**Lagerstroemia L.**

Trees with spreading branches; bark pale, cracking off-in pieces; leaves glabrous; flowers in panicles, purple; fruit capsule, subglobose; seeds winged. Fl - Fr: March - July. Local name: Tamhan, Bondara, Jarul (M.). Locality: Pune. Common in Konkan along river beds, cultivated in gardens as ornamental plant.

**Medico-botany**: Parts used - Root, bark, leaves and seeds. **Literature** - Root is astringent, febrifuge. Bark and leaves are purgative; seeds are narcotic. **Folk medicine** - Bark decoction is recommended in fevers. This plant is an official emblem of the State Maharashtra and extensively cultivated as ornamental garden plant.

Specimens examined: Pune - Vartak (3174, AHMA).

**Lawsonia L.**


Large shrubs, leaves ovate, acuminate, shining; side branches ending into spines; flowers in panicles,
white; fruit a capsule. Fl - Fr: April - July. Local name: Mendi, Henna (M.); Mendica (S.). Locality: Throughout the area. Cultivated as hedge plant throughout the area.

Medico-botany: Parts used - Leaves, seeds, flowers, bark, oil. Literature - Bark is given in jaundice and enlargement of spleen. Leaves are externally applied during headache, often rubbed over soles of feet as cooling. Leaf-decoction is used to cure sore throat. Flowers are sporific. Oil is astringent. Leaves are used to cure skin diseases. Folk medicine - Fresh leaves are crushed and paste is made with lime-juice. This paste is applied on soles of burning feet. Leaf juice with raw sugar is recommended in spermatorrhoea. Seeds are fried on ghee and powdered. This powder is used to cure diarrhoea. Crushed leaves are boiled in coconut oil, used as astringent and said to be useful to promote the hair growth.

The leaves are extensively used as red-dye. It is applied on palms and also used as a hair-dye. The dry leaf powder is sold in the market. Henna oil and perfume is famous. Leaves are extensively used in perfumery.

Specimens examined: Sinhagad - Vartak (3176, AHMA); Pachgaon-Parvati (Pune) - Kulkarni (16301, AHMA).
Woodfordia Salisb.


Straggling shrubs; bark smooth, peeling off in fibers; leaves sub-opposite, sessile; flowers in axillary cymes, calyx with glandular dots, bright red; fruit capsule. Fl - Fr : November - May. Local name : Dhavas, Dhyati (M.); Dhataki (S.). Locality : Throughout the area. Common in moist deciduous forests, found straggling from rock crevices.

Medico-botany : Part used - Flowers. Literature - Dried flowers are astringent, tonic, safe stimulent in pregnancy; useful in leucorrhoea, menorrhagia and toothache. Flower powder is given in dysentery. Flowers are used in Ayurvedic preparations. Folk medicine - Flowers are fried on ghee and recommended in painful menstruation. Flowers are dried and powdered. This powder with honey is recommended in dysentery.

The flowers are much valued in Ayurvedic preparations i.e. 'Asavas' as it is used as fermenting agent as well as a good preservative. In all 'Rasashalas' demand of the flowers is very high. In the market dried flowers
are sold under name 'Dhayatiche phul'.

Specimens examined: Karnala - Datar (3217, AHMA);
Bhandara - Upadhye (17434, AHMA).

PUNICACEAE

Punica L.


Small trees; thorns axillary or terminal; leaves opposite, shining; flowers solitary, axillary, red; fruit capsule. Fl - Fr : May - December. Local name: Dalimb, Anar (M.); Dadhim (S.). Locality: Throughout the area. Cultivated for edible fruits. Many horticultural varieties are cultivated for bigger size of fruit and small size of seeds. Can be cultivated in dry areas hence now-a-days much valued.

Medico-botany: Parts used - Root, bark, flower, fruit.

Literature - Root is vermicide. Bark is astringent, used in piles. Seeds are used to cure bronchitis. Flowers are used to check vomiting. Unripe fruit is appetiser and tonic, aphrodisiac. Fruit is recommended in thirst,
fever, heart diseases, sore throat. The rind of fruit is antidysenteric. **Folk medicine** - Fruits are warmed and crushed. The juice obtained is given three times during a day to cure dysentery and diarrhoea. The dried ripe fruit is rubbed with honey and given to cure cough. Seed juice presumed to enriches blood. Fruit rind is vermifuge. Fruit is sold in market. The price is variable seasonally.

Specimens examined: Pune - Vartak (3248, AHMA); Pachgaon-Parvati (Pune) - Kulkarni (16304, AHMA).

**ONAGRACEAE**

1. Herbs, leaves sessile .. **Ludwigia**
1. Aquatic herb, petiole spongy .. **Trapa**

**Ludwigia** L.


Erect perennials, branched; leaves sessile, linear, elliptic; flowers in spikes, yellow; fruit capsule. Fl - Fr : August - December. Local name : Pan-lavang (M.);
Jal-lavang (S.). Locality: Throughout the area. Commonly found near swamps.

Medico-botany: Part used - Whole plant. Literature - Plant pulp in butter-milk is useful in dysentery. Plant decoction is vermifuge, purgative. Root infusion is febrifuge.

Specimens examined: Karnala - Vartak (3235, AHMA); Dakhnichirai (Mulshi) - Upadhye (17435, AHMA).

Trapa L.


Aquatic herbs; leaves alternate; flowers solitary axillary, incurved during flowering, bent down beneath water afterwards; fruits obovoid, angular, with spinous horn on either side. Fl - Fr: January - May. Local name: Shingada (M.); Shrungatata (S.). Locality: Cultivated in ponds. Rarely cultivated for valuable fruits in the area under study.

Medico-botany: Part used - Nut. Literature - Nut is cool-
ing, cures burning sensation, blood diseases and urinary discharges. Floor is made from nuts. The floor mixed with sugar and milk is recommended in dysentery and painful menses. Poultice made from floor is useful to ripe abscesses early.

The floor is valued as it is eaten during fasts. The nuts and prepared floor is sold in the market. The price is variable.

**CARICACEAE**

*Carica L.*


Widely cultivated, native of West-Indies; leaves large, glabrous, pinnatifid; male flowers in drooping panicles, female flowers in clusters, yellow; fruit soft, with yellow pulp, edible. Fl - Fr: January - May. Local name: Papaya, Papai (M.); Madhukarkati (S.). Locality: Throughout the area. Extensively cultivated for edible fruits.

**Medico-botany:** Parts used - Milky juice of unripe fruit, seeds, ripe fruit, leaves. **Literature** - Milky juice of
unripe fruit is extensively used in medicine. It is anthelmintic; applied locally to procure abortion, useful in expulsion of lumbrici, applied externally on skin diseases. Ripe fruit is stomachic digestive, carminative; useful in bleeding piles, ringworm and wounds of urinary tracts. Seeds are vermifuge. Folk medicine - Milky juice of unripe fruit is useful in enlargement of spleen. It is given with sugar. Milky juice is a good digestive and recommended after lunch or dinner along with equal amount of honey and warm water. Dried milky juice can be stored and a paste is made with warm water, which is used for local applications on abscesses, skin diseases and swellings. It is believed that fruit has abortive properties and hence not consumed by pregnant women.

White thin latex contains Papain a digestive enzyme, hence valued. It is used in many preparations of digestive tablets. Ripe fruits are valued in fruit market and price varies seasonally.

Specimens examined: Bhor - Vartak (3255, AHMA); Karnala - Mandavgane (3256, AHMA).

CUCURBITACEAE

1. Anther cells conduplicate
2. Corolla campanulate .. Coccinia
259

2. Corolla lobes divided up to base into 5 petals

3. Petals fimbriate
   3. Petals entire

4. Anthers included in the tube
   4. Anthers exerted

5. Tendrils simple
   6. Male flowers in racemes
   6. Male flowers in clusters or solitary

5. Tendrils bi-trifid

7. Fruit dehiscent by a stapple
   7. Fruit indehiscent

8. Petioles 1.3-2.5 cm
   8. Petioles 7.5-10 cm

1. Anther cells straight

9. Tendrils bi-fid
   9. Tendrils simple

10. Female flowers sessile
    10. Female flowers pedunculate

**Benincasa Savi**

Creepers with angular stem; leaves 5-lobed, flowers yellow; fruit cylindric, covered with waxy bloom. Fl - Fr: October - January. Local name: Kohala (M.); Kushmanda (S.). Locality: Throughout the area. Occasionally cultivated in all parts of area under consideration.

**Medico-botany:** Part used - Fruit. **Literature** - Fruit is tonic, aphrodisiac, diuretic, cures urinary and blood diseases. Fruit has got alternative and styptic properties, cooling, anti-malarial. Fruit-juice is specific in haemoptysis and internal haemorrhages. Fresh fruit-juice with sugar is given in insanity. It is laxative. It is recommended internally with *Aloe, Acorus* and *Centella asiatica* juice during internal haemorrhages. Juice is also recommended in diabetes. Fruit is used in preparations of sweet-meats and utilized as tonic.

Fruits are sold in vegetable market. Price is variable. Fruit is also consumed as vegetable.

Specimens examined: Poona - Without number and collector’s name - Blatter.

**Citrullus Schrader**

*Citrullus colocynthis* Schrader in Linnaea, 12: 414. 1838.

Monoecious; stem creeping; tendrils simple; leaves variable, petiole densely hirsute; flowers yellow; fruit glabular. Fl - Fr: November - January. Local name: Kadu-indrayan, Chirata (M.); Indravaruni (S.). Locality: Mulshi, Koyna, Purandhar, Kashele, Torna. Commonly found in hilly areas after monsoon.

Medico-botany: Parts used - Fruit, root, seeds, leaves. Literature - Fruit and seeds are purgative. Root is used to cure dysentery, jaundice, urinary discharges and rheumatism. Leaves are cooling. Root is given during pains in stomach. Folk medicine - Water extract of stem is emetic.

Specimens examined: Pachgaon-Parvati (Pune) - Kulkarni (16307, AHMA).

Coccinia W. & A.

Fl. Karnataka: 111; C. indica W. & A.; FBI. 2: 621;
C. 1: 572; KB. 2: 1151; GIMP: 72; GBMP: 70.
Cephalandra indica Naud., AS 1: 280. Ill. KB.: 462A.

Perennial climbers; tendrils simple; stems grooved; leaves rough, with papillae; flowers dioecious, white; fruit ovoid, indehiscent. Fl - Fr: August - November. Local name: Tondile (M.); Bimba (S.). Locality:
Throughout the area. Common on hedges, cultivated as a vegetable.

Medico-botany: Parts used - Root, leaves, fruits.

Literature - Root is cooling, used to cure vomiting, urinary infections, burning of palms and feet. Leaf-juice is applied externally on wounds, it is also applied on body to induce perspiration in fever. Root juice is prescribed in diabetes.

Folk medicine - Fresh whole plant juice with sugar is given to stop bleeding in pregnancy. Fresh young fruit is chewed and eaten to cure mouth ulcers.

Fruits are sold in market as vegetable.

Specimens examined: Pune, Karnala - Vartak (3264, 14124, AHMA).

Corallocarpus Welw.


Climbers with fibrous roots; stems angular, hairy, leaves fleshy, pale green palmately lobed; flowers in racemes, greenish-yellow; fruit red, beaked. Fl - Fr: June - September. Local name: Karvina, Kadvinai (M.); Katunai (S.). Locality: Pune, Occasionally found.
Medico-botany: Parts used - Whole plant, root. Literature -
Plant is bitter, emetic, cures inflammation. Root is
alterative, laxative, used in rheumatism. Folk medicine -
Plant with onion, cumin seeds and caster oil is made in
an ointment and applied externally on rheumatic pains.
Root is used by tribals to substitute Jalap but it is
very strong and hence given only to healthy persons.

Specimens examined: Parvati (Pune) - Vartak (3267, AHMA).

Cucumis L.

1. Perennials
   1. C. callosus

1. Annuals

2. Leaves deeply arbicular-reniform .. C. melo
2. Leaves cordate .. C. sativus

Cucumis callosus (Rottl.) Cogn. in Pflanzeur 88 : 129.
1924. C. trignosus Roxb.; FBI. 2 : 619; C. 1 : 569; KB.

Perennials; stems rough with rigid hairs; leaves
ovate, dentate; flowers monoecious, yellow; fruits sub-
globose, pale yellow when ripe. Fl - Fr: June - November.
Local name: Karit (M.). Locality: Pune, Mulshi. Common
in moist deciduous forests.

Medico-botany: Parts used - Root, fruit, seeds. Literature-
Fruit is stomachic. Root decoction is purgative, seeds are astringent.

Specimens examined: Katraj, Bhor - Vartak (3268, 3269, AHMA).


Annuals, leaves scabrous; flowers big, yellow; fruit spherical to ovoid, glabrous. Fl - Fr: January - March. Local name: KharbuJ (M.); Kharbuja (S.). Locality: Throughout the area. Many varieties are largely cultivated throughout the area especially on sandy river beds.

Medico-botany: Parts used - Fruit, seeds. Literature - Fruit is cooling, applied externally on skin. Seeds are recommended as diuretic, also used in chronic fevers and thirst. Folk medicine - Ripe fruit pulp is applied on eczema. Fruits are edible and sold in market seasonally.

Specimens examined: Purandhar - Vartak (3273, AHMA); Sinhagad - Ghate (15775, 15776, 15777, AHMA).

Hairy climbers; leaves deeply cordate, flowers yellow; fruit is covered with harsh hairs. Fl - Fr: June - December. Local name: Khira, Kakadi, Tawse (M.); Trapusi (S.). Locality: Throughout the area. Extensively cultivated as edible cucumber.

Medico-botany: Parts used - Leaves, fruit, seeds. Literature - Unripe fruit is cooling, astringent, nutritive, demulcent. Seeds are tonic, diuretic. Leaves are boiled and mixed with cuminum seeds is a remedy in throat affections. Folk medicine - Fruit has cooling properties, it is digestive. In sun-stroke fruit pieces are kept on the head to neutralize heat. Cucumber is used raw as well as in many edible preparations.

Specimens examined: Karnala - Mandavgane (3275, AHMA).

**Diplocyclos (Endl.) Post et Ktze.**


Climbing shrubs; tendrils 2-fid; leaves membranous, cordate; flowers monoecious, yellow; fruit subsessile, lobose, bluish-green. Fl - Fr: August - October. Local name: Shivlingi, Kavadodi (M.); Baj (S.). Locality:
Pune, Sinhagad, Katraj, Ambavde. Commonly found on hedges.

**Medico-botany** : Parts used - Whole plant, leaves. **Literature** - Plant is bitter tonic, alterative. Leaves are applied externally on swellings.

Specimens examined : Pune - Upadhye (17697, AHMA).

**Lagenaria Seringe**


Large, pubescent, climbing herbs; leaves cordate, dentate; flowers monoecious or dioecious, white; fruits elongated, indehiscent, polymorphous. Fl - Fr : May - December. Local name : Dudhi, Dudhi-bhola (M.); Tumbi (S.). Locality : Throughout the area. Cultivated as fruit vegetable. Shape of fruit is variable. Sweet and bitter varieties are found.

**Medico-botany** : Parts used - Root, leaves, fruit, flowers, seeds. **Literature** - Fruit of sweet variety is laxative, used as tonic, cooling and aphrodisiac. Fruit of bitter variety is diuretic, used in vaginal and uterine complaints. Root of bitter variety is applied on inflammations. Seeds
emetic. Flowers are cooling. Leaves purgative. Folk-
medicine - Stalks of aged fruit is cut off, seeds and pulp
is removed. Country liquor with Ammi seeds, Foeniculum
seeds and pimpri is filled inside and sealed fruit is
burried in earth. This is removed after a month and fil-
tered through cloth. This is kept in a bottle with good
lid. This preparation is recommended in asthma. Leaves
are boiled in oil and is applied on skin diseases. Sweet
fruit variety is sold in the vegetable market.

Specimens examined: Karnala - Mandavgane (3289, AHMA).

*Luffa* Cav.

1. Fruits smooth  \[ .. L. cylindrica \]
   1. Fruits 10-ribbed
2. Young leaves green, glabrous  \[ .. L. acutangula \]
2. Young leaves white, villous  \[ .. L. acutangula \]
   \[ var. amara \]

*Luffa acutangula* (L.) Roxb. *Fl. Ind.* 3 : 713. 1832. FBI.
2 : 615; C. 1 : 566; KB. 2 : 1121; GIMP : 159. *Ill.* KB. :
449.

Monoecious climbers; stems angular; tendrils trifid;
flowers yellow; fruit tapering towards base, longitudinally
10 ribbed, indehiscent. Fl - Fr: March - October. Local
name: Shirale, Dodka, Dodaka-turai (M.); Mahakoshataki (S.).
Locality: Throughout the area. Cultivated as a vegetable. Commonly observed on roof of tribal's hut.

Medico-botany: Parts used - Seeds, leaves. Literature - Seeds emetic, purgative. Powdered leaves are applied on leprosy. Folk medicine - Whole plant is boiled in wax or ghee and an ointment is prepared. It is applied locally as healing agent. The fruits are sold in market as vegetable.

Specimens examined: Karnala - Mandavgane (3291, AHMA).


Leaves are smaller than _L. acutangula_ and fruit is 5-10 cm long, obov. id, very bitter. Fl - Fr: September - December. Local name: Ran-turai (M.); Koshataki (S.).

Locality: Lavarde, Mulshi. Common along hedges.

Medico-botany: Parts used - Leaves, fruit, seeds. Literature - Leaves are applied externally. Fruit cures fever, cough and asthma. Seeds are emetic, cathartic. Seeds kernel is antidysenteric. Folk medicine - Dried fruit is used as snuff in jaundice. With smelling of it causes flow of yellow sticky liquid. Sometimes vomiting also results. The yellowness in jaundice disappears.
immediately. The whole plant is dried and water extract of it used as wash for decaying wounds.

Specimens examined: Museum Specimen in M.A.C.S.; Khandala - Santapau (54956, Blatter).


Monoecious climbers; flowers yellow; fruit elongated, indehiscent, marked with longitudinal lines. Fl - Fr: June - December. Local name: Ghosale (M.); Rajkoshataki (S.). Locality: Throughout the area. Commonly cultivated in gardens. During monsoon the climber is observed cultivated on roof of almost every hut of tribal.

**Medico-botany:** Parts used - Fruits, leaves and seeds. **Literature** - Fruit is expectorant, purgative. Seeds are emetic and cathartic. **Folk medicine** - Leaves are boiled into ghee and an ointment is made. It is applied on skin diseases. Leaf juice is boiled with jaggery and applied externally on boil to induce early ripening. Fruits are sold in the market as vegetable.

Specimens examined: Pune - Upadhye (17698, AHMA).
Momordica L.

1. Flowers monoecious, fruit
   5-15 cm long
   M. charantia

1. Flowers dioecious, fruit
   2.5-5 cm long
   M. dioica

Momordica charantia L. Sp. pl. 1009. 1753. FBI. 2 : 616,
C. 1 : 562; KB. 2 : 1130; GIMP : 168; GBMP : 144; AS 1 :
275. Ill. KB. : 452.

Annuals; stems angled, hairy; flowers monoecious,
yellow; fruits 5-15 cm long, red when ripe, appearance of
a crocodile's back. Fl - Fr : April - August. Local name:
Karle (M.); Karvelle (S.). Locality : Throughout the area.
Commonly found on hedges. Cultivated.

Medico-botany : Parts used - Leaves, fruits. Literature -
Leaf juice is emetic, purgative, fruit is recommended in
piles and jaundice. Folk medicine - Fruit vegetable is
considered as antidiabetic. Root paste in water is applied
externally on abscesses for 3 to 4 days, once in a day. It
is said to help in early ripening of an abscesses. Leaf
juice is applied externally as an insecticide.

Specimens examined : Pune - Vartak (3311, AHMA); Siddheshwar,
Pune - Upadhye (17436, 17437, AHMA).

Perennial climbers with tuberous roots, tendrils simple; leaves variable; flowers dioecious, yellow; fruits ellipsoid, densely echinate with soft spines. Fl - Fr: June - September. Local name: Kartoli (M.); Karkotaki (S). Locality: Katraj, Pune. Found on moist waste places along boulders. Occasionally cultivated as fruit vegetable.

Medico-botany: Parts used - Root, fruit. Literature - Root is used as remedy for bleeding piles. Root paste in water is applied on body to reduce fever. Powder or infusion of dried fruits is introduced into nostrils, produces errhine effect and provokes a conspicuous discharge from the Schneiderion mulous membrane.

Specimens examined: Katraj - Vartak (3313, AHMA); Katraj - Patil (2683, BSI); Khed - Janardhanan (71973, BSI).

Solena Lour.

Prostrate herbs with perennial roots; stems glabrous, leaves polymorphus; dioecious; flowers yellow; fruits bright red when ripe. Fl - Fr: June - September. Local name: Kokhar, Gamati (M.). Locality: Kashele, Torna, Sajjangad. Commonly occurring throughout the area after monsoon.

**Medico-botany**: Parts used - Root, leaves, seeds. Literature - Root juice with cuminum seeds, sugar and milk is recommended as remedy for spermatorrhoea. Leaf juice is applied to the parts which become inflamed from the application of the marking nut. Folk medicine - Seeds or stem is crushed with a cup of water and is given as antidote for poisonous animal bites. Leaf juice is externally applied on skin rashes.

Specimens examined: Sinhagad - Ghate (15772, AHMA); Pachgaon-Parvati (Pune) - Kulkarni (16319, AHMA).

**Trichosanthes L.**

1. Male racemes with large bracts .. *T. palmata*
1. Male racemes ebracteate .. *T. cucumerina*

**Trichosanthes cucumerina** L. Sp. pl. 1008. 1753. FBI. 2: 609; C. 1 : 560; KB. 2 : 1112; GIMP : 248; GEWP : 218; AS 1 : 279. **Ill. KB. : 444B.**

Annuals; leaves lobed, denticulate; flowers white; fruits ovoid, green with white stripes, scarlet when ripe.
Fl - Fr: July - December. Local name: Jangli-padval, Ran-padval (M.). Locality: Pune, Kanakeshwar. Occasionally seen on hedges.

Medico-botany: Part used - Whole plant. Literature - Plant is general and cardiac tonic, febrifuge, vermicide, emetic, cathartic. Seeds are antifertile, given in stomach disorders. Folk medicine - Decoction of young fruits is given as purgative.

Specimens examined: Kanakeshwar - Sane (15193, 15195, AHMA).


Wood climber; leaves variable; fruits globose, red when ripe, streaked with orange streaks. Fl - Fr: April - October. Local name: Kaundal, Makal (M.); Mahakas (S.). Locality: Kashele, Mahabaleshwar, Bhimashankar, Pune, Mulshi. Occasionally found in moist deciduous forests.

Medico-botany: Parts used - Fruit, root. Literature - Fruit is carminative, purgative, abortifacient, used to cure rheumatism, tooth-ache, ozoena, homierrohia. Fruit powder in coconut oil is used to apply on sores under the
ears and nostrills. **Folk medicine** - Fruit powder is filled in *Bauhenia* leaves and is smoked in asthma.

Specimens examined: Purandhar - Santapau (6176, 6177, Blatter).

**CACTACEAE**

*Opuntia* P. Miller


Thorny shrubs, forming dense clumps; flowers yellow.


**Medico-botany**: Parts used - Whole plant. **Literature** - Baked fruit is given in whooping cough. Milky juice is purgative. Mashed leaves are applied on inflammation. Plant pulp is applied to eyes in ophthalmia. **Folk medicine** - Plant is warmed and crushed, a paste is applied externally on swellings. Flowers are crushed with sugar, warmed and a syrup is made. This syrup is recommended in cough.
especially for children.
It was a common weed, in early 20th century it was controlled by biological measure.
Specimens examined: Poona - Cherian (65990, BSI).

**APIACEAE**

1. Leaves simple
2. Leaves compound
3. Secondary ridges of fruit inconspicuous
4. Fruits laterally compressed
5. Fruits dorsally compressed
6. Fruits less than 4 mm long
7. Fruits 5-6 mm long
8. Fruits more than 6 mm long
9. Fruits hirsute
10. Fruits glabrous
11. Bracts present
12. Bracts absent

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<tr>
<td>1. Leaves simple</td>
<td>. Centella</td>
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<tr>
<td>1. Leaves compound</td>
<td></td>
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<tr>
<td>2. Secondary ridges of fruit inconspicuous</td>
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<tr>
<td>3. Fruits laterally compressed</td>
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<td>3. Fruits dorsally compressed</td>
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<td>2. Secondary ridges prominent</td>
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<td>5. Fruits hirsute</td>
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<tr>
<td>5. Fruits glabrous</td>
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<tr>
<td>6. Bracts present</td>
<td>. Cuminum</td>
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<tr>
<td>6. Bracts absent</td>
<td>. Coriandrum</td>
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*Centella L.*

*Centella asiatica* (L.) Urban in C. Martius, Fl. bras.
11(1) : 287; t. 78, f. 1. 1879. Fl. Tamil. Car. 1 : 676;
GIMP : 58; GBMP : 60. *Hydrocotyle asiatica* L.; FBI. 2 :
Creeping or prostrate herbs; rooting at nodes; leaves reniform, deeply cordate at base; flowers pink, sessile.

Fl - Fr: May - November. Local name: Mandukparni, Bharmi (M.); Karivna (S.). Locality: Pune, Kashele, Sajjangad, Pashan. Commonly found growing on moist marshy places.

Medico-botany: Part used - Whole plant. Literature - Used as a tonic to improve memory, applied externally on skin diseases. Plant is local stimulant, sedative, cardiotonic, cures hiccup and cough. An ointment is made from leaves and is used in elephantiasis. Leaves are also useful in skin diseases. Folk medicine - Leaves are crushed along with leaves of Acorus colamus and mixed with honey. It is recommended as brain tonic, improves memory. Fresh leaf juice with honey cures cough. Crushed leaves are boiled in oil and filtered oil is applied on head for deep and silent sleep. It is believed that oil also helps to keep hairs black. Leaves are used in many Ayurvedic preparations. Fresh leaves are sold in local market. Bharmi and Mandukparni are the contraversial plants of Ayurveda (Usman Ali et al.).

Specimens examined: Karnala - Mandavgane (3390, AHMA); Bhosari (Pune) - Ghate (14189, AHMA).
Coriandrum L.


Glabrous annuals; flowers white, fruits round. Fl - Fr : November - February. Local name : Kothimbeer, Dhane (M.); Dhanyak (S.). Locality : Throughout the area. Extensively cultivated.

Medico-botany : Part used - Whole plant. Literature - Fruit is cooling, diuretic, stomachic, cures thirst and vomiting. Plant is given in dysentery. Seeds are chewed to correct foul breath. Oil is extracted from seeds and used as stimulant during colic. Folk medicine - Whole plant is crushed and applied externally on swellings, abscesses and skin diseases as cooling agent. Also kept on eye during conjunctivities. Fruit powder is soaked in water and filtrate is used as eye wash. Filtrate is also used to cure thirst during fever. It is used as diuretic and given with cuminum seeds and sugar. Leaves are used as potherb in cooking. Available in local market as fresh vegetable. Dried fruits are sold in market as Dhane and are extensively used as spice.

Specimens examined : Pune - Vartak (3396, AHMA); Karnala - Mandavgane (3397, 3398, AHMA).
Cuminum L.


Annuals; leaves tri-partite; flowers white; fruits cylindric, tip narrowed; seeds dorsally compressed. Fl - Fr : November - January. Local name : Jire (M.); Jirak (S.). Locality : Throughout the area. Occasionally cultivated for its valued fruits.

Medico-botany : Part used - Fruit. Literature - Fruit is sweet, cooling, aphrodisiac, stomachic, carminative, stimulant. Fruits along with fruits of *Coriandrum sativum* and sugar are soaked in water and filtrate is given to cure urine troubles. Seeds are roasted and eaten to stop vomiting. Fruits are used in cooking as a condiment. Sold in market as Jire.

Specimens examined : Torna - Vartak (3505, AHMA).

Daucus L.

Branched herbs; flowers in umbles; central flower sterile, purple; fruits with prickles. Fl - Fr: January - February. Local name: Gajar (M.); Garjar (S.). Locality: Throughout the area. Cultivated as root vegetable.

Medico-botany: Parts used - Seeds, root. Literature - seeds are nervine tonic, laxative, diuretic, aphrodisiac. Root is sweet, antidysenteric, stomachic. Horticultural varieties are cultivated for sweet and red root crop. Carrot is sold in local market as vegetable, extensively used in cooking, also eaten raw.

Specimens examined: Katraj - Vartak (3399, 3400, AHMA).

_Foeniculum_ P. Miller

_Foeniculum vulgare_ Miller, Gard. dict. (ed. 8). 1768. FBI. 2: 615; C. 1: 609; KB. 2: 1211; GIMP: 121; GBMP: 105; AS 1: 294. II. KB.: 477D.

Small herbs; flowers yellow; fruits 5-6 mm long, vittae conspicuous. Fl - Fr: October - December. Local name: Badishep (M.); Madhurica (S.). Locality: Throughout the area. Cultivated for edible fruits.

Medico-botany: Parts used - Root, leaves, seeds. Literature - Leaves improve eyesight. Seeds are sweet, carminative, diuretic, stimulant; useful in chest, spleen and kidney diseases. Folk medicine - Seeds are chewed in dry cough.
Dried fruits are sold in market as Badishep. It is used as condiment as well as mastecatory. Extensively used raw or roasted or along with betel nut (preparation is locally called as 'Supari') as mouth refresher. Oil is extracted from fruits and used to cure stomach disorders. Fruits are boiled in water with little salt and sugar, is recommended for children during teething. This water preparation is also used as antidysenteric to children.

Fruit oil is one of the constituent in preparation of 'Gripe water' which is used to keep child healthy.

Specimens examined: Sinhagad - Vartak (3405, AHMA); Bombay - Woodraw (Without number - Blatter).

Peucedanum L.


Glabrous, woody, perennials; leaves bipinnate; flowers yellow; fruits abovate. Fl - Fr: July - December. Local name: Baphli, Shopa (M.). Locality: Bhandardara, Bhimashankar, Torna, Koinea. Occasionally found at semievergreen and moist forests.

Medico-botany: Part used - Fruits. Literature - Fruits are
carminative, stimulant; used in place of Anethum graveolens.

Folk medicine - Fruits are crushed and given with warm water in stomach disorders. Tribal people use these seeds in place of 'Balantshep' (Anethum graveolens) after child birth and said to be equally effective.

Trachyspermum Link.

Trachyspermum ammi (L.) Sprague in Kew Bull. 1929 : 228.

Erect annuals; leaves pinnate; flowers white; fruit less than 2 mm long, muricate. Fl - Fr : September - November. Local name : Ova, Ajwan (M.); Yavani (S.).
Locality : Pune, Bhimashankar, Wadashwar. Cultivated for seeds.

Medico-botany : Part used - Fruit. Literature - Fruit is antiseptic, carminative, tonic, stimulant. Used in dyspepsia, colic, flatulence. Sometimes constitutes element of cough mixture. Oil is extracted from fruits and fragrant yellowish crystals are sold in the market. Folk medicine -
Fruits are extensively used as apitiser, tonic, digestive and carminative, after child birth. Mixture of umbelliferous fruits (Peucedanum graveolens and Trachyspermum ammi) are roasted and eaten raw every day after child birth. Woman is allowed to inhaled fumes of these seeds. Dry fruit powder is applied externally on skin diseases. Fruit is crushed and mixed with rock salt and ghee. It is applied on scorpion sting.

Fruits are sold in market and used in cooking.

Specimens examined: Museum specimen - MACS.

RUBIACEAE

1. Herbs
2. Flowers in paniculate cymes .. Oldenlandia
2. Flowers in whorls in stipular cup .. Borreria
1. Shrubs or trees
3. Stipules absent .. Rubia
3. Stipules present
4. Ovules many in each cell
5. Flowers in dense heads
6. Corolla lobes imbricate .. Anthocephalus
6. Corolla lobes valvate .. Haldina
5. Flowers not in dense heads
7. Fruits capsule
   8. Corolla valvate
   9. Single seeded

7. Fruits berry
   8. Corolla twisted
   9. Many seeded

6. Corolla valvate

S. Corolla twisted

5. Single seeded

4. Ovules solitary

10. Radicle superior

11. Ovary two-celled

9. Wany seeded

11. Ovary more than 2-seeded

10. Radicle inferior

12. Corolla twisted

13. Style shortly exserted

13. Style much exserted,
    2-branched, entire

12. Corolla valvate

13. Style shortly exserted,
    entire

12. Corolla valvate

14. Trees

14. Shrubs

.. Hymenodictyon
.. Mussaenda
.. Gardenia
.. Catundregam
.. Canthium
.. Meyna
.. Ixora
.. Pavetta
.. Morinda
.. Spermadictyon

Anthocephalus A. Rich.

5: 238. 1834; C. 2: 6; GIMP: 20. A. cadamba Miq.; FBI.

Large trees with horizontal branches, leaves coriaceous, glabrous; flowers in heads, fragrant, orange; fruit

Medico-botany : Parts used - Bark, leaves, fruit. Literature - Bark is bitter, aphrodisiac, useful in urine complaints and blood diseases. Fruit is healing, cause biliousness when ripe. Leaf decoction is used as gargle in aphthae and stomatitis. Folk medicine - Stem bark paste is applied externally on swellings. Bark decoction in water is febrifuge.

Specimens examined : Pachgaon-Parvati (Pune) - Kulkarni (16326, AHMA).

Borreria G.F.W. Mey


Prostrate, hirsute, herbs; leaves subsessile; flowers in whorls with a stipular cap, blue; fruits capsule. Fl - Fr : May - November. Local name : Madanghanti (M.). Locality Khandala, Raireshwar, Purandhar. Commonly found in high rainfall regions.
Medico-botany: Parts used - Root, seeds. Literature - Root decoction is alterative. Seeds are stimulant. Vapours are inhaled to kill tooth worms.

Specimens examined: Haireshwar - Vartak (3534, AHMA); Karnala - Datar (3539, AHMA).

Canthium Lam.


Branched shrubs with opposite, supraxillary, nearly horizontal, sharp straight spines; flowers in cymes; fruit drupe. Fl - Fr: May - November. Local name: Kirni (M.). Locality: Mahabaleshwar, Ambavne, Bhandardara, Pune. Found in moist desiduous forest.

Medico-botany: Parts used - Leaves, root. Literature - Leaf decoction is prescribed in certain stages of flux. Root is anthelmintic. Leaves are edible.

Specimens examined: Pachgaon-Parvati (Pune) - Kulkarni (16328, AHMA).
**Catunaregam** Tirven.


Small trees with decussate spines; leaves obovate, wrinkled, shining above; flowers solitary, white, turning to yellow; fruits globose. Fl - Fr : March - July. Local name : Gelphal (M.); Madanphal (S.). Locality : Throughout the area. In dry deciduous and moist forests.

**Medico-botany** : Parts used - Fruit, bark. Literature - Fruit is emetic. Fruit pulp is antidysenteric. Bark is astringent. **Folk medicine** - Fruit paste in water is externally applied on swellings. Fruit pulp separated from rind and seeds. It is crushed in water. It is kept for hour or two, filtered and given in diorrhoea. Fruit is also used for fish stapification.

Dried fruits are sold in market.

Specimens examined : Kanakeshwar - Sane (15225, AHMA); Atkarwadi - Ghate (17114, AHMA).
Gardenia L.

1. Trees

1. Unarmed shrubs

\[2^7\]

Gardenia gummosifera L. f. Suppl. 164. 1781. FBI. 3: 116;

Glabrous shrubs; leaves subsessile, elliptic, obtuse, shining; flowers white; fruit ellipsoid. Fl - Fr: March - August. Local name: Dikemali (M.); Nadihingu (S.). Locality: Kashele, Kanakeshwar, Karnala. Occasional in moist deciduous forests.

Medico-botany: Parts used - Gum, leaves. Literature - Gum is carminative, vermifuge, astringent, checks diarrhoea.

Folk medicine - Gum is rubbed on gum in case of children during teething. It is also cures diarrhoea. Due to typical odour it keeps off flies from sores. Gum with sugar is recommended to expel the worms. Very small amount of gum is given to remove gases, hence recommended in stomach pains. Leaves are crushed and juice is given to cure fever due to cold.

Dikemali is a gum which is an exudation located at leafbud. It is sticky and shining, yellowish-green. Sold in market.

Specimens examined: JNAMPH&G (Pune) - Upadhye (17458, AHMA); Siddheshwar - Upadhye (17459, AHMA).
**Gardenia resinifera** Roth, Nov. Pl. sp. 150. 1821. Fl.

Small trees with grey bark; leaves with short petiole, elliptic, acuminate; flowers axillary, white, fragrant. Fl - Fr : March - July. Local name : Dikemali (M.); Hingu (S.).

**Medico-botany** : Part used - Gum. **Literature** - Gum is used as G. gummifera.

Specimens examined : Kanakeshwar - Sane (15213, 15214, AHMA); Karnala - Ghate (17090, AHMA).

**Haldina** Ridrd.

**Haldina cordifolia** (Roxb.) Ridrd. in Blumea 24 : 361. 1978.

Tall, deciduous trees; leaves orbicular, cordate; flowers in globose heads, dull white; fruits capsule. Fl - Fr : July - February. Local name : Hedue, Hed (M.); Haridrak (S.). Locality : Mahabaleshwar, Bhandardara, Sinhagad, Kashele, Mira dongar. Common in semievergreen and moist deciduous forests.
Hymenodictyon Wall.

FI. Tamil. Car. 2 : 709. **Hymenodictyon excelsum** Wall.;

Trees with smooth bark; leaves abruptly acuminate; stipule glandular-serrate; flowers in panicles, white, fragrant; fruit capsule. Fl - Fr : June - October. Local name : Bhorsal (M.). Locality : Murbad, Pune, Kashele, Sinhagad, Ambavne, Bhandardara. Common along ghats and hilly areas.

**Medico-botany** : Part used - Bark. **Literature** - Bark is used in place of Cinchona bark.

Specimens examined : Bhambarde - Vartak (17256, AHMA);
Ambavne - Upadhye (17461, AHMA).

**Ixora L.**

1. Flowers white .. **I. pavetta**
1. Flowers scarlet .. **I. coccinea**


Glabrous shrubs; leaves sessile; flowers in corymbose
cymes, scarlet; fruit globose, purple when ripe. Fl - Fr: Throughout the year. Local name: Bakora, Pen-gul, Rat-kuda (M.). Locality: Kanakeshwar, Karnala, Kashele. Common in moist deciduous forest, also cultivated in gardens.

Medico-botany: Parts used - Flowers, bark. Literature - Root and flowers are antidysenteric. Flowers are also used to cure dysmonorrhoea. Flowers are fried with ghee given along with Cuminum seeds and nagkeshar as antidysenteric.

Specimens examined: Empress garden (Pune) - Vartak (14043, AHMA); Mapgaon - Sane (15215, 15216, AHMA).


Small, branched, evergreen trees; leaves very coriaceous; flowers in sub-globose clusters, fragrant; white; fruit drupe. Fl - Fr: January-October. Local name: Rair-kuda, Nevali (M.); Nevali (S.). Locality: Khandala, Ambavne, Kashele. Common in hilly deciduous forests.

Medico-botany: Parts used - Root, fruits, flowers, bark. Literature - Root or fruits are given to female when urine is highly coloured. Flowers are used to cure cough. Folk medicine - Crushed flowers are mixed with milk and given to cure cough. Bark paste in water is applied externally.
on abscesses. Bark is chewed raw to strengthen teeth. 
Kuda is a controversial plant species (See Chapter VI).
Specimens examined: Express garden (Pune - Vartak (3604, 
AHMA).

Meyna Link.

228. 1928; Fl. Khandala: 105; **Vangueria spinosa** Roxb.; 
FBI. 3 : 136; C. 2 : 36; KB. 2 : 1285; GIMP : 252; AS 1 : 

Small trees with sharp spines; flowers in cymes, 
greenish white; fruits globose, brown when ripe. Fl - Fr : 
January - May. Local name: Alu (M.); Pinditaka (S.). 
Locality: Pune, Ambavne, Bhandardara, Sinhagad, Karnala. 
Common throughout the area.

**Medico-botany**: Parts used - Fruit, leaves. **Literature** - 
Fruit is astringent, cooling, an expellant of phlegm and 
bile. Leaves are useful for diphtheria. The fruit is 
edible. Fruits are sold in market.

In the laboratory fruit jelly is successfully tried. It 
is observed that jelly setting is more early in comparison 
with other fruits.
Specimens examined: Katraj - Gunjatkar (16334, AHMA); Khandala - Upadhye (17462, AHMA); Mira dongar - Upadhye (17463, AHMA).

**Morinda L.**


**Medico-botany:** Part used - Root. **Literature** - Root is astringent. **Folk medicine** - Root latex crushed with 'Bor' leaves (*Zizyphus rugosa*) and mixture is applied externally on scorpion sting.

Root is used for extraction of red dye.

Specimens examined: Katraj - Vartak (3648, AHMA); Pachgaon-Parvati (Pune) - Kulkarni (16331, AHMA).
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Mussaenda L.


Rambling shrubs; leaves elliptic; flowers in terminal cymes; enlarged calyx segments leaf-like, white; flowers golden-yellow. *Fl - Fr*: July - December. Local name: Shrivar (M.); Shrivati (S.). Locality: Pune, Khandala. Cultivated as ornamental plant.

Medico-botany: Parts used - Root, leaves, flowers. Literature - Root paste in cow's urine is applied on white leprosy. White leaves with milk are given to cure jaundice. Flowers are applied as detergent to ulcers.

Specimens examined: Khandala - Upadhye (17699, AHMA).

Oldenlandia L.


Glabrous herbs; leaves subsessile; flowers on filiform pedicles, white; fruit capsule. *Fl - Fr*: September - January. Local name: Paripath, Khetpapada (M.); Parpat (S.). Locality: Throughout the area. Common weed in monsoon.
Medico-botany: Parts used - Whole plant. Literature -
Plant is febrifuge. It is recommended in intermittent
fever with gastric irritation and nervous depression. Plant
juice is applied on palms burning sensation and soles of
feet in fevers. Folk medicine: Plant decoction in water
is recommended to cure mesles. Dried plant powder is
smoked in asthma. It is a controversial plant 'Pittapapada'
(See Chapter VI).

Specimens examined: Bhor - Vartak (3686, AHMA); Mira dongar-
Upadhye (17465, AHMA).

Pavetta L.

Pavetta indica L. Sp. pl. 110. 1753; FBI. 3 : 150; C. 2 :
41; GIMP : 187; GBMP : 162.

Shrubs; young branches glabrous; leaves variable
flowers in cymes, white, fragrant. Fl - Fr : February -
June. Local name : Phaphti (M.). Locality : Throughout
the area. Very common in the area, commonly found on open
hilly slopes.

Medico-botany: Parts used - Root, leaves. Literature -
Root is bitter, mixed with ginger and rice water, it is
recommended in dropsy. Leaf decoction in water is given
to cure haemorrhoidal pains.
Specimens examined: Raireshwar - Vartak (14036, AHMA); Wadeshwar - Upadhye (17465, AHMA).

**Rubia L.**


Climbing herbs; roots red; stem rough grooved, quadrangular; leaves in whorls, ovate, rough; flowers in cymes, greenish-white; fruits purple when ripe. **Fl - Fr:** September - January. **Local name:** Manjishta (M.); Manjishtha (S.). **Locality:** Bhandardara, Mahabaleshwar, Ambavne, Kanakeshwar. Commonly occurring in semi-evergreen patches at moist places under shed.

**Medico-botany:** Parts used - Whole plant. **Literature** - Plant is tonic, alterative, improves blood, given in dropsy, jaundice, amenorrhoea, ulcers and urinary discharges. **Folk medicine** - Plant extract in water is recommended after child-birth to improve anemic condition.

Plant is sold in the market and also an ayurvedic preparation "Mahamanjishthādhi Kadha" is available in the market. Dry plant powder is also sold in market and in a demand as used in many cosmetic preparations, like facial pack to improve skin complexion.
Specimens examined: Raireshwar - Vartak (3766, AHMA); Torna - Upadhye (17466, AHMA); Sinhagad - Upadhye (17467, AHMA); Kalsubai - Upadhye (17468, AHMA).

*Spermadictyon* Roxb.


Shrubs, leaves rigid, glabrous; flowers in panicles; white; fruit capsule. Fl - Fr: November - March. Local name: Jitsaya, Gugandha, Narakganda (M.). Locality: Pen-Mira donger; Mahabaleshwar, Sinhagad, Purandhar, Torna. Common on fort walls and rocky, hilly areas.

Medico-botany: Part used - Root. Literature - Infusion of root is given in corbature, also cures diabetic carbuncle. Folk medicine - Root bark is extensively used to control diabetes. Root bark is dried and powdered. Powder is given with warm water to control blood sugar. Root bark paste in water is given in Ascitis. It is claimed that when the medicine is given within few hours it shows desirable effects. Dried root is recommended in kidney complaints.

Many stories about very serious patients suffering from diabetes, Ascitis and kidney stones are leasoned from
different Vaidus (Medicine person) and also from recognised ayurved practitioners. This root has got magic effect on persons suffering from above diseases. The root bark is collected from Junnar area and supplied to ayurved practitioners at Pune regularly.

Specimens examined: Purandhar - Vartak (3594, AHMA); Varsai - Upadhye (17460, AHMA).

ASTERACEAE

1. Shrubs
2. Herbs
1. Corolla absent
2. Corolla present
3. Flowers multicoloured
4. Ray florets absent
4. Both florets present
3. Flowers single coloured
5. Corolla white
6. Heads thorny
7. Leaves wooly beneath
7. Leaves wooly on both surfaces
6. Heads without thorns
8. Ray florets absent
8. Both florets present
5. Corolla other than white

.. Artemisia
.. Xanthium
.. Spilanthus
.. Carthamus
.. Echinops
.. Dicoma
.. Ageratum
.. Eclipta
9. Corolla yellow
10. Perennials
11. Leaves fleshy.. Notonia
11. Leaves simple
12. Straggling herbs.. Tridax
12. Erect herbs.. Dendrauthema
10. Annuals
14. Herbs with latex
15. Latex white.. Sonchus
15. Latex yellow.. Launea
14. Herbs without latex
16. Prostrate.. Glossocardia
16. Erect
17. Ray florets absent.. Blumea
17. Both florets present
18. Leaves alternate.. Helianthus
18. Leaves opposite
19. Leaves sessile.. Guizotia
19. Leaves petiolate
20. Leaves pinnate.. Tagetes
20. Leaves entire.. Slegesbeckia
9. Corolla purple
21. Leaves sessile
22. Branches angled and ribbed.. Tricholepis
22. Branches cylindrical.. Sphaeranthus
21. Leaves petiolate
23. Leaves glabrous.. Emilia
23. Leaves wooly

24. Rosette leaves are present  .. Elephatopus

24. Rosette leaves absent  .. Vernonla

Ageratum L.


Erect herbs; leaves ovate, hairy; flowers in heads, white; achenes black. Fl - Fr : October - February. Local name : Osadi, Sahadevi (M.). Locality : Throughout the area. A roadside weed, very common.

Medico-botany : Part used - Leaves. Literature - Leaves are styptic, applied on cuts. Plant juice has antilitic properties. Folk medicine - Leaf juice is applied externally on body as febrifuge. Two leaves of this plant with one leaf of Tulshi (*Ocimum sanctum*) and two black peppers are crushed together and recommended after every four hours to cure fevers. Crushed leaves are applied on cuts and wounds to stop bleeding.

Specimens examined : Karnala - Mandavgane (3819, AHMA); Pune - Ghate (14709, AHMA).

Artemisia L.


Aromatic shrubs; leaves pinnatisect; tomentose beneath; flowers minute, heads in panicled cymes, yellow.

**Medico-botany** : Parts used - Whole plant. Literature - Plant is anthelmintic, stomachic, tonic. Infusion of leaves and flowering tops is administered in nervous and spasmodic affections, in asthma and siseases of brain. **Folk medicine** - Extract of whole plant is used as tonic. It is used in contraction of uterus and helps in painless bleeding. Crushed plant is mixed with oil and applied externally on wounds. Plant is used to worship the God.

Specimens examin d : Raireshwar - Vartak (3832, AHMA);
Sinhagad - Upadhye (17470, AHMA).

**Blumea DC.**

*Blumea malcolmii* (Clarke) Hook. f. in FBI. 3 : 266. 1881;
C. 2 : 78.

Whole herb is covered with white silky hairs. Flowers

Medico-botany : Part used - Leaves. Folk medicine - Crushed leaves are applied on cuts and wounds. Fresh leaf juice is applied on bleeding wound, results to stop blood.

Specimens examined : Bhimashankar - Vartak (3900, AHMA); Karnala - Datar (3904, AHMA); Mira donger - Upadhye (17472, AHMA).

**Carthamus L.**


Medico-botany : Parts used - Flowers, seeds. Literature - Flowers are laxative, sedative, tonic, diuretic, expectorant, used to cure jaundice and skin diseases. Seeds are purgative, used in rheumatism; seed oil is used to cure joint-pains; used for dressing ulcers. Plant is used as green vegetable and available in Market.
Specimens examined: Junnar - Gunjatkar (AHMA); Bhor - Upadhye (15743, 17473, 17474, AHMA).

**Dendrauthema Des. Moul.**


Small shrubs; mostly cultivated for flowers; native of China. **Fl - Fr**: September - February. **Local name**: Shevanti, Savanti (M.); Satpatri (S.). Few varieties are cultivated for ornamental flowers.

**Medico-botany**: Parts used - Flowers, leaves. **Literature** - Leaves are rubbed over aching heads. Flowers are carminative purified blood, clarifies brain and also given in urinary discharges.

Flowers are sold in market. Good market value as used for garlands and to worship God.

Specimens examined: MACS Campus (Pune) - Upadhye (17475, AHMA).
Dicoma Cass.

Ill. KB. : 556.

Annuals, densely tomentose; leaves sessile, clothed with wooly hairs; flowers in heads, white. Fl - Fr : December - February. Local name : Navanaji (M.).
Locality : Katraj, Pune, Sinhagad, Torna. Commonly found in hilly areas near Pune.

Medico-botany : Part used - Whole plant. Literature - Bitter, febrifuge, used specifically in febrile attacks after child-birth.
Specimens examined : Mutha river side (Pune) - Vartak (4030, AHMA); Katraj - Vartak (4031, AHMA).

Echinops L.

Ill. KB. : 548.

Spreading annuals; leaves sessile, glabrous, deeply pinnatifid; flowers in heads, white. Fl - Fr : November -
January. Local name: Utanti, Utakara (M.); Utakantaka (S.).

Medico-botany: Part used - Whole plant. Literature:
Plant is alterative, diuretic, tonic, used in fevers. Root powder is used to destroy lice. Folk medicine - Plant decoction is used internally to cure skin diseases and fevers. Root powder with Acacia gum is applied on hair as remedy to destroy lice.
Used in compound Ayurvedic preparations.

Specimens examined: Ambavde - Vartak (4036, AHMA);
Waghjaicha donger (Pune) - Upadhye (17476, 17477, AHMA).

Eclipta L.

Erect or prostrate annuals, found near moist places; flowers white; fruit achen, cuneate, compressed. Fl - Fr: October - January. Local name: Maka (M.); Bhrungaraj (S.).
Locality: Pune, Bhandardara, Ambavne. Commonly found on moist, wet places and river beds.
Medico-botany: Part used - Whole plant. Literature - Plant is hot, bitter, good for hair growth, cures inflammations, prevents abortions. Root issued as tonic, applied externally on skin diseases. Used as a substitute to Taraxacum i.e. well known liver tonic. Leaf juice is given in fevers. Folk medicine - Fresh plant juice is applied on hair externally to retain them black. Fresh plant juice with equal honey is recommended in fevers with cough. Plant is crushed and mixed with oil. Oil is boiled and applied on head for undisturbed sleep. Fresh leaf juice is applied on forehead during fever.

Plant has got good demand in oil preparations. 'Maka-oil' or 'Bhrungaraj-tel' is famous for healthy hair growth and retaining the hair black. Oil made up by many pharmaceutical companies is available in the market under different trade names. In the market fresh plant is also sold sometimes.

Specimens examined: Mutha river side (Pune) - Vartak (4039, AHMA); Revas - Sane (15243, AHMA).

Elephantopus L.

A - *Elephantopus scaber* L. - annual used by local tribes to cure high fevers.

B - *Madhuca indica* J. Gmelin - a devine plant for each tribal community as every plant part is useful.
Leaves radical, veins prominent beneath; flowers in terminal heads, violet; fruit achenes. Fl - Fr: September - November. Local name: Hastipada, Pashi (M.); Gojihva (S.). Locality: Karnala, Bhandardara, Lavarde, Dakhni, Pune. Common under shady places in moist deciduous forest.

Medico-botany: Part used - Whole plant. Literature - Plant is astringent, tonic and febrifuge. Decoction of plant is given in diarrhoea and stomach pain. Roots are used to arrest vomiting. Dried root powder is applied to toothache. Leaves boiled in coconut oil and applied to ulcers and exzema. Folk medicine - Roots are boiled in water, and water is recommended to reduce body pain in high fevers.

Specimens examined: Kalsubai - Vartak (4055, AHMA); Karnala - Mandavgane (4056, AHMA).

*Emilia Cass.*


Medico-botany: Part used - Whole plant. Literature - Plant decoction is febrifuge. Leaf juice is applied on eye inflammation and night blindness. Folk medicine - Crushed plant is externally applied on female breast to cure breast abscesses. It reduces pain and help in easy draining of it.

Specimens examined: Katraj - Vartak (4065, AHMA); Sinhagad - Vartak (14675, AHMA).

Glossocardia Cass.


Prostrate annuals; leaves dissected; flowers in heads, yellow. Fl - Fr : July - September. Local name: Pittapapada, Fattarsuva (M.). Locality: Throughout the area. Commonly found on barren hilly areas after monsoon.

Medico-botany: Part used - Whole plant. Literature - Plant is used in female complaints. Folk medicine - Plant decoction is febrifuge. It is given in fevers after child birth, helps in contraction of uterus. It is one of the controversial plant 'Pittapapada' (see Chapter VI). Sold in Pune market as 'Pittapapada'.

Herbs; leaves opposite, sessile; flowers golden yellow. Fl - Fr: September - December. Local name: Karale, Karale til (M.). Locality: Throughout the area. Cultivated largely on hilly slopes. Native of tropical Africa.

Medico-botany: Part used - Seeds. Literature - Oil is extracted from seeds. Oil is used externally to less down rheumatic pain.

Oil is substituted to sesame oil, ghee and castor oil. Flowers are sold in market. Seeds are edible and sold in the market.

Specimens examined: Karnala - Vartak (4126, AHMA); Katraj - Gunjatkar (16343, 16349, AHMA).
**Helianthus L.**


Annuals; stem hirsute; leaves toothed, basal cordate; flowers yellow. FL - FR : October - January. Local name : Suryaphul (M.); Adityabhakta (S.). Locality : Throughout the area. Extensively cultivated for seeds. Native of America.

**Medico-botany :** Parts used - Flower, root, seeds. **Literature** - Flowers are pungent, cure skin diseases, antiperiodic. Decoction of root cures toothache. Seeds are diuretic, expectorant.

Specimens examined : FCBG (Pune) - Vartak (4131, AHMA); MACS (Pune) - Badve (14565, AHMA).

**Launaea Cass.**


Glabrous, flagelliform; leaves radical, toothed; flowers in heads, yellow. FL - FR : October - January.
Local name: Pathari, Bhopathari (M.); Golomika (S.). Locality: Nagaon, Alibag. Restricted only on sandy sea-coasts.

Medico-botany: Parts used - Leaves, whole plant. Literature - Plant is given to buffaloes to promote the secretion of milk. Fresh whole plant juice is given as soporific to children, and also applied on rheumatic pains. Folk medicine - Dried leaf powder is mixed with honey and recommended in cough.

Specimens examined: Nagaon - Sane (15251, AHMA); Nagaon - Upadhye (17479, 17480, AHMA).

Notonia DC.

Notonia grandiflora DC. in Wight, Contrib.: 24. 1834.

Glabrous perennials, fleshy; leaves ovate elliptic; flowers in corymbose heads, yellow; fruit achene. Fl - Fr: July - December. Local name: Vandar-roti (M.). Locality - Pune, Katraj, Raipurewar. Found on rocky hilly slopes, cultivated in gardens.

Medico-botany: Part used - Stems. Literature - Stems are
recommended in dog-bite.
Specimens examined: Katraj - Vartak (4170, AHMA); Raireshwar - Vartak (4272, AHMA).

Siegesbeckia L.

Large annuals, stem tinged with purple; leaves triangular ovate; flowers yellow. Fl - Fr: November - March. Local name: Katampu (M.). Throughout the area. Abundant in dry river beds.
Medico-botany: Part used - While plant. Literature - Tincture is made from whole plant. It is depurative, cardio-tonic, healing ulcers, applied on skin diseases.
Specimens examined: Katraj - Vartak (4241, AHMA); Raireshwar - Vartak (4242, AHMA).

Sonchus L.

Glabrous annaas, stems branched; leaves sessile; flowers in irregular umbels, yellow; achens ribbed.
Fl - Fr: December - April. Local name: Mhatara (M.).
Locality: Throughout the area. Commonly found as under herb and as roadside weed.

Medico-botany: Parts used - Plant juice, root. Literature - A brownish gum is extracted by evaporation of whole plant juice, it is powerful hydragogue and cathartic. Infusion of root is tonic, febrifuge.

Specimens examined: Katraj - Vartak (4250, AHMA); Kanakeshwar - Sane (15246, AHMA); Chikkhalgaon - Upadhye (17481, AHMA).

*Spharanthus L.*


Herbs; stems with toothed wings, glandular, hairy; leaves sessile, rounded, dentate; heads purple, globose.
Fl - Fr: December - March. Local name: Mundi, Gorakh-mundi (M.); Mundirika (S.). Locality: Throughout the area. Weed in cultivated lands, after monsoon. Commonly found in harvested rice-fields.
Medico-botany: Part used: Whole plant. Literature - Herb is tonic, deobstruent, alterative. Root and seeds are anthelmintic. Whole plant decoction is diuretic, used in urethral discharges. Plant is used in skin diseases and stomach disorders. Folk medicine - Whole plant is boiled in oil and used for external application on skin diseases. Dried plant powder with Cuminum seeds and butter milk is recommended in stomach disorders. Flower heads are used as fish poison. Flower heads are sold in market under name 'Mundi'.

Specimens examined: Bhor - Vartak (4240, AHMA); Kurul - Sane (15252, AHMA).

Spilanthus L.


Medico-botany: Parts used - Flower heads, seeds. Literature - Seeds and flowers are chewed to produce salivation. Tincture of flower heads is used to cure toothache, it is specific for inflammation of the periosteum of the jaws. Flowering heads are sold in the market.

Specimens examined: Hirdoshi - Vartak (4278, AHMA); Alibag - Gunjatkar (16359, AHMA).

Tagetes L.


Erect annuals, branched; leaves pinnate; flowers ranges from yellow to deep orange. Fl - Fr: September - January. Local name: Zendu, Genda (M.). Locality: Throughout the area. Originally from Mexico. Many horticultural varieties are grown in gardens and also near temples.

Medico-botany: Parts used - Leaves, flowers. Literature - Flowers are bitter, useful in fevers and epileptic fits. Leaves are cooling, used in piles, scabies. Leaf juice is used for earache and ophthalmia. Leaf juice is astringent and fresh juice is applied on
face for fair complexion. Used in herbal facial packs. Flowers have got good demand, in market, especially at 'Dashara' and 'Divali' festivals.

Specimens examined: Katraj - Vartak (4281, AHMA); Pune - Upadhye (17482, AHMA); Dakhnichirai - Upadhye (17483, AHMA).

**Tricholepis DC.**


**Medico-botany:** Part used - Whole plant. **Literature -** Plant is nervine tonic, useful in skin diseases, aphrodisiac, used in seminal debility.

Specimens examined: Malavali - Vartak (4299, AHMA); Koyna - Vartak (4301, AHMA).
Tridax L.


Straggling herbs, hairy; leaves ovate elliptic, with glandular hairs; flowers in heads, heads solitary, yellow. Fl - Fr: Throughout the year. Local name: Ekdandi, Dagadipala (M.). Locality: Throughout the area. Very common in gardens and roadsides.

**Medico-botany**: Part used - Leaves. **Literature** - Leaves are applied on cuts. No mention of this property anywhere except GBMP. **Folk medicine** - Leaves are crushed and applied on cuts, bleeding wounds and rash on skin. In the field, this plant provides very useful tincture with antiseptic and healing properties.

Specimens examined: Karnala - Vartak (4321, AHMA); Pune - Upadhye (1745, AHMA); Dakhnichirai (Mulshi) - Upadhye 17486, AHMA).

**Vernonia Schreber**

1. Leaves white beneath
   - *V. anthelmintica*
2. Leaves green beneath
   - *V. cinerea*


Pl. Tamil. Car. 2 : 826; FBI. 3 : 236; C. 2 : 66; GIMP :
Erect annuals; leaves lanceolate, serrate, pubescent beneath; flowers in heads, purple; achenes ribbed. Fl - Fr: November - February. Local name: Kadujire (M.); Arannyajrak (S.). Locality: Throughout the area. Commonly found in moist and dry deciduous forests.

Medico-botany: Part used - Seeds. Literature - Seeds are anthelmintic, tonic, stomachic, used in skin diseases and employed for destroying pediculi. Folk medicine - Dried seeds are recommended with warm water to expel the worms. Dried seeds are powdered and mixed with equal volume of turmeric and ghee, this ointment is applied externally on stabies. Seed decoction is febrifuge. Seeds are sold in market under name 'Kadujire'.

Specimens examined: Naireshwar - Vartak (3968, AHMA); Narsapur - Vartak (3967, AHMA); Torna - Upadhye (17487, AHMA).


Erect annuals, pubescent; leaves variable, irregularly toothed; flowers in heads, pinkish-violet. Fl -

Medico-botany : Part used - Whole plant. Literature - Plant decoction is used to promote perspiration in fertile conditions, used as a remedy for spasm of the bladder and strangury. Plant juice is used in piles. Root is used in dropsy. Flowers are febrifuge.

Specimens examined : Raireshwar - Vartak (4322, AHMA); Pachgaon-Parvati (Pune) - Kulkarni (16365, AHMA).

Xanthium L.


Annual herbs; rough; leaves alternate, triangular-ovate, trilobed; heads monoecious, axillary or terminal. Fl - Fr : December - March. Local name : Shankeshwar (M.); Arishta (S.). Locality : Throughout the area. Growing on waste places commonly.

Medico-botany : Parts used - Every plant part. Literature - Plant is acrid, cooling diaphoretic, sedative, tonic, improves appetite. Decoction is useful in long standing cases of malaria. Root is bitter tonic, useful in stomach
diseases. Fruit is cooling, demulcent. Plant is useful in poisonous insect bites. Folk medicine - Decoction in water is recommended in high fevers.

Specimens examined: Ambavde - Vartak (4360, AHMA); Pachgaon-Parvati (Pune) - Kulkarni (16367, AHMA).

GOODENIACEAE

_Scaevola_ L.


Shrubs; leaves sessile, tuft of white wool in axil; flowers in axillary cymes, white; fruit drupe. Fl - Fr: June - January. Local name: Bhadrak, Bhadraksh (M.). Locality: Alibag, Nagaon. Found on sandy sea-coasts.

Medico-botany: Part used - Fruit. Literature - Fruit juice is instilled into eyes to clear off apacities.

Specimens examined: Nagaon - Sane (15261, 15262, AHMA).

LOBELIACEAE

_Lobelia_ L.

_Lobelia nicotianaeefolia_ Heyne in Roth, Nov. Pl. Sp.: 143.
Biennial or perennial herbs; stem hollow; flowers in terminal racemes, more than one ft. long, white; fruit capsule. Fl - Fr: November - May. Local name: Devnal, Bhoknal, Dhota (M.); Nal (S.). Commonly found on ghats in high rainfall areas.

Medico-botany: Parts used - Leaves, stem, seeds. Literature:
Infusion of leaves is antiseptic, stomachic, diuretic, cure burning sensation. Seeds are acrid. Root is used in scorpion bite. Folk medicine - Dried leaves are smoked in asthma, helps in desolving and easy expeling of the cough. Hollow stem is kept in hot water and vapors are taken inside the mouth, which also helps in desolving the cough.

Specimens examined: Ambavne - Upadhye (17700, AHMA).

PLUMBAGINACEAE

Plumbago L.


Perennial herbs, woody, glabrous; leaves ovate; stipule amplexicaul at base; flowers in spike, white,
calyx with stalked glands. **Fl - Fr**: August - December.

**Local name**: Chitrak (M., S.). **Locality**: Pune, Katraj, Bhandardara, Mulshi, Kashele, Kanakeshwar. Abundant on shady waste places.

**Medico-botany**: Parts used - Root, milky juice. **Literature** - Root is used in skin diseases. Root bark is powerful abortifacient, useful in rheumatism, aphrodisiac. Milky juice is applied externally on scabies and ulcers. **Folk medicine** - Root suspension in water is applied externally on abscesses. Root paste in water is applied as abortifacient. It is told that abortion results in two or three hours after application.

Root is sold in crude drug market.

**Specimens examined**: Varandha - Vartak (4502, AHMA); Varsai - Upadhye (17488, AHMA).

**MYRSINACEAE**

**Embelia** Burm.

1. Inflorescens axillary and terminal both .. **E. ribes**

1. Inflorescens axillary .. **E. tsjeriam-cottam**

**Embelia ribes** Burm. **Fl. Ind.**: 62, t. 23. 1768. **FBI. 3**: 513; **C. 2**: 143; **KB. 2**: 1478; **GIMP**: 106; **GBMP**: 95; **AS 2**: 7. **ILL. KB.**: 577.
Rambling shrubs; leaves elliptic; flowers terminal and axillary, in panicked racemes; fruit turn black on ripening. Fl - Fr: December - May. Local name: Vavdinga (M.); Vidang (S.). Locality: Karnala, Malshej ghat, Lavarde, Kashele, Bhandardara, Sajjangad. Common in moist forests.

Medico-botany: Part used - Fruit. Literature - Cures tumours, heart and urinary diseases, anthelmintic. Fruit is used as adulterant with black pepper. Folk medicine - Fruits are anthelmintic, specifically in cases of children. Fruits are boiled in water and filtered water is recommended in fevers during thirsty sensation. The young stems eaten after removing outer bark is said to be remedy for stomach pain.

Fruits are sold in the market.

Specimens examined: Bhandardara - Upadhye (17489, AHMA).


Shrubs; very similar to the E. ribes, only flowers are distinctly axillary and ripe fruit is dark red. Fl - Fr: April - July. Local name: Amti, Amti-fatakadi (M.); Edanga (S.). Locality: Sajjangad, Raigad, Bhandardara, Bhimashankar, Kashele. Found in moist forests.
Medico-botany: Parts used - Fruits, root bark. Literature - Fruit is antiseptic carminative and anthelmintic. Dried root bark is used to cure tooth ache. Folk medicine - Fruits are used as a substitute to E. ribes.

Specimens examined: Majgad - Vartak (4527, AHMA); Bhandardara - Upadhye (17490, AHMA).

SAPOTACEAE

1. Calyx segments four .. Madhuca
1. Calyx segments six or more
   2. Lateral nerves parallel .. Manilkara
   2. Lateral nerves reticulate .. Mimuscosps

Madhuca Lam.

1. Leaves elliptic .. M. indica
1. Leaves oblanceolate .. M. longifolia


Trees; leaves clustered near ends of branches, pubescent, elliptic; flowers in dense fascicles, creamy white; fruit berry. Fl - Fr: January - June. Local name:
Moha, Mohada (M.); Madhuk (S.). Locality: Pune, Murbad, Dheswadi, Bhandardara. Common in deciduous forest.

Medico-botany: Parts used - Flower, fruit, bark, leaves, latex. Literature - Flowers yield distilled spirit which is used in medicine. It is tonic, nutritive, recommended in old intestinal diseases. It is used as appetizer in fevers. Flowers are fried on ghee and eaten to cure piles. Bark is astringent, tonic. Distilled spirit mixed with water and used as mouth refresher during toothache, bleeding gums and mouth ulcers. Smoke of burning leaves has a curative effect in throat affections. Unripe fruit is used in ophthalmia. Juice of kernel, if snuffed, stops nasal bleeding. Folk medicine - Oil is extracted from seeds, is rubbed externally on rheumatic pains. Latex is externally applied on creaked feet. It is very useful tree for tribals - a tree of devine. Every plant part can be utilized in a way or other to fulfil tribals daily needs. Wood provides fuel, different parts can be used medicinally, dried flower flour can be used as raw material for making roasted bread, oil extracted from seed can be eaten, oil cake is used for catching fish and bark or flowers can be fermented to prepare liquor.

The oil extracted is also used for exchanging purposes, especially in Thane tribal localities, as tribal
give Kadhuca oil and get some other edible oil. This barter system is a common practice in tribals from Bhimashankar-Ahupe area too.

Specimens examined: Kanakeshwar - Sane (15264, AHMA); Law College hill (Pune) - Upadhye (17493, AHMA).


Trees; leaves at the end of the branches; flowers appearing with young leaves; flowers in clusters, anthers biserrate; fruit berry. Fl - Fr : December - March. Local name : Mohada, Ilappi (M.). Locality : Pune, Bhor, Kanakeshwar. Sometimes cultivated, not found wild.

Medico-botany : Parts used - Flowers, seeds, latex. Literature - Flowers are anthelmintic, laxative. Seed oil is used in skin diseases. Latex is used in rheumatic pains.

Specimens examined: Pune - Ghatle (17127, AHMA); Pune - Upadhye (17494, AHMA).
Manilkara Adanson

1. Staminods absent  ..  M. zapata
1. Staminods present  ..  M. hexandra


Glabrous trees; leaves coriaceous, oblong; flowers axillary, whitish; fruit berry, reddish-yellow when ripe.
Fl - Fr : September - December. Local name : Rangin (M.); Rajadani (S.). Locality : Pune, Alibag, Sajjangad, Kanakeshwar.
Common in dry forests, on low lying hill slopes.

Medico-botany : Part used - Bark. Literature - Bark is astringent, demulcent.

Specimens examined : Karlikhind - Sane (15267, AhMA); Pune - Ghate (17495, AhMA).

Manilkara zapata (L.) P. Royen in Blumea 7 : 410, 1953.
Trees with rough bark; leaves oblong lanceolate; flowers white; fruit with pink flesh and brown epicarp.

Fl - Fr : September - March. Local name : Chikku (M.).
Locality : Throughout the area. Largely cultivated. Many horticultural varieties are grown as fruit crop.

Medico-botany : Parts used - Fruit, bark, seeds. Literature - Fruit is preventive against biliousness and febrile attacks. Bark is tonic, febrifuge. Seeds are diuretic.

Fresh fruits are sold in fruit market and has got good market potential.

Specimens examined : Bhor - Vartak (4540, AHKA); Pune - Upadhye (17491, 17492, AHWA).

Mimusops L.

Mimusops elengi L. Sp. pl. 349. 1753. FBE. 3 : 548;

Evergreen trees with smooth bark; flowers small, white, very fragrant; fruit berry, ovoid, yellow when ripe. Fl - Fr : January - March. Local name : Bakul, Bakuli (M.); Bakul (S.). Locality : Pune, Bhor, Sajjangad. Many times cultivated in gardens.
Medico-botany: Parts used - Bark, flowers, seeds, root, fruit. Literature - Bark is astringent, tonic, used in fevers, decoction is used as a gargle in diseases of gum and teeth. Flowers are febrifuge, cures blood diseases; seeds are locally applied within the anus of children in cases of constipation. Root is diuretic, aphrodisiac. Fruit pulp is used in chronic dysentery. Folk-medicine - Bark ash is used for brushing teeth and believed to strengthen the teeth. It is believed that seeds provide very good remedy in piles. Twenty-one peeled (epicarb removed) ripe seeds with 21 fruits of black pepper are crushed together and crushed bulk is given to the person suffering from piles with water in the morning. Person is not allowed to take any food before or after taking the medicine for whole day, and asked to walk for six hours continuously. After walking light food is allowed. It was said that if only once it is done, it removes whole cause of piles and person did not suffer again from piles in his whole life. Bark has got good market potential as used in different preparations of toothpowders.

Specimens examined: Baneshwar - Vartak (14051, AHMA); Pune - Upadhye (17496, AHMA).
EBENACEAE

Diospyros L.

1. Corolla more than 2 cm across .. D. peregrina
1. Corolla less than 1 cm across .. D. melanoxylon

Diospyros melanoxylon Roxb. Car. Pl. 1 : 36. t. 46. 1795.

Middle-sized trees with grey bark, young parts tomentose; male flowers in paniculate cymes; female flowers solitary; fruit yellow when ripe. Fl - Fr : January - June.

Medico-botany : Parts used - Leaves, bark. Literature - Bark is astringent, used in diarrhoea, as a tonic. Leaves are carminative, laxative. Dried leaves are used in urinary, skin and blood diseases. Leaves are used in 'Bidi' Industry.

Specimens examined : Katraj - Vartak (4558, AHMA).

Diospyros peregrina (Gaertner) Guerke in Engl. Nat.
Pflanzenfam. IV. 1 : 164, 1891. Fl. Tamil, Car. 2 : 870;

Medico-botany: Parts used – Fruit, seeds, bark. Literature– Fruit and stem bark is astringent. Seed oil is useful in dysentery. Infusion of fruit is used as gargle in aphthae and sore throats, juice is applied on wounds. Folk medicine – Fruits are crushed and dried. The dried fruits are antidysenteric. Bark infusion is febrifuge. Leaves have got good demand in 'Bidi' making industry.

Specimens examined: Empress garden (Pune) - Vartak (4557, AHMA); Law College hill (Pune) - Upadhye (17498, AHMA).

SYMPLOCACEAE

Symplocas L.


Medium sized trees; leaves elliptic; flowers in terminal or axillary panicles, fragrant, white turning yellow; fruit black when ripe. Fl – Fr: December – March.
Local name: Lodhra, Loth (M.); Lodhral (S.). Locality: Bhimashankar, Ambavne, Koyna. Found in semi-evergreen patches.

Medico-botany: Part used - Bark. Literature - Bark is bitter, acrid. Bark paste is applied externally to promote the masturbation. The bark with sugar is given in menorrhoea. It should be given 2-3 times a day, for 3-4 days. Bark is also useful in eye diseases, ulcers and water decoction is used in bleeding gums. Folk medicine - Bark powder is used in vaginal diseases. Bark powder is extensively used by medico-practitioners for ulcers in vagina.

Specimens examined: Koyna - Vartak (4569, AHMA); Ambavne - Ghate (17139, AHMA); Ambavde - Upadhye (17500, AHMA).

**OLEACEAE**

1. Shrubs
   1. Trees
      2. Leaves coriaceous
         2. Leaves rough and scabrous

Jasminum L.

1. Leaves compound
   1. Leaves simple
      2. Leaves glabrous
         2. Leaves pubescent

.. Jasminum
.. Olea
.. Nyctanthes
.. J. grandiflorum
.. J. sambac
.. J. multiflorum

Shrubs, flowers fragrant, white with reddish under surface. Fl - Fr : July - November. Local name : Chameli (M.); Jati (S.). Locality : Throughout the area. Cultivated in the gardens.

Medico-botany : Parts used - Leaves, flowers, root.

Literature - Flowers are bitter; emetic; used in toothache, diseases of blood and ulcers. Root is purgative, expectorant, cures headache. Leaf juice is applied on corn. Folk medicine - Leaves are boiled in oil and oil is dropped in ear during earache. Crushed flowers are cooling and applied externally on skin rashes and headache. Leaves are chewed to get relief from mouth ulcers. Flowers have demand in perfumery.

Specimens examined : Kaigad - Vartak (4577, AHMA).


Shrubs, clothed with velvety tomentum; leaves opposite, ovate; flowers in terminal, capitate cymes,
fragrant. Fl - Fr: December - March. Local name: Mogra, Ran-mogra (M.); Kunda (S.). Locality: Throughout the area. Mostly cultivated.

**Medico-botany:** Parts used - Flowers, leaves, roots. 
**Literature** - Flowers are emetic. Dried leaves are soaked in water and a poultice is prepared which is useful in ulcers; has got healing properties. Flowers have got good market value.

Specimens examined: FCBG (Pune) - Vartak (4587, AHMA); Ghatghar - Vartak (4588, AHMA).


Shrubs, young parts pubescent; leaves opposite; flowers in bunch of 3, white, fragrant. Fl - Fr: May - September. Local name: Mogra (M.); Mallika (S.). Locality: Throughout the area. Cultivated in gardens.

**Medico-botany:** Parts used - Flowers, leaves, roots. 
**Literature** - Young leaves are crushed into water, sugar is added and 'sarbet' is made, which is useful in bloody stools. Root decoction is recommended in irregular menstruation. Flowers are cooling. Crushed flowers are applied
unmoistened to breasts to arrest secretion of milk in puerperal state in cases of threatened abscess.

Flowers have got market potential.

Specimens examined: FCBG (Pune) - Vartak (4593, AHMA).

**Nyctanthus L.**


Small trees with rough leaves; stems quadrangular; leaves opposite; flowers fragrant, tube orange and free petals white; capsules orbicular. Fl - Fr: February - October. Local name: Prajakta, Parijatak (M.); Kharpatrika, Parijatak (S.). Locality: Throughout the area. Cultivated in gardens and near temples.

**Medico-botany:** Parts used - Leaves, bark, root, flowers, seeds. **Literature** - Leaf juice is febrifuge. Decoction of bark, leaves, roots and flowers is given in excessive diuresis and in enlargement of the spleen. Flowers are carminative, stomachic. Seeds are used in skin diseases. **Folk medicine** - Fresh leaf juice is given in high fevers with ginger juice and honey. Powdered seeds are mixed in oil and paste is applied externally for scalp.
Specimens examined: Pune - Vartak (4606, AHMA); Karnala -
Mandavgane (4607, AHMA).

Olea L.


Glabrous trees; leaves elliptic, tomentose; flowers
polygam dioecious, white; fruit drupe. Fl - Fr : January-
March. Local name : Parjamb, Karambu (M.). Locality :
Bhandardara, Khandala, Mahabaleshwar, Ambavne. Found in
semievergreen forests.

Medico-botany: Part used - Bark. Literature - Bark is
febrifuge. Folk medicine - Bark decoction with other
aromatics is recommended to reduce high fevers.

Specimens examined: Khandala - Vartak (4610, AHMA);
Mahabaleshwar - Vartak (4614, AHMA); Bhandardara - Upadhye
(17501, AHMA).

Salvadoraceae

Salvadora L.

Salvadora persica L. Sp. Pl. 122. 1753; FBI. 3 : 619; C.
Large shrubs with drooping branches; flowers in panicles, greenish-yellow; fruit drupe, red when ripe. Fl-Fr: November - March. Local name: Pilu, Khakan (M.); Pilu (S.). Locality: Alibag - Nagaon. Found along creeks and on sea-coasts.

**Medico-botany**: Part used - Leaves, bark, fruit. **Literature**. Leaves are externally applied on rheumatism. Leaf juice is used in nose troubles. Fruit is carminative, diuretic. Stem-bark decoction is tonic, used in low fevers.

Specimens examined: Revas - Sane (15274, 15275, AHMA).

### APOCYNACEAE

<table>
<thead>
<tr>
<th>1. Spines present</th>
<th>2. Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Flowers yellow</td>
<td>4. Leaves in whorls</td>
</tr>
<tr>
<td>3. Flowers white (sometimes red in Nerium and Plumeria)</td>
<td>5. Leaves 4-7 in whorls</td>
</tr>
<tr>
<td>5. Leaves 3 in whorls</td>
<td>4. Leaves not in whorls</td>
</tr>
</tbody>
</table>

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Ill. KB.: 598.
6. Leaves spirally arranged .. *Plumeria*
6. Leaves opposite
7. Follicles beaked .. *Ervatamia*
7. Follicles without beak
8. Seeds boat shaped .. *Holarrhena*
8. Seeds tapering to one end .. *Wrightia*

2. Herbs or shrubs
9. Climbing shrubs .. *Anodendron*
9. Erect shrubs
10. Flowers yellow .. *Allamanda*
10. Flowers pink-white .. *Rauvolfia*

**Allamanda L.**

*Allamanda cathartica* L. Mantiss. 2 : 214. 1771; C. 2 : 207; KB. 2 : 1556; GIMP : 11; AS 2 : 35. Ill. KB. : 602B.

Milky shrubs, native of Guyana; leaves in whorls, shining; flowers large, yellow, showy. F1 - Fr : Flowers throughout the year; Fruits not seen. Local name : Jhari sontakka (M.). Locality : Pune. Cultivated in gardens.

Medico-botany : Parts used - Bark, leaves. Literature - Bark is hydragogue in ascites. Leaves are cathartic. The people working in printing press, they suffered by typical stomach pain due to accumulation of lead in stomach. Bark decoction of this plant helps in reducing the pain.

Specimens examined : Pune - Ghate (15759, 15799, AHKA).

Trees with milky juice, glabrous; leaves are in whorls, 4-7, coriaceous; flowers in umbellate cymes, greenish-white; follicles cylindric. Fl - Fr: December - June. Local name: Saitan, Satvin (M.); Saptaparna (S.). Locality: Karnala, Khandala, Matheran. Found in high rainfall tract.

Medico-botany: Parts used - Bark, milky juice.

Literature - Bark is bitter tonic, febrifuge, used in malarial fevers, useful in diarrhoea and dysentery, laxative, anthelmintic, galactogogue, good in heart and blood diseases. Milky juice is applied on ulcers and rheumatic pains. Folk medicine - Bark is powdered and decoction is made. This decoction is recommended in periodic fevers. This decoction with other aromatics (e.g. Acorus calamus, Zingiber officinale etc.) is given after child birth. It is stomatic, tonic, febrifuge and also galactogogue.

Stem bark has market potentials as used in Ayurvedic preparations like 'Amritashtakapachana'. The bark is used in place of Cincona.
Specimens examined: Karnala - Mandavgane (4623, AHMA); Pune - Ghate (16834, AHMA).

**Anodendron A. DC.**


**Medico-botany**: Part used - Root. **Literature** - Root is used in place of Ipecacuanha.

Specimens examined: Hiraireshwar - Vartak (14054, AHMA); Khandala - Vartak (4624, AHMA).

**Carrisa L.**

Large, evergreen shrubs with horizontal glabrous spines; leaves coriaceous, elliptic; flowers in corymbose cymes, white; fruit berry purplish-black when ripe.

Fl - Fr : December - June. Local name : Karvanda (M.); Karmardaka (S.). Locality : Throughout the area. Very common in moist and dry deciduous forests. Sometimes cultivated for fruits.

Medico-botany : Parts used - Fruit, root. Literature - Root is anthelmintic, stomachic. Unripe fruit is astringent, ripe fruit is cooling, having antiscorbutic properties. Folk medicine - Root paste in lemon juice is applied externally on skin rash. Ripe fruits are edible. Unripe fruit is made in pickles. Both have got good market value. Jelly can be made from ripe fruits.

Specimens examined : Katraj - Vartak (4629, AHMA); Khandala - Gunjatkar (16385, AHMA).

Cascabela Raf.

Small trees; leaves linear-lanceolate; flowers bell-shaped, yellow. Fl - Fr: September - May. Local name: Bittichezad, Pivli Kanher (M.); Pit-Karvir (S.). Locality: Pune, Kashele, Murbad, Pen, Alibag.
Native of West Indies and South America, cultivated in gardens.

Medico-botany: Parts used - Bark, milky juice. Literature - Bark is bitter, cathartic, febrifuge, useful in intermittent fevers. Milky juice is poisonous. Used in heart diseases in place of Digitalis. Folk medicine - Bark powder and dried milky juice is stored and used in heart diseases. It is used as febrifuge. But given in very small doses and under experts observations.

Specimens examined: Alibag - Sane (15292, AH&SA).

Catharanthus L.


Garden plants, native of West Indies; leaves deep green, polished, shining; flowers pure white or rose-red;
fruit a follicle. Fl - Fr : Throughout the year. Local name : Sadaphuli (M.). Locality : Throughout the area. Cultivated in gardens, also found escaped.

Medico-botany : Part used - Whole plant. Literature - Plant is used as remedy for diabetes. Leaf infusion is administered in monorrhoea. Leaf juice is applied to wasp sting.

The leaves contain many alkaloids. It is observed that the leaves can be served as a remedy for cancer. The cultivation of it is done on large scale as it has got good market potential.

Specimens examined : Pune - Vartak (4642, AHMA); Alibag - Sane (15281, AHMA).

Ervatamia Stapf


Glabrous, branched shrubs; leaves lanceolate, shining, flowers in cymes, white, fragrant; follicles yellow when ripe, short beaked. Fl - Fr : Throughout the year. Local
name: Tagar, Anant (M.); Nandivruksha (S.). Locality: Throughout the area. Sometimes found wild, cultivated in gardens.

Medico-botany: Parts used - Root, milky juice, wood, flower. Literature - Wood is refrigerant. Milky juice is applied on diseases of eye. Root is bitter, used to cure toothache, tonic, used in epilepsy and ophthalmia. Folk medicine - Root suspension in water along with root of Clerodendron serratum (Sharangi) is applied on head, during headache with fever after child birth. Crushed flowers are applied externally on eye as cooling.

Specimens examined: Lonavala - Reddi (97836, DSI); Khandala - Santapau (10747, Blatter).

**Holarrhena R. Br.**


Small pubescent trees; leaves ovate; flowers in terminal cymes, white, fragrant. Fl - Fr: March - June. Local name: Pandhara Kuda, Kuda, Kutaja, Indrajav (M.); Kutaj (S.). Locality: Throughout the area. Common in deciduous forests.
Medico-botany: Parts used - Root, seeds, bark. Literature -
Root is pungent, anthelmintic, cures blood diseases, antidiysenteric. Seeds are astringent to bowels, cures bleeding pile and skin diseases, carminative. Bark is bitter, strengthen gums, astringent, galactogogue, tonic, removes muscular pain. Infusion of fresh root bark and seeds are useful in dysentery. Seed powdër is rubbed on gums to relieve from tooth pain and bad breath. Folk medicine - Root paste in butter-milk is recommended in dysentery and diarrhoea. Seeds are febrifuge. It was claimed by tribals that frequent consumption of seeds shows antitetanous action.

Seeds are used in many Ayurvedic preparations and hence has good market value. Both root pieces and seeds are sold in market under market name 'Kudhyache-Pal' and 'Indrajav'. These seeds are true 'Indrajav' and due to morphological similarities other seeds get mixed in market sample. It is a controversial drug (Please see Chapter VI).

Specimens examined: Karnala - Vartak (4626, AHMA);
Ehandardara - Upadhye (17503, AHMA); Varsai - Upadhye (17504, AHMA).
**Merium L.**


Evergreen shrubs, with milky juice, leaves coriaceous, linear, in whorls; flowers red or white. *Fl - Fr:* Throughout the year. *Local name:* Kanher (M.); Karvir (S.). *Locality:* Throughout the area. Found escape, cultivated in gardens and near temples.

**Medico-botany:** Parts used - Whole plant. *Literature - Plant is poisonous.* Root is bitter, aphrodisiac, cardiotonic, applied to chancre and ulcers on the penis. It is powerful resolvent, only to be used externally. Leaf decoction is applied to reduce swellings. Oil from root bark is used in skin diseases and in leprosy. *Folk medicine - Root suspension in water is given to reduce stomachache.* But it should not be given on empty stomach. Root is recommended in snake bite. Leaves are crushed, warmed and applied on swellings.

Specimens examined: Pune - Vartak (4668, AMMA); Karnala - Mandavgane (4671, AMMA).
Plumeria L.


Small trees, native of Tropical America; leaves lanceolate; flowers white with golden-yellow centre or red. Fl - Fr : Throughout the year. Local name : Khur-chapha, Pandhara-chapha (M.); Khirchampaka (S.). Locality : Throughout the area. Cultivated near temples of Shiva. Found giant growth in many Deo-rais near Pune.

Medico-botany : Parts used - Leaves, bark, milky juice, root. Literature - Root bark is purgative, carminative, used in ascites. Bark is febrifuge. Leaves are warmed and externally applied on swellings. Milky latex is useful in toothache, also applied externally on joint pain. Folk medicine - Flower bud with betel leaf is given as febrifuge. Leaves are crushed with fresh coconut endosperm and applied externally on skin to cure skin diseases.

Specimens examined : Karnala - Vartak (4675, AHMA); Kanakeshwar - Sane 15288, AHMA).
Kauvolfia L.

Kauvolfia serpentina (L.) Benth. ex Kurz, Forest Fl. Burma
2 : 171. 1877. FBI. 3 : 632; C. 2 : 189; KB. 2 : 1550;
GIMP : 210; GHMP : 180. Ophioxyylon serpentinum L.; AS 2 :
31. III. KB. : 602A.

Small shrubs; leaves at ends of branches, lanceolate,
flowers in cymes, pinkish-white; fruit drupe, black when
ripe. Fl - Fr : February - September. Local name : Hadaki,
Sarpagandha, Adakai (M.); Sarpagandha (S.). Locality :
Pune, Pen, Miradonger, Kashele. Endangered species. Rarely
found wild in the area under consideration, but cultivated
as medicinal plant.

Medico-botany : Parts used - Root, leaves. Literature -
Root is good source of reserpine, sedative, tonic, used in
insanity, reduces blood pressure, remedy in painful affec-
tions of the bowels. Leaf juice is used for removal of
opacities of the cornea of the eye. Folk medicine - Root
is extensively used as cardio-tonic. Root suspension is
given in stomach pain. Used in snake-bite. This is an
important medicinal plant from the area. Cultivated as
it has got market potential. Cultivation practices are
known and topography, climate is suitable for the cultiva-
tion of this plant.
Root is sold in market. Also had good demand in Ayurvedic
preparations. A large work is done by many workers on this species with cultivation and pharmacognostic aspect. (Chandra, 1955, 1956; Datta, Chopra and Kapoor, 1962; Manachina, 1954; Virmani et al., 1980)

Specimens examined: MACS (Pune) - Vartak (14700, AHMA); MACS Campus (Pune) - Upadhye (17505, AHMA); Hadapsar (Pune) - Upadhye (17506, AHMA).

Wrightia R. Br.

1. Leaves hispid; seeds tapering towards one end .. W. tinctoria
1. Leaves tomentose; seeds attenuated at one end .. W. arbores

Wrightia arbores (Dennst.) Mabb. in Taxon 26 : 533. 1977.

Small trees, young parts pubescent; leaves tomentose; flowers in corymbose cymes, calyx glandular inside; follicles grooved. Fl - Fr : April - July. Local name : Tambada Auda, Kala Indrajav (M.). Locality : Katraj, Kashele. Occasionally found in moist deciduous forests.

Medico-botany : Parts used - Bark, seeds. Literature - Bark preparation is given in menstrual and renal complaints. Folk medicine - Bark suspension is antidysenteric. Seeds are used as substitute to true Indrajav.
Seeds are adulterated in the market samples of true Indrajav (See Chapter VI).

Specimens examined: Katraj - Vartak (16388, AHMA); Kashele - Ghate (16992, AHMA); Kashele - Upadhye (17509, AHMA).


Medico-botany: Parts used - Bark, seeds. Literature - Bark and seeds have properties as Holarrhena antidysenterica and used in place of it. Folk medicine - Seeds are used as antidysenteric and febrifuge. Seeds are adulterated in true Indrajav. It is a controversial seed drug (see Chapter VI).

Specimens examined: Hirdoshi - Vartak (4706, AHMA); Bhandardara - Ghate (16963, AHMA); Khandala - Upadhye (17507, AHMA); Miradonger - Upadhye (17508, AHMA).
ASCLEPIADACEAE

1. Erect shrubs
   2. Leaves thick, elliptic .. Calotropis
   2. Leaves thin, lanceolate .. Asclepias

1. Twining or climbing shrubs
   3. Leaves absent .. Sarcostemma
   3. Leaves present
      4. Leaves cordate, as long as or shorter than broad
         5. Leaf-base sagittate .. Pergularia
         5. Leaf-base cordate
            6. Corolla spotted with purple .. Cosmostigma
            6. Corolla not spotted .. Wattakaka
      4. Leaves not cordate, as long as or large than broad
         7. Corolla tube inflated baselly .. Ceropegia
         7. Corolla tube when present not inflated
      8. Flowers in axillary umbels
         9. Latex watery .. Tylophora
         9. Latex milky .. Gymnema
      8. Flowers in inflorescence other than umbels
         10. Leaf-base cordate .. Holostemma
         10. Leaf-base acute or truncate .. Oxystelma
Asclepias L.


Erect shrubs with milky juice, leaves linear-lanceolate; flowers in umbels, orange-yellow. Native of West-Indies.

Fl - Fr : Throughout the year. Local name : Haldhi-kunku, Pivla-chitrak (M.); Kurki, Haktta-pushpa (S.). Locality : Pune. Abundant in moist shady places. Commonly found in river beds.

**Medico-botany** : Parts used - Root, leaves. **Literature** - Root is purgative, used in piles, gonorrhoea. Leaf juice is anthelmintic, useful in gonorrhoea. Powdered leaves are used in treating sores and wounds.

Specimens examined : Pune - Vartak (4744, AHMA); Karnala - Mandavgane (4751, AHMA).

**Calotropis** R.Br.

1. Staminal corona curved .......... *C. gigantea*
1. Staminal corona straight .......... *C. procera*

Tall shrubs; bark yellowish-white, leaves elliptic, oblong; flowers in cymes. Fl - Fr: December - July.
Local name: Rue, Mandar (M.); Ark (S.). Locality: Throughout the area. Common on waste places and dry deciduous open forests.

Medico-botany: Parts used - Root, bark, leaves, flowers, latex. Literature - Root bark is substituted for Ipecacuanha. It is expectorant, emetic, purgative, useful in worms, ascites and elephantiasis. Root powder is a mild stimulant and febrifuge. Leaves applied to swellings and painful joints. Tincture of leaves is used in intermittent fevers. The milky latex is acrid, purgative, cure tumers, tonic, expectorant. Flowers are stomachic, good in liver diseases. Folk medicine - Flowers are dried and powdered, it is useful in mental disorders, given as tonic. Milky latex is filled in decaying teeth. Sometimes white flowered variety is observed. It is claimed by local people that such variety is more effective. (Plate 5.9a).

Specimens examined: Karnala - Mandavgane (4756, AHMA); Pachgaon-parvati (Pune) - Upadhye (17510, AHMA).

A - *Evolvulus alsinoides* L.
- a brain tonic, commercial source of 'Shankhapushpi'.

B - *Calotropis gigantea* R.B
- white-flowered variety said to be more effective than usual one.
Erect shrubs; young parts white; leaves subsessile, ovate-elliptic; flowers in umbellate cymes, purplish-white; seeds comose. Fl - Fr: December - March. Local name: Rui (M.); Ark (S.). Locality: Throughout the area. Common on dry waste places.

Medico-botany: Parts used - Leaves, flowers and milky juice.
Literature: Properties are similar as of C. gigantea.
Folk medicine: Both the species C. gigantea and C. procera are used in same way and named Rui. Local people do not differentiate the two species.
It is a religious plant. Cultivated near temple of 'Hanuman', used to worship God.

Specimens examined: Katraj - Vartak (4757, AHMA); Pachgaon-parvati (Pune) - Upadhye (17511, AHMA).

Ceropegia L.

1. Leaves fleshy
   .. C. bulbosa

1. Leaves membranous
   .. C. candelabrum

Ceropegia bulbosa Roxb. Cor. pl. 1: 11, t. 7. 1795. FBI.
Illi. KB.: 630.
Twiners with tuberous roots; leaves variable, fleshy; flowers in umbellate cymes, greenish, violet-purple inside; fruit follicles. Fl - Fr: August - December. Local name: Patal-tumbadi (M.). Locality: Katraj, Sinhagad, Purandar. Twiner on thickets, usually found on hilly slopes.

Medico-botany: Part used - Tuberous root. Literature - Tuber is tonic. Local people used leaves and tuber as vegetable.

Specimens examined: Katraj - Vartak (4764, AHMA).


Medico-botany: Part used - Tubers. Literature - Tubers are tonic, used in bowel complaints, cures dysentery. Tuber is edible.

Specimens examined: Sinhagad - Vartak (4780, AHMA).
**Cosmostigma Wight.**

*Cosmostigma racemosa* (Roxb.) Wight, Contrib. Bot. India:


**Medico-botany :** Parts used - Root, leaves. **Literature -** Root is chloragogue, useful in dyspepsia accompanied by fever. Leaves are used to cure ulcerous sores, also applied on wounds.

Specimens examined : Hirdoshi - Vartak (4785, AHMA); Kanakeshwar - Sane (15301, AHMA).

**Cynnema R. Br.**


Woody climbers, young parts pubescent; leaves ovate, elliptic; flowers in sessile cymes, yellow; follicles

**Medico-botany**: Part used - Whole plant. **Literature** - Plant is bitter, acrid, anthelmintic, cures eye complaints, stomachic used in heart diseases, piles, expectorant. Fresh leaves are chewed to reduce glycosurin, used in diabetes. Root is emetic, expectorant, useful in snake-bite. **Folk medicine** - Leaves are used in treatment of diabetes. Leaves are crushed and applied on wounds and pricking of prikle. Dried leaves are used as snuff to promote discharge from nose. If sugar is eaten after consumption of these leaves, it is tasteless. Dried leaves are sold in market as 'Badekicha-pala'.

Specimens examined: Koyna - Vartak (4305, AHMA); Bhimashankar - Vartak (4308, AHMA).

**Holostemma** R. Brown

*Holostemma ada-kodien* Schultes in L. Syst. Veg. 6: 95.

Large twining shrubs, glabrous, shining; leaf-base cordate, glands at base of mid-rib; flowers in cymes; staminal corona. Fl - Fr : August - December. Local name : Shidodi, Khandodaki, Tultuli (M.). Locality : Pune, Mulshi, Bawdhan. Found in hilly regions and hedges.

Medico-botany : Parts used - Roots, leaves. Literature - Roots are alternative, remedy for scalding in gonorrhoea. Root paste applied to the eyes in opthalmia, used in diabetes and spermatorrhoea. Crushed leaves are applied on abscesses.

Specimens examined : Katraj - Vartak (4812, AHMA); Sinhagad - Vartak (4814; AHMA).

Oxystelma R. Br.


Twining herbs with milky juice; leaves deciduous, linear, glabrous; flowers in cymes, large, rose coloured. Fl - Fr : November - February. Local name : Dhudhani (M.); Dugdhika (S.). Locality : Pune. Found on river banks.

Medico-botany : Parts used - Plant, root. Literature -
Plant is bitter, pungent, used as diuretic, laxative, expectorant. Plant decoction is used as gargle in aphthous ulceration of mouth and sore throat. Roots are used in jaundice.

Specimens examined: Pune - Ghate (4838, AHMA).

**Pergularia L.**


Perennial herbs with foetid milky juice; stems hairy leaves suborbicular; flowers in lateral cymes, greenish-white; follicles echinate. Fl - Fr : August - January.

Local name: Utaran (M.); Chandaldugdhika (S.). Locality: Pune, Bhandardara, Lonavala. Common as roadside weed.

**Medico-botany:** Parts used - Leaves, root. **Literature** - Leaves are used as expectorant in catarrhal affections, given in asthma, applied on rheumatic pains. Fresh leaf poultice is used for carbuncle, with good effect. Root is mixed with cow's milk and used as purgative.

Specimens examined: Pune - Vartak (4797, AHMA); Pachgaon-Parvati (Pune) - Kulkarni (16407, AHMA).
Sarcostemma R.Br.


Leafless, trailing shrubs; stems green, jointed; flowers in terminal umbels, white. Fl - Fr : May - September. Local name : Ran-sher, Soma, Somalata (M.). Locality : Katraj, Pune. Found in dry hilly regions.

Medico-botany : Part used - Stems. Literature - Bitter, alterative, emetic. Folk medicine - Whole plant is crushed and mixed with water, is recommended in rheumatic, joint pains. It is tonic and claimed as a 'Soma' of Rugveda. The plant juice is said to be taken as beverage by 'Purohits' doing 'Yadnya' in past. But the milky latex is also said to be poisonous. Still some medico-practitioners strongly recommend it as a tonic.

Specimens examined : Katraj - Vartak (4842, AHMA); Jejuri - Vartak (4844, AHMA); Pune - Upadhye (17513, AHMA).

Tylophora R.Brown

(L.f.) W.& A.; FBI. 4 : 44; C. 2 : 226; KB. 3 : 1631; GBMP : 220; AS 2 : 41. Ill. KB. : 618B.

Twining perennials; leaves elongate, glabrous, pubescent, cordate; flowers in umbellate cymes, greenish-purple, fruit a follicle. Fl - Fr : August - December. Local name : Pitmari, Antamul, Khadki-raasa, Pitvel (M.); Mulini, Mul-raasa (S.). Locality : Pune, Ambavne, Sajjangad, Bhandardara. Found in open forests.

Medico-botany : Parts used - Leaves, roots. Literature - Leaves are emetic, expectorant, useful in dysentery. Substitute to Ipecacuanha. Recommended in asthma, bronchitis, useful in overloaded state of the stomach and other cases requiring the use of emetics. Folk medicine - Leaves are strongly recommended in Asthma. The leaves are eaten raw. In the beginning only one leaf is eaten and one leaf is added daily upto consumption of seven leaves. It is said to be emetic, it desolves cough and gives relief. Roots are diuretic and pain killer.

It was observed that in small tribal villages, a Vaidu always cultivates this plant. He collects it from nearby forest and cultivates it with maximum care.

Specimens examined : Pune - Upadhye (17514, 17515, 17516, AHMA).
Dregea volubilis (L.f.) Benth. ex Hook; KB. 3 : 1635.
Marsdenia volubilis (L.f.) T. Cooke; FBI. 4 : 46; C. 2 : 230; GBMP : 138. Ill. KB. : 629A.

Twining shrubs; leaves suborbicular, acuminate, glabrous; flowers in umbellate cymes, yellowish green.

Medico-botany : Parts used - Root, leaves. Literature - Leaves are applied on boils and abscesses. Roots are emetic, expectorant. Used in eye diseases to cause sneezing.

Specimens examined : Rajgad - Vartak (4871, AHMA); Katraj - Vartak (4874, AHMA).

PERIPLOCACEAE

1. Leaves elliptic-ovate .. Cryolepis
1. Leaves oblong-lanceolate .. Hemidesmus
Cryptolepis R.Br.

**Cryptolepis buchananii** Roem. & Schult. Syst. 4: 409. 1819;
FBI. 4: 5; KB. 3: 1599; GIMP: 82.


**Medico-botany:** Part used - Whole plant. **Literature** - Plant is used in preparation given to children as a cure for rickets.

Specimens examined: Hirdoshi - Vartak (4722, AHMA);
Wedeshwar - Upadhye (17512, AHMA).

**Hemidesmus R.Br.**


Perennial, prostrate shrubs; stems often violet, pubescent; leaves variable, elliptic, oblong; flowers in subsessile cymes, greenish-purple. Fl - Fr: September - January. Local name: Uparsali, Anantmul (M.); Ananta,
Utpalsariva (S.). Locality: Throughout the area. Very common in moist forests.

Medico-botany: Part used - Root. Literature - Roots are substituted to 'Sarsaparilla'. Demulcent, alterative, used in fevers and skin diseases, blood purifier, given in burning sensation during piles, purgative. Liquid extract is given in skin diseases. Used in urinary disorders. Root in combination with other drugs is prescribed in snake bite. Folk medicine - Tea is made from roots and is recommended with milk and sugar to cure cold, cough and fevers. Water infusion of a plant with Gul-vel and Cuminum seeds is said to be a curative measure in kidney diseases. Roots and root powder are sold in market.

Specimens examined: Pachgaon-Parvati (Pune) - Kulkarni (16397, AHMA); Varandha - Vartak (4783, AHMA).

LOGANIACEAE

Strychnos L.


Large trees with axillary spines; leaves elliptic, shining, five-nerved; flowers in terminal cymes, greenish-
white; fruit a berry, orange when ripe; seeds discoid, covered with gray silky hair. Fl - Fr: February - July. Local name: Kajara, Auchela (M.); Vidar Vrukhsha, Vishtindukas. Locality: Nagaon. Found near creeks and back waters of sea. Found only at single locality from area under study.

Medico-botany: Parts used - Seeds, root, leaves, wood. Literature - It is most important drug used in medicine as powerful nervine tonic and stimulant to spinal cord. Root bark paste with lime juice is effective in cholera. Leaf poultice is applied on wounds, ulcers and maggots. Seeds are colic. Wood is useful in dysentery. Seeds are used as bitter tonic, useful in stomach pain, cardio-tonic, given along with other drugs. This drug is poisonous and used in microdoses.

It is reputed Ayurvedic medicine. Used in allopathy, homeopathy and Ayurveda. Also mentioned in British pharmacopia. Main source of strychnine. Seeds are used locally as fish poison. It was found that many cases of suicide caused by seeds of this plant. Seeds are sold in market under market name 'Kuchala-bee'.

Specimens examined: Nagaon - Sane (15313, AHMA); Nagaon - Upadhye (17517, AHMA).
1. Flowers in axillary clusters       .. Enicostema
1. Flowers in cymes
2. Flowers irregular       .. Canscora
2. Flowers regular
3. Corolla single-coloured       .. Swertia
3. Corolla bi-coloured       .. Exacum

Canscora Lam.

Canscora diffusa (Vahl) R.Br. Prodr. : 451. 1810, in Obs.;
FBI. 4 : 103; C. 2 : 251; KB. 3 : 1659; GIMP : 49. ill.
Wt.Ic. : 1327.

Much branched, erect annuals; leaves membranous,
tri-nerved; flowers many in paniculate cymes. Fl - Fr :
September - December. Local name : Shankhapushpi (M.).
Locality : Throughout the area. Common on moist places
in monsoon.

Medico-botany : Part used - Whole plant. Literature - Plant
is a nervine-tonic. Also used in insanity and epilepsy.
Folk medicine - Plant is locally used as ayurvedic herb,
Shankhpushpi, a well known brain tonic. It is mainly
used by Konkan Vaidys. This is a controversial herb
(Please see Chapter VI).
Specimens examined: Bhor - Vartak (4902, AHMA); Ambavde - Vartak (4907, AHMA).

**Enicostema Bl.**

*Enicostema byssopifolium* (Willd.) I.C. Vardoor in


Glabrous, perennial herbs; stem angular; leaves sessile; flowers axillary, white; fruit capsule. Fl - Fr: August - December. Local name: Chota-Kirayet, Kade chirayet, Nayicha pala, Mamajva (M.). Locality: Pune, Mulshi. Occasionally seen near moist places.

**Medico-botany:** Part used - Whole plant. **Literature** - Plant is bitter tonic, laxative, used as blood purifier, in rheumatism, abdominal ulcers, applied on swellings. **Folk medicine** - Plant is used as an ayurvedic drug Kade-chirayet locally. Plant decoction is febrifuge. In the market sold as Nayicha-pala or Mamajva. It is a controversial drug Kade-chirayet (Please see Chapter VI).

Specimens examined: Chaturshringi (Pune) - Vartak (4936, AHMA).
Exacum L.


Erect annuals; leaves variable; flowers in terminal cymes, showy, half white-half blue; capsule shining. Fl - Fr : July - November. Local name : Gavti-kirayet, Udi-kirayet, Kade-chirayet (M.). Locality : Sajjangad, Sinhagad, Raigad. Found on hilly pasture lands.

**Medico-botany :** Part used - Whole plant. **Literature -** Plant is tonic, stomachic. **Folk medicine -** Plant decoction is febrifuge.

It is a controversial plant Kade-chirayet (Please see Chapter VI).

Specimens examined : Raigad - Vartak (4938, AIMA).

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Swertia L.

1. Corolla bluish-white . . . *S. angustifolia*
1. Corolla pale-yellow . . . *S. decussata*

*Swertia angustifolia* Buch.-Ham ex D. Don Prodr. 127. 1825; KB. 3 : 1666; GIMP : 237. Ill. KB. : 641A.
Stems angular, winged; leaves linear; flowers bluish-white, one gland on each carolla lobe. Fl - Fr: October - November. Local name: Pahadi-kirayet, Kade-chirayet (M.). Locality: Mahabaleshwar. Found only at one locality from area under study.

**Medico-botany:** Part used - Whole plant. Literature - Plant is substituted for Chirayet. **Folk medicine** - Plant decoction is febrifuge.

It is a controversial plant Kade-chirayet. (Please see Chapter VI).


**Medico-botany:** Parts used - Whole plant, root. Literature - Plant is bitter tonic. It is a good substitute to *Gentiana kurroa* and Chirata. **Folk medicine** - Plant decoction is febrifuge.

Plant is sold in market as Kade-chirayet. It is a
controversial species (Please see Chapter VI).

Specimens examined: Rajgad - Vartak (4982, AHMA); Raireshwar - Vartak (4986, AHMA).

BORAGINACEAE

1. Procumbent herbs  ... Coldenia
1. Erect herbs
2. Flowers in spikes  ... Heliotropium
2. Flowers in cymes  ... Trichodesma

Coldenia L.


Procumbent herbs; stem with white hairs; leaves crisped, serrate or subpinnatifid, pubescent; flowers solitary, sessile, pale-yellow, pyrenes beaked. Fl - Fr: September - October. Local name: Tripankhi (M.); Tripakshi (S.). Locality: Karnala, Sinhagad. Found in rice fields.

Medico-botany: Part used - Whole plant. Literature - Dried plant with equal part of fenugreek seeds is warmed and applied on boils. Fresh leaves are applied on rheumatic swellings.
Specimens examined: Karnala - Vartak (5018, AHMA);
Sinhagad - Vartak (5022, AHMA).

**Heliotropium L.**

_Heliotropium indicum_ L. Sp. Pl. 130. 1753. FBI. 4: 152; 
KB. : 651A.

Annuals; leaves ovate, pilose beneath, nerves conspicuous on lower side; flowers sessile, violet. Fl - Fr: October - December. Local name: Bhurundi (M.); Hastishunda (S.). Locality: Pune, Kanakeshwar. Found on moist waste land.

_Medico-botany_: Parts used - Leaves, whole plant. _Literature_ - Crushed leaves are applied on boils, ulcers and wounds. Plant is diuretic. _Folk medicine_ - Plant juice is mixed with caster oil and is applied on boils. Leaf decoction is febrifuge.

Specimens examined: Mutha river side (Pune) - Vartak (5049, AHMA); Kanakeshwar - Sane (15330, AHMA).

**Trichodesma R. Br.**

Annual herbs; leaves sessile, hirsute at base, villose beneath; flowers solitary, violet-pink; fruit pyramidal. Fl - Fr : August - October. Local name : Chota Kulpha, Lahana Kulpha, Jinghini, Adhapushpi (M.); Jinghini (S.). Locality : Pune, Bhor, Kashele, Alibag, Mulshi, Bhandardara, Sajjangad. Commonly found as road side weed.

**Medico-botany** : Parts used - Whole plant, leaves, root.

**Literature** - Plant is diuretic. Leaves are depurative. Useful in eye diseases. Root is pounded and made into a paste, it is applied on swellings. Root is antidysenteric.

**Folk medicine** - Root decoction in water is antidysenteric. It is specifically used to cure dysentery during monsoon. Plant decoction is given to cure frequent fevers.

Specimens examined : Bhor - Vartak (5095, AHMA); Mapgaon - Sane (15335, AHMA); Torna - Upadhye (17519, AHMA); Pune - Upadhye (17520, AHMA).

Small trees with rough bark; leaves alternate, glabrous; flowers in panicles, white; fruit drupe, pinkish-cream coloured. Fl - Fr : March - June. Local name : Bhokar (M.). Locality : Karnala, Siddheshwar, Khandala. Found in both open and dense forests.

Medico-botany : Parts used - Leaves, bark, fruit.

Literature - Decoction of stem bark is used in fevers. Fruit is astringent, anthelmintic and diuretic. Kernels are used as remedy for ringworms. Leaves are applied on headache and ulcers. Folk medicine - Fruits are eaten raw to reduce acidity. Fruits are edible, made into pickels. Fresh fruits are sold in vegetable market seasonally.

Specimens examined : Karnala - Vartak (5025, AHMA); Khandala - Upadhye (17518, AHMA).
1. Herbs or shrubs
  2. Prostrate herbs
  3. Erect, dwarf shrubs
  1. Climbers or twiners
  3. Leafless climbers
  3. Leaves present
  4. Fruits indehiscent
  5. Corolla whitish-cream
  5. Corolla purple
  4. Fruits dehiscent
  6. Capsules enclosed in sepals
  6. Capsules not enclosed in sepals
  7. All leaves lobed
  7. Leaves entire except lower leaves

**Argyreia** Lour

1. Leaves silky-white beneath
  1. Leaves pubescent, pale-green beneath

**Argyreia cuneata** Ker-Gawl in Bot. Reg. v. 8 : 661. 1822.

Climbing shrubs; leaves ovate, oblong; flowers in

**Medico-botany**: Part used - Leaves. **Literature** - Leaves are used in diabetes.

Specimens examined: Sinhagad - Vartak (5124, AHMA); Pachgaon-parvati (Pune) - Kulkarni (16414, AHMA).


Large climbers; stems stout, white tomentose; leaves cordate, glabrous, white pubescent beneath; flowers in cymes rose purple, white pubescent outside; fruit globose. Fl - Fr: August - November. Local name: Samudrashok (M.); Vrudhadaruk (S.). Locality: Pune, Bhandardara, Sinhagad.

Commonly cultivated for beautiful flowers.

**Medico-botany**: Parts used - Root, leaves. **Literature** - Root is tonic, used in rheumatism and nervous disorders. Leaf poultice is applied for wounds and skin diseases. **Folk medicine** - Leaf is tied with outer surface towards skin on a unripe boil, it helps in early ripening of it.
As it ripens leaf is tied with inner surface towards skin.
Silky undersurface probably provides cotton like bandage.
Specimens examined: Chikkhalgaon - Upadhye (17521, AHMA).

Convolvulus L.

Convolvulus arvensis L. Sp. pl. 153. 1753; FBI. 4 : 219;
C. 2 : 303; KB. 3 : 1735; GIMP : 76; AS 2 : 66. Ill. KB. :
668C.

Glabrous twiners; leaves variable; flowers in dense
heads, pinkish-white; capsules globose. Fl - Fr :
December - February. Local name: Harinpag, Chandvel (M.).

Medico-botany: Part used - Root. Literature - Root is
purgative, cathartic.
Specimens examined: Mutha river side (Pune) - Vartak (5141,
AHMA); Ambavde - Vartak (5143, AHMA).

Cressa L.

Cressa cretica L. Sp. pl. 223. 1753; FBI. 4 : 225; C. 2 :

Dwarf, spreading shrubs; vary hairy; leaves sub-
sessile, silky hairy; flowers in axillary clusters, pinkish-white; capsule ovoid, pointed. Fl - Fr : November - January. Local name : Rudravanti, Ran harbara, Kardi, Lona (M.); Rudanti (S.). Locality : Pune, Bombay, Kanakeshwar. Commonly found in wheat fields after harvest.

Medico-botany : Part used - Whole plant. Literature - Plant decoction is a tonic. It is specifically given as a tonic when person is suffering from chronic cough. It is a controversial plant Redravanti (Vartak, 1958). Medico-practitioners use this plant as Rudravanti. The plant exhudes out water in morning, it is claimed that the name Rudravanti comes after this property as vernacularly 'continuous crying' is Rudana. It is also claimed that true Rudanti can be examined by burring shells near root. Within a day white colour of shells change to yellow colour, and it is a test of true Rudanti.

Specimens examined : Bombay - Vartak (5144, AHMA); Revas - Sane (15346, AHMA).

_Cuscuta L._

Stems twining, greenish-yellow; leafless; flowers in solitary umbels; capsules globose, glabrous. Fl - Fr: January - March. Local name: Amar-vel, Akash-vel (M.). Locality: Throughout the area. Common, often found on hedge plants as parasite.

**Medico-botany:** Parts used - Whole plant, seeds. Literature - Seeds are carminative, stomachic, sedative, diuretic, useful in diseases of liver and spleen. Plant infusion is used to wash sores, purgative, given in fevers. Folk medicine - Whole plant is crushed and pounded with til oil, it is applied on skin diseases.

Specimens examined: Bhandardara - Upadhye (17525, 17526, AiMA).

**Evolvulus L.**


Perennial herbs with woody root stock; leaves many, elliptic, hairy; flowers solitary, blue; capsule membranous. Fl - Fr: October - January. Local name: Shankhapushpi, Shankhavalli (M.); Vishnukranta (S.). Locality: Throughout the area. Commonly found on road
sides and in open grasslands.

Medico-botany: Part used - Whole plant. Literature - Plant is bitter tonic, alterative, useful in bronchitis, epilepsy, useful in nerve and brain diseases, febrifuge, antidysenteric. Folk medicine - Plant is extensively used as brain tonic. It is given after fever with cuminum seeds and milk. It is a controversial plant 'Shankhapushpi' (Please see Chapter VI).

In the Pune market whole plant is sold as Shankhapushpi.

Specimens examined: Karnala - Mandavgane (5160, AHMA); Pune - Upadhye (17522, AHMA).

Ipomoea L.

1. Leaves entire
2. Stems smooth
3. Leaves lobed or digilate
4. Overy 3 celled
5. Leaves palmately lobed

2. Stems mucronate
3. Leaves bi-lobed
4. Overy 4 celled
5. Leaves irregularly lobed

.. I. obscura
.. I. turbinata
.. I. pes-caprae
.. I. nil
.. I. digitata
.. I. batatas
Tamil. Car. 2 : 1022; FBI. 4 : 202; C. 2 : 320; KB. 3 :
1719; GIMP : 141; AS 2 : 64. Ill. KB. : 663.

Annuals; leaves cordate, irregularly lobed; flowers in many flowered cymes, purple. Fl - Fr : October - March.
Local name : Ratalu, Kanangi (M.). Locality : Cultivated in the area. Native of tropical America, extensively cultivated for sweet root vegetable.

Medico-botany : Part used - Root. Literature - Root is laxative, tonic. Roots are sold in vegetable market seasonally. In Hindu community consumed on fast days.
Specimens examined : Bombay - V.M. Patel (1611, Blatter).

Ipomoea digitata L. Syst. Nat. ed. 10 : 924, 1759. FBI. 4 :
202; C. 2 : 318; KB. 3 : 1717; GIMP : 142; GBMP : 120. Ill.
KB. : 662.

Perennial twiners with large tuberous roots; leaves palmately lobed; flowers in corymbose cymes, purple. Fl - Fr : August - November. Local name : Vidari, Khirvidhari (M.). Locality : Pune, Kashele. Seen cultivated as Vidarikand.

Medico-botany : Part used - Tuberous root. Literature - Roots are tonic, aphrodisiac, purgative, galactogogue. Folk
medicine - Tuberous root is dried, powdered and given with milk and sugar as tonic.
It is a controversial plant 'Vidari' (See Chapter VI).
Sold in Pune market as Vidarikand.

Specimens examined: Pune - Upadhye (17523, AHMA).


Twining annuals; hairy; leaves trilobed; flowers solitary or in cymes, blue; capsule ovoid. Fl - Fr: July - September. Local name: Nili, Kaladana (M.); Shankhini (S.).

Medico-botany: Part used - Seeds. Literature - Seeds are laxative, carminative, used in inflammations and abdominal diseases, fevers, anthelmintic. Seeds are sold in market as Kala-dana.

Specimens examined: Ambavde - Vartak (5210, AHMA);
Pachgaon-Parvati (Pune) - Aulkarni (16423, AHMA).

Ipomea obscura (L.) Ker-Gawl. in Bot. Reg. 3: c. 239, 1817.
FBI. 4: 207; C. 2: 317; KB. 3: 1722; GIMP: 142. Ill. KB: 659A.
Twining annuals; with purplish stem; flowers solitary or in cymes, yellowish-pink with brown eye; capsule ovoid.
Fl - Fr: Throughout the year. Local name: Pungali (M.).
Locality: Sinhagad, Lonavala, Bhandardara. Commonly found.

Medico-botany: Part used - Leaves. Literature - Dried leaves are powdered and boiled in ghee consider valuable application in aphthous affections.

Specimens examined: Thorla dara (Sinhagad) - Vartak (5221, AHMA); MACS (Pune) - Ghate (14735, AHMA).

Ill. KB.: 667A.

Prostrate twiners; leaves bilobed, fleshy, parallel veined; flowers solitary, purple. Fl - Fr: Throughout the year. Local name: Maryad-vel (M.); Vrudhadarak (S.).

Medico-botany: Parts used - Root, leaves. Literature - Leaves are externally applied on rheumatic pains. Leaf juice is diuretic. Root is applied on swellings. Root juice can
be dried and preserved, it is purgative. **Folk medicine** - Leaves are crushed and mixed with oil, it is applied on swellings and dislocation of joints. Fresh leaf juice is given in cough.

Specimens examined: Nagaon - Sane (15353, AHMA); Nagaon - Upadhye (14524, AHMA).


Large twiners; stems muricate; leaves ovate, glabrous; flowers in axillary cymes, rose purple; capsule globose, epiculate. Fl - Fr: September - November. Local name: Gariya, Barik bhovri (M.). Locality: Katraj, Pune, Karnala. Cultivated plant, sometimes found escape.

**Medico-botany**: Part used - Seeds. **Literature** - Seeds are bitter, purgative, febrifuge.

Specimens examined: Katraj - Vartak (5204, AHMA); Mutha river side (Pune) - Vartak (5205, AHMA).

*Operculina Silva Manso*

*Operculina turpenthum* Silva Manso, Enum. Subst. Braz.: 16 &
Perennial, climbing herbs; leaves, ovate, mucronate; flowers in cymes, white; capsule enclosed in enlarged brittle, muricate sepals. Fl - Fr: October - January. Local name: Nishottar, Dudhkalmi (M.); Trivruta (S). Locality: Kanakeshwar, Khandala. Found in dry deciduous forests.

Medico-botany: Parts used - Root, stem. Literature - Root is substituted to Jalap. Used in ascitis, bitter, purgative, expectorant, useful in joints and muscular pain. Dried root and stem pieces are sold in crude drug market.

Specimens examined: Kanakeshwar - Sane (15371, AHMA).

Rivea Choisy.


Climbing shrubs; leaves cordate, silky, pubescent; peduncles one to many flowered; flowers white, turning yellow; fruit berry. Fl - Fr: June - September. Local name: Phand (M.); Phangika (S). Locality: Found in dry deciduous forests.
Medico-botany: Part used - Whole plant. Literature - Plant juice is applied on piles and phthiriasis, also applied on brisels.

Specimens examined: Sinhagad - Vartak (5305, AHMA).

Solanaceae

1. Fruits capsule
   1. Fruits berry...
   2. Flowers sessile
   2. Flowers stalked
   3. Berry elongated
   3. Berry round
   4. Flowers yellow
   4. Flowers purple or white

Capsicum L.

1. Corolla white
   1. Corolla greenish-white with ochreous markings in the throat


Annuals or biennials; leaves simple; flowers solitary, white; berry green, red when ripe. Fl - Fr: Throughout the year. Local name: Lal-mirchi (M.). Locality: Throughout
Native of tropical America, many varieties are under cultivation.

**Medico-botany**: Part used - Fruit. **Literature**: Fruit is stimulant, useful in sore throat, scarlatina, dyspepsia. Fresh fruits are sold in vegetable market. It is also used as a flavouring agent in cooking.

Specimens examined: Pune - Vartak (5322, AHMA); Kanakeshwar - Sane (15373, AHMA).


Shrubby perinnials; leaves ovate, acuminate; flowers solitary, greenish-white; berry green, red when ripe. **Fl - Fr**: Throughout the year. **Local name**: Lavangi-mirchi (M.); Raktha-mirach (S.). **Locality**: Throughout the area. Extensively cultivated for berries. Many varieties are cultivated.

**Medico-botany**: Part used - Fruit. **Literature**: Fruit is pungent, expectorant, increases biliousness. Berries are sold in vegetable market, also ripe dried berries are sold as pungent agent in cooking.
Datura L.

1. Capsule oval  ..  D. stramonium
1. Capsule globose  ..  D. metel


Woody undershrubs; stems purplish-black, polished; leaves ovate irregularly lobed; flowers solitary, violet-pink or purple; capsules globose, covered with conical tubercles; seeds reniform, black-brown. Fl - Fr : Throughout the year. Local name : Kala-dhotra (M.). Locality : Pune, Kashele. Native of tropical America, cultivated for seeds, sometimes found escape on roadside waste lands. Sometimes plant with double corolla or triple corolla also found.

Medico-botany : Parts used - Seeds, leaves, roots. Literature - Used in insanity, fever with catarrhal and cerebral complications, diuretic. Dried leaves are used in place of Belladona leaves. Folk medicine - Crushed leaves are applied externally on guinea worm. Seeds are said to be poisonous but used in microdoses in ayurvedic preparations like 'Sutshekhar', 'Suvarna Sutshekhar' etc. Hence has got good market potential.

Specimens examined : Karnala - Mandavgane (5335, AHMA); Nagaon - Sane (15374, AHMA); Pune - Upadhye (17527, AHMA).

Branched, woody, glabrous herbs; leaves irregularly lobed, pale beneath; flowers solitary, white; capsule oval, covered with spines of unequal length; seeds reniform, ash coloured. Fl - Fr : August - November. Local name : Dhotra, Pandhara dhotra (M.); Dattura (S.). Locality : Katraj, Pune, Kashele. Seen occasionally on waste places, near villages, cultivated as medicinal herb.

**Medico-botany** : Parts used - Leaves, flowers, fruits, seeds. **Literature** - Leaves and seeds are antiseptic, narcotic. Fruit sedative. Crushed leaves are applied externally on boils, tumours and piles. Roasted leaves are applied locally to relieve eye pain, headache and nose trouble. Flower juice is useful in earache. Fruit juice is applied for curing dandruff and falling hair. Root paste is applied to reduce inflammation. **Folk medicine** - Roasted seeds are powdered and mixed with honey, it is said to be a good remedy to cure cough. Unripe fruits are opened on plant itself and seeds are taken out, the clove buds are placed inside and fruit is sealed. It is allowed to remain on plant for 24 hours; Then clove buds are taken out, roasted and kept in a bottle with good lid. These buds are useful in asthmatic attacks.
Specimens examined: Katraj - Vartak (5242, 5243, AHMA).

**Physalis L.**


Annuals; leaves ovate, lobed or serrate; flowers solitary, yellow; berry enveloped in elongated calyx. Fl - Fr: August - December. Local name: Kapal-phodi, Chirbutale (M.); Tankari (S.). Locality: Pune, Baneshwar, Kanakeshwar. Common weed.

**Medico-botany:** Parts used - Fruits, leaves. **Literature** - Fruit is tonic, diuretic, purgative. Leaf juice is mixed with water, mustard oil and applied on headache. **Folk medicine** - Root with honey is given as expectorant. Fruits are eaten by children.

Specimens examined: Narsapur - Vartak (5568, AHMA); Kanakeshwar - Sane (15375, AHMA).

**Solanum L.**

1. Leaves entire, without prickles .. *S. nigrum*
1. Leaves lobed, with prickles

2. Herbs with compressed prickles .. *S. virgulinum*
2. Under-shrubs with large prickles .. *S. indicum*

Prickly undershrubs; leaves ovate, lobed prickly on both sides; flowers in racemes, purple, berry red when ripe. Fl - Fr : August - December. Local name : Dorli, Ringni, Chichardi (M.); Bhuhati (S.). Locality : Throughout the area. Common on hilly and roadside areas.

Medico-botany : Parts used - Root, leaves, fruits.

Literature - Root is carminative, expectorant, useful in fevers and asthma, employed in toothache. Leaf juice with ginger is recommended to stop vomiting. Folk medicine - Unripe fruits are crushed and eaten raw to reduce acidity. Unripe fruits are fried and vegetable is eaten by local people.

The root is reputed ayurvedic medicine, used in Dashamuladi-kada. It is ingredient in other preparations as 'Bruhat-pancha-mala'.

Specimens examined : Mahabaleshwar - Vartak (5393, AHMA); Junnar - Gunjatkar (16431, AHMA); Pune - Upadhye (17529, AHMA); Chikkhalgaon - Upadhye (17530, AHMA).

Glabrous annuals, divaricately branched; leaves ovate; flowers in umbellate cymes, white; berry globose, purple-black. Fl - Fr: August - November. Local name: Kamani, Kangani (M.); Kakmachi (S.). Locality: Throughout the area. Commonly found as weed in cultivated lands.

Medicinal-botany: Parts used - Whole plant, leaves, fruits.

Literature - Plant juice is cathartic; alterative; given in spleen enlargement; applied externally on skin diseases; useful in blood spitting, piles and dysentery. Leaves are diuretic, laxative. Fruit is useful in fevers, diarrhoea and eye diseases. Folk medicine - Vegetable made from young shoots of this plant is recommended in all types of skin diseases. Plant juice is applied to mouth ulcers.

Specimens examined: Sinhagad - Vartak (5401, AHMA); Raireshwar - Vartak (5402, AHMA).


Diffuse, perennial herbs; leaves subpinnatifid, prickly; flowers in cymes, purple; berry yellow when ripe. Fl - Fr: June - August. Local name: Ubhi-ringni, Kate-ringni, Choti-ringni (M.); Katakari, Bhuhati (S.). Locality:
Throughout the area. Commonly found on roadsides and waste lands.

Medico-botany: Parts used - Every plant part is useful.

Literature - Plant is bitter, carminative, laxative, stomachic, useful in bronchitis, asthma and fevers. Root is expectorant useful in cough, asthma, fevers, chest pain, given to check vomiting. Bud and flower with salt solution is good for watery eyes. Fruit juice is useful in sore throat. Folk medicine - Fruits are boiled in water and steam is inhaled through mouth to relieve rooth ache. Leaf juice with honey is recommended in cough. Leaf juice with black pepper is applied on rheumatic pains. Whole plant is used in many ayurvedic preparations as expectorant and febrifuge, used as Dashmula. White flower variety is rarely found. It is said to be more effective.

Specimens examined: Bhor - Vartak (5421, AHMA); Nagaon - Sane (15379, AHMA).

Withania Paug.


Erect, tomentose shrubs; leaves subsessile, ovate, entire; flowers in umbellate cymes, sessile. Fl - Fr:
September - December. Local name: Askand, Dhorgunja (M.); Ashwagandha (S.). Locality: Pune, Rahuri, Kashele. Abundantly growing on waste lands.

Medico-botany: Parts used - Root, leaves, fruits, seeds, bark. Literature - Bark is tonic. Seeds are aphrodisiac. Leaves are used as febrifuge. Root and seeds are used as those of Holarrhena antidysenterica. Fruit is diuretic.

Folk medicine - Root decoction is used to reduce blood pressure. Dried roots are sold in market as Ashwagandha.

It was published in local newspaper that the root of this species can be a good substitute for 'Ginseg'. If it is proved clinically, species will catch great demand in international crude drug market.

Specimens examined: Pune - Vartak (5429, AHMA); Rahuri - Kumbhojkar (16802, AHMA); Pune - Upadhye (17531, 17532, AHMA).

SCROPHULARIACEAE

1. Flowers yellow (sometimes white in Striga)
2. Prostrate herbs
3. Flowers in terminal racemes
4. Flowers in long, lax spikes
1. Flowers other than yellow

4. Leaves in whorls

4. Leaves alternate or opposite

5. Leaves entire

5. Leaves pinnatiset

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**Bacopa** Aubl.


AS 2: 85. **ILL. KB. 696**

Glabrous, succulent, creeping herbs; rooting at nodes; leaves sessile; flowers axillary, pale-blue; fruits capsule.


**Medico-botany**: Part used - Whole plant. **Literature** - Plant is emetic, laxative, bitter, purifies blood, used as nervine tonic. Useful in epilepsy, insanity, diuretic. **Folk medicine** - Plant juice is cooling, useful to strengthen the memory, fresh juice is recommended in hysteria. Raw leaves are eaten to improve stuttering person.
Useful in many ayurvedic preparations. There is controversy in identification of true Bramhi mentioned in ayurvedic literature. But it is proved that this plant species may be true Bramhi.

Specimens examined: Katraj - Vartak (5454, AHMA); Karnala-Mandavgane (5460, AHMA).

**Kicxia Dumort.**


**Medico-botany:** Part used - Whole plant. **Literature** - Plant is useful in diabetes.

Specimens examined: Pune - Vartak (5518, 5519, AHMA).

**Limnophila R.Br.**


Herbs with strong aroma like turpentine; stem rooting at nodes; leaves pinnatifid; flowers in axillary racemes, pink. Fl - Fr: October - January. Local name: Ambuti (M.); Ambragandha (S.). Locality: Pune, Sinhagad. Commonly found near tanks and river beds.

Medico-botany: Part used - Whole plant. Literature - Plant juice is antiseptic. Mixed with coconut oil and applied on elephantiasis, rubbed on body in pestilent fevers. Recommended internally with ginger and cuminum in dysentery.

Specimens examined: Sinhagad - Vartak (5499, AHMA); Padmavati (Pune) - Ghate (5508, AHMA).

Sopubia Buch.-Ham.

Sopubia delphinifolia (L.) G.Don, Syst. v. 4: 560. 1837; FBI. 4: 302; C. 2: 378; KB. 3: 1831; CIMP: 231. III. KB.: 701A.

Medico-botany: Part used - Whole plant. Literature - Plant junice is applied to the feet to heal sores caused by exposure to moisture.

Specimens examined: Sinhagad - Vartak (5001, AHMA); Bhor - Vartak (5602, AHMA).

Striga Lour.


Erect herbs; strigose with prickly hairs; leaves sessile with pustular prickles; flowers in lax spikes, yellow or sometimes white; capsule oblong. Fl - Fr: October-February. Local name: Laghukurandika (M.). Locality: Pune, Khandala, Ambavne. Found along roadsides, hilly slopes.

Medico-botany: Part used - Whole plant. Literature - Plant is bitter; improves appetite and taste, useful in blood diseases.

Specimens examined: Rajgad - Vartak (5624, AHMA); Kanakeshwar - Sane (15387, AHMA).
Verbascum L.


Celsia coromandeliana Vahl; FBI. 4 : 251; C. 2 : 352; KB. 3 : 1807; GIMP : 57; AS 2 : 87; Ill. KB. : 691.

Hairy herbs; radical leaves compound, cauline leaves similar, smaller; flowers in terminal racemes yellow; capsules subglobose. Fl - Fr : January - May. Local name : Kutki (M.); Mulahal (S.). Locality : Pune. Found in river bed in monsoon and waste places.

Medico-botany : Part used - Whole plant. Literature - Plant is useful in blood complaints, sedative, useful in dysentery, prescribed in skin eruptions and fevers.

Specimens examined : Khandala - Razi (5687, AHMA); Karnala - Vartak (5696, AHMA).

OROBANCACEAE

Aeginetia L.


Leafless herbs; scapes many from rhizome; flowers large, purple; capsules beaked, enclosed in persistent calyx. Fl - Fr : September - November. Local name : Mutri (M.). Locality : Kashele, Khandala, Raireshwar. Occasionally seen after monsoon.
Medico-botany: Parts used - Root, capsule. Folk medicine - Root is diuretic hence locally called as Mutri. Black powder from mature capsules is recommended with warm water to cure female complications; excess menstruation.

Specimens examined: Raireshwar - Vartak (5741, AHMA); Nashele - Upadhye (17533, AHMA).

BIGNONIACEAE

1. Leaves 2-3-pinnate
   2. Corolla pale-yellow .... Radermachera
   2. Corolla purple .... Oroxyllum

1. Leaves 1-pinnate
   3. Corolla yellow .... Stereospermum
   3. Corolla white

4. Flowers in few-flowered, terminal racemes .... Dolichandrone
4. Flowers in many-flowered, terminal, densely tomentose panicles .... Heterophragma

Dolichandrone (Fenzel) Seem.

Dolichandrone falcata (DC.) Seem. J. Bot. 8: 381. 1870.

Deciduous trees; leaves 1-pinnate, acuminate,
glabrous; flowers in terminal racemes, white; fruit linear capsule. Fl - Fr: March - August. Local name: Medshingi (M.). Locality: Pune, Sinhagad, Karnala, Kashele. Found in dry deciduous forests, on hill slopes.

Medico-botany: Parts used - Plant, leaves. Literature - Plant is abortifacient. Folk medicine - Leaf juice is applied externally on swellings. Leaf juice is given internally to cure stomach-ache.

Specimens examined: Padmavati (Pune) - Vartak (5783, AHMA) Sinhagad - Vartak (5787, AHMA).

**Heterophragma DC.**


Large trees with brown bark; leaves pinnate, tomentose; flowers in panicles, tomentose, fragrant; capsules linear, pointed. Fl - Fr: January - May. Local name: Varas (M.). Locality: Pune, Katraj, Khandala, Bhandardara. Commonly found in dry deciduous forests.

Medico-botany: Part used - Wood. Literature - Oil extracted from wood is applied on skin diseases.
Specimens examined: Katraj - Vartak (5792, AHMA); Karnala - Vartak (5795, AHMA); Kalsubai - Upadhye (17534, AHMA).

Oroxylum Vent.


Trees, branching at top; stems with lenticles; leaves very large, leaflets ovate, elliptic; flowers in racemes purple; capsules 30-90 cm long. Fl - Fr : June - December. Local name : Tatu (M.); Shonyak (S.). Locality : Kashele, Pune. Found in moist deciduous forests. Not common.

Medico-botany: Parts used - Root, Bark, fruit. Literature - Root is used in 'dashmula'. Bark is astringent tonic, useful in fevers, bronchitis, worms, dysentery. Root with sesame oil is recommended in otorrhea. Fruit carminative, stomachic. Seeds purgative. Folkmedicine - Bark paste in water is applied on cuts and wounds. Crushed leaves are applied on joint pains. Root pounded in water is applied externally on swellings.

Root has market potential as used in various ayurvedic preparations.
Specimens examined: Kashele - Ghate (16964, AHMA).

Radarmachera Zoll. & Moritz.


Deciduous trees with grey bark; leaves bipinnate; flowers in panicles, yellow; capsules 30-90 cm long. Fl - Fr: April - August. Local name: Kharshing (M.). Locality: Bhandardara, Junner, Kashele. Distributed in dry and moist forests. Not common.

Medico-botany: Part used - Wood. Literature - Oil from wood is useful in cutaneous affections.

Specimens examined: Museum specimen - AHMA; Kasara-Igatpuri Ghat - Jain (14918, BSI); Vaitarna dam - Billore (110500, BSI).

Stereospermum Cham.


Deciduous, glabrous trees; leaves pinnate; flowers in

Medico-botany : Parts used - Root, leaves, flowers.

Literature - Root, leaves and flowers are febrifuge. Leaf juice with lime juice is used in maniacal cases. Folk medicine - Capsules are febrifuge. Root is used in 'Dashmularishta' and 'Dashamul-kadha'.

Specimens examined : Vartak - Ambavde (5800, AHMA); Ghate - Atkarwadi (16855, 16856, AHMA).

PEDALIACEAE

1. Corolla yellow .. Pedalium
1. Corolla purple-pink .. Sesamum

Pedalium L.


Small herbs; leaves opposite, ovate, succulent; flowers solitary, axillary, yellow; fruit pyramidal, bluntly 4 angled, with conical spines. Fl - Fr : September

Medico-botany: Parts used - Whole plant, fruit. Literature - Plant is externally applied on ulcers. Fruit is demulcent, diuretic. Plant decoction is given in gonorrhoea, dysaria and spermatorrhea. Folk medicine - Plant is agitated in cold water, it forms thick mucilage. It is mixed with sugar and given as a powerful remedy in gonorrhoea. Fruits are sold in market and has good market potential. Also useful in compound Ayurvedic preparations.

Specimens examined: Nagaon-Kumbhojkar (17438, AHMA); Nagaon - Upadhye (17440, AHMA).

*Sesamum L.*


Small herbs; flowers purplish-pink; capsules quadrangular, beaked. Fl - Fr: August - November. Local name: Til (M.); Tila (S.). Locality: Throughout the area. Native of Africa, extensively cultivated as oil crop, sometimes found escape.
Medico-botany: Part used - Seeds. Literature - Seeds are tonic, cooling, galactogogue, diuretic, astringent, useful in eye disease, applied on wounds and ulcers. Oil from seeds is useful in lung diseases, burning sensation and inflammations. Folk medicine - Oil is externally applied on skin rashes. Black seed variety is eaten raw to cure irregular menses. Seed has very good potential in market as oilseed. Oil is medicinally important as useful base for several ointment preparations. Extensively cultivated for its edible and oil purpose.

Specimens examined: Karnala - Vartak (5816, AHMA); Kanakeshwar - Sane (15394, AHMA).

MARTYNIACEAE

Martynia L.


Shrubs; leaves opposite, sticky, pubescent, glandular, cordate; flower pink-purple; drupe with two sharp woody hooks. Fl - Fr : August - October. Local name: Vinchu (M.). Locality: Throughout the area. Native of Mexico, naturalized, commonly found on waste lands and
roadsides in monsoon.

**Medico-botany**: Parts used - Leaves, fruit. **Literature** - Leaves are useful in epilepsy, applied to tuberculous glands of the neck. Leaf juice is useful as gargle for sore throat. Fruit is useful in inflammation. **Folk medicine** - Fruit is burned and an ash is made. This ash is applied externally on cuts and wounds.

Specimens examined: Karnala - Mandavgane (5409, AHMA); Ambavde - Vartak (5810, AHMA).

### ACANTHACEAE

<table>
<thead>
<tr>
<th>1. Corolla orange</th>
<th>.. Crossandra</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Corolla other than orange</td>
<td></td>
</tr>
<tr>
<td>2. Stems spinose at nodes</td>
<td></td>
</tr>
<tr>
<td>3. Flowers purple</td>
<td>.. Hygrophila</td>
</tr>
<tr>
<td>3. Flowers yellow</td>
<td>.. Barleria prionitis</td>
</tr>
<tr>
<td>2. Stems not spinose at nodes</td>
<td></td>
</tr>
<tr>
<td>4. Leaves pinnatifid</td>
<td>.. Acanthus</td>
</tr>
<tr>
<td>4. Leaves simple</td>
<td></td>
</tr>
<tr>
<td>5. Leaves sessile or subsessile</td>
<td></td>
</tr>
<tr>
<td>6. Flowers in heads</td>
<td>.. Lepadagathis</td>
</tr>
<tr>
<td>6. Flowers in spikes</td>
<td></td>
</tr>
<tr>
<td>7. Bracteoles absent</td>
<td>.. Neuracanthus</td>
</tr>
</tbody>
</table>
7. Bracteoles present
8. Stems round .. Rungia
8. Stems quadrangular
9. Capsule more than 8 seeded .. Andrographis
9. Capsule four seeded .. Indoneesiella
5. Leaves petiolate
10. Shrubs
11. Bracteoles conspicuous
12. Flowers white .. Justicia adhatoda
12. Flowers bluish green .. Ecbolium
11. Bracteoles very small or absent
13. Staminodes two .. Barleria
13. Staminodes absent .. Strobolanthus
10. Herbs
14. Flowers in trochotomus cymes .. Peristrophe
14. Flowers in spikes or racemes
15. Cladodes present .. Haplanthodes
15. Cladodes absent .. Justicia (except J. adhatoda)

Acanthus L.

KB. : 719A.

Medicobotany: Parts used - Whole plant. Literature - Plant is useful in asthma. Leaves are useful in rheumatism and neuralgia. Plant decoction is used in dyspepsia. Folk medicine - Crushed leaves are applied externally on swellings.

Specimens examined: Revas - Sane (15396, 15397, AHMA).

Andrographis Wall.

Andrographis paniculata (Burm. f.) Wall. ex Nees in Wall.

Erect annuals; stem quadrangular; leaves subsessile; flowers in lax racemes, rose-red; capsules oblong, yellowish-brown. Fl - Fr: November - January. Local name: Kirayet, Pale-kirayet, Kade-chirayet, Kal-me\(\text{gh}\) (M.). Locality: Kashele, Pune, Kothimbe. Cultivated as Kade-chirayet. Sometimes found in deciduous forests.
Medico-botany: Part used - Whole plant. Literature - Bitter herb, well known stomachic, tonic, alterative, anthelmintic, remedy to dyspepsia. Folk medicine - Plant tincture is used in arresting the progress in influenza. It is recommended for reducing any type of fever. This is a controversial plant species Kade-chirayet (Please see Chapter VI). It is cultivated as a commercial crop at Academy of Development Science, Kashele and also in nearby areas at Karjat. The plant is supplied to the pharmaceuticals as a source, Ayurvedic herb kade-chirayet, has good market potential.

Specimens examined: Kashele - Upadhye (17701, AHMA).

Barleria L.

1. Flowers yellow
   .. B. prionitis

1. Flowers white
   .. B. cristata var. dichotoma

Barleria cristata L. Sp. Pl. 636. 1753. var. dichotoma
Prain, Beng. pl. 812. 1903. C. 2 : 460; KB. 3 : 1880;
GIMP : 33.

Hairy herbs; leaves lanceolate; flowers in terminal or axillary spikes, white. FI - Fr: November - February. Local name: Pandhari Koranti (M.). Locality: Pune, Sinhagad, Bhor. Cultivated in gardens and near temples.

Prickly shrubs; leaves elliptic; flowers axillary, sessile, yellow; capsule beaked. Fl - Fr : October - May. Local name : Koranti, Pivli-koranti (M.); Kurantaka (S.). Commonly found, also cultivated in gardens as hedge plant.

Medicobotany : Parts used - Leaves, root, flowers, bark. Literature - Leaf juice is useful in catarrhal affections of children with fevers. Leaves are useful in toothache. Root paste is applied externally on boils and swellings. Bark is useful in cough. Folk medicine - Leaves and roots are boiled in Til oil and prepared filtered oil is used for application on joint pains. Flowers are made in a local drug preparation with sugar called 'Gulkand' just like rose flowers, and is strongly recommended to cure painful menstruation. Dried leaf powder is useful as tooth powder and gives relief from toothache. Wild beautiful plant. Commonly cultivated for flowers to worship God.
Specimens examined: Karnala - Mandavgane (5867, 5868, AHMA); Nagaon - Upadhye (15539, AHMA).

**Crossandra Salisb.**


Shrubs; leaves in whorls, lanceolate, acute; flowers in axillary spikes, orange; capsules glabrous.

Fl. Fr: July - February. Local name: Aboli (M.).

Locality: Throughout the area. Planted in gardens. Not found wild.

Medico-botany: Parts used - Leaves, roots. Literature - Plant is aphrodisiac. Leaves are expectorant. Roots are boiled in milk and given in gonorrhea.

Specimens examined: Pune - Vartak (5892, AHMA); Pune - Upadhye (17540, AHMA).

**Ecbolium Kurz.**

**Ecbolium viride** (Farsk.) Alst. var. latevirens (Clarke) Sant. in Rec. bot. Surv. India 16(1): 185. 1960. Fl.

Karnataka: 205. **Ecbolium linneanum** Kurz. var. latevirens
Shrubs; thickened above the nodes, glabrous; leaves oblong-oval; flowers in spikes, bluish-green; capsules pointed. Fl - Fr: October - January. Local name: Ran-aboli, Dhakta-adulsa. Locality: Pune. Not cotton.

Medico-botany: Part used - Roots. Literature - Roots are useful in jaundice and monorrhagia.

Specimens examined: Karnala - Mandavgane (5914, AHMA).

**Haplanthodes** Ktze.


Glabrous herbs; leaves accuminate; axillary; cladodes present; flowers sessile, dark-lilac; capsules grooved. Fl - Fr: November - February. Local name: Pittapapada (M.). Locality: Pune, Dakhni, Bhandardara, Pen-Varsai. Found as undergrowth.

Medico-botany: Part used - Whole plant. Literature - Plant is given in fevers. Folk medicine - Whole plant decoction is febrifuge. It is used in place of true 'Pittapapada'.
It is a controversial plant 'Pittapapada' (Please see Chapter VI).

Specimens examined: Sinhagad - Vartak (5938, AHMA); Karnala - Datar (5943, AHMA); Dakhnichi Rao (Mulshi) - Upadhye (17544, AHMA).

Hygrophila R. Br.


Stout herbs with axillary spines; leaves in whorls; flowers in whorls; bluish-purple; capsules pointed. Fl - Fr : July - January. Local name: Kolsunda, Talimkhana (M.); Ikshura (S.). Locality: Pune, Sinhagad, Khandala, Bhandardara, Mulshi. Common on marshy, swampy places throughout the area.

Medico-botany: Parts used - Root, leaves, seeds. Literature - Diuretic, useful in jaundice, dropsy and rheumatism, tonic. Roots are diuretic, leaves are applied on gleet. Seeds are tonic, useful in gonorrhea and spermatorrhea. Folk medicine - Powdered seeds with milk and sugar is a
excellent tonic. Used as tonic by bodybuilders.
Seeds are sold in market.

Specimens examined: Khandala - Gunjatkar (16457, AHMA);
Pashan - Kulkarni (17538, AHMA).

**Indoneesiella** Srrem.


Erect herbs; leaves sessile, flowers in axillary racemes, pinkish-white; capsule elliptic-lanceolate. Fl - Fr: August - October. Local name: Ran-chimni (M.).
Locality: Katraj, Junnar, Sajjangad. Occasionally found on pasture lands; also seen as weed in cultivated lands.

Medico-botany: Part used - Whole plant. Literature - Plant is febrifuge.

Specimens examined: Katraj - Vartak (5824, AHMA);
Pachgaon-Parvati (Pune) - Kulkarni (16453, AHMA).

**Justicia** L.

1. Corolla pink .. *J. procumbens*
1. Corolla white
2. Shrubs  


Branched shrubs; leaves elliptic, lanceolate; flowers in axillary spikes, white; capsules clavate.

Fl - Fr : December - April. Local name : Adulsa (M.); Vasaka (S.). Locality : Pune, Khandala, Sinhagad, Bhandardara, Pen-Mira dongar. Commonly found in moist forests, also cultivated as hedge plant.

**Medico-botany** : Parts used - Root, leaves, flowers.

**Literature** - Extensively used as remedy for cough, cold; bronchitis and asthma. Leaves are useful in rheumatism. Root and leaves are antiseptic. Flowers improve blood circulation. The root facilitates the expulsion of the foetus, useful in fevers and gonorrhea. Flowers have antispasmodic properties. **Folk medicine** - Leaf decoction with honey is recommended in cough and bronchitis. Dried leaf powder is smoked in asthma. Leaf juice with ginger and honey is expectorant.

It is reputed Ayurvedic medicine. Used in many Ayurvedic preparations, prescribed in cough and asthma. Most of the pharmaceuticals manufactures expectorant products like
Vasanin, Adulsa syrup, Adulsol and many more. Leaves have got very good market potential as demand from all pharmacies.

Specimens examined: Bhor - Upadhye (17536, AHMA); Ambavne - Upadhye (17537, AHMA).


Herbs; leaves lanceolate; flowers in interrupted spikes, white; capsules clavate. Fl - Fr: December - April. Local name: Jagat-madan (M.). Locality: Pune. Cultivated in gardens, sometimes found escaped.

**Medico-botany**: Parts used - Whole plant, leaves. Literature - Plant is useful in bronchitis, inflammation, dyspepsia and fevers. Leaf decoction is given in rheumatism. Infusion of leaves is recommended internally in cephalalgia, hemiplegia and facial paralysis.

Specimens examined: Pune - Vartak (6007, AhMA); Bhor - Vartak (6008, AHMA).

Diffused herbs; rooting at lower nodes; leaves variable; flowers in terminal spikes, pink. Fl - Fr: September - January. Local name: Ghatipittapapada (M.). Locality: Throughout the area. Commonly found in hilly areas.

Medico-botany: Part used - Whole plant. Literature - Cooling, expectorant, useful in urinary discharges, enriches blood, used in ophthalmia and skin diseases. Plant has some therapeutic properties as Fumaria indica and can be substituted for it (GBMP, 1953). Folk medicine - In Pen-Varsai area the plant is called as Pittapapada and used as it. It is a controversial plant Pittapapada (See Chapter VI).

Specimens examined: Katraj - Vartak (6014, AHMA); Pune - Vartak (17542, AHMA).

Lepidagathis Willd.


Spreading herbs; stems quadrangular; leaves opposite, sessile; flowers in heads, whitish-pink, hairy; capsules ovoid. Fl - Fr: September - April. Local name: Koch, Bhuigend (M.). Locality: Throughout the area. Found on
dry, rocky places, on boundaries of cultivated lands.

**Medico-botany:** Part used - Whole plant. **Literature** -
Plant is bitter tonic, useful in fevers, applied externally on skin affections. **Folk medicine** - Plant decoction along with other ingredient is recommended in fevers. Whole plant decoction is given in measels.
Whole plant is sold in market as 'Kochphul'.

Specimens examined: Rajgad - Vartak (6051, AHMA); Raireshwar - Vartak (6056, AHMA).

**Neuracanthus Nees**


Erect herbs; leaves subsessile; flowers in globose congested silky spikes, purple; capsules ovoid, glabrous.

**Medico-botany:** Parts used - Root, whole plant. **Literature** -
Root is used to cure ring worms. **Folk medicine** - Whole plant decoction is given after child birth which results in
fever with increase in milk.

Specimens examined: Bhor - Vartak (6082, AHMA); Karnala - Datar (6086, AHMA).

**Peristrophe Nees**


**Medico-botany:** Part used - Whole plant. **Literature** - Plant is used as antidote. **Folk medicine** - Plant is used in place of 'Pittapapada' when true herb (genuine material) is not available. It is believed that the plant decoction has got febrifugal properties, same as genuine drug 'Pittapapada'. (Please see Chapter VI).

Specimens examined: Pune - Tadphale (6099, AHMA); Pashan - Vartak (6093, AHMA).
**Rungia Nees**


Diffuse herbs; rooting at nodes; leaves subsessile; flowers in spikes, bluish pink; capsules compressed, rugose.

Fl. Fr : October - January. Local name : Ghatipittapapada (K.). Locality : Throughout the area. Commonly found in open spaces and grass lands.

**Medico-botany** : Part used - Whole plant. **Literature** - Plant is febrifuge, vermifuge, useful in cough. **Folk medicine** - Plant decoction is useful to reduce high fevers. Locally claimed as 'Pittapapada' and used as *Fumaria indica*.

It is a controversial plant 'Pittapapada' (Please see Chapter VI).

Specimens examined : Karnala - Mandavgane (6139, AHMA); Chikkhalgaon - Upadhye (17543, AHMA).

**Strobilanthes Blume**

Shrubs with rough stem; leaves opposite, lanceolate; flowers in axillary spikes, purple with yellow hairs at mouth. Fl - Fr: September - December (at intervals of 7 or 8 years). Local name: Karvi (M.). Locality: Mahabaleshwar. Restricted to evergreen patches from the area.

Medico-botany: Parts used - Bark, flowers. Literature - Bark is used for fomentation in tenesmus and as external application in paralysis. Flowers are considered vulnery.

This species has got importance in Bee-keeping, as Karvi-honey is said to be medicinally important.

VERBENACEAE

1. Creeping herbs
   1. Shrubs or trees
      2. Trees
         3. Leaves 3-7-foliate
         3. Leaves simple
            4. Corolla regular
            4. Corolla bilipped
      5. Flowers in corymbose spike

   .. Phyla
   .. Vitex
   .. Tectona
   .. Gmelina
   .. Lantana
5. Flowers in other than corymbose spike

6. Leaves tomentose beneath .. **Callicarpa**

6. Leaves glabrous beneath

7. Calyx persistant in fruit .. **Clerodendrum**

7. Calyx not persistant in fruit .. **Premna**

**Callicarpa** L.

*Callicarpa tomentosa* (L.) Murray in L. Syst. Veg. (ed. 13) :
330. 1774. Fl. Khandala : 214; *C. lanata* L.; FBI. 4 : 567;
C. 2 : 503; AB. 3 : 1921; GIMP : 45. Ill. KB. : 732A.

Shrubs with grey bark, rough, corky; leaves crowded at end of branches; tomentose beneath; flowers in cymes, purple, tomentose; drupe globose, shining. Fl - Fr :
December - May. Local name : Yissar (M.). Locality :
Karnala, Mahabaleshwar, Bhandardara, Bhimashankar. Found in evergreen and semievergreen patches from the area.

**Medico-botany** : Parts used - Bark, root, leaves. **Literature** - Bark and root is useful in fevers and skin diseases. Root is used to cure cutaneous affections. Leaves are boiled in milk and used as wash for apthae of the mouth. **Folk medicine** - Crushed leaves are applied on skin diseases.

Specimens examined : Mahabaleshwar - Vartak (6213, AHMA);
Karnala - Mandavgane (AHMA).
Clerodendrum L.

1. Straggling shrubs
   1. Erect shrubs
   2. Flowers blue
      2. Flowers other than blue
         3. Corolla tube fleshy, 5-10 cm long
         3. Corolla tube pubescent, 1-3 cm long

   Clerodendrum inerme Gaertn. Fruct. 1 : 271, t. 57, fig. 1.
   1788. FBI. 4 : 589; C. 2 : 511; KB. 3 : 1945; GIMP : 71;

   Straggling shrubs, bark pale brown; leaves opposite,
   glabrous; flowers in axillary cymes, white; drupe pyriform.
   Fl - Fr : November - February. Local name : Vanjai (M.);
   Mundali (S.). Locality : Pune, Nagaon, Alibag. Found
   cultivated in gardens. Grows wild near sea coasts.

   Medico-botany : Parts used - Leaves, root. Literature -
   Leaves are alterative, febrifuge. Root is useful in
   rheumatism. Medicinal properties of C. inerme closely
   resembles 'Chirata' (Chopra et al. 1956; Kirtikar and Basu,
   1935). Although it is mentioned that it can be substituted
   to 'Chirata', local people neither mentioned it, nor it has
   vernacular name as 'Chirayet' or 'Kude-chirayet'. Folk
   medicine - Root decoction is useful to reduce fevers.
Specimens examined: Pune - Vartak (6221, AHMA); Pune - Upadhye (17545, AHMA).


Pubescent herbs; leaves subrhomboid, glabrous, flowers in axillary cymes, pinkish white, fragrant, drupe with persistent calyx. Fl - Fr : August - February. Local name : Airan (M.); Agnimanth (S.). Locality : Pune, Katraj, Jejuri. Commonly found along canal sides.

Medico-botany: Parts used - Root, leaves. Literature - Root is bitter tonic, one of the ingredient of deshmula extraction, given in convalescence of measles. Leaf juice is given in neglected syphilitic complaints. Folk medicine - Root is pounded with water and externally applied on swellings and inflammations.

Specimens examined: Katraj - Vartak (6224, AHMA); Jejuri - Vartak (6226, AHMA).


Woody shrubs, stems quadrangular; young parts
glaubrous; leaves opposite; flowers in lax, dichotomous cymes, blue. Fl - Fr : August - December. Local name : Bharangi (M.); Bharli (S.). Locality : Throughout the area. Common in dry deciduous open forests.

Medico-botany : Parts used - Root, leaves. Literature - Root is stomachic, anthelmintic, useful in asthma and fevers. Leaves are febrifuge. An ointment is made by boiling leaves with oil, which is useful in cephalalgia and opthalmia. Folk medicine - Root decoction is used to cure fevers. Tender leaves are used as vegetable by local people.

Specimens examined : Mahabaleshwar - Vartak (6228, AHMA); Arnala - Vartak (6231, AHMA).


Shrubs; leaves lanceolate; flowers in panicles, white, carolla tube fleshy. Fl - Fr : September - December. Local name : Bharang (M.). Locality : Pune, Kashele. Native of Assam, Sikkim and Sumatra, cultivated.

Medico-botany : Parts used - Root, leaves, resin. Literature - Root is useful in cough and asthma. Resin is employed in syphilitic rheumatism. Leaf juice is mixed
with ghee and applied to herpetic eruptions and pemphigus. Leaves are vermifuge and tonic.

Specimens examined: Pune - Vartak (6233, AHMA).

_Gmelina L._


Deciduous trees; bark yellowish-grey; young parts pubescent; leaves ovate, cordate, petiole with glandular tip; flowers in cymes, brownish yellow; drupe ovoid, smooth.

Fl - Fr : February - June. Local name : Shivan (M.); Gambhari (S.). Locality : Katraj, Karnala, Kashele, Ambavne. Seen in moist deciduous forests.

Medico-botany: Parts used - Root, leaves. Literature - Root is one of the ingredient in deshmula. Leaf juice is demulcent, useful in cough, foetid discharges, worms and gonorrhea. Root is stomachic, laxative, febrifuge. Folk medicine - Root paste is applied externally on swellings. Root is used in many Ayurvedic preparations. Wood is used in matchbox industry.

Specimens examined: Katraj - Vartak (6249, AHMA); Karnala - Vartak (2653, AHMA).
Lantana L.

*Lantana camara* L. Sp. Pl. 627. 1753 var. *aculeata* (L.)
Holdenke, Torreya 34 : 9. 1934; FBI. 4 : 562; C. 2 : 498;
GIMP : 149; AS 2 : 114; *L. aculeata* L.; KB. 3 : 1914.

Straggling shrubs; stems quadrangular; leaves rough, prickles recurved; flowers corymbose spikes, orange-red, with yellow center. Fl - Fr: Throughout the year. Local name: Ghaneri, Tantani (M.). Locality: Throughout the area. Common weed in dry, scrubs and roadside. Native of America.

**Medico-botany:** Part used - Whole plant. **Literature** - Plant decoction is tonic, useful in Malaria and atoxy of abdominal viscera. **Folk medicine** - Leaves are crushed and juice is applied on wounds.

Specimens examined: Sakhar - Vartak (6259, AHMA); Pachgaon-Parvati (Pune) - Kulkarni (16467, AHMA); Chikkhalgaon - Upadhye (17547, AHMA).

**Phyla Lour.**

Creeping, perennial herbs; rooting at nodes; leaves glabrous; flowers in axillary heads, subsessile, pink.
Fl - Fr: Throughout the year. Local name: Jal-pimpali, Kat-vel (M.); Vashir (S.). Locality: Pune. Always found near water.

Medico-botany: Parts used - Whole plant, leaves. Literature - Plant is febrifuge, diuretic, useful in boils. Leaf infusion is given in indigestion to children. Also given to woman after delivery.

Specimens examined: Pashan - Tadphale (6267, 6268, AHMA); Nagaon - Sane (15434, AHMA).

Premna L.


Small trees; leaves broadly elliptic, glabrous, dentate; flowers in terminal cymes. Fl - Fr: March - June.

Medico-botany: Parts used - Root, leaves. Literature - Root is bitter, laxative, stomachic, useful in piles,
constipation, fevers. Leaves are externally applied on piles and tumors. Leaves with pepper are recommended in cold and fevers, carminative.

This plant is sometimes mistaken as Bharangi and used as Clerodendrum serratum.

Specimens examined: Mapgaon - Sane (15435, AHMA); Ambavne-Upadhye (17548, AHMA).

Tectona L.f.


Deciduous trees; leaves elliptic, ovate, rough; flowers in cymes, white; fruit subglobose, calyx forming bladder like structure. Fl - Fr : June - October. Local name : Sag, Sagwan (M.); Sak (S.). Locality : Throughout the area. Commonly cultivated for wood. An important species in social forestry. A pure stand of this single species has been observed in 'Sagdara' sacred grove, Shirdale in Ambegaon taluka, Pune district. Trees with large dimensions have been observed there. In moist, dry and mixed forest natural regeneration of this economically important species is commonly observed.
Medico-botany: Parts used - Wood, bark, flowers, fruits.

Literature - Pounded wood is applied on headache and swellings, internally recommended as vermifuge. Ash of wood is applied on swollen eyelids. Oil from nuts is applied on skin diseases. Oil from flowers is useful for hair growth. Bark is astringent. Folk medicine - Nut is rubbed in water and paste is applied externally on stomach in painful urination, diuretic.

Specimens examined: Karnala - Vartak (6278, AHMA); Junnar - Ghate (17163, AHMA).

**Vitex L.**

1. Leaves trifoliate, leaflets sessile
   
1. Leaves 3-5-foliate, leaflets petioate


   Ill. A.B. : 740A.

Small trees with grey bark, leaves lanceolate, serrate or entire, glabrous; flowers in cymes, tomentose, bluish-purple. Fl - Fr : November - March. Local name: Nirgudi (M.); Nirgundi (S.). Locality: Throughout the area. Commonly found throughout the area, also cultivated as hedge plant.
Medico-botany: Parts used - Root, leaves, fruit. Literature-
Root is tonic, febrifuge, astringent, stomachic, expectorant.
Leaf decoction with long-pepper is given in catarrhal fever.
Oil prepared from leaf juice is applied to sinuses and
rheumatic pains. Leaf juice is also given internally in
rheumatism. Dried leaves are smoked to get relief from
headache. Fruit is vermifuge. Folk medicine - Fresh leaf
juice is applied on swellings due to 'Vat'. Leaves are
boiled in water and steam is allowed to pass over the swollen
portion to get relief from it. Oil extracted from leaves is
rubbed on joint pains. Leaves are warmed and applied
externally on swellings.

Seeds of this plant are called as 'Renuk-beej' in Thane
district and is used as vermifuge. Dried leaves are burnt
as mosquito repellent. It is believed by local people that
the Nirgudi leaves with very deep serrate margin are more
effective than that of entire margin.

Specimens examined: Mahabaleshwar - Vartak (6292, AHMA);
Varandha - Vartak (6293, AHMA); Bhandardara - Upadhye
(17549, AHMA).

Vitex trifolia L. Sp. Pl. 638. 1753. FBI. 4: 583; C. 2 :
508; KB. 3 : 1936; GIMP : 251. Ill. KB. : 740B.

Small trees with smooth bark; leaves variable,

Medico-botany : Parts used - Leaves, flowers. Literature - Leaves are externally applied on rheumatic pains, febrifuge. Flowers with honey are given in vomiting and severe thirst. Folk medicine - It is used same as V. negundo on swellings and joint pains.

Specimens examined : Kashele - Upadhye (17703, AHMA).

AVICENNIACEAE

Avicennia L.


Small trees; leaves coriaceous, elliptic, shining; flowers in small heads, yellow; capsule beaked. Fl - Fr : April - July. Local name : Tiwar (M.); Tiwarak (S.). Locality : Alibag, Nagaon. Typical mangrove plant, found on marshy sea coasts.

Medico-botany : Parts used - Bark, root, unripe fruits. Literature - Bark is astringent. Root is aphrodisiac.
Unripe fruit poultice is applied on boils and abscesses to hasten suppuration.

Specimens examined: Kevas - Sane (15418, 15419, AHMA).

LAMIACEAE

1. Stamens two
   . Salvia

1. Stamens four
   2. Prostrate plants, rooting at nodes
      . Mentha

2. Erect plants
   3. Shrubs
      4. Corolla white
         . Colebrookea
      4. Corolla coloured
      5. Stems densely wooly
         . Anisomeles
      5. Stems pubescent
         . Leonotis

3. Herbs
   6. Succulent herbs
      . Coleus
   6. Non-succulent herbs
   7. Corolla white
      . Leucas
   7. Corolla purple
      8. Flowers in whorls
         . Ocimum
      8. Flowers in spikes
      9. Leaves crenate
         . Anisochilus
      9. Leaves irregularly toothed
         . Pogostemon
Anisochilus Wall.

**Anisochilus carnosus** (L.f.) Wall. *Fl. As. Rar. 2 : 18. 1831.
FBI. 4 : 627; C. 2 : 532; KB. 3 : 1971; GIMP : 19; AS 2 : 123. *Ill. KB. : 753A.*


**Medico-botany:** Parts used - Whole plant, leaves. Literature - Plant is stimulant, expectorant. Leaf juice is cooling, mixed with sugar-candy and given for cold and cough.

Specimens examined: Katraj - Vartak (6306, AHMA); Sinhagad - Vartak (6308, AHMA).

Anisomeles H.Br.


Medico-botany: Part used - Leaves. Literature - Infusion of leaves is colic, useful in catarrhal affections, fevers, fever arising from teething. Oil distilled from leaves is externally applied on rheumatic pains.

Specimens examined: Katraj - Vartak (6325, 6326, 6327, AhMA).

Colebrookea Sm.


Shrubs; leaves crowded at the end of branches; flowers in spikes, white; nut ovoid. Fl - Fr: December - April. Local name: Bhaman (M.). Locality: Throughout the area. Commonly found along ghats at higher altitudes.

Medico-botany: Parts used - Root, leaves. Literature - Roots are used in epilepsy. Leaves are applied on wounds and bruises. Folk medicine - Crushed leaves are applied externally on cuts.

Specimens examined: Baneshwar - Vartak (6334, AHMA); Torna - Vartak (6337, AHMA).

Coleus Lour.

Coleus amboinicus Lour. Fl. Cochinch. 2: 372. 1790. FBI.
435


Erect herbs with quadrangular stems; leaves ovate with winged petiole; flowers in axillary whorls, orange. Fl - Fr : September - December. Local name : Matisul (M.). Locality : Pune, Katraj, Mulshi. Commonly found in hilly areas near villages.

Medico-botany : Parts used - Flowers, root, leaves.

Literature - Ash of flower heads is applied on burns, mixed
with curd and applied on skin diseases. Root paste is applied on breast when milk does not pass due to swellings. Leaf decoction is tonic.

Specimens examined: Katraj - Vartak (6389, AHMA); Pashan - Vartak (6390, AHMA).

**Leucas H.Br.**

1. Plants more than 60 cm high
   2. Calyx mouth villose within .. *L. cephalotus*

2. Calyx mouth not villose within .. *L. indica*
   1. Plants less than 60 cm high
   3. Calyx mouth oblique .. *L. plukenetii*

   3. Calyx mouth straight .. *L. stelligera*


Hairy annuals; leaves ovate, lanceolate; flowers in terminal whorls, sessile. Fl - Fr : November - January.

Local name: Tumba (M.); Dronapushpi (S.). Locality: Pune, Dakhni, Khandala, Purandhar. Found in dry hilly areas.

**Medico-botany**: Parts used - Whole plant, leaves.

**Literature** - Plant is stimulant, laxative, anthelmintic,
useful in bronchitis and inflammation. Leaf juice is externally applied on scabies.

Specimens examined: Khandala - Upadhye (17705, AHMA).


Stems quadrangular; leaves serrate; flowers in axillary or terminal whorls, bracts bristle tipped. Fl - Fr: September - January. Local name: Goma (M.); Dronapushpi (S.). Locality: Pune. Found as roadside weed.

Medico-botany: Part used - Leaves. Literature - Leaves are roasted and eaten with salt as febrifuge. Carminative, expectorant, laxative, stomachic, leaf juice is employed in headache and cold.

Specimens examined: Pune - Razi (6407, AHMA); Bhor - Vartak (6410, AHMA).


Variable annuals; branches quadrangular; leaves subsessile; flowers in terminal and axillary whorls. Fl -
Fr : October - December. Local name : Dronpushpi (M.).
Locality : Kashele, Pune, Katraj, Alibag. Found in dry and moist deciduous forests.

Medico-botany : Parts used - whole plant, flowers, leaves. Literature - Plant is antipyridic. Leaves are useful in rheumatism, applied externally on skin diseases. Flowers are useful in cold. Folk medicine - Plant decoction is given in fevers.

Specimens examined : Katraj - Vartak (6392, AHMA); Pashan - Vartak (14065, AHMA).


Pubescent herbs; leaves elliptic, lanceolate; flowers in terminal or axillary whorls. Fl - Fr : November - February. Local name : Goma, Burambi, Kumbha (M.).
Locality : Pune, Bhandardara, Katraj, Mahabaleshwar, Sinhagad. Found in open hilly areas.

Medico-botany : Parts used - Whole plant, leaves. Literature - Plant is stimulant and carminative. Folk medicine - To cure hemicrania, the leaf juice of this plant is dropped in opposite nostril, results in flowing of watery fluid and person gets relief.
Specimens examined: Mahabaleshwar - Vartak (6430, AHMA); Sinhagad - Vartak (6434, AHMA).

**Mentha L.**


Prostrate herbs; rooting at nodes; strongly aromatic, stems purplush black; leaves ovate, toothed; flowers axillary. Fl - Fr: Not seen. Local name: Pudina (M.). Locality: Throughout the area. Commonly cultivated in gardens as flavouring agent.

**Medico-botany:** Parts used - Leaves, whole plant. Literature: Dried plant is carminative; stomachic; diuretic. Oil extracted from plant and also crystals called as 'Pudhineka phul' are used medicinally. Leaf juice is digestive, useful in stomach pain. Crystals dissolved in alcohol and rubbed on skin to get anesthetic effect. Oil and crystals are sold in market.

Specimens examined: Pune - Upadhye (17708, AHMA).

**Ocimum L.**

1. Stems purplish-black
   
1. Stems whitish-green
2. Bracts sessile
   2. Bracts stalked
   3. Corolla less than 4 mm long
      3. Corolla 8-9 mm long


Branched herbs; leaves elliptic, glabrous; flowers in whorls. Fl - Fr: May - October. Local name: Krishna-tulasi (M.); Ajagandha (S.). Locality: Throughout the area. Commonly grown in gardens.

Medico-botany: Parts used - Whole plant, leaves. Literature: Leaf-paste is applied on skin diseases. Useful in cold.

Specimens examined: Sinhagad - Vartak (6470, AHMA); Karnala-Mandavgane (6472, AHMA).


Branched herbs; leaves toothed; flowers in whorls, densely racemose; bracts stalked; nutlets black, pitted. Fl - Fr: July - December. Local name: Subja (M.); Barabara (S.). Locality: Pune. Cultivated in the gardens.
Medico-botany: Parts used - Root, flowers, leaves, seeds.

Literature - Root is useful in bowel complaints. Flowers are carminative, diuretic, stimulant, demulcent. Leaf juice is warmed and given with honey to cure *cough*. Seeds are mucilaginous, cooling, useful in gonorrhea, diarrhea. Plant is aromatic and on distillation with water yields essential oil which solidifies into basil comphor. Seeds are sold in market and taken with milk and sugar. It is cooling, useful household remedy.

Specimens examined: Pune - Vartak (6474, AHMA); Miradonger - Upadhye (17551, AHMA).


Medico-botany: Parts used - Whole plant, leaves. Literature

Plant aromatic. Leaves are chewed to cure mouth ulcers. Seeds are given in headache and neuralgia. In high fevers leaf paste is applied to fingers and toe-nails. Plant is
cooling, diuretic. Plant is boiled in water and bath is recommended in rheumatism and paralysis. **Folk medicine** - Leaves are boiled with ginger and tea is given as febrifuge.

Specimens examined: Katraj - Vartak (6475, AHMA); Karlikhind - Sane (15452, AHMA); Dakhnichirai (Mulshi) - Upadhye (17552, AHMA).


Stems subquadrangular; leaves elliptic-oblong, serrate or entire; flowers in close whorls, purplish-pink. Fl - Fr: Throughout the year. Local name: Tulshi, Tulas, Kali-tulas (M.); Tulshi (S.). Locality: Throughout the area. It is sacred plant, cultivated near almost every Hindu house and temple.

**Medico-botany**: Parts used - Leaves, seeds, roots. **Literature** - Leaves expectorant. Leaf juice is used in gastric disorders. Dried leaves are provided as snuff in ozena. Seeds are demulcent, useful in disorders of genito-urinary system. Root is given in malarial fevers. Fresh root and leaves are applied to the bites of mosquitoes. Leaf juice with pepper is given as febrifuge. Leaf juice along with leaf juice of **Vitex negundo** and ajwan seeds is
is given in joint pains. **Folk medicine**: Leaf juice with honey is given as expectorant. Leaf juice is applied on ring worm. Leaf infusion with other ingredients is given as febrifuge. Seeds with sugar and milk are cooling. Plant is very good household remedy and also a sacred plant.

Specimens examined: Karnala - Mandavgane (6479, AHMA); Bhandardara - Upadhye (17553, AHMA); Siddheshwar - Upadhye (17554, AHMA).

**Pogostemon Desf.**


Stems quadrangular; leaves with strong aroma, irregularly toothed; flowers in spikes, white with purple spot. Fl - Fr : November - March. Local name : Phangli, Phangla (M.); Phaninjaka (S.). Locality : Throughout the area. Common on hill slopes at higher altitudes.

**Medico-botany**: Parts used - Root, leaves. **Literature** - Leaves are applied on wounds to promote healing. Root is useful in uterine haemorrhage. Root paste is a remedy for the snake-bite 'Phursa' and apparently with marked success. (Dymock, 1890). **Folk medicine** - For poisonous bites leaf
and root juice is applied externally. It is also given internally for seven days. Fresh leaf juice is given to reduce high fever and stomach pain. Fresh leaf juice is mosquito repellent.

Specimens examined: Mahabaleshwar - Vartak (6523, AHMA); Bhandardara - Upadhye (17555, AHMA).

**Salvia L.**


Erect herbs; stems quadrangular, grooved; leaves lanceolate, glabrous; flowers in panicles, blue. Fl - Fr: September - January. Local name: Kamarkas (M.). Locality: Pune, Mahabaleshwar, Narsapur.

Medico-botany: Part used - Seeds. Literature - Seeds are diuretic, useful in gonorrhea and haemorrhoids.

Specimens examined: Koyna - Vartak (6544, AHMA); Narsapur - Vartak (6547, AHMA).

**PLANTAGINACEAE**

**Plantago L.**

1. Perennials; leaves ovate-oblong .. *P. major*
1. Annuals; leaves linear, filiform .. *P. ovata*

Perennial herbs; leaves alternate, radical; flowers in lax spikes, greenish; capsules ovoid; seeds rugulose, dull-black. Fl - Fr : September - February. Local name : Bartang, Isabgol (M.). Locality : Mahabaleshwar, Pune. Rarely found, sometimes cultivated for seeds.

Medico-botany : Parts used - Whole plant, seed. Literature - Plants and seeds are used in place of P. ovata, true 'Isabgol'.


Woody annuals; leaves linear, filiform, 3-nerved; flowers in cylindric spikes; capsule ellipsoid; seeds yellowish brown. Fl - Fr : October - November. Local name: Isabgol (M.); Ashwakarnabej (S.). Locality : Cultivated at Jawaharlal Nehru Ayurvedic Medicinal Plants Garden and Herbarium, Pune. Cultivated for seeds and husk.

Medico-botany : Part used - Seeds. Literature - Seeds are demulcent, cooling, diuretic, useful in troubles of gastro-
intestinal and genito-urinary tracts, chronic dysentery and constipation. Well known Ayurvedic herb, has got good export value.

Specimens examined: Museum Specimen in MACS.

NYCTAGINACEAE

1. Prostrate herbs
   .. Boerhavia

1. Erect herbs
   .. Mirabilis

Boerhavia L.


Prostrate, creeping herbs; branches thickened at nodes; leaves suborbicular, margins pink; flowers in umbels, inconspicuous, pink. Fl - Fr: Throughout the year. Local name: Punarnava (M., S.). Locality: Throughout the area. Common, found on waste places and hilly slopes.

Medico-botany: Part used - Whole plant. Literature - bitter, cooling, useful in biliousness, blood impurities, anaemia, heart diseases, dyspepsia, given in jaundice, ascites and gonorrhea. Recommended in scanty urine and internal inflammation. It is a well known Ayurvedic
remedy. Used by local people as mentioned in literature. Chief ingredient of Ayurvedic preparations such as 'Punarnavasav'. Plant has got good market value. It is believed by local people as well as medico practitioners that white flower variety is more effective than pink-one; it is called as "Shwet-punarnava".

Specimens examined: Karnala - Mandavgane (6590, AHMA); Pune - Upadhye (17556, 17557, AHMA).

Mirabilis L.


Herbs, swollen at nodes; leaves rather fleshy, base cordate; flowers showy, many shades from yellow to red. Fl - Fr: July - January. Local name: Gulbakshi, Gul-abbas (M.). Locality: Throughout the area. Native of tropical America, sometimes found escape.

Medico-botany: Parts used - Root, leaves. Literature - root is aphrodisiac, purgative. Leaves are applied on boils and inflammation. Folk medicine - root is pounded in water and paste is made. It is applied on any type of swellings. Root from white flower variety is said to be a good remedy for scorpion-sting. The root exclusively from white flower plant is rubbed with water and applied on a bite.
Footpath vendors sometimes sold this root as 'Kala-bachanag', used for external applications on swellings.

Specimens examined: Karnala - Mandavgane (6603, AHMA); Pune - Badve (14606, AHMA); Pune - Upadhye (17558, AHMA).

**AMARANTHACEAE**

1. Leaves opposite
2. Erect herbs
   - Achyranthes
3. Leaves alternate
4. Prostrate herbs
   - Alternanthera

1. Leaves alternate
2. Erect herbs
2. Prostrate herbs

1. Flowers unisexual
3. Flowers bisexual
3. Flowers unisexual
4. Inflorescence bicolour
   - Celosia
4. Inflorescence monocolour
5. Flowers greenish-white
   - Aerva
5. Flowers pink-rose
   - Digera

**Achyranthus L.**


III. KB. : 793.

Erect woody herbs; leaves thick, elliptic, pubescent; flowers in terminal spikes; greenish-white. Fl - Fr: October - January. Local name: Aghada (M.); Apamarga (S.).
Locality: Throughout the area. Commonly found along hedges and on waste places. Holy plant, used to worship God.

Medico-botany: Part used - Whole plant. Literature - Plant is diuretic, purgative, useful in dropsy, piles, skin eruptions, colic. Plant ash is well known ayurvedic remedy in cold, cough, asthma and ulcers. Folk medicine - Plants are dried and burned. This ash is mixed with water and after sometime filtered water is collected and kept in sunlight. Whitish salt remained after sun drying is used in medicine. It is diuretic and recommended in cough. Stems are used as toothbrush to get relief from tooth-pain. 'Aghadhachakshar' is sold in market.

Specimens examined: Karnala - Datar (6613, AHM); Kanakeshwar - Sane (15461, AHMA).

FBI. 4: 728; k.B. 3: 2064; GIMP: 8; GBMP: 12; AS 2: 139. Ill. KB.: 792.

Woodie herbs; much branched; leaves alternate; flowers axillary, bisexual, greenish-white. Fl - Fr: August - December. Local name: Karpuri-Madhuri (M.); Adanapaki (S.). Locality: Throughout the area. Very common weed, also found in cultivated lands.
Medico-botany: Parts used - Whole plant, root, flowering heads. Literature - Plant is anthelmintic, diuretic. Koot is demulcent, useful in headache. Folk medicine - Plant decoction is diuretic. Medicos practioner from Pune brought this plant for botanical identification in our laboratory. They make pills from flowering heads of this species with 'Gugula' and give it for cure of kidney stone. According to him this is excellent remedy to cure kidney stone.

Specimens examined: Katraj - Vartak (6620, AHMA); Sinhagad - Upadhye (17560, AHMA).

Alternanthera Forsk.

Alternanthera sessilis (L.) R.Br. ex DC. Cat. Pl. Hort.

Prostrate herbs; leaves lanceolate-elliptic; flowers in heads, sessile, white shining. Fl - Fr : Throughout the year. Local name : Reshemkata (M.). Locality : Throughout the area. Common weed forming dense mats.

Medico-botany: Part used - Whole plant. Literature - Plant is galactogogue, febrifuge.
Specimens examined: Pashan - Vartak (6668, AHMA); Pachgaon-Parvati (Pune) - Kulkarni (1648, AHMA).

Amaranthus L.

1. Herbs with spines .. A. spinosus
1. Herbs without spines .. A. tricolor


Glabrous herbs with spines; leaves ovate-lanceolate; flowers in spikes; capsule ovoid. Fl - Fr: Most of the year. Local name: Kate-math, Tandulja (M.); Tanduliya (S.). Locality: Throughout the area. Common weed on waste places and cultivated lands.

Medico-botany: Part used - Whole plant. Literature - Plant is laxative. Leaf poultice is applied on abscesses. Leaves are also used in gonorrhoea and eczema. Folk medicine - Plant is used as pot-herb. Vegetable is stomachic and often recommended in constipation.

Specimens examined: Pune - Razi (6681, AHMA); Pune - Ghate (14698, AHMA).

Amaranthus tricolor L. Sp. Pl. 989. 1753. Fl. Karnataka:

Herbs with grooved, purplish leaves variable; flowers in clusters on interrupted spikes. Fl - Fr : March - April. Local name : Math (M.); Marisha (S.). Locality : Throughout the area. Cultivated as pot-herb, also found escape.

Medico-botany : Part used - Whole plant. Literature - Plant is cooling, useful in dysentery, diarrhoea and haemorrhage from bowels. Decoction is used as a wash in mouth ulcers. Vegetable is sold in market seasonally.

Specimens examined : Baneshwar (6676, AHMA); Pune - Upadhye (17561, AHMA).

Celosia L.


Glabrous annuals; leaves variable; flowers in terminal spikes, appearing pink, afterwards white; capsule ellipsoidal; seeds subreniform, black. Fl - Fr : October - December. Local name : Kurdu (M.); Vitunna (S.). Locality : Throughout the area. Common weed on road-side and cultivated lands.
Medico-botany: Part used - Seeds. Literature - Seeds are useful in diarrhoea, blood diseases and mouth sores. Folk medicine - Seeds are boiled in water and it is used as diuretic. Young leaves are used as vegetable. Seeds are sold in crude drug market.

Specimens examined: Padmavati (Pune) - Vartak (6701, AHMA); Karnala - Datar (6708, AHMA).

Digera Forssk.


Spreading herbs; leaves variable, round with reddish margins, glabrous; seeds yellowish-brown. Fl - Fr: September - December. Local name: Gitana (M.); Kurunjara (S.). Locality: Pune, Karnala, Mulshi, Murbad. Common after rains.

Medico-botany: Parts used - Flowers, seeds. Literature - Flowers and seeds are useful in urinary complications, laxative.

Specimens examined: Padmavati (Pune) - Vartak (6713, AHMA); Karnala - Vartak (6717, AHMA).
CHENOPODIAEAE

1. Shrubs .. Salicornia
1. Herbs
2. Stems jointed .. Suaeda
2. Stems not jointed
3. Root fleshy, fusiform .. Beta
3. Root not as above
4. Flowers all similar .. Chenopodium
4. Flowers di\morphic .. Spinacia

Beta L.


Herbs; leaves subcordate; flowers in solitary clusters, on interrupted spikes. Fl - Fr : May - June.

Medico-botany : Parts used - Leaves, seeds. Literature - Leaves are tonic, diuretic, purgative, applied on burns. Seeds are cooling, diuretic, carminative. Fresh roots are sold in vegetable market. Sugar can be extracted from root.

Chenopodium L.

1. Leaves glandular, petioles short .. C. ambrosioides
1. Leaves eglandular, petioles long .. C. album

Erect herbs; leaves variable, eglandular; flowers in paniculate spikes. Fl - Fr : January - March. Local name: Chakvat (M.); Chilli (S.). Locality: Throughout the area. Cultivated as pot-herb.

Medico-botany: Parts used - Whole plants, leaves. Literature - Plant is laxative, anthelmintic. Crushed leaves are applied externally as cooling. Fresh vegetable is sold in market seasonally.

Specimens examined: Pune - Vartak (6745, AHMA); Karnala - Vartak (6749, AHMA).


Aromatic herbs; leaves glandular, petioles short; flowers in paniculate spikes, minute. Fl - Fr: December - April. Local name: Chandanbatva (M.); Chandil (S.). Locality: Pune. Rarely cultivated as pot herb.

Medico-botany: Part used - Whole plant. Literature - Plant is anthelmintic. Sold in vegetable market as pot-herb.

Specimens examined: Pune - Vartak (6753, AHMA); Vithalwadi - (Pune) - Vartak (6756, AHMA).
Salicornia L.


**Medico-botany**: Part used - Whole plant. **Literature** - Plant ash is used for mange and itch; considered emmengogue and abortive.

Specimens examined: Alibag - Kumbhojkar (17450, 17451, AHMA).

Spinacia L.


Herbs; succulent; leaves alternate; male flowers in spikes, female flowers crowded; fruit capsule. Fl - Fr: February - May. Local name: Palak (M.); Palakya (S.). Locality: Throughout the area. Extensively cultivated as pot herb.

**Medico-botany**: Parts used - Leaves, seeds. **Literature** -
Leaves are cooling, laxative, stomachic, digestive, useful in blood diseases. Seeds are used in inflammation of liver and also in jaundice. Green vegetable is sold in market and extensively used as pot herb.

Specimens examined: Pune - Upadhye (17706, AHMA).

*Suaeda* Forsk.


Medico-botany: Parts used - Whole plant. Folk medicine - An ointment is made from whole plant and is applied on wounds. Whole plant is used as vegetable.

Specimens examined: Revas - Sane (15483, AHMA); Nagaon - Upadhye (17563, AHMA).

**BASELLACEAE**

*Basella* L.

*Basella alba* L. Sp. Pl. 272. 1753. B. rubra L.; FBI. 5:

Medico-botany: Part used - Leaves. Literature - Leaves are demulcent, diuretic, narcotic, laxative, useful in dysentery, gonorrhea. Leaf juice is useful in urticaria. Leaves are commonly used as vegetable. Fleshy fruits are used to colour lips and palms by tribal women.

Specimens examined: Pune - Vartak (6744, AHMA); Pune - Upadhye (17562, AHMA).

POLYGONACEAE

1. Perianth 6-cleft
   .. Rumex

1. Perianth 3-5-cleft
   .. Polygonum

Polygonum L.

Stems reddish; leaves subsessile; flowers in racemes, pink. Fl - Fr: September - December. Local name: Sheral (M.). Locality: Pune, Sajjangad, Karnala. Occasionally found in moist forests.

Medico-botany: Parts used - Whole plant, leaves.

Literature - Leaf infusion is used in colic. Plant is used as febrifuge.

Specimens examined: Pune - Tadphale (6791, AHMA); Karnala - Mandavgane (6790, AHMA).

**Rumex L.**


Glabrous, fleshy annuals; leaves elliptic; flowers in racemes, perianth membranous, reticulate in fruit.

Fl - Fr: March - May. Local name: Chuka (M.). Locality: Throughout the area. Cultivated as pot-herb.

Medico-botany: Parts used - Leaves, seeds. Literature - Leaves are cooling, diuretic, laxative, stomachic, useful in dyspepsia, vomiting, checks nausea. Leaf juice is applied on toothache. Seeds are useful in dysentery.

Vegetable is sold in market seasonally.
Specimens examined: Pune - Vartak (6816, 6817, AHMA).

ARISTOLOCHIACEAE

Aristolochia L.

1. Leaves reniform  A. bracteolata
1. Leaves linear-oblance to obovate  .. A. indica


Prostrate, branched perennials; leaves reniform, cordate at base; flowers solitary, dark-purple; capsule 12-ribbed. Fl - Fr: September - January. Local name: Kidambar, Badakphul (M.); Dhumbrapatra (S.). Locality: Pune. Found cultivated in gardens.

Medico-botany: Part used - Whole plant. Literature - Plant is extremely bitter, anthelmintic, purgative, useful in fevers, applied to kill maggots. Leaf juice with milk and opium is given in gonorrhea. Dried root powder is administered during labour to increase uterine contraction. It is externally applied on joint pains and skin diseases. Folk medicine - Fresh juice is given during labour and also used as purgative, anthelmintic. Juice
with castor oil is applied on eczema.

Specimens examined: Pune - Upadhye (17709, AHMA).


Shrubby twiners; leaves linear-oblong to obovate; flowers in axillary racemes, whitish-green with brownish tip; capsules opening from below upwards. Fl - Fr: November - February. Local name: Sapsand (M.); Iswari (S.). Locality: Pune, Alibag, Pen-Miradongar, Kashele, Murbad. Occasionally found on hilly slopes.

Medico-botany: Parts used - Root, leaves, seeds.

Literature - Root is bitter, purgative, emmenagogue; useful in bowel troubles of children, tonic, dry powder with honey is useful in leucoderma. Seeds are useful in inflammation, and dry cough. Useful in 'tridosha', febrifuge, stimulant, stomachic. Useful in snake-bite.

Folk medicine - Whole plant is dried and powdered. It is useful during child birth, good febrifuge. It is used by Thakar community in snake-bite. It is found that, Thakar Vaidus cultivate this plant near his hut as he can easily get fresh drug as and when needed.

Specimens examined: Kanakeshwar - Vartak (15487, AHMA);
PIPERACEAE

Piper L.

1. Upper leaves sessile, lower petiolate
   1. All leaves petiolate
      2. Leaves 7 nerved
         .. P. longum
      2. Leaves 5-9 nerved
         .. P. nigrum


Stems with many adventitious rootlets; leaves broad, cordate, unequal at base, 7-nerved; spikes dense. Fl - Fr: Not seen. Local name: Nag-vel, Vidyache pan (M.); Nag-valli (S.). Locality: Pune, Sajjangad. Native of Java, cultivated for leaves.

Medico-botany: Parts used - Leaves, root. Literature - Leaf is pungent-sweet, carminative, stomachic, laxative, useful in thirst, asthma. Leaf juice is antiseptic, dropped into eyes in painful affections. Oil from leaves is used in catarrhal disorders. Roots are used to produce sterility in woman. Folk medicine - Warm leaf smeared
with oil is applied on abscesses, which helps in easy ripening of it. It is also applied on chest in difficulty of breathing. Crushed leaves are externally applied to the chest as galactagogue. Betel leaf is a famous masticategy. It has great demand and many horticultural varieties are grown having different size and flavours. It is sold in every market from small village to cosmopolitan cities. Leaf has got honour in worshipping God in all Indian communities.

Specimens examined: Pune - Upadhye (17710, AHK'A).


Stems cylindrical, thickened at nodes; leaves ovate, cordate; flowers in solitary spikes; seeds ovoid, shining. Fl - Fr : September - January. Local name : Pimpali (M.); Pippali (S.). Locality : Pune, Kashele. Cultivated for fruits.

Medico-botany: Parts used - Fruit, root. Literature - Root is pungent, stomachic, laxative. Root extract is given after child birth. Fruit is hot, bitter. Long pepper is recommended in peculiar manner. Drug is started with infusion of three long peppers taken with
honey on first day and dose is to be increased by three long peppers every day, for ten days. Then the dose is to be gradually reduced. This is common Ayurvedic practice, said to act as valuable tonic and known as 'Vardhaman Pimpali'. It is also recommended in chronic cough. Long pepper, black pepper and rock salt is given in colic. Dried fruit powder is extensively used to get relief from cough. It is well known tonic of Ayurveda. Used as a single drug and also used in compound preparations. Dried fruit and root are sold in the market.

Specimens examined: Nagaon - Sane (15496, AHMA); Nagaon - Gunjatker (16503, AHMA).


Climbers, thickened at nodes; leaves coriaceous, 5-9-nerved; flowers in interrupted spikes; fruits first yellow, becomes red after ripening. Fl - Fr : October - February. Local name: Miri, Kali-miri (M.); Marich (S.). Locality: Pune. Seen cultivated for fruits.

_Medico-botany:_ Part used - Fruits. _Literature:_ Fruit is hot, pungent, anthelmintic, alterative, useful in piles, urinary discharges, aromatic stimulant, helpful in weakness
after fever, good appetiser, useful in arthritic pains, locally applied on sore-throat, piles and skin diseases. Fruit is rubbed in cold water and applied externally on skin diseases. Dried, powdered fruit is mixed with ghee and externally applied on allergic rashes and piles. It is employed as stimulant, antiperiodic and rubefacient. Fruit is well-known Ayurvedic drug. Useful in many compound preparations. Sold in market. Used in recipes as condiment and spice.


MYRISTICACEAE  

Myristica L.  

1. Main nerves less than 8 pairs, reddish, prominent
   ... M. fragrans

1. Main nerves 8-14-pairs, not prominent
   ... M. malabaria


Lofty trees; leaves coriaceous nerves red beneath, prominent pairs less than 8; male flowers in racemes; fruit ovoid with aril. Fl - Fr: Not seen. Local name: Jaiphal (M.); Jatiphal (S.). Locality: Pune, Alibag, Koyna. Rarely seen cultivated.
Medico-botany: Part used - Fruit. Literature - Fruit is bitter, anthelmintic, aphrodisiac, improves taste. Oil is extracted from fruits is stimulant, carminative, useful in diarrhoea and externally applied on joint pains. Nut and mace is diuretic, galactogogue. It is a household remedy. Nut is rubbed with milk and mixed with sugar, is recommended as antidysenteric. Nut is flavouring agent. Nut and mace is used as spice. Nut is sold in market.


Tall shrubs; leaves coriaceous, lanceolate; flowers dioecious; fruits elongate, aril yellow. Fl - Fr: November - March. Local name: Ranjaiphal (M.). Locality: Rarely seen in semievergreen forests.

Medico-botany: Part used - Seed. Literature - Seed suspension with milk is given in bloody stools. Oil is used as *M. fragrans*.

Specimens examined: Museum Specimen - MACS; Vasotafort - Kumbhojkar (17168, AHMA).
LAURACEAE

1. Twining parasites .. Cassytha

1. Trees

2. Leaves tri-nerved .. Cinnamomum

2. Leaves penninerved .. Actinodaphne

Actinodaphne Nees.

Actinodaphne angustifolia Nees in Wall. Pl. As. Rar.
FBI. 5 : 149; G. 2 : 31; KB. 3 : 2156; GIMP : 6; GBMP :
9. Ill. KB. : 832 (Plate 5.10A).

Small trees; leaves crowded at the ends of branches, coriaceous; young leaves silky pubescent; flowers dioecious, yellow; fruits dark red. Fl - Fr : September - December. Local name : Pisa (M.). Locality : Mahabaleshwar, Varandha, Ambavne, Bhimashankar. Common in semievergreen forests.

Medico-botany : Parts used - Leaves, seeds. Literature - Leaf infusion is given in urinary disorders. Oil from seeds is externally applied on sprains. Folk medicine - Leaf juice is given to get relief from stomach pain. Seed-oil is applied externally on joint pains. Seed oil is non-edible and used in soap industry.
A - Actinodaphne hookeri Meissn. seed oil is useful on rheumatic pains.

B - Costus speciosus Smith catching good commercial value
Specimens examined: Harishchandragad - Vartak (6886, AHMA); Bhimashankar - Ghate (17171, AHMA).

Cassytha L.

Cassytha filiformis L. Sp. Pl. 35. 1753. FBI. 5: 188.
KB. : 835B.


Medico-botany: Part used - Whole plant. Literature - Tonic, alterative, mixed with oil and used as hair tonic. Mixed with butter and ginger and used for cleansing inveterate ulcers.

Specimens examined: Mapgaon - Sane (15490, 15491, AHMA).

Cinnamomum Bl.

KB. : 830A.

Middle sized, evergreen trees; bark pale, smooth,
young parts glabrous; flowers in loose panicles; fruits dark purple. Fl - Fr: November - March. Local name: Dalchini (M.); Tamalpatra (S.). Locality: Bhimashankar, Bhandardara, Varandha. Found in semievergreen forests.

Medico-botany: Part used - Bark. Literature - Bark is aromatic, astringent, stimulant, carminative, useful in checking nausea and vomiting.
Dried bark is sold in market. It is used as spice and flavouring agent.

Specimens examined: Bhimashankar - Vartak (6897, AHMA).

**THYMELEAECEAE**

*Gnidia L.*


Branched shrubs; leaves subsessile, oblong, glaucous, flowers in terminal heads, yellow with silky bracts; fruit enclosed in perianth. Fl - Fr: November - May.
Local name: Rametha, Datpadi (M.). Locality: Throughout the area at higher altitude. Commonly found at higher altitude in moist and semievergreen forests.
Medico-botany: Parts used - Leaves, bark. Literature - Leaves are powerful vesicant. Bark is used as fish poison. Folk medicine - It is believed that chewing of any plant part results in teethfall, hence locally called as Dat-padi. One medico-practitioner from Pune claimed one miraculous property of this species. Leaf juice when rubbed on external ear, it is resulted in regaining sense of hearing. It needs more scientific studies, if proved true, it can be beneficial to mankind.

Bark is used by local people for tying fuel wood branches. Stem and bark can also yield good quality paper.

Specimens examined: Hirdoshi - Vartak (6925, AHMA); Mahabaleshwar - Vartak (14228, AHMA).

ELAEAGNACEAE

Elaeagnus L.


Large, scandent shrubs; running over trees with rust colour shining scales; leaves coriaceous, lower surface white shining. Fl - Fr: October - February. Local name: Angul (M.). Locality: Ambavne, Bhimashankar, Khandala,

**Medico-botany:** Parts used - Flowers, fruits. 

Flowers are *cardiac*, astringent. Fruit is astringent. 

Fruits are eaten raw. Sold in local markets seasonally.

Specimens examined: Raigad - Vartak (6929, AHMA).

**Loranthaceae**

1. Leaves present
   1. Leafless

   **Dendrophthoe** Mart.


   Branched parasites; leaves thick, coriaceous, linear-oblong; flowers in axillary racemes, orange; fruit berry. 

   Fl - Fr: December - March. Local name: Bandgul (M.); Bandak (S.). Locality: Pune, Bhor, Torna, Siddheshwar. Commonly found on tall lofty trees.
Medico-botany: Parts used - Bark, flowers. Literature - Bark is astringent, narcotic, useful in wounds, asthma, menstrual discharges and constipation. Folk medicine - Flowers are crushed, warmed and applied on swellings.

Specimens examined: Karnala - Mandavgane (6938, AHMA); Lonavla - Gunjatkar (16509, AHMA).

Viscum L.


Leafless shrubs; branches jointed, linear-flattened; flowers in fascicles at nodes, minute; fruits berry. Fl - Fr: June - October. Local name: Had-sandhi (M.).
Locality: Pune, Kashele, Murbad. Hanging on lofty trees.

Medico-botany: Part used - Whole plant. Literature - Plant is given in fever attended with aching limbs. Useful in diseases of blood, ulcers and epilepsy. Folk medicine - Plant is crushed and applied on fractures. It is claimed that it is a very good remedy for joining bones, hence vernacularly called as Had-sandhi.

Specimens examined: Katraj - Vartak (6914, AHMA); Harishchandragad - Vartak (14152, AHMA).
SANTALACEAE

Santalum L.


Small trees; heart-wood yellow, scented; leaves elliptic, glabrous; flowers in panicles, brownish red; fruit drupe, blackish. Fl - Fr : February - July. Local name : Chandan (M.); Shrikhand (S.). Locality : Pune, Awsari ghat, Kanakeshwar, Ambavde. Found wild as well as cultivated. In Awsari ghat growing wild with cultivated Eucalyptus and Subabul.

**Medico-botany** : Part used - Wood. **Literature** - Wood is cooling, antipyritic, aphrodisiac, useful in heart diseases, thirst, burning sensation, bronchitis. Oil is extracted from wood useful in many preparations. Paste made by grounding up wood with water is applied on skin diseases. Wood powder with coconut water is given in thirst. **Folk medicine** - Wood paste with water is applied externally as cooling agent. It relieves headache, also applied on swellings.

Woodpaste in water is applied in temples on forehead. Used in worshiping God. Oil is useful in perfumery. Wood carving gives many useful articles. Wood costs high. Wood powder is useful in making 'Agarbatti' and cosmetics.
Specimens examined: Ambavde - Vartak (6999, AHMA);
Kanakeshwar - Sane (15499, AHMA).

EUPHORBIACEAE

1. Herbs
2. Prostrate plants
   .. Chrozophora
3. Erect plants
4. Leaves with entire margin
   4. Stamens 3 .. Phyllanthus
   4. Stamens 5 .. Kirganelia
5. Leaves toothed
6. Leaf-base 2-glandular .. Baliospermum
   6. Leaf-base eglandular .. Tragia
   6. Plants with stinging hairs .. Acalypha
7. Leaves palmate or pinnate
8. Leaves palmate
9. Leaves 3-lobed .. Jatropha
9. Leaves 5-7-lobed .. Ricinus
8. Leaves pinnate .. Emblica
7. Leaves entire
10. Leaves 3-nerved at base .. Mallotus
10. Leaves with single midrib and many lateral pairs
11. Plants with milky latex
12. Trees
   .. Sapium
12. Shrubs
   .. Euphorbia
11. Plants with watery latex
13. Leaves peltate  .. Macaranga
13. Leaves other than peltate
14. Shrubs
15. Dioecious  .. Homonoia
15. Monoecious  .. Breynia
14. Trees
16. Fruit stone  .. Drypetes
16. Fruit other than stone
17. Corolla absent  .. Glochidion
17. Corolla present
18. Fruit drupe  .. Bridelia
18. Fruit capsule  .. Croton

**Acalypha L.**


KB. : 875A.

Annuals; leaves thin, glabrous; flowers in axillary spikes; fruit capsule. Fl - Fr : June - September. Local name: Kupi, Khokhli (M.); Haritmangiri (S.). Locality: Throughout the area. Common weed; found on moist waste lands.
Medico-botany: Parts used - Whole plant, root, leaves.

Literature - Plant is emetic; expectorant, substitute for senega; useful in bronchitis, pneumonia and asthma. Root is cathartic. Leaf powder is laxative, emetic, increases secretion of pulmonary organs, useful in earache, constipation. Folk medicine - Leaf juice is externally applied on skin diseases. Leaves are crushed and a ball to the size of marble is made; it is introduced into the rectum. It is claimed that this is useful in relieving constipation of children. Dry leaf powder with honey is given as expectorant.

Specimens examined: Karnala - Vartak (7029, 7030, 7031, AHMA).

Baliospermum blume


Herbs; upper leaves small, lower large, base 2-glandular; flowers in axillary racemes; capsules hairy. Fl - Fr: December - February. Local name: Danti, Jamalgota (M.); Danti (S.). Locality: Karnala, Pen-Varsai, Kashele. Found on open places in monsoon forests.
Medico-botany: Parts used - Root, seeds, leaves. Literature - Root is purgative, anthelmintic, diuretic, useful in enlargement of spleen, anaemia and jaundice. Seeds are substituted for Croton tiglium. Also applied locally as stimulant and rubefacient. Leaf decoction is given in asthma. Folk medicine - Root is diuretic, abortifacient. It is believed to be excellent remedy on ascitis in Pen-Varsai area. Fresh root decoction is given in such cases.

Specimens examined: Karnala - Datar (7046, 7047, 7048, AHMA).

Breynia Forst.

Wt.Ic.: 1897.

Shrubs; leaves membranous, elliptic; flowers monoecious; fruit on enlarged colored calyx; seed arillate.
Fl - Fr: April - July. Local name: Kangli (M.). Locality: Throughout the area. Found in dry deciduous forests.

Medico-botany: Part used - Whole plant. Literature - Plant is astringent to bowels. Juice is useful in conjunctivities.

Specimens examined: Pune - Upadhye (17707, AHMA).
Bridelia Willd.


Deciduous trees; leaves elliptic-oblong, coriaceous; flowers dioecious, greenish-yellow; drupe fleshy. Fl - Fr: May - October. Local name: Asana (M.). Locality: Throughout the area. Common in deciduous forests.

**Medico-botany**: Part used - Bark. **Literature**: Bark is astringent. Bark with gingeli oil is applied as liniment on rheumatism. **Folk medicine**: Bark paste in water is applied externally on swelling. Leaves are used as 'Bidi patta' in Bhandardara area.

Specimens examined: Gunjavni - Vartak (7073, AHMA); Kanakeshwar - Sane (15510, AHMA).

Chrozophora Neck.


Prostrate, woody herbs; leaves orbicular, pubescent; flowers in axillary racemes; capsules woody. Fl - Fr: February - June. Local name: Suryavarti (M.). Locality: Throughout the area. Found on road-sides and in rice fields.
Medico-botany: Parts used - Root, leaves, seeds. Literature - Root ash is useful in cough. Seeds are purgative. Leaves are depurative.

Specimens examined: Ambavde - Vartak (7093, AHMA); Karnala-Vartak (7096, AHMA).

**Croton L.**

1. All plant parts clothed with silvery scales
   - *C. oblongifolius*

1. Silvery scales absent
   - *C. tiglium*


Middle-sized trees; covered with orbicular, silvery scales; leaves crowded at the end of branches; flowers axillary; capsules trilobed. Fl - Fr: Seen in fruits - November. Local name: Ghan-sar (M.). Locality: Malshej ghat. This species is only seen in Malshej ghat. - Rare.

Medico-botany: Parts used - Bark, root, fruit. Literature - Bark, root and fruit are purgative. Bark is alterative. Leaves are externally applied on scabies.

Specimens examined: Malshej ghat - Upadhye (17711, AHMA).
Evergreen trees with stellate hairs; leaves ovate, lanceolate; flowers axillary; capsule tri-lobed, glabrous. Fl - Fr: January - March. Local name: Jamalgota (M.); Nag-Danti (S.). Locality: Pune. Cultivated. Naturalized in the area.

Medico-botany: Parts used - Fruit, seeds. Literature - Fruit and seeds are purgative. Oil is extracted from seeds and has great demand in medicine. It is used in mental troubles, convulsions, abdominal diseases, fevers, and insanity. Oil is used in many ayurvedic preparations.

Specimens examined: Pune - Upadhye (17712, AHMA).

Drypetes Vahl


Evergreen trees; leaves shining, dark green, flowers deoecious; fruit stone. Fl - Fr: March - June. Local name: Putranjiva (M.). Locality: Khandala, Alibag, Pune. Found in evergreen patches, also cultivated.
Medico-botany: Parts used - Leaves, bark, seeds.

Literature - Decoction of leaves, bark and seeds are given in colds and fevers.

It is believed by local people that if stones neckless in thread is tied around child neck, it gives long life to child.

Specimens examined: Karnala - Vartak (7294, AHMA); Pune - Upadhye (17570, 17571, AHMA).

**Emblica Gaertn.**


Trees with crooked trunk; leaves subsessile, pinnate; flowers in axillary fascicles; fruit glabose, fleshy, with vertical furrows. Fl - Fr: March - September. Local name: Avla (M.); Dhatri (S.).

Locality: Throughout the area. Common in dry deciduous forest.

Medico-botany: Parts used - Fruit, Flowers, leaves, stem. Literature - Fruit is sour, carminative, laxative, tonic, useful in burning sensation, vomiting,
urinary discharges, constipation, anaemia. Unripe fruit is cooling, diuretic, laxative. Flowers are cooling, aperient. Main constituent of 'Triphala'. Fresh stem bark with honey and turmeric is given in gonorrhoea. Leaves with fenugreek seeds are given in chronic dysentery. Folk medicine - Fruit is used as mentioned in literature. For toothache young stem is chewed. In decayed tooth watery latex is filled.

Fruit is natural source of Vit. C. Used in many preparations and food products. The chief Ayurvedic preparations are 'Triphala-churna' and 'Chavanprash'. In Ayurveda 'Amla' is not only a medicine but is 'Rasayana'. It is very good tonic and daily consumption of it helps to maintain young, healthy, safe, sound and beautiful life. It is also believed in ancient times Rishis austere ascetic years together using 'Amla'. In many herbal cosmetics 'Avla' is used. It is also demanded by local people for recipes like 'Moravla' and 'pickels'. 'Moravala' a homemade remedy useful in many disorders. Like 'Chavanprash' daily consumption of it is tonic and keeps person healthy. It is also demanded in local products as 'Avala Supari'.

In the areas under study, tribals mainly Thakars, collect fruits from forest and sell in market. It is a chief minor forest product and helps aborigines economically. Fresh fruit, many Ayurvedic preparations and compound products are sold in the market. Almost all pharmaceuticals and medicos practitioners use fruit in their
preparations.

Specimens examined: Karnala - Datar (7118, AHMA); Pune - Ghate (17196, AHMA).

**Euphorbia L.**

1. Leaves absent
   - .. **E. tirucalli**

1. Leaves present

2. Small trees

3. Spines present

4. Spines spirally arranged
   - .. **E. nerrifolia**

4. Spines vertically arranged
   - .. **E. nivulia**

3. Spines absent
   - .. **E. antiquorum**

2. Herbs

5. Leaves less than 1 cm.
   - .. **E. thymifolia**

5. Leaves more than 1 cm.
   - .. **E. hirta**


Small trees with stout trunk; branches green, fleshy; leaves deciduous, flowers in cymes. Fl - Fr: Flowers in July-August, fruits not seen. Local name: Narasya (M.).

Not common.
Medico-botany: Parts used - Whole plant, root bark, stem.

Literature - Plant is purgative, digestive, pungent.

Root bark is purgative. Plant juice is useful in rheumatism, toothache, nervine diseases, dropsy; locally applied on cutaneous affections.

Specimens examined: Museum specimen in MACS.

**Euphorbia hirta** L. Sp. Pl. 454. 1753. FBL. 5 : 250;

Annual hispid herbs; leaves reddish above; cyathia axillary or terminal; capsules breaking into 3 cocci.

Fl - Fr: Throughout the year. Local name: Dhdi (M.); Nagarjuni (S.). Locality: Throughout the area. Common weed in gardens, roadsides and cultivated lands.

Medico-botany: Part used - Whole plant. Literature - Plant is useful in worms, bowel complaints, cough, dysentery, colic. Plant decoction is given in bronchial affections and asthma. Plant latex is applied on warts. Folk-medicine - Plant juice is given as expectorant. It is also recommended in bronchitis and said to be very good remedy in asthma. Milky juice is externally applied on skin diseases.

Specimens examined: Ambavde - Vartak (7152, AHMA);
Pune - Ghate (14739, AhMA).


Fleshy trees with spirically arranged spines; leaves towards end of branches; flowers in cymes, central male flower with two lateral bisexual flowers. Fl - Fr : January - March. Local name : Nivdung (H.); Sahunda (S.). Locality : Throughout the area. Common in dry deciduous and scrub forests. It is also locally cultivated on field boundaries.

Medico-botany : Part used - Milky juice. Literature - Milky juice is purgative, diuretic, useful in dropsy, rheumatism, abdominal troubles. It is employed in earache. Folk medicine - Milky juice is used in very small doses. For small calculated doses, black pepper seeds are dipped only once in fresh latex and dried. These dried black pepper seeds are used to cure stomach-ache. Latex is externally applied on joint pains.

Specimens examined : Museum specimen in MACS.

Trees with vertically arranged spines; leaves sessile, fleshy; flowers in cymes; capsules trilobed.
Fl - Fr: Flowers January - February, fruits not seen.
Local name: Nivdung (M.). Locality: Throughout the area.
It is distributed on dry-hilly slopes. Commonly intermixed with \textit{E. nirifolia}.

Medico-botany: Parts used - Leaf juice, root bark, latex.

Literature - Leaf juice is purgative, diuretic, useful in earache. Root bark is useful in dropsy. Latex is applied externally on rheumatism.

Specimens examined: Museum specimen in MACS.

KB.: 847.

Annual herbs; prostrate; leaves opposite, flowers axillary; capsules pubescent. Fl - Fr: Most of the year.
Local name: Nayali, Dudhi (M.); Laghu-dugdhika (S.).
Locality: Pune. Abundantly found in the area.

Medico-botany: Parts used - Leaves, latex, seeds.

Literature - Leaves and seeds are astringent, stimulant,
given in bowel complaints. Latex is applied on ring-worms.

Specimens examined: Mutha riverside (Pune) - Vartak (7170, AHMA); Pashan - Vartak (14078, AHMA).


Leafless (or leaves small, coducous) with erect, smooth branches; flowers in clusters, capsules velvety. Fl - Fr : August - January. Local name: Sher, Thor, Nival (M.). Locality : Pune. Native of Africa, commonly cultivated as hedge plant as cattle do not touch it.

**Medico-botany**: Part used - Latex. **Literature**: Latex is purgative, carminative, useful in gonorrhea, cough, asthma, colic, tumers, dropsy and abdominal troubles. Applied externally on warts and joint-pains. It is commonly cultivated in gardens. A twing of plant is hanged in the house to keep away flies.

Specimens examined: Pune - Upadhye (17713, AHMA).

**Glochidion** Forst.

**Glochidion ellipticum** Wight Icon. Pl. Ind. Orient. f. :
Small trees; leaves elliptic, acuminate, stipulate, shining; male flowers greenish-yellow, female flowers yellow; capsules turnip shaped. Fl - Fr: January - May. Local name: Bhoma (M.). Locality: Raigad, Haireshwar, Ambavne, Bhandardara, Malshej ghat. Abundently found in evergreen and semievergreen forests.

Medico-botany: Part used - Bark. Literature - Bark is given when stomach revolts against food.

Specimens examined: Raigad - Vartak (7190, AHMA); Haireshwar - Vartak (7193, AHMA).

**Homonoia Lour.**


Pubescent shrubs; leaves linear, lanceolate, toothed, clothed with orbicular scales beneath; flowers in spikes, dioecious; capsules globose. Fl - Fr: January - April. Local name: Sherni (N.); Pashanbheda (S.). Locality: Pune, Pen, Ambavade, Bhandardara, Harishchandra gad. Commonly seen in river beds.
Medico-botany: Part used - Root. Literature - Root decoction is useful in piles and syphilis. Root is diuretic, laxative, given in urinary discharges.

Specimens examined: Ambavde - Vartak (7206, AHMA); Harishchandragad - Vartak (7212, AHMA).

**Jatropha L.**

1. Flowers red
2. Petioles with gland tipped bristles
3. Leaf margins with gland tipped bristles

1. Flowers greenish-yellow
2. Petioles eglandular
3. Leaf margins eglandular


Small trees, grows rapidly; leaves 3-5 lobed, base triangular; flowers greenish-yellow, fruit physic-nut. Fl - Fr: July - October. Local name: Moglieranda (M.). Locality: Pune, Kankeshwar, Kashele, Sajjangad. Native of tropical America, cultivated as hedge plant.
Medico-botany: Parts used - Stem, latex, leaves, fruit, seeds. Literature - Seeds are purgative. Fruit is anthelmintic, useful in urinary discharges, abdominal complaints and diseases of heart. Leaves are applied externally on mammary as lactagogue. Twigs are used as tooth-brush. Latex is externally applied on scabies, eczema and ring worm. Folk medicine - Local tribes use this plant same as mentioned in literature. Oil can be extracted from seeds and is externally applied on rheumatic pains. Latex is applied on wounds as antiseptic.

Extensively cultivated as hedge plant as it grows fast and makes thick compound.

Specimens examined: Pune - Vartak (7214, AHMA); Kanakeshwar - Sane (15525, AHMA); Pune - Upadhye (17566, 17567, AHMA).

Jatropha glandulifera Raxb. Fl. Ind. 3: 688. 1832.

Evergreen trees with yellow juice; leaves palmate, lobed, margins serrate, glandular; flowers in cymes, greenish-yellow, monoecious, capsule oblong, trilobed. FI – Fr: August – January. Local name: Lal-erand (M.).
Locality: Pune. Found on open waste lands.
Medico-botany: Parts used - Seeds, root. Literature -
Oil can be extracted from seeds, is purgative. Root is
useful in piles, asthma, swellings.

Specimens examined: Pune - Vartak (7220, AHMA); Pune -
Upadhye (17568, AHMA).

Jatropha gossypifolia L. Sp. Pl. 1006. 1753. FBI. 5:
383; C. 3: 94; KB. 3: 2247; GIMP: 145.

Shrubs; leaves 3-5 lobed, petiole glandular,
flowers in cymes, red, glandular. Fl - Fr: August -
January. Local name: Jangli erand (<b>) Locality: Pune.
Native of Brazil, sometimes cultivated, also found
escape.

Medico-botany: Parts used - Bark, leaves, seeds, root.
Literature - Bark is emmenagogue. Leaves are applied on
skin diseases and boils. Seeds are emetic. Root paste
in water is given to children suffering from abdominal
enlargements.

Specimens examined: Kanakeshwar - Sane (15527, AHMA).

Jatropha multifida L. Sp. Pl. 1006. FBI. 5: 383; C. 3:
95; KB. 3: 2243; GIMP: 145; GIMP: 125. Ill. KB: 
868.
Shrubs; leaves long petiolar with multifid stipules; flowers in cymes red.
Local name: Jyotishka (M.). Locality: Pune.
Cultivated as ornamental plant, native of America.

Medico-botany: Parts used - Fruit, seed. Literature - Fruit is pungent, purgative, useful in wounds, skin diseases and vomiting. Seeds are purgative and emetic.

Keirganelia Juss.


Straggling shrubs; leaves variable, elliptic-rounded; flowers axillary; fruit fleshy berry, purple.
Fl - Fr: June - March. Local name: Puvan (M.); Krishna-Kambaji (S.). Locality: Throughout the area. Commonly found near river banks.

Medico-botany: Parts used - Leaves, bark. Literature - Crushed leaves with camphor are chewed in bleeding gums and mouth ulcers. Bark is alterative, cooling. Folk medicine - Leaves are chewed in mouth ulcers. Bark infusion is given to lessen inflammation.
Specimens examined: Haisreshwar - Vartak (7238, AHMA); Nagaon - Sane (15529, AHMA).

**Macaranga Thouars**


Small trees; leaves entire, peltate, glandular below; flowers dioecious, male flowers in sessile heads, female flowers in panicles; capsules hairy, glandular.

Fl - Fr : January - October. Local name : Chandada (M.).

Locality : Throughout the area. Commonly found in semi-evergreen forests.

**Medico-botany :** Part used - Gum. **Literature** - Gum is externally applied on venereal sores. Leaves are locally used for making plates (Patravali).

Specimens examined: Lonavla - Ghate (17201, AHMA);
Ambavne - Upadhye (17569, AHMA).

**Mallotus Lour.**

*Mallotus philippensis* Muell. Arg. in Linnaea, 34 : 196.

1865. FBI. 5 : 442; C. 3 : 113; KB. 3 : 2267; GIMP : 160;
Small trees; leaves alternate, entire; flowers dioecious, in spikes; stamens numerous; capsules trilobed, covered with bright-red powder and stellate hairs. Fl - Fr: November - January. Local name: Kunkuphal, Kapila (M.); Kampilaka (S.). Locality: Ambavde, Bhimashankar, Harishchandragad, Ambavne, Bhandardara. Common evergreen tree in moist, dry and mixed deciduous forests.

Medico-botany: Part used - Fruit. Literature - Glands, hair and red powder on fruit is bitter, anthelmintic, cathartic. Applied on scabies and ring worm. Folk medicine - Red powder is good vermifuge. It is given with honey. Red powder mixed with oil and applied on wounds and skin diseases locally.

Kapila or Kamala - a red powder is sold in market. Medico practitioners used it. It is collected by tribals from Bhimashankar area.

Specimens examined: Ambavde - Vartak (7253, AHMA); Harishchandragad - Vartak (7258, AHMA).

**Phyllanthus L.**

1. Trees
2. Herbs

2. Leaf-base cuneate

.. *P. acidus* .. *P. maderaspatensis*
2. Leaf-base obtuse

3. Teples 5  

. P. niruri

3. Teples 6  

. P. urinaria

Industr. bull. 14 B : 17. 1909. Fl. Tamil. Car. 2 : 
C. disticha L. ; KB. 3 : 2227; Phyllanthus distichus 
Muell. ; FBI. 5 : 304; C. 3 : 80; AS 2 : 184. Ill. 
KB. : 862A.

Glabrous, deciduous trees; leaves thin, ovate; 
flowers in racemes, small; fruit fleshy, yellowish 
green. Fl - Fr : September - January. Local name : 
Native of Madagascar, commonly cultivated for fruits.

Medico-botany : Parts used - Leaves, fruits, seeds. 
Literature - Fruit is acrid, sour, improves appetite, 
useful in vomiting, constipation, enriches blood. 
Acid exudation collected from leaves is useful in 
dyspepsia, diarrhea and dysentery. 
Fruit is edible, sold in local market seasonally, made 
into chatany, pickles and sarbat. 

Specimens examined : Pune - Upadhye (17565, AHEIA).

Annuals; leaves elliptic, oblong; flowers monoecious, axillary, yellow; fruit capsule. Fl. - Fr : August - December. Local name : Bhui-avali (M.); Bhuiamlaki (S.). Locality : Throughout the area. Common weed in cultivated lands.

**Medico-botany** : Parts used - Whole plant, root, leaves. Literature - Plant is diuretic, useful in troubles of genito-urinary tract. Root infusion is given in dysentery. Root paste in rice water is given in menorrhea also used to lessen oedematous swellings and ulcers. Leaf poultice is applied on bruises. Folk medicine - Whole plant is crushed and given raw to cure jaundice. Dried whole plant is sold in market.

Specimens examined : Kalsubai - Vartak (7276, AHMA); Karnala - Vartak (7279, AHMA).


Woody annuals; leaves variable; flowers axillary; capsules globose, trilobed. Fl. - Fr : August - December.
Local name: Kanocha (M.). Locality: Pune. Found as weed in dry areas.

**Medico-botany**: Part used - Leaves, whole plant.

**Literature**: Leaves are expectorant, carminative, laxative, astringent, tonic, useful in headache. **Folk medicine**: Plant infusion is diuretic.

Specimens examined: Pashan - Vartak (7269, AHMA); Sinhagad - Vartak (7270, AHMA).

*Phyllanthus urinaria* L. Sp. PI. 982. 1753; FBI. 5 : 293; C. 3 : 83; KB. 3 : 2223; GIMP : 190; AS 2 : 183. Ill. KB. : 859B.

Glabrous annuals; leaves sessile, linear, stipulate; flowers axillary, yellow; capsules globose. Fl - Fr : August - November. Local name: Bhui-avali, Lalmudra (M.); Tamravalli (S.). Locality: Karnala, Pune, Khandala, Kanakeshwar. Weed in cultivated lands, **many times** mistaken as *P. niruri*.

**Medico-botany**: Part used - Whole plant. **Literature**: Plant is diuretic, useful in thirst, branchitis, genito-urinary troubles. Root is given to sleepless children.

Specimens examined: Karnala - Vartak (7287, AHMA); Kanakeshwar - Sane (15536, AHMA).
*Hicinusa* L.


Small trees; stems hollow; leaves 5-7-lobed, serrate; flowers monoecious, in terminal racemes, male on upper portion and females below; capsules prickly.

Fl - Fr : March - June. Local name : Erand (M.,S.).

Locality : Throughout the area. Cultivated. Sometimes found escape. Cultivated near every wadi or village. Probably native of Africa.

Medico-botany : Part used - Every plant part is used medicinally. Literature : Root is healing, carminative, purgative, alterative, useful in skin-diseases. Leaf poultice is applied on boils, relieves headache, cooling. Seed and seed oil is purgative, applied on skin diseases. Also administered in bowel complaints of children. Oil is externally applied on rheumatic pains. Folk medicine - Leaves are galactagogue. In jaundice daily one crushed leaf is recommended with milk for seven days. It improves appetite. Oil is used as purgative. It is believed that in small doses it is purgative but in large doses it results in constipation. Though it is exotic species, it is naturalized and
used in Ayurvedic medicine years together. It is used in many compound Ayurvedic preparations. Oil is also used as lubricant and in soap industry. This species has great market value and has economical potential. It can be cultivated on field boundaries as grows straight and also survive in poor soil. Erandmul, seeds and oil is sold in the market.

Specimens examined: Karnala - Mandavgane (7295, AHMA); MACS Garden - Upadhye (14922, AHMA).

*Sapium* P. Br.


Deciduous trees; leaves crowded at the ends of branches; flowers when tree is bare of leaves; monoecious, flowers in spikes. Fl - Fr : October - February. Local name: Dudla (M.). Locality: Pune, Ambavde, Lavarde, Bhandardara. Occasionally seen in dry deciduous and moist forests.

Medico-botany: Part used - Milky latex. Literature - Latex is resisant.

Specimens examined: Gunjavni - Vartak (7297, AHMA);
Tragia L.


Hispid herbs with shining hairs; leaves serrate, hairy; flowers monoecious; capsules tri-valved. Fl - Fr: October - December. Local name: Khajkolti (M.).

Locality: Mahabaleshwar, Khandala. Abundant.

Medico-botany: Part used - Root. Literature - Root is alterative, given in fevers and intermit colds. Applied on skin diseases.

Specimens examined: Mahabaleshwar - M. Zekiel (25253, Blatter); Khandala - Santapau (6816, Blatter).

**ULMACEAE**

1. Fruit samara
   
   **Holoptelea**

1. Fruit drupe

2. Leaves glaucous beneath
   
   **Trema**
2. Leaves not glaucescent beneath ... *Celtis*

*Celtis* L.

*Celtis timorensis* Spanogle L.ima 15: 343. 1841; F1.


Evergreen trees; branches tomentose; young leaves membranous; flowers in paniculate cymes, small, greenish-yellow; drupe fusiform, beaked. Fl - Fr: February - May. Local name: Burmaj, Nivli (M.). Locality: Kanakeshwar, Ambavde, Ambavne. Found in evergreen patches and semi-evergreen forests, not common.

Medico-botany: Part used - Wood. Literature - Wood is blood purifier when taken with lemon juice.

Specimens examined: Ambavde - Vartak (7325, AHMA); Kanakeshwar - Sane (15542, AHMA).

*Holoptelea* Planch.

Deciduous trees; leaves ovate, elliptic; flowers in racemes at scars of fallen leaves, male and herma­phrodite flowers are mixed together; fruit samara with reticulately veined wings. Fl - Fr : February - April. Local name : Wavla (M.); Chirbilva (S.). Locality : Throughout the area. Found in dry and moist deciduous forests, also planted as roadside tree.

Medico-botany : Parts used - Bark, leaves, seed.

Literature - Bark suspension in water is applied on rheumatic pains. Seed is applied on skin diseases.

Folk medicine - Leaves are boiled in oil and applied on wounds. Bark is boiled in water and mucilagenous suspen­sion extracted is applied on rheumatic pains. Sometimes bark is tied on the rheumatic pains. Seed is pounded in water and applied on ringworm. Seeds are eaten by children.

Specimens examined : Ganjawni - Vartak (7335, AHMA); Kanakeshwar - Sane (15543, AHMA); Waghjaicha donger (Pune) - Upadhye (17573, 17574, AHMA).

Trema Lour.

Small evergreen trees; leaves oblong, dark-green; flowers in axillary cymes, greenish; fruit drupe. Fl - Fr: September - March. Local name: Gol (M.). Locality: Throughout the area. Commonly seen on hilly slope. A pure formation of this species is observed on way from Khopálvi (Thane district) to Ahupe (Pune district).

Medico-botany: Part used - Whole plant. Literature - Plant is used in epilepsy.

Specimens examined: Rajgad - Vartak (7347, AHMA); Khandala - Ghate (17219, AHMA).

MORACEAE

1. Inflorescence a hypanthodium
2. Fruits simple
3. Fruits berry
4. Fruits syncarp

.. Ficus
.. Streblus
.. Morus
.. Artocarpus

Artocarpus Forst.

Artocarpus heterophyllus Lam. Encycl. 3: 209, 1789.
Huge, evergreen trees, leaves coriaceous dark-green, shining above; flowers on fleshy recepticles with short stalk; fruit aggregate syncarp. **Fl - Fr**: November - June. Local name: Phanas (M.); Panas (S.). Locality: Pune, Karnala, Kanakeshwar, Ambavne, Lavarde. Cultivated, also found wild in sacred groves and evergreen areas.

**Medico-botany**: Parts used - Leaves, root, fruit, stem. **Literature** - Leaves are useful in skin diseases. Root is given internally to cure diarrhea. Fruit is carminative, tonic, laxative. **Folk medicine** - Dried stem bark is pounded into paste and applied on cuts and wounds. Tree yields good timber and also valued for edible fruits. Healthy tree can produce 40-60 fruits yearly. Unripe and ripe fruit is sold in local market.

Specimens examined: Karnala - Kandasvane (7448, AHMA); Ambavne - Ghate (17220, AHMA).

**Ficus L.**

1. Trees dioecious
   
   .. **F. carica**

1. Trees monoecious
2. Figs on special shoots
   3. Leaves opposite  ..  F. hispida
   3. Leaves alternate ..  F. racemosa

2. Figs in axil of fallen leaves
   4. Figs stalked  ..  F. exasperate
   4. Figs sessile

5. Leaves caudate
   6. Receptacle depressed at apex ..  F. religiosa
   6. Receptacle not depressed at apex ..  F. rumphi

5. Leaves not caudate
   7. Leaves obtuse at apex ..  F. bengalensis
   7. Leaves bluntly apiculate at apex ..  F. microcarpa


Large, evergreen trees, sending prop roots; leaves ovate, glabrous; figs axillary sessile, globose. Fl - Fr : February - July. Local name : Wad (K.); Wat (S.).

Locality : Throughout the area. Usually lofty trees are seen around local shrines near every village.

Medico-botany : Parts used - Milky juice, bark, leaves, seeds, prop roots. Literature - Bark infusion is tonic, useful in dysentery. Milky juice is applied externally
on rheumatic pains. Seeds are cooling, tonic. Leaf-poultice is applied on abscesses. **Folk medicine** - Prop roots are crushed and given internally, are said result in increase in height.

This is a religious tree and worshiped by every Hindu community. Figs are edible and occasionally eaten by tribal communities. Popular tree, grown in house as 'Bonsai'.

Specimens examined: Pune - Vartak (7459, AHKA); Katraj - Vartak (7461, AHMA).


Small, deciduous trees; leaves cordate; dioecious, fig shortly pyriform. Fl - Fr: February - May. Local name: Anjir (M.); Phalgu (S.). Locality: Pune district. Cultivated at various places in Pune district for edible fruits.

**Medico-botany**: Part used - Fig. **Literature** - Fig is nutritive, demulcent. Fig-pulp is mucilaginous and is given as emollient during cough. Dried figs are useful in constipation. Extensively cultivated in Pune district. Fresh figs are sold in local markets. Dried figs are sold in market as an article of confectionery.
Specimens examined: Mahabaleshwar - Vartak (7465, AHMA).


Small trees with white bark; leaves elliptic, entire, scabrid, hispid; figs yellow when ripe. Fl - Fr: February-May. Local name: Kharoti (M.); Phulgu (S.). Locality: Rajgad, Ambavde, Karnala. Found commonly in shady places.

**Medico-botany:** Part used - Bark. Literature - Bark infusion is given in enlargement of spleen and liver. Leaves are used as sand paper for polishing wood.

Specimens examined: Rajgad - Vartak (7469, AHMA); Karnala - Datar (7476, AHMA).


Small, hispid trees; leaves opposite, ovate, rough; figs often reaching the soil. Fl - Fr: May - August.

Local name: Bhuiumber (M.); Kakodumber (S.). Locality: Karnala, Bhimashankar, Bhandardara, Kanakeshwar. Found in semi-evergreen and mixed forests.
Medico-botany: Parts used - Fruit, seed, bark. Literature - Fruit, seed and bark is purgative. Bark is febrifuge. Fig is emetic.

Specimens examined: Kanakeshwar - Sane (15557, AHMA); Karnala - Datar (7488, AHMA).


Glabrous trees; aerial roots few; leaves elliptic-coriaceous; figs sessile, in pairs. Fl - Fr: April - July. Local name: Nandruk (M.); Nandi-vrikha (S.). Locality: Pune, Baneshwar, Katraj, Karnala, Kanakeshwar. Found wild, sometimes planted as a roadside tree.

Medico-botany: Parts used - Leaves, bark, root. Literature - Bark juice is given in liver diseases. Leaves and bark is pounded and applied on rheumatic pains. Root bark infusion is applied on wounds. Folk medicine - Roots are pounded and mixed with oil, boiled and filtered oil is applied on cuts, wounds and bruises. At Baneshwar in Pune district, huge root system formed a network on wall of old temple, appearing as beams and pilers.

Specimens examined: Katraj - Vartak (7489, AHMA); Kanakeshwar - Sane (15559, AHMA).

Large, deciduous trees; leaves oblong-ovate, dark green above; figs on stems, in clusters, orange-red when ripe. Fl - Fr : February - July. Local name : Umber (M.); Audumber (S.). Locality : Throughout the area. Very common throughout the area.

**Medico-botany** : All plant parts are medically used. 
**Literature** - Root is used in hydrophobia. Bark is cooling, galactogogue; given in dysentery and menorrhagia. Leaves are applied on bilious affections, given internally in cough. Fruit is remedy for visceral obstructions. Sap is applied on mumps; also given in diabetes. **Folk medicine** - Sap is astringent, given internally in high fevers and measles. Leaf powder with honey is expectorant. Fruit is eaten by local people.

Stem bark is sold in crude drug market. Plant-sap is sold in market as 'Umbarache-pani'.

It is a religious tree and believed as a house of God 'Datta'.

Specimens examined : Karnala - Mandavgane (7494, AHMA); Pune - Kulkarni (16536, AHMA).

Large, glabrous, trees often epiphytic; leaves coriaceous with long tail like apex; figs sessile. Fl - Fr : February - July. Local name : Pimpal (M.); Ashwatth (S.). Locality : Usually planted near village shrines.

Medico-botany : Parts used - Bark, leaves, fruit, root.

Literature - Bark is astringent, infusion is given in scabies. Fig is laxative, cooling. Leaves are applied on skin diseases. Leaves and young shoots are purgative. Folk medicine - Stem bark is pounded and applied on cuts and wounds. It is a religious tree of Hindus and Buddhas. It is believed by village people that tree is a home of evil spirits and hence a pregnant woman is not suppose to wonder near this tree. Very difficult to eradicate, causes damage to constructions.

Specimens examined : Karnala - Mandavgane (7492, AHMA); Pune - Aulkarni (16539, AHMA).


Deciduous trees; leaves coriaceous; figs in pairs,

Medico-botany: Part used - Juice. Literature - Juice along with turmeric, pepper and ghee is given internally in asthma.

Specimens examined: Gunjavni - Vartak (7495, AHMA).

*Morus L.*


Medico-botany: Part used - Fruit. Literature - Fruit is refreshing, given in sore throat. Many horticultural varieties are planted for silk-worm feeding.

Specimens examined: Karnala - Mandavgane (7506, AHMA); Pune - Kulkarni (16540, AHMA).
Streblus Lour.


Small trees; leaves elliptic, irregularly toothed, scaberulous; flowers axillary; fruits yellow. Fl - Fr: January - May. Local name: Kharoti, Kharmati (M.).
Locality: Karnala, Kanakeshwar, Siddheshwar. Found in open deciduous forests on hilly slopes.

Medico-botany: Parts used - Milky juice, bark. Literature - Bark decoction is given in fevers, and dysentery. Milky juice is astringent, antiseptic, applied on wounds. Leaves are used as sand paper for polishing wood.

Specimens examined: Karnala - Datar (7515, AHMA);
Siddheshwar - Ghate (17240, AHMA).

Casuarina Forst.


Handsome trees with drooping branches; leaves scaly; male flowers in spikes, females in heads. Fl - Fr:
November - March. Local name: Vilayati suru (M.).
Locality: Pune, Nagaon. Often planted everywhere.

Medico-botany: Part used - Bark. Literature - Bark is an excellent remedy in chronic diarrhoea and dysentery. Bark infusion is tonic.

Planted as sand binder and wind breaker on sea coasts. Grows well on beaches. Good avenue tree.

Specimens examined: Karnala - Mandavgane (7522, AHMA); MACS garden (Pune) - Saraf (14730, AHMA).

ORCHIDACEAE

1. Leaves appearing after flowers
   1. Plant bears leaves and flowers together
      2. Petals white
         2. Petals yellow with brown lines
            Eulophia
            porch R.Br.

   1. Flowers yellow
      1. Flowers bluish-white
Roots tuberous, forms a chain like structure; leaves appearing after flowers, flowers in lax racemes, bluish-puhrplücke, Fl - Fr : Flowers in May - June. Fruiting not seen. Local name : Amarkand, Davanicha kanda (M.); Balakand (S.). Locality : Ambavne, Pune. Found in moist shady places.

Medico-botany : Part used - Tubers. Literature - Tuber is externally applied on tuberculous glands on neck. Tuber is appetiser.

It is claimed by Dr. Purandare from Bombay that tubers have miraculous properties. With clinical trials he proved that tubers from 'Palghar' area near Panvel can cure tuberculosis. The preparation he suggested is as follows : Peel off the tubers and chopped. Boiled with milk and taken every day as per instructions. The preparation should be taken fresh every day.

Specimens examined : Potted specimen in MACS garden.


Medico-botany: Part used - Tubers. Literature - Tubers are anthelmintic, tonic.

Specimens examined: Vithalwadi (Pune) - Vartak (7596, 7597, AHMA).

Habenaria Willd.


Tuberous plants; leaves oblong, lanceolate, flat; flowers white, sessile; fruit capsule. Fl - Fr: September - October. Local name: Salep (M.). Locality: Khandala, Purandhar, Kanakeshwar. Commonly found in monsoon.

Medico-botany: Part used - Tuber. Literature - Tuber furnishes salep. 'Salep' is sold in market, is is general tonic.

Specimens examined: Kanakeshwar - Sane (15588, 15589, AHMA).

Vanda R.Br.


Epiphytic herbs; leaves coriaceous, flat; flowers in racemes, yellow with brown lines. Fl - Fr: July -
September. Local name: Bande (M.); Vanda (S.). Locality: Pune, Kashele. Observed on Mangifera indica tree.

Medico-botany: Parts used - roots, leaves. Literature - Roots are used as 'Hasna'. Leaf juice is dropped during ear-ache. 'Hasna' is a controversial drug. The market sample is not morphologically comparable to roots of this species.

Specimens examined: Potted specimen in MACS garden.

ZINGIBERACEAE

1. Leaves spreading horizontally
   1. Leaves erect
      2. Leaves oblong
         2. Leaves lanceolate
            .. Curcuma
            .. Zingiber
            .. Kaempferia

Curcuma L.

1. Flowering spike is from center of tuft of leaves
   1. Flowering spike is apart from leaves
      2. Root stalk palmately branched
         2. Root stalk with simple branching
            .. C. amada
            .. C. aromatica
            .. C. longa

Tubers thick cylindrical, leaves long lanceolate, accumulate; flowers in autumnal spikes, yellowish white.
Fl - Fr : Flowering : September - October, fruiting not seen. Local name : Ambe-halad (M.); Ambra-Haridra (S.).
Locality : Seen cultivated.

Medico-botany : Part used - Rhizome. Literature - Rhizome is bitter, diuretic, useful in skin diseases, asthma, applied on inflammations.

Rhizome and Rhizome powder is sold in crude drug market. It is used in beautification and better skin complexion.
Specimens examined : Museum specimen in MACS.


Roots palmately branched; leaves oblong, flowers in spikes; fragrant, pink. Fl - Fr : May - July. Local name : Kan-halad (M.); Van-haridra (S.). Locality : Kashele, Malshej ghat. Found in moist, shady places.

Medico-botany : Part used - Rhizome. Literature - Rhizome is tonic, carminative, promote eruptions. Externally applied on skin diseases and headache.

Herbs with branched tubers; leaves lanceolate, tapering at ends, flowers in spikes, yellow. Fl - Fr: May - July. Local name: Haldi (M.); Haridra (S.). Locality: Pune. Cultivated for rhizome.

Medico-botany: Part used - Rhizome. Literature: Rhizome is aromatic, stimulant, tonic, blood purifier, alterative. Fresh rhizome juice is anthelmintic, useful as antiparasitic for skin affections. Externally applied on skin. Folk medicine: Rhizome and rhizome powder is used as antiseptic, healing agent. Extensively used for external application on deep wounds.

'Haldi' is reputed Ayurvedic and household remedy, used in many ointments and skin cosmetics. It is well known antiseptic, with hot milk and sugar or jaggery recommended in sore throat. For good skin complexion mixed with Chana flour and milk is applied on child's skin. It is also used as spices and colouring agent in many recipes. Dried rhizome and rhizome powder is sold in the market. 'Haldi' is also used to worship God. 'Haldi' leaves are added to butter while making ghee from it, it gives good flavour to ghee. 'Haldi' leaves are also used in 'Pangi' a favourite Kokani recipe.
Specimens examined: Museum specimen in MACS.

**Kaempferia L.**


Leaves spreading horizontally, petioles very short; flowers appearing from center of leaves, fragrant, white. Fl - Fr: July - September. Local name: Chandra-mula (M.); Chandra-mulika (S.). Locality: Pune. Cultivated in gardens as ornamental plant.

**Medico-botany**: Part used - Tuber. **Literature**: Tuber is stimulant, expectorant, applied to stoppages of the nasal organs.

Specimens examined: Potted specimen in MACS garden.

**Zingiber** Adans.


Rhizomatic herbs; leaves subsessile, narrow; flowers in spikes, purplish-green. Fl - Fr: Not seen. Local name: Ale, Suntha (M.); Adrak (S.). Locality: Extensively cultivated.
Medico-botany: Part used - Rhizome. Literature - Rhizome is pungent, appetiser, stomachic, carminative, useful in dyspepsia, flatulent colic, piles and abdominal troubles. Given in toothache, colds and urinary complications. Oil from rhizome is applied on rheumatic pains. Folk medicine—Used as mentioned in literature.

Many compound Ayurvedic preparations as well as household recipes are made from fresh and dried rhizome. Fresh rhizome is used with tea-decoction and given in cold and cough. Sliced fresh rhizome with lemon juice and rock salt is given as appetiser. It is used as flavouring agent in many preparations. Rhizome with honey is expectorant. Rhizome with sugar is made in sweetmeats known as 'Alepak' (Ginger barfi) and is famous remedy in cold, cough and fevers. 'Suntha' a dried rhizome and rhizome powder is sold in market. Powdered rhizome with sugar and ghee is given to less down acidity, stomachic, appetiser, carminative. Fresh rhizome paste is externally applied to relieve headache. It is extensively cultivated and demanded for fresh rhizome. Rhizome after process is stored as 'Sunth'. It is reputed Ayurvedic remedy. Used as condiment and spice in cooking.

Specimens examined: Pune - Upadhye (17576, AHMA).
COSTACEAE

Costus L.

**Costus speciosus** Smith in Trans. L. Soc. 1 : 249. 1791.
FBI 6 : 249; C. 3 : 243; KB. 4 : 2440; GIMP : 78; CHIMP : 75; AS 2 : 230. Ill. KB. : 947. (Plate 5.10B)

Herbs; leaves subsessile, spirally arranged, pubescent; flowers in spikes, white with red bract, showy; capsules globose. Fl - Fr : August - October. Local name : Pav, Penva, Koshta (M.); Æemuk (S.). Locality : Karnala, Kashele, Alibag, Malshej ghat. Commonly found in moist shedy places. Now-a-days cultivated for its alkaloid contain.

Medico-botany : Part used - Root. Literature - Root is bitter, useful in cough, anaemia, fevers and skin diseases. Folk medicine - Root is tonic. Root is used in place of 'Koshta-kolinjan' (*Alpinia galanga*) by local people. The stem is chewed by Thakars as thirst depressing in forest when water is not available.

Specimens examined : Karnala - Vartak (7807, AHMA).

MUSACEAE

**Musa L.**

**Musa paradisiaca** L. Sp. Pl. 1043. 1753; FBI. 6 : 262; C.
Tree like herbs, trunk cylindric; leaves oblong, green, 5-8 feet long; inflorescence pendulous; fruit yellowish when ripe. Fl - Fr: Throughout the year. Local name: Kel, Kela (M.); Kardali (S.). Locality: Throughout the area. Extensively cultivated for edible fruits. Many horticultural varieties are grown.

medico-botany: Part used - Every plant part is medicinal. Literature - Hoot is anthelmintic, tonic, given in dysentery and urinary troubles. Stem juice is astringent, useful in thirst. Leaves are applied on cuts and skin diseases, stimulant, astringent. Unripe fruit is given in diabetes. Fruit is tonic, given in dysentery and cough. Fresh fruit is given to stop bleeding. Sap of unripe fruit is mixed with rice water and given in dysentery. Folk medicine - Stem juice and fruit is used as mentioned in literature. Fruit cover is dried and ash is made, it is applied on cuts externally. If the piece of glass is swallowed by child the ripe fruit is asked to eat immediately. This tree is considered good omen in 'Hindu' community. Leaves are used as plates. Stem and leaves are decorated near door during ceremony. Inflorescence is used as vegetable. Unripe fruit is fried on t>ee and 'chopes' are made. Different kinds of sweets are made from ripe
fruit. Unripe fruit is dried and flour is made and considered as tonic.

Specimens examined: Pune - Upadhye (17715, AHMA).

HYPOXIDACEAE

Curculigo Gaertn.


FBI. 6: 279; C. 3: 255; KB. 4: 2469; GIMP: 84; GBMP: 81; AS 2: 238. Ill. KB. : 956A. (Plate 5.11A)

Herbs with elongated root stalk; leaves linear, lanceolate with sheathing leaf base; flowers in racemes, yellow. Fl - Fr: August - November. Local name: Kali-musali (M.); Tal-musali (S.). Locality: Throughout the area. Commonly seen in moist places after monsoon.

Medico-botany: Parts used - Rhizome, leaves. Literature - Rhizome is tonic, carminative, useful in piles, asthma, aphrodisiac. Folk medicine - Rhizome is tonic. Leaves are applied on cuts and wounds.

A well known Ayurvedic remedy. Sold in market as Kali-musali.

Specimens examined: Mahabaleshwar - Vartak (7914, AHMA); Chikkhalgaon - Upadhye (17577, AHMA).
A - *Curculigo orchioides* Gaertn. an authentic source of 'Kali-musali'.

B - *Asparagus racemosus* var. *javanaica* Bak. an authentic source of 'Shatavari'
TACCACEAE

Tacca Forst.


Root stalk globose; leaves 3-partite, pinnatifid; flowers drooping. Fl - Fr: September - December. Local name: Deva, Dukkarkand (M.). Locality: Throughout the area. Common with rains, in shady places.

Medico-botany: Part used - Root. Literature - Root is bitter, useful in dysentery.

Specimens examined: Karnala - Vartak (7867, AHMA); Mapgaon - Sane (15613, AHMA).

AGAVACEAE

Agave L.


Medico-botany: Parts used - Root, leaves. Literature - Roots are diuretic. Leaves are laxative, useful in scurvy. Plant is extensively cultivated on hilly slopes to stop soil erosion, it develops good fence in gardens, cultivated as ornamental plant, also yields fibre.

Specimens examined: Pune - Upadhye (17714, AHMA).

**DIOSCERACEAE**

*Dioscorea* L.


Climbing herbs with large tubers; bulbiferous in leaf axils; leaves ovate, acuminate, 7-9 nerved; flowers in spikes. Fl - Fr : July - December. Local name : Kadukaranda (M.). Locality : Throughout the area. Commonly found on hedges and moist forests.

Medico-botany: Part used - Root. Literature - Root is bitter, tonic, useful in dysentery and skin diseases. Applied externally on swellings. Root is edible but rather bitter. The roots are sliced and kept in running water to remove bitterness and then eaten.
Specimens examined: Katraj - Vartak (7883, AHMA); Karnala - Vartak (7890, AHMA).

**ASPAHAGACEAE**

**Asparagus L.**


Spinose, scandent, undershrubs; leaves scaly, cladodes spinous; flowers in racemes, white, fragrant; fruit green changing to red and black when ripe. Fl - Fr: April - July. Local name: Satavari (M; S.).

Locality: Throughout the area. Common in dry deciduous, thorn and moist deciduous forests.

**Medico-botany**: Part used - Root. **Literature** - Root is refrigerant; demulcent, diuretic, aphrodisiac and alterative tonic. Useful in dysentery, inflammations, eye and blood diseases, throat complication and epilepsy. **Folk medicine** - It is excellent tonic. Root is peeled off, threads are removed and then root is finely chopped. It is boiled with milk and sugar, it is given as tonic in weakness after any illness. It is also recommended to
nursing mother. It is extensively used by medico-practitioners and is a reputed Ayurvedic remedy. Used in many compound Ayurvedic preparations. Satavari-kalpa and Satavari-ghrita are famous Ayurvedic medicines. Tender leaves of this species are used in making soups, it costs very high.

Specimens examined: Karnala - Mandavgane (7958, AHMA); Wadeswar - Upadhye (17578, AHMA); Law College hills (Pune) - Upadhye (17579, AHMA).

LILIACEAE

1. Flowers red or orange
2. Flowers solitary
   .. Gloriosa
2. Flowers in racemes
   .. Aloe
1. Flowers not as above
3. Flowers in heads
   .. Allium
3. Flowers in racemes
4. Leaves appearing with flowers
   .. Scilla
4. Leaves appearing after flowers
   .. Drimia

Allium L.

1. Leaves flat, keeled
   .. A. sativum
1. Leaves fistular, terete
   .. A. cepa

Perennial herbs with underground leafy bulbs; leaves in two rows; flowers in umbels. Fl - Fr : March - May. Local name : Kanda (M.); Palandu (S.). Locality : Throughout the area. Cultivated throughout the drier parts from the area.

Medico-botany : Part used - Bulb. Literature - Bulb is tonic, improves appetite, useful in asthma, scabies, urinary discharges, abdominal disorders, earache, enriches blood. Folk medicine - Bulb juice with honey is given as expectorant. Bulb is chopped and fried on ghee, is applied on abscesses externally. Bulb is chopped finely and mixed with tamarind pulp, it is recommended in diarrhea. Bulb juice is applied on head to cure headache, also applied on palms and head during high fevers. Fresh bulb juice is used as ear drop. Opened fresh bulb is inhaled to the swooning person. Onion bulb is reputed household remedy. Not only tribals but also used in urban areas. It is used in compound Ayurvedic and homeopathic preparations. It forms an artical in cookery. It constitutes essential article for poor people diet. Demanded high in many recipes. Green leaves are used as vegetable and both leaves-bulbs are sold in local market.
Specimens examined: Amble - Upadhye (17716, AHMA).


Herbs with underground bulbs; leaves flat; flowers in heads, greenish-white. Fl - Fr: February - April.
Local name: Lasun (M.); Lashun (S.). Locality: Throughout the area.
Cultivated in low rainfall tract.

Medico-botany: Part used - Garlic buds. Literature - Bud is carminative, aphrodisiac, expectorant, stimulant, febrifuge. Bud juice is applied on skin diseases, useful as ear-drops, flatulence and colic. It improves appetite and useful in diseases of heart and eye. It is invaluable remedy in the treatment of pneumonia. Folk medicine - Used as mentioned in literature.
In 1986-87 due to shortage of production, cost of garlic was raised sky-high in the vegetable market, as local medico-practitioner made some drug from garlic which he claimed to be useful in jaundice.
Garlic is household remedy and used by local people extensively. Use of garlic in diet after illness and to nursing mother is common practice. Thin peeling from garlic buds is placed on fire and smoke is inhaled to coughing child of month or two months age. It is said
to be good heart tonic and hence 'Garlic pearls' are sold in market which are small tablets and are without fragrance.

Specimens examined: Bombay - Kulkarni (7299, Blatter).

*Aloe L.*


Xerophytic herbs; leaves ensiform, pale green with prickles; flowers in racemes. Fl - Fr: May - June.

Local name: Aorphad (M.); Kumari (S.). Locality: Throughout the area. Found cultivated as medicinal plant on hedges.

Medico-botany: Part used - Leaves. Literature - Reputed ayurvedic remedy. Plant is stomachic, purgative, useful in piles and colic. Plant juice is cathartic, given in constipation and menstrual suppressions. Folk medicine - Leaf pulp with turmeric powder is applied externally on burns. Used extensively after labour. Dried juice is sold in market as Kath-bol or Hira-bol. Whole plant is also sold in market. Extensively used by medico-practitioners and household remedy.

Specimens examined: Potted plants in MACS garden.
Drimia Jacq.


Herbs with bulbs; leaves appearing after flowers; flowers in racemes. Fl - Fr : June - August. Local name : Jangli-kanda (M.); Kolkand, Van-palandu (S.). Locality : Sinhagad, Karnala, Pune, Phulgaon, Alibag. Not common, found on open dry places before rains. Also found on sandy shores.

Medico-botany : Part used : Bulb. Literature - Bulb is very toxic, anthelmintic, stomachic, cardiac stimulant, diuretic, useful in bronchial complaints. Used in medicine as substitute for Squill. Also used in place of Digitalis.

Many ayurvedic preparations, made from bulb are available in market.

Specimens examined : Sinhagad - Vartak (8080, AHMA); Karnala - Mandavgane (8083, AHMA).

Gloriosa L.

Gloriosa superba L. Sp. Pl. 305. 1753. FBI. 6 : 358; C.
Branched climbers with root tubers; sprouts after rains; flowers large, showy, yellow-orange. Fl - Fr: July - September. Local name: Kallavi, Khadyanag, Bachnag (M.); Kalhari (S.). Locality: Sinhagad, Raireshwar, on way from Lonavala to Khandala, Kanakeshwar, Karnala, Kashele. Common throughout the ghats. Also planted as ornamental plant in gardens.

Medico-botany: Parts used - Root, bulb, flowers. Literature - Root is bitter, anthelmintic, laxative, useful in chronic ulcers, abdominal pains, bleeding piles, abortifacient. Starch obtained from root is useful in gonorrhea. Root paste is applied to navel, suprapubic region and vagina to promote labour. Folk medicine - Root is used as mentioned in the literature. Flowers are collected and dried. These flowers are tied on arm to promote labour. The tubers are collected, sliced, soaked in butter-milk over night and dried. These dried slices are stored as a drug.

This plant has got extensive export value as it is a source for alkaloid colchicine. Tuber is also used by local medico-practitioners. Beautiful flowers are sold in Bombay-Pune market.
Specimens examined: Sinhagad - Vartak (8009, AHMA); Haireshwar - Vartak (8013, AHMA).

**Scilla L.**


Herbs with radical leaves, flowers in racemes, greenish-pink. Fl - Fr: May - July. Local name: Bhui-kanda (M.). Locality: Throughout the area. Commonly found on pasture lands and open places.

**Medico-botany:** Part used - Bulb. **Literature** - Bulbs are used in place of *Drimia indica*. **Folk medicine** - Local people use the bulb in place of Jangli-kanda.

Specimens examined: Sinhagad - Vartak (8069, AHMA); Kanakeshwar - Sane (15626, AHMA); Sutarwadi (Mulshi) - Upadhye (17575, AHMA).

**SMILACACEAE**

**Smilax L.**

*Smilax zeylanica* L. Sp. Pl. 1028. 1753; KB. 4: 2496;

Climbers with distant prickles; leaves alternate, trinerved; flowers in umbels. Fl - Fr : August - November. Local name : Ghot-vel (M.); Hirannya-shak (S.). Locality: Ambavne, Bhimashankar, Dakhni, Pune. Common in semi-evergreen patches throughout the area.

Medico-botany : Part used - Roots. Literature - Roots are used in place of Sarsaparilla. Applied on rheumatic pains, useful in dysentery and vernal diseases.

Specimens examined : Haireshwar - Vartak (8093, AHMA); Alibag - Gunjatkar (16570, AHMA).

**COMMELINACEAE**

**Commelina L.**


Medico-botany: Part used - Whole plant. Literature - Plant is bitter, emollient, demulcent, laxative, beneficial in leprosy. Leaves are used as vegetable or fried in oil with Chana flour.

Specimens examined: Ambavde - Vartak (8117, AHMA); Pashan - (8119, AHMA).

ARECACEAE

1. Fruits less than 5 cm long
2. Spines present
   3. Spines trianular
   3. Spines ensiform
2. Spines absent
1. Fruits more than 5 cm long
4. Monoecious
4. Dioecious

Areca L.


Slender trunk; leaves pinnate, leaf-lets confluent; spadix androgynous; fruit fleshy-fibrous. Fl - Fr : Throughout the year. Local name : Supari, Pofali (M.); Phuga (S.). Locality : Throughout the area. Common in coastal area, cultivated in gardens.
Medico-botany: Parts used - Root, seed. Literature -

- Root decoction is a reputed cure for sore-lips. Dried nut is used internally and externally to stop watery discharges from vagina. Nut (seed) powder is anthelmintic, useful in urinary discharges and nervine tonic. Folk medicine - Fresh seed is pounded and given to expel tapeworm. Chewed after meals as digestive. Popular mastication, extensively used in preparation of 'Pan' also masticate raw and roasted. Powdered 'Supari' is prepared from different flavouring and digestive agents where Areca nut forms chief ingredient.

- Sold in market as raw nuts, sliced nuts, roasted nuts and powdered 'Supari'.

Specimens examined: MACS Campus (Pune) - Kumbhojkar (8192, AHMA).

Borassus L.

Borassus fabellifer L. Sp. Pl. 1187. 1753. FSI. 6: 482;

- Trunk swollen above middle; leaves shining, margins with hard spinescent serratures; flowers dioecious, spadix large. Fl - Fr: March - July. Local name: Tad, Tadi (M.).

Medico-botany: Parts used - Root, fruit, juice.

Literature - Root is cooling. Fruit is cooling, tonic, laxative, useful in thirst. Fruit is aphrodisiac, tonic, laxative, nutritive. Juice is used as stimulant antiphlegmatic, laxative, useful in dropsy.

Fermented juice is favourite drunk of local people.

Fruits are edible and sold in market. Jaggery is made from sap.

Specimens examined: Alibag - Bonde (15919, 15920, AHMA).


Medico-botany: Parts used - Seed, juice. Literature - Seed is acrid, cooling. Fresh juice is laxative. Stem is used for making musical instruments by tribals.

Specimens examined: MACS Campus (Pune) - Bonde (15669, 15670, AHMA); Kanakeshwar - Sane (15627, AHMA).

Cocos L.


Unarmed, monoecious palms; leaflets equidistant, spadix androgynous; fruit obovoid, greenish-yellow. Fl - Fr: Throughout the year. Local name: Naral, Shahale (M.); Shriphal (S.). Locality: Throughout the area. Extensively cultivated in coastal areas and also inlands.

Medico-botany: Parts used - All plant parts are useful. Literature - Fruit is sweet, diuretic, anthelmintic to tapeworms. Water of unripe fruit is cooling, nutritive, given in fevers, thirst, diuretic. Root is astringent useful in utraine diseases. Flowers are cooling. Oil from matured fruit is useful as healing agent, promotes hair growth. The freshly drawn juice from the young spadix is refrigerant, diuretic. Fermented juice constitutes
liquors. Folk medicine - Fruit is nutritive. Oil is used for external application on wounds and skin diseases. Oil is a base for making different ointments useful in skin diseases. Flowers crushed with sandlewood paste, sugar and water are given in high fevers, it reduces thirst and burning sensations. Coconut fruit shell is burnt and oil is extracted, it is extensively applied on ringworm.

Coconut forms an article of food. Oil is used for external application and also edible. Unripe fruit known as 'Shahale' is given to patients and believed as good as saline fluid. Many household useful articles are made from fiber and also exhibition articles from coir. It has got good export value. Tree of Deive, especially for Konkan people as all tree parts are useful in one way or other.

Specimens examined : Karnala - Vartak (8202, AHMA).

Phoenix L.

Phoenix sylvestris Roxb. (Hort. Beng. : 73. 1814 et)

Palms with large hemispherical crown; leaves
greyish-green, apex with triangular spines, spadix dioecious; fruits orange-yellow. Fl - Fr: January - May.
Local name: Shindi, Khajuri (M.); Vit-kajuri (S.).
Locality: Throughout the area. Commonly found in dry regions.

Medico-botany: Parts used - Fruit, juice, root.

Literature: Fruit is tonic, good in heart and abdominal complaints. Root is used in toothache and as nervine tonic. Fresh juice is cooling beverage. A jaggery is made from sap.

Specimens examined: Without locality - Vartak (8204, 8205, AHMA).

**PANDANACEAE**

**Pandanus** L.f.


Shrubby, sometimes like small trees; stems with supporting roots; leaves coriaceous, pointed; spadix subsessile, male flowers enclosed with white fragrant caudate, acuminate spathes. Fl - Fr: September - December.
Local name: Kewada (M.); Ketaki (S.). Locality: Pune, Mulshi, Nagaon. At only three places seen wild, cultivated in gardens.

**Medico-botany:** Parts used - Flowers and spath. **Literature** - It is bitter, pungent, useful in skin diseases. Oil from bracts is stimulant, antiseptic, useful in headache. Fragrant spath is used by local people to worship God. Pleats are made from this spath is also kept in cupboards to keep away infection of white ant.

Specimens examined: Chikkhalgaon - Chate (17242, 17243, AllMA).

**TYPHACEAE**

**Typha L.**


Marshy herbs; leaves exceeding the flowering stem; spikes cylindric, male and female separated; female flowers pale-brown, male yellow. Fl - Fr: August - September. Local name: Ram-ban, Pan-kanis (M.); Braka (S.). Locality: Pashan, Karnala, Sajjangad, Mulshi. Found near marshy wet places. Common.
Medico-botany: Part used - Male flowers and pollens, root stock. Literature - Root stock is diuretic, astringent.

Folk medicine - Yellow pollen powder and floss of the female flowers are applied on deep wounds. They are good healing agent and also act as medicated cotton. It is renowned traditional remedy and all tribes in the area normally used it in the same way.

Specimens examined: Pune - Vartak (8208, AHMA); Karmala - Mandavgane (8210, AHMA).

ARACEAE

1. Plants free floating
2. Venation striate
3. Leaves peltate
4. Neuters present

.. Pistia
.. Acorus
.. Colocasia
.. Sauromatum
.. Amorphophallus

Acorus L.

Branched, creeping herba; leaves bright green.

Fl - Fr: Not seen. Local name: Vekhand (M.); Vacha (S.).
Locality: Sinhagad, Baneshwar. Found naturally growing at only two localities on mucky places.

Medicobotany: Part used - Rhizome. Literature - Rhizome is pungent, healing, laxative, diuretic, carminative, emetic; useful in fevers, throat infections, loss of memory, inflammation and abdominal pains. It is aromatic stimulant and useful in chronic diarrhoea and cough in children. Externally applied on rheumatic pains. Rhizome powder is very effective insecticide.

'Vacha' is a reputed ayurvedic remedy. It is used as single drug as well as with many other ingredients in compound preparations. It is used extensively by ayurvedic medico-practitioners and also as household remedy. Dry powder is applied externally on head and chest of newborn babies. It is recommended internally with honey to nursing mother to reduce abdominal pains and as nervine tonic. With honey given as expectorant and emetic.

Dried rhizome and rhizome powder are sold in local market. Drug has a large market potential.

Specimens examined: Pune - Vartak (8213, AHMA).
Amorphophallus Blume


Herbs; leaves appearing after flowers, petioles rough, spotted; spathe pinkish-green; fruit orange-red.

Medico-botany: Part used - Tuberous corm. Literature - Corm is stomachic, carminative, tonic, restorative, expectorant, useful in piles, rheumatism, and useful in dysentery. When fresh acrid stimulant and expectorant. Folk medicine - Corm is pounded in water and applied externally on rheumatic pains and swellings. Corm is boiled and sliced. Slices are fried on oil. It forms a good diet for patients suffering from piles. Corm is sold in vegetable market.

Specimens examined: MACS Campus (Pune) - Ghate (14,704, AHMA); Aanakeshwar - Sane (15634, AHMA).

Colocasia Schott

Herbs with underground stem; petioles erect, leaves peltate; spathe yellow. Fl - Fr: August - September.
Local name: Alu (M.); Kachhi (S.). Locality: Throughout the area. Found wild at marshy places, often cultivated in back-yard of tribals and also urbans.

Medico-botany: Parts used - Tuber, petiole. Literature - Petiole juice is styptic, stimulant. Folk medicine - Petiole is crushed with salt and applied on abscesses. Tuber is given during back-pain after labour. The leaves are edible. Many recipes are favourite among rural as well as urban population. Thakars collect leaves in monsoon, dried it and preserve it for consumption during period of scarcity.

Specimens examined: Torna - Vartak (16770, AHMA).

**Pistia L.**


Free floating, stoloniferous herbs; leaves pubescent, fleshy. Fl - Fr: Not seen. Local name: Jal-parni; Jal-kumbhi (M.); Prashni (S.). Locality: Throughout the area. Commonly seen in river beds, ponds and lakes.
Medico-botany: Parts used - Whole plant, root, leaves, ash. Literature - Plant is demulcent, given in dysuria. Root is laxative, diuretic. Leaf poultice is applied to haemorrhoids. Leaves are expectorant, antidysenteric. Leaf juice with coconut oil is applied externally on skin diseases. Plant ash is applied to ringworm.

Troublesome weed very difficult to eradicate from river beds.

Specimens examined: Pune - Ghate (8253, 8254, AHMA).

Sauromatum Schott


Medico-botany: Part used - Tubers. Literature - Tubers are used as a stimulating poultice.

Specimens examined: Baneshwar - Upadhye (17717, AHMA).
1. Flowering glumes spirally arranged
   .. Scirpus
1. Flowering glumes distichously arranged
2. Spikelets many-flowered
   .. Cyperus
2. Spikelets 1-2-flowered
   .. Kyllinga

Cyperus L.
1. Spikelets golden
   .. C. iria
1. Spikelets red-brown
   .. C. rotundus


Medico-botany: Part used - Whole plant. Literature - Plant is tonic, astringent, stomachic.

Specimens examined: Bhor - Vartak (9087, AHMA); Pachgaon-Parvati (Pune) - Kulkarni (16592, AHMA).

Tuberous, glabrous, annuals; flowers in umbels; nut trigonous, greyish-black. Fl - Fr : September - January. Local name : Motha, Nagarmotha (M.); Mushtak (S.). Locality : Throughout the area. Common along moist places, troublesome weed in cultivated lands and gardens, difficult to eradicate.

Medico-botany : Part used - Tuber. Literature - Tubers are tonic, astringent, diuretic, anthelmintic, useful in stomach disorders, thirst, fevers and ulcers. Given in irritation of bowels. Applied externally as galactogogue and also on skin diseases. Folk medicine - Tuber is pounded in water and applied on poisonous animal bites. Given with Acorus calamus and honey in fever after labour.

It is a well known Ayurvedic remedy. Used in compound Ayurvedic preparations. Tubers are used in herbal powders useful taking baths and also said to be beneficial for hair growth. Useful as an aromatic agent. Tubers are sold in market.

Specimens examined : Ambavde - Vartak (9333, AIMA); Saireshwar - Vartak (9337, AIMA).
Kyllinga Hottb.


*A. triceps* Hottb.; *FBL.* 6: 587; *C.* 3: 391; *KB.* 4: 2633; *GIMP.* 148; *AS* 2: 268.

Perennial herbs; stems tufted; spikes usually three together; nuts oblong. *Fl - Fr:* September - January. Local name: Nirveshi (M.); Nirvesh (S.).

Locality: Khandala, Pune, Bhandardara, Bhor. Abundant.

Medico-botany: Part used - Whole plant, root.

Literature: Whole plant is tonic, cooling. Roots boiled in oil and oil is applied on skin diseases.

Specimens examined: Bhor - Vartak (9524; AHMA);

Khandala - Vartak (9228, AHMA).

Scirpus L.


Medico-botany: Part used - Tubers. Literature - Tubers are recommended in diarrhea and vomiting. Tubers are edible.
Specimens examined: Katraj - Vartak (10220, AHMA); Kanakeshwar - Sane (15668, AHMA).

POACEAE

1. Trees
   1. Shrubs or herbs
      2. Prostrate herbs
      2. Erect herbs or shrubs
         3. Spikes densely crowded on spongy rachis
         4. Grains triangular
         4. Grains round, globose
         3. Spikes not crowded on rachis
         5. Nuts stony
         5. Nuts other than stony
         6. Plants 3-6 meter in height
         6. Plants less than 3 meters in height
         7. Stems in short clumps
         8. Roots aromatic, fragrant
         8. Roots without aroma
         7. Stems elongated with nodes and internodes
         9. Grains elongated, tapering to both ends

.. *Dendrocalamus*
.. *Cynodon*
.. *Zea*
.. *Sorghum*
.. *Coix*
.. *Saccarum*
.. *Vetiveria*
.. *Cymbopogon*
10. Grains less than 1.5 mm broad  .. *Oryza*

10. Grains 2-3 mm broad  .. *Triticum*

9. Grains globose, round  .. *Eleusine*

**Coix L.**


Stems rooting at lower nodes; leaves narrow, base cordate; monoecious. Fl - Fr : October - January.

Local name : Ran-jondhala, Kasayi (M.); Govdhuk (S.).

Locality : Throughout the area. Abundant on river banks and near standing water.

Medico-botany : Parts used - Roots, seeds. Literature - Seeds are diuretic, tonic. Roots are given in menstrual disorders.

Specimens examined : Sinhagad - Vartak (1102, AHMA);
Karnala - Vartak (119, AHMA).

**Cymbopogon Spreng.**

*Cymbopogon citratus* (DC.) Stapf in New Bull. 357. 1906; HB. 4 : 2681; GIMP : 87; GBMP : 85. *Andropogon citratus*

Medico-botany: Parts used - Leaves, oil. Literature - Leaves are bitter pungent, aphrodisiac, anthelmintic, useful in cough. Oil is carminative in cholera. Folk medicine - Infusion of leaves is stomachic, carminative, useful in stopping vomiting. Infusion of leaves with ginger, sugar and other ingredients is given in fevers. This infusion with milk is given before sleep, it helps in reducing temperature, curing cough and cold. This is a popular household remedy. Leaves are sold in local market. Leaves are boiled in petroluem jelly and applied as mosquito repellent.

Specimens examined: MACS - Vartak (14400, AhMA).

_Cynodon Pers._

Leaves linear, ligulate; spikes greenish-purple.

Fl - Fr : August - September. Local name : Hirali, Durva (M.); Durva (S.). Locality : Throughout the area. Common grass, also cultivated as lawns.

Medico-botany : Part used - Whole plant. Literature - Plant is cooling, diuretic, useful in dropsy and piles. Plant juice is applied on cuts and wounds. Folk medicine - Fresh plant juice is given in painful menstruation. If blood is observed in urine then fresh juice with sugar, coriander and cuminum seeds is given for seven days.

Plant is well known astringent and also used to worship God 'Ganapati'.

Specimens examined : Katraj - Vartak (11126, AHMA); F.C.B.G. (Pune) - Vartak (11128, AHMA).

Dendrocalamus Nees.


Deciduous, strong bomboo, stems green when young, yellow when old; leaves rounded at base. Fl - Fr : Not seen. Local name : Bamboo, Mes, Kalak (M.); Vansha (S.). Locality : Chikkhalgaon, Ambavne, Pune, Pen, Varsai. Common in moist deciduous forest. Good clumps are observed at Chikkhalgaon.
sacred grove. Ambavne near Lonavala, forms special category and also has a forest type where dominating element is bamboo.

**Medico-botany** : Part used - Silicious matter found near joints. **Literature** - The silicious matter found near the joints is used as cooling and tonic. Sitopaladi-churna is well known ayurvedic remedy. Vanshalochan is a well known ayurvedic drug. Crystals of silicious matter are sold in crude drug market. In Varsai area, local Vaidya cultivate this bamboo with great efforts for genuine silica crystals. Young stems are eaten as vegetable.

Specimens examined : Kasa - Billore (116425, BSI).

**Eleusine Gaertn.**


Stems as thick as thumb; leaves broad, overlapping the stem; spikes suberect. **Fl - Fr** : January - March. **Local name** : Nachni, Nagli (M.); Ragi (S.). **Locality** : Throughout the area. Commonly cultivated on hilly slopes by shifting cultivation method.

**Medico-botany** : Part used - Grains. **Literature** - Grain
is sweet, tonic, cooling. Grain constitutes a major diet of tribals. Many preparations are available in market as 'Nachni-satva', 'Nachni-papad' also constitutes in baby foods, hence demanded more in market.

Specimens examined: Ambavde - Vartak (11101, AHMA).

**Oryza L.**


Annuals; leaves straite; spikelets loosely panicked.
Fl - Fr: September - January. Local name: Bhat, Tandul (M.); Shali (S.). Locality: Throughout the area. One of the major food crop of the area under consideration. Commonly cultivated for food grain.

**Medico-botany:** Part used - Grain. **Literature** - Grain is sweet, tonic, diuretic, improves taste. Rice water is demulcent, soothing. **Folk medicine** - Rice water is very powerful remedy to cure gonorrhea. Rice water is used as a media, many times when suspension is made by pounding different roots.

It is a major artical of diet, used by tribals as well as urbans. Grain and other preparations of grains are available in market.
Specimens examined: Panvel - Vartak (11355, AHMA); Kanakeshwar - Sane (15106, AHMA).

Saccharum L.


Stems 3-6 meters high, glabrous, pubescent; leaves linear, lanceolate; flowers in pyramidal panicles. Fl - Fr : March - June. Local name : Us (M.); Ikkshu (S.).
Locality : Throughout the area. Cultivated as cash crop.
Medico-botany : Parts used - Stem, sugar. Literature - Plant and sugar is sweet, diuretic, cooling, tonic, useful in thirst and enriches blood.

Jaggery and sugar are food articles, also used in sweetening of drugs. In ayurvedic preparations 'Kakvi' a product of plant juice is used as preservative.

Specimens examined: Pune - Upadhye (17718, AHMA).

Sorghum Pers.

Andropogon sorghum Brot.; FBI. 7 : 183; C. 3 : 511.
Annuals with linear leaves; flowers in decompound panicle; grain round. Fl - Fr: Cultivated in kharif and rabi season. Local name: Jondhala, Jwari (M.). Locality: Throughout the area. Extensively cultivated for food grains.

Medico-botany: Parts used - Grain, rust on leaves.

Literature - Grain is cooling, improves appetite and taste. Rust on leaves is oxytocic and abortifacient. Folk medicine - Leaf rust is given after labour which helps to regain size and shape of uterus. It is well known in ayurveda and also used by medico-practitioners. Leaf rust is a disease caused by fungi Claviceps perpurea.

Specimens examined: Narsapur - Vartak (11406, AIMA).

Triticum L.


Many varieties are cultivated extensively, throughout the area for food grain. Fl - Fr: December - February. Local name: Gahu (M.); Godhum (S.).

Medico-botany: Part used - Grains. Literature - Nutrient, tonic. Folk medicine - Starch extracted from grains is very good tonic.

Grain and flour constitute many articles of food.
Perennial grasses with aromatic roots; leaves linear, acute; flowers in panicles. Fl - Fr: Not seen. Local name: Vala (M.); Ushir (S.). Locality: Pune, Kashele. Cultivated for commercial khas.

Medico-botany: Part used - Root. Literature - Roots are cooling, stimulant, stomachic, considered refreshing. Paste in water is applied externally as cooling agent in high fevers.

Root is used in compound Ayurvedic preparations. It is demanded in many herbal cosmetics. Roots are added to water in summer. Soft drink of Khas is appreciated in summer. Has got good market potential. Roots and root powder are sold in local market. Cultivated at Jawaharlal Nehru Ayurvedic Medicinal Plants Garden and Herbarium, Pune.

Specimens examined: Pune - Upadhye (17720, AHMA).
Zea L.

Zea mays L. Sp. Pl. 971. 1753. FBI. 7 : 102; C. 3 : 574;
KB. 4 : 2659; GIMP : 260; AS 2 : 270.

Tall grasses, monoecious. Fl - Fr : May - September.
Local name : Maka (M.). Locality : Throughout the area.
Native of America. Extensively cultivated for corns.

Medico-botany : Part used - Grains. Literature - Grains are
astringent, nourishing, nutritive, suitable diet in a
relaxed condition of bowels. Corns and grains forms an
article of food. 'Pop-corns' and 'corn soup' are favourite
recepies. Has got good potential in market.

Specimens examined : MACS Campus (Pune) - Vartak (11453,
AHMA).

ACTINIOPTERIDACEAE

Actiniopteris Link

Actiniopteris australis (L.f.) Link. Fil. Sp. 80. 1841.

Small palm like ferns, seen commonly in crevices
of rocks in low rainfall region. Local name : Mayurshikha
(M.).

Medico-botany : Part used - Whole plant. Literature -
Plant is anthelmintic, styptic.

**ADIANTACEAE**

*Adiantum* L.

1. Fronds at least bippinnate .. *A. capillus-veneris*
1. Fronds simply pinnate
   2. Pinnae halfmoon shaped .. *A. philippense*
   2. Pinnae wedge shaped .. *A. caudatum*


Herbs with creeping rhizome; leaves pinnate; with upper edge irregularly rounded. Found in rock crevices of the low rainfall region during monsoon. Common in village wells. Local name : Necha (M.).

**Medico-botany** : Part used - Whole plant. Literature - Plant is demulcent, expectorant, tonic.

Specimens examined : Mahabaleshwar - Vartak (433, AHMA).


Herbs; pinnae rooting at tip, wedge shaped at base. Common along moist, shedy hilly slopes and rock crevices. Local name : Necha, Hinsusraj (M.).
Medico-botany: Part used - Leaves. Literature - Leaves are useful in skin diseases, diabetes and cough.

Specimens examined: Pachgani - Vartak (25069, AHMA).


Herbs; pinnae stalked, half moon shape. Abundent in high rainfall region. Local name: Hanshapadi (M.).

Medico-botany: Part used - Whole plant. Literature - Plant is used as febrifuge and erysipelas.

Specimens examined: Mahabaleshwar - Vartak (461, AHMA).

*1,2,3* - Although three species of *Adiantum* are different, local people used it in the same way.

Folk medicine - Leaves are crushed and with honey given as expectorant.

ASPIDIACEAE

*Tectaria* Cav.

*Tectaria macrodonta* (Fee) C. Chr. Ind. Fil. Suppl. III : 181. 1934. *Aspidium sicutarium* Sw.

Rhizomatic ferns; leaves pinnate. Commonly occurring in evergreen patches at Mahabaleshwar, Ghataichi Rai
(Bhandardara), Kashele. Local name: Kambalnakhi (N.).

Medico-botany: Part used - Rhizome. Folk medicine - Extensively used by Konkan vaidus. Rhizome is pounded in water and paste is applied on skin diseases, scalp of head and ring worms. It is brought by medico-practitioner to the laboratory for identification. The rhizomes are allowed to germinate in nursery and then species is identified and confirmed.

Specimens examined: Potted specimens in MACS; Mahabaleshwar-Vartak (without number - AHMA).

OSMUNDACEAE

Osmunda L.


Stripes tufted; fronds bipinnate, fertile pinnules cylindrical forming a copious panicle. Restricted to shady moist places found at Mahabaleshwar, Kas, Bhandardara, Konkan.

Medico-botany: Parts used - Whole plant. Literature - Plant is tonic, styptic.

Specimens examined: Kas dam - Vartak (17290, 17291, AHMA)