CHAPTER IV

OBSERVATIONS
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A. ETHNO-MEDICINAL PLANTS

FABACEAE

*Mucuna pruriens* (L.) DC., Prodr. 2:405, 1825. F.B.I. 2:187, 1876. *M. Prurita*

Plate 2, Fig. 2.

Vern. Name: Kiwanch (H), Kavacha, Kanchkuri (M).

Locality: Ganeshpur.

Habitat: Commonly occurs as a twinner in moist forest and along riverbanks.

Flowers: Sept - Dec  
Fruits: Dec - Feb

Description:


Voucher Specimen No.: 510/001.

Ethnomedicinal significance:

Seeds of this plant are used as tonic and aphrodisiac. Bristles of pods mixed with solidified sugarcane juice made into pills to kill stomach worms in babies and calves. Seeds given for improving retention of semen and night dreams. Roots are effective in dysentery. Roots are also practised by the tribals in the form of smoke to accelerate delivery and reduce pain. Leaf juice is used in headache. Leaf extracts are taken internally to cure ulcers.

Seeds of this plant are used as nervine tonic, in scorpion sting etc. Pods are
particularly antihelminthic. Powder in paste form is applied externally against dropsy (Chopra et al., 1956; Srivastava, 1989; Bhattacharjee, 1998). Roots are reported to be diuretic and used in renal infections. Roots are also useful in the treatment of cholera (Duke James, 1986).

**Chemical constituents:**

Seeds contain L. DOPA and some other amino acids. Glutathione, Lecithin, gallic acid and β-sitosterol, seed oil gave stearic, palmitic, myristic, arachidic, oleic and linoleic acids. Serotonin was present in pods only. Mucunine, mucunadine, prurienine, prurieninine were reported from seed.

**References:**


**Pueraria tuberosa** (Roxb. ex willd.) DC.

**Plate 2, Fig. 3.**

**Vern. Name**: Bhuikoha (G), Sural (H), Ghor - bel (M).

**Locality**: Ganeshpur

**Habitat**: Along hill slopes.

**Flowers and Fruits**: Feb - June.

**Description**:

Wild, annual, large twinner, propagation by tuber. Stem aerial, erect, weak, herbaceous. Leaves unipinnate, imparipinnate, three leaflets, stipulate with stipels, leaflet large, ovate, acuminate, pubescent. Flowers in raceme, zygomorphic, bluish purple. Pod membranous, flat, constricted between the seeds covered with bristly brown hairs.
Voucher Specimen No. 510/002.

Ethnomedicinal significance:

Tubers of this plant used as a tonic by the local Gond tribes. It is also given to stimulate lactation. Tubers are also effective to control body temperature.

Tubers given in fevers and rheumatism, used as emetic, tonic and lactogenic (Chopra et al., 1956). Root tubers eaten raw or boiled, may also be used for extraction of starch. Leaves used as fodder for horses and cattle. Roots demulcent and refrigerant; also used as cataplasm on swollen joints and as a Lactagogue (Ramchandran et al., 1986). Tubers used as tonic, demulcent, galactogogue, cooling (Srivastava, 1989).

Chemical constituents:

β-Sitosterol, stigmasterol, daidzein, puerarin and a new isoflavone from tubers.¹ A new pterocarpan-tuberosin - isolated from roots and tubers and its structure determined.² A new pterocarpanone - hydroxy tuberosone - isolated from tubers and its structure determined.³ Isolation of two pterocarpenes - anhydrotuberosin and 3-o-methylanhydrotuberosin - and a coumestan - tuberostan from tubers and their characterisation⁴.

References:


The plant is popular as folk medicine to enhance the appetite and lactation in animals, as well as human being. The underground root enlarges excessively to form large tuber, probably justifying its local name as "Bhuikoha".
**Abrus precatorius** L., Syst. Nat. ed. 12, 472, 1767; F.B.I. 2 : 175, 1876.

**Plate 2, Fig. 1.**

**Vern. Name**: Gungchi, Ratti (H), Gunja (M).

**Locality**: Ganeshpur.

**Habitat**: Common in hedges near villages and also in the forest tracts.

**Flowers** - Aug - Oct  
**Fruits** - Cold season.

**Description**:


**Voucher Specimen No. 510/003.**

**Ethnomedicinal significance**:

Dried root powder mixed in cow's milk given in scorpion sting by the local tribes. Raw seeds are poisonous but boiled seeds are used as a tonic and effective as aphrodisiac. The seeds in paste form are applied locally in sciatica, stiffness of shoulder joints and paralysis. Seeds are abortifacient. The leaf juice is sweet in taste and used to treat hoar senses. The leaf juice mixed with oil and applied on painful swellings of body. Leaf juice is also effective in cough, colds and stomachache.

Leaf juice mixed with roots of **Plumbago zeylanica** L. and rubbed over leucodermic spots and their paste is applied in white leprosy. Leaves acts as hair tonic.
The ethnomedicinal significance of the plant has been well supported by the earlier reports enumerated by (Chopra et al., 1956, Srivastava, 1989, James, 1986, Bhattacharjee, 1998). However the application of dried powder with cow's milk in scorpion sting as practised by the local inhabitants has not been reported earlier.

**Chemical constituents** :

Roots contain precol, aborl, glycyrrhizin and alkaloids abrasine and precasine. Seeds contain alkaloids bases - abrine, hypaphorine, precatorine and methyl ester of N-N- dimethyl tryptophan methocation. Seeds also contain Flavonoids. Abrin has also been reported from the plant. Leaves contain pinitol.

**References** :


The folk medicinal plant *Abrus precatorius* L. has attracted the attention of many biologist for its biological activity, particularly, Abrine is considered to be effective in elevating the immunological responses to bacteria, viruses, microorganisms; The local use of the plant in abortion and hastening of labour, has been proved by the work of Nwedo and Botting (1983). The plant is also amenable for its propagation through tissue culture techniques.

**Psoralea corylifolia** L., sp. Pl. 764, 1753; F.B.I. 2 : 103, 1876.

**Plate 2, Fig. 4.**

**Vern. Name** : Bavachi (G), Bavanchi (H), Bavachi (M).

**Locality** : Belkheda.
Habitat: A common plant, met with in distributed gravelly areas


Description:

Voucher Specimen No. 510/004.

Ethnomedicinal significance:
The seeds powder of the plant are mixed with sesame oil and applied on affected part of leucoderma and other skin diseases. The seed oil has also been extracted and found to have antimicrobial, antifungal and antiinsecticidal activities. Psoralen and Isosporalen has been isolated from the seeds and are being investigated against several diseases including AIDs. The leaves are used against diarrhoea and roots are useful in caries of teeth (Bhattacharjee, 1998).

Chemical constituents:
Seeds and roots contain chalcones, flavones, isoflavones, furanocoumarins and coumesteral groups of compounds. These include bavachromanol, isoneobavachalcone, trilaurin, angelcin, psoralen, daidzein, coumesteral, coumestan, bakuchiol, bavachromene, bavachinin, isobavachin, barachalcone, isobavacholcone. The essential oil from seeds contain β-caryophyllene oxide, bakuchinol, β-caryophyllene and linalool as chief constituents. Geranyl acetate, 4-terpinol and limonene are present in small amount.
References:

2. Indian perfumer, 1979, 23; 174.

Chemically, the seeds and roots reveals the presence of chalcones, flavones, isoflavones. The essential oils from seeds as reported above, confers the effective properties for various skin diseases.

**Hedysarum linifolium** L. F. suppl. 331, 1781 var. **Linifolia**.

Plate 2, Fig. 5.

**Vern. Name**: Kawwa dubal (G)

**Locality**: Belkheda.

**Habitat**: Common in open areas, especially amongst grasses.

**Flowers and Fruits**: July - Oct.

**Description**:


**Voucher Specimen No. 510/005.**

**Ethnomedicinal significance**:

The ash obtained by burning the uprooted plant and mixed with coconut oil, this medicated oil is applied on febrile eruptions in children, particularly around head. Seeds are nutritive.
Srivastava et al. (1989) and Chopra et al. (1996) also reported its use in amenorrhoea.

**APOCYANACEAE**


**Vern. Name**: Sadabahar (H), Sadaphuli (M)

**Plate 10, Fig. 1 & 4.**

**Locality**: Common.

**Habitat**: Planted in gardens as an ornamental.

**Description**:


**Voucher Specimen No. 510/006.**

**Ethnomedicinal significance**:

Tribals strongly recommended that infusion of leaves used in distress associated with menstruation, including premenstrual tension in women. They also claimed decoction of leaves arrest haemorrhages. The decoction of leaves is
found to be antidiabetic. They also recommend leaves in hypertension. Roots used to relieve toothache.

Plants used in diabetes, infusion of leaves used in menorrhagia. Roots possess hypotensive, sedative properties. An extract from the plant has shown growth inhibitory effect in certain human tumours (Ramchandran et al., 1986).

**Chemical constituents:**

Plant contain about 0.86% of alkaloids in roots, 0.67% in leaves and 0.31% in stems. The most important are vincleucoblastine (VLB), Leurocristine (LC), Vincoside and iso-vincoside (Strictosidine).

**References:**

2. The Catharanthus Alkaloids, 1975, p. 159.

This plant is highly medicinal and reported to contain many alkaloids. The plant can be an alternative source material for drugs specially recommended for hypertension.

**Holarrhena pubescens** (Buch-Ham.) Wall, ex G.Don. H. Antidysenterica

(Roth.) A, DC, F.B.I. 3 : 644, 1882.

**Vern. Name** : Kuda (G), Kurchi (H), Pandhrakuda (M).

**Locality** : Bhivkund.

**Habitat** : Common on lower parts of hills in forest and also along the plains.

**Flowers and Fruits** : Mar - May.

**Description** :

A small tree, bark pale white. Leaves broadly ovate to obovate - oblong,
base obtuse. Flowers white, scented, in terminal dense corymbose cymes. Follicles cylindric with white spots. Seeds linear oblong, with a deciduous coma of brown hairs at the tip.

**Ethnomedicinal significance:**

Bark of the plant is recommended against diarrhoea, dropsy, and stomachache. Seeds in the powdered form are used as antihelminthic and given against intestinal worms.

The literature survey also supports the information provided by the local tribes. (Chopra et al., 1986, 1996; Srivastava, 1989).

**Chemical constituents:**

Around 30 alkaloids have been isolated from the plant, mostly from the bark. These include conessine, kurchine, kurchicine, holarrhimine, canarrhimine, conaine, conessimine, iso-conessimine, conimine, holacetine and conkurchine; aminoglycososteroids - holantosines A-D and holarosines A, B, E and F. Bark also gave nonalkaloids a triterpene-5, 20(29) - lupadien - 3β-ol and a steroid - sitosta-5, 23-dien-3β-ol.

The seeds gave amino acids in free state, aspartic and arginine being the major ones.

**References:**


It is particularly noteworthy that number of alkaloids have been isolated from the bark. Seeds are reported to contain amino acids like aspartic acid, arginine etc.
MALVACEAE

**Sida acuta** Burm. F. Fl. Ind. 147, 1768. **S. Carpinifolia** L.F. suppl. 307, 1781; F.B.I. 1: 323, 1874.

Plate 7, Fig. 5.

**Vern. Name** : Terore (K), Barjara (H).

**Locality** : Cosmopolitan.

**Habitat** : Weed of fields and waste places.

**Flowers and Fruits** : Sept - Nov.

**Description** :


**Voucher Specimen No. 510/007.**

**Ethnomedicinal significance** :

Korku tribes use this plant in asthma. Decoction of roots along with the roots of *Argemone mexicana* L. and *Lagasca mollis* Cav. is effective in asthma. Decoction of root is also given in fever. Decoction of roots and leaves used against haemorrhoids and impotency. Roots are considered as tonic. Leaves are also effective in swellings, elephantiasis, and acts as a abortifacient. Some tribals strongly recommend seeds to improve sex vigour and also for the treatment of
gonorrhoea and against asthma with other combinations.

Roots are astringent, cooling, tonic useful in nervous and urinary diseases and in disorders of the blood and bile. It is considered as aphrodisiac (Chopra et al., 1956). Leaves are demulcent and diuretic; boiled in oil, they are applied to testicular swellings and in elephantiasis, Decocotion of leaves and roots emollient, used for hemorrhoids and impotency. Root tonic, used in stomachace, diaphoretic, and antipyretic, used in nervous and urinary disorders and bowel complaints; also used as an electuary for expelling worms (Ramachandra et al., 1986, Srivastava, 1989).

Chemical constituents:

Ecdysterone isolated. Cryptolepine isolated. Isolation of α-amyrin, ephedrine and cryptolepine from roots. Pristane, phytane, hentriacontane, nonacosane, cholesterol, campe sterol, stigmasterol, β-sitosterol and stigmast-7-enol isolated from aerial parts.

References:
3. Fitoterapia, 1984, 55, 249.

Seeds, roots and leaves are found to be effective in many complaints and extensively used by the tribals.

The reported chemical constituents reveals the predominance of sterols in aerial parts.

Plate 7, Fig. 1.

Vern. Name: Jangali bhendi (G), Ranbhendi (H).

Locality: Ganeshpur.

Habitat: On edges of fields and along hill slopes.

Flowers and Fruits - Sept - Dec.

Description:


Voucher Specimen No. 510/008.

Ethnomedicinal significance:

Root powder or fresh root of this plant is used to control early seminal ejaculation by the local tribals. Decoction of fruits is effective in dissolving urine stone.

Fruits richer in Vit.C than those of Abelmoschus esculentus (L.) Moench. Aromatic seeds used in Arabia for perfuming coffee (Ramchandran et al., 1986).
Chemical constituents:

Epoxyoleic, malvalic and sterculic acids identified in seed oil in addition to normal saturated and unsaturated fatty acids.

Reference:

The plant is wild species of Abelmoschus having its usage as folk medicine mentioned above.

Plate 7, Fig. 3.
Vern. Name: Lal ambari (H), Lal ambadi (M).
Locality: Cosmopolitan
Habitat: Commonly cultivated and as an escape.
Flowers and Fruits - Sept - Nov.
Description:
Voucher Specimen No. 510/009.

Ethnomedicinal significance:
Dried powder of roots of this plant along with dried powder of roots of Bacopa monnieri (L.) Wettstein and Abelmoschus ficulneus L. is given in leucorrhoea by the local Gond tribes. Fruits, seeds and ripe calyx is used to cure scurvey. Seeds are also used to stimulate flow of urine. Specially ripe calyx is a
good source of Vit C. It is very effective in leucorrhoea in combination with other plants mentioned above.

Leaves are diuretic, sedative. Fruits antiscorbutic, leaves, seeds and ripe calyx are diuretic and antiscorbutic (Chopra et al., 1956). The seeds are demulcent, diuretic, tonic, and used in debility, dyspepsia, dysuria and stranguary (Duke James, 1986). Fruits are antiscorbutic, leaves, seeds and ripe calyces are diuretic, antiscorbutic (Ramchandran et al., 1986). Infusion of calyces cooling, digestive, diuretic, emollient, sedative, antiscorbutic (Srivastava, 1989)

Chemical constituents:

Extract of flowers contained reducing sugars, glucosides, acids, an alkaloids and resins. It acts as antispasmodic in intestine. New glycoside - gossytrin isolated from flower petals and structure determined. Cholesterol, campesterol, stigmasterol, β-sitosterol, α-spinasterol and ergosterol isolated from seeds.²

References:


Chemically the parts of the plant exhibit the presence of reducing sugars, glycosides, alkaloids and acids. Therefore, it is a potent source of pharmaceutical drugs.

Plate 7, Fig. 2.
Vern. Name: Jangali Kapas (G), Deo Kapas (M).
Locality: Behali.
Habitat: Road sides and slope of hills.

Flowers and Fruits - Aug - Dec.

Description:

A wild arborescent. Branches purple, hairy, cymose branching covered by stellate hairs. Leaves simple, stipulate, stipules lanceolate, alternate, petiolate, lamina palmately incised, leaf surface glabrous, covered by hairs. Flowers solitary, or in raceme, bracteate, pedicillate, complete, actinomorphic, hypogynous, pentamerous. Gamosepalous. Polypetalous, petals imbricate. Stamens indefinite, monadelphous, staminal tube prominent, antheriferous in whole length, anthers kidney shaped, monothecous, pollen grains spinous. Capsules about 1 cm long, oblong, pointed. Seeds free covered with white fibers which are not readily separable from seed.

Voucher Specimen No. 510/010.

Ethnomedicinal significance:

Decoction of roots given in fever. It is also effective in rheumatism. Seeds are considered as aphrodisiac and recommended in scanty lactation and diarrhoea. Leaves are diuretic and are useful in mental disorders.

In traditional medicine this plant is considered to be an effective remedy against rheumatism. The officinal part is the seed. It is sweet, light, and galactogogue. It gives strength to the body, leaves are diuretic and are beneficial in mental disorders. The flowers are germicidal and they purify blood and heal ulcers due to leprosy. The seeds are aphrodisiac and recommended in scanty lactation and diarrhoea (Kolammal, 1979; Kurup et al., 1979).

Chemical constituents:

Seeds and root gave optically inactive gossypol (a dimeric sesquiterpene aldehyde). Seed hulls contain leucodelphinidin.
References:


Plate 7, Fig. 4.

Vern. Name: Petara (G), Kakrai (H)

Locality: Ganeshpur.

Description:


Voucher Specimen No. 510/011.

Ethnomedicinal significance:

Leaf extract used in piles and externally applied to alleviate chest complaints. It is also effective in digestion complaints. Root decoction is used in fever by local tribes. Seeds are prescribed as aphrodisiac.

Leaves used in piles and as pectoral (Ramchandran et al., 1986) Leaves used as pectoral (Chopra et al., 1956, 1996, Caius, 1986).
Chemical constituents:

Leaves and fruits contained kaempferol and quercetin as major Flavonoids. Leaves contained glucose, fructose, galactose as well as alanine, glutamic acid and arginine and valine.

References:


The plant is specific for pectoral complaints.

RUTACEAE

Ruta graveolens L. var angustifolia, Hook.f. in F.B.I. 1:485, 1875.

Plate 5, Fig. 3.

Vern. Name: Sadab (H), Satap (M).
Locality: Malinpur in Garden.
Habitat: Cultivated for its medicinal properties in gardens.

Flowers and Fruits - Oct - April.

Description:


Voucher Specimen No. 510/012.

Ethnomedicinal significance:

Plant extract is locally applied in chronic patients of joint pains. It is also
effective in earache and toothache, tribals confidently claimed leaf juice is very effective in children against fever and worms. It is also useful in colics, epilepsy and nervous distress (i.e. Hysteria). The tribals mostly rely on this plant and confidently recommend against intestinal worms in infants.

Oil obtained from plants is antihelminthic, antiepileptic, rubefacient, emmenagogue, narcotic, herb juice in earache, and toothache, locally applied in rheumatism of joints (Srivastava, 1989). Infusion of plant is used to treat epilepsy, and nervous distress. It is said to promote fertility, promote delayed menstruation. The leaf poultice is used to treat rheumatism (Bhattacharjee, 1998).

**Chemical constituents**:


**References**:


The reported chemical constituents supports the use of this plant as folk medicine in rheumatism, fever and intestinal worms (in infants). In Ayurveda, the plant serves as chief constituent of drugs meant for epilepsy and nervous distress.
Thus, it constitutes one of the important herbal medicines having specific properties.

**ASCLEPIADACEAE**


**Plate 1, Fig. 1.**

**Vern. Name**: Utranvel (G), Utranjutuka (H), Utrani (M).

**Locality**: Cosmopolitan.

**Habitat**: Very common at the foot of hills along the pathways, also seen in hedges.

**Flowers and Fruits**: Aug - Jan.

**Description**: Wild, perennial, woody climber, twiner with milky latex with foetid smell, branches covered with spreading hairs, internodes long. Leaves simple, broadly ovate, opposite decussate, shortly petiolate. Flowers in umbellate cyme, greenish white, complete, bisexual, actinomorphic, caronate. Follicles strongly reflexed, pointed, echente with a soft spines. Seeds ovate, dentate at base and silvery white hairs at the top.

**Voucher Specimen No. 510/013.**

**Ethnomedicinal significance**: Leaf extracts of this plant massaged over the painful muscles and joints by the local tribes. Leaf juice is also effective in respiratory infection like cough, asthma etc. Fruit decoction is antipyretic. Leaf juice is antihelminthic. Leaf juice
also given in diarrhoea. Tribals claimed leaf juice is effective in menstrual trouble in women.

Leaf of the plant is most effective in catarrhal infection, infantile diarrhoea, rheumatism, also it is preferred in gynaecological problems (Srivastava, 1989; Bhattacharjee, 1998).

Particularly the tribals also use this plant in veterinary applications.

**Chemical constituents:**

Plant gave betaine, a polypeptide, hentriacontane, lupeol, α and β-amyrin, β-sitosterol, 5β-stigmaster-7(8)-en-3α-ol and 5β-stigmast-8(14)-en-3α-ol. Seeds and stems gave cardenolides - calactin, calotropin, calotropagenin, uzarigenin and coroglaucigenin.

**References:**


**Plate 1, Fig. 2.**

**Vern. Name:** Didam (K), Dudhialata (H), Dudhani (M).

**Locality:** Biba.

**Habitat:** Rare, occasionally found in sandy soil.

**Flowers and Fruits:** July-Jan.
**Description:**


**Voucher Specimen No. 510/014.**

**Ethnomedicinal significance:**

Fresh plant is very effective to stimulate lactation in women after childbirth, and it is the common practice in tribals. These tribals also practise fresh roots in Jaundice. They claim latex of this plant is effective in periodic fever. Latex also cure wounds and sore.

Herb antiseptic, depurative, and galactogogue. Latex used as vulnerary. Fresh roots prescribed in jaundice (Ramchandran et al., 1986). Herb antiseptic, depurative galactogogue; plant extract useful in throat infection; Latex antiperiodic, fresh roots useful in jaundice (Srivastava, 1989).

**Chemical constituents:**

A new pregnane ester tetruglycoside - oxystine isolated from roots and characterised as 12-o-cinnamoyl-desacylmetaplexigenin-3-o-β-D-cymaropyranosyl (1 --> 4)-o-β-D-thevetopyranosyl (1--> 4)-o-β-D-cymaropyranosyl (1--> 4)-o-β-D-digitoxopyranoside. Another pregnane ester oligoglucoside-oxysine isolated and its structure elucidated as calogenin 3-o-β-D-oleandropyranosyl (1 --> 4)-o-
β-D-thevetopyranosyl (1→4)-o-β-D-cymaropyranosyl (1→4)-o-β-D-digitoxopyranoside².

References:


During survey, it was noticed that the plant shows somewhat restricted distribution and located in remote places. The local tribes considers this plant as panacea for stimulating lactation in women after childbirth. As the population of this plant is dwindling it is necessary to conserve it through farming and micropopagation.


Plate 1, Fig. 3.

Vern. Name: Akawa (K), Mandar (H), Rui (M).

Locality: Samdapur

Habitat: Less common, in waste places and along streambeds.

Flowers and Fruits - June - March.

Description:

Wild, perennial shrub with milky latex, xerophytic. Stem and leaves covered by waxy coating, stem thick, laticiferous. Leaves simple, sessile exstipulate, opposite-decussate, ovate, unicostate, fleshy. Flowers in polychasial umbellate cyme, complete, bisexual, actinomorphic, hypogynous, white, Pedicel long. Sepals 5, polysepalous, imbricate, slightly petaloid. Petals 5, gamopetalous, corolla twisted, white. Stamens 5, corona staminal, single lobed, exceeding to staminal column. Gynoecium bicarpellary syncarpous, ovary superior, ovary and style free,
stigma united, gynandrous, ovary unilocular, placenta one, thick, hammer shaped, ovules many, marginal. Fruit etario of follicles, follicle recurred, smooth. Seeds flat with silky white hairs.

**Voucher Specimen No. 510/015.**

**Ethnomedicinal significance:**

Latex is useful in skin ailments, slightly roasted leaves are externally applied to painful joints and swellings. Leaves are also useful in fever. Slightly roasted flowers are effective in asthma and whooping cough.

Plants used in asthma, fevers with enlarged liver, cough and skin diseases (Srivastava, 1989). Milky latex has purgative property, leaves applied on burns. Root bark antidysenteric (Hajra and Vaisya, 1981).

**Chemical constituents:**

Latex contains proteases - calotropins DI and DII.\(^1\) Calotropains FI and FII.\(^2\) Plant contains β-sitosterol, bark saponins and leaves and stems - supogenins. The root bark contains two isomeric alcohols giganteol and iso-giganteol.\(^3\) α-amyrin, β-amyrin, taraxasterol, φ-taraxasterol isolated.\(^4\) Calotoxin, uscharin and calactin identified.\(^5\) Two new triterpene esters-3'-methylbutanoates of α-amyrin and φ-taraxasterol-isolated from latex.\(^6\)

**References:**

In ayurvedic medicine, the plant is established, to have many medicinal properties. Root bark is diphoretic, cures asthma and syphilis, Flowers antihelminthic, analgesic, astringent etc. Milk is purgative, used in leucoderma and abdominal diseases.

**PLUMBAGINACEAE**

**Plumbago zeylanica** L. Sp. Pl. 151, 1753; F.B.I. 3; 480, 1842.

**Plate 5, Fig. 1.**

**Vern. Name:** Chitrak (H), Chitramula (M).

**Locality:** Sayawada

**Habitat:** Wild within the area, straggling amongst bushes. Also found in waste places.

**Flowers and Fruits - Sept - Feb.**

**Description:**


**Voucher Specimen No. 510/016.**

**Ethnomedicinal significance:**

Root paste of this plant applied for opening abscesses. Root paste along with milk and water applied externally in leprosy and other skin diseases by the
local tribes. Roots are also practised in piles. Root powder mixed with mustard oil, applied externally on septic wounds.

Roots made into a paste with vinegar, salt and water applied externally in leprosy and other skin diseases. Milky juice used as application in scabies and unhealthy ulcers (Chopra et al., 1956). Roots are abortifacient, vesicant, and diuretic used in dyspepsia, piles, anasarca, diarrhoea, and skin diseases. Root extract applied for opening abscesses (Ramchandran et al., 1986). Roots used in diarrhoea, dyspepsia, piles, anasarca, leprosy and skin diseases (Srivastava, 1989). Roots are used to promote appetite and improve digestion (Bhattacharjee, 1998).

**Chemical constituents:**

Roots yielded naphthaquinone derivatives - plumbagin, 3-chloroplumbagin, 3,3'-bipumbagin.\(^1\) Elliptinone, Chitranone, droserone, zeylanone, isozyelanone.\(^2\) 1,2(3)-tetrahydro-3, 3'-bipumbagin.\(^3\) Plumbazeylanone.\(^4\)

**References:**


Tribals specifically recommend this plant in healing wounds, skin diseases. It is mostly antiseptic.

**PASSIFLORACEAE**


**Plate 5, Fig. 6.**

**Vern. Name:** Mulaibuti (K) Gangurli (M).

**Locality:** Belona.

**Habitat:** Occasional in hedges.

Description:

A slender foetid, tendril-like climber, ciliate and denticulate with gland-tipped setaceous hairs, similar hairs also beneath and simple hairs above. Leaves 3 lobed, ovate, triangular, ciliate on margins. Flowers white, greenish, axillary, solitary. Calyx tube fleshy. Corona of 1 to several rows of numerous filiform segments with 1 or more membranous folds lower down and a shallow cup surrounding the gynandrophiore. Stamens 5. Ovary 1-celled many ovuled, styles 3. Fruit like a small green gooseberry.

Voucher Specimen No. 510/017.

Ethnomedicinal significance:

Decoction of leaves used in asthma by the local tribes. Leaves are also applied on forehead in headache. Root paste is applied on scorpion sting. Leaves of this plant mixed with leaves of Vitex negundo L. used in skin inflammations.

Decoction of leaves used in biliousness and asthma. Fruits are emetic, leaves applied on the head in giddiness and headache (Chopra et al., 1956; Srivastava, 1989). Fruits are emetic, their decoction used in asthma and biliousness, decoction of leaves and roots is an emmenagogue, used in hysteria (Ramchandran et al., 1986).

Chemical constituents:

7,4'-Dimethoxynaringenin and 3,5-dihydroxy-7,4'-dimethoxyflavanone isolated. The chemical constituents reports the presence of specific alkaloid passiflorine, Ermanin and 7,4'-dimethoxyapigenin.
References:

2. Echeverri et al., 1985.

The plant is valued for its application in asthma and scorpion sting among the Korku tribes.

OXALIDACEAE


Plate 5, Fig. 2.

Vern. Name: Amrulsak (H), Ambuti, anjati (M).

Locality: Cosmopolitan.

Habitat: Common weed of wet soil, fields, and waste place.

Flowers and Fruits - Oct - March.

Description:

Wild, herb with long creeping stem, and ascending shoot having pubescent hairs. Leaves long trifoliate, petiolate, leaflet cuneate at the base, subsessile, margin ciliate, stipulate, stipules small adnate to the petiole. Flowers axillary subumbellate, pedunculate, bracteate. Sepals oblong, obtuse. Petals oblong, rounded at the apex. Stamens 10 polyandrous. Gynoecium pentacarpeliary, styles 5, stigma terminal, ovules one or two in each locule. Fruit capsular, capsule cylindrical, shortly beaked. Seeds deep brown, small indefinite, transversely ribbed.

Voucher Specimen No. 510/018.

Ethnomedicinal significance:

Plant used against skin diseases and fever by the local tribes. Leaves and roots are used to treat dysentery and diarrhoea. Leaves being source of vit C can be used to cure scurvey. It is also a good appetiser. Tribals claimed that it is useful in cataract.
Leaves are cooling, refrigerant, stomachache, antiscorbutic, plant used as cure for scurvey (Chopra et al., 1956). Leaves are a good source of Vitamin C and carotene. Fresh juice of plant given in dyspepsia, piles, anaemia, and tympanitis. Infusion of leaves used to cure opacity of the cornea (Ramchandran et al., 1986). Leaves cooling, stomachic, refrigerent, antiscorbutic. Plants considered to be a cure for scurvey (Srivastava, 1989).

**Chemical constituents:**

Alcoholic extract of leaves showed complete inhibition of growth of *Staphylococcus typhi*, *S. aureus*, *S. albus* and *S. citrus* at 6.5/mg/ml.

**Reference:**


The plant is used as folk medicine, specially as a source of Vit. C. It is also antidysenteric (Kharkonger and Joseph, 1981). Sexena et al. (1981) and Prum et al. (1983) reported the presence of flavonoid, glycoside-3-glycosylquercetin, 3-glucosylkaenferol, 7-glucosylkaempterol.

**Biophytum sensitivum** (L.) DC. Prodr. 1:690, 1824, F.B.I. 1:436 in part, 1874.

**Oxalis sensitiva** L. Sp.Pl. 434, 1753.

**Plate 5, Fig. 4.**

**Vern. Name**: Zapilzara (K), Lajalu (H), Lajri (M).

**Locality**: Cosmopolitan.

**Habitat**: Very common in grass land on gravel soil; also along hill slopes.

**Flowers and Fruits**: July - Feb.

**Description**:

Wild, small annual herb, 3-10 cm tall with short herbaceous stem. Leaves
crowded at the end of stem near the ground. Leaves unipinnate, leaflets 8-15 pairs, oblong, terminal pairs of leaflets, larger and becomes smaller down words, leaves are sensitive to touch, subsessile, glabrous. Flowers yellow in a short umbel, flowers complete, bisexual, actinomorphic, bracts lanceolate, small, crowded below the pedicel. Sepals lanceolate, polysepalous, acute. Petals polypetalous, rounded spreading. Stamens 10, polyandrous, inner 5 are larger. Gynoecium pentacarpellary, syncarpous, styles five, placentation axile. Fruit capsule, ellipsoid, 5 grooved. Seeds small, ovoid.

**Voucher Specimen No. 510/019.**

**Ethnomedicinal significance:**

The tribals claim that the extract of whole plant should be applied externally to reduce hydrocele, whereas the dried powder alongwith coconut oil is effective in piles and fissures. Leaves diuretic when taken internally. It is also antiseptic and styptic specifically applied for healing wounds and ulcers.

Leaves diuretic, powdered seeds applied to wounds. Decoction of roots in gonorrhoea and lithiasis. Ash effective in stomachache (Chopra et al., 1956).

In Ayurveda, the whole plant is reportedly cooling, bitter, astringent, antipyretic, and antiseptic. It is useful in fever, burning sensation, chronic cough, dysentery, urinary calculi and vaginal disorders. It cures piles and hydrocele. The leaves are antiseptic and styptic and hence very useful in healing wounds and ulcers. The leaves act as diuretic when given internally (Moose, 1978; Chunekar, 1982).

The literature survey reveals that chemical constituents have not so far reported from this plant. It forms a component of folk as well as crude ayurvedic drugs.
LAMIACEAE


Plate 12, Fig. 4.

Vern. Name: Babui Tulsi (H), Sabza (M), Rantulas (G).

Locality: Cosmopolitan.

Habitat: Common on top of hills; also in open grasslands.

Flowers and Fruits: Throughout the year.

Description:

Wild, perennial, branched, erect herb, covered by glandular hairs, aromatic.


Voucher Specimen No. 510/020.

Ethnomedicinal significance:

Decoction of whole plant given in fever, seeds with water given internally as antidysenteric and also recommended against stomachache by the local tribes. Plant is also effective in cough and worm. Leaf juice used in earache and seeds are considered as aphrodisiac.

Flowers carminative, diuretic, stimulant, demulcent, seeds mucilaginous given infusion in gonorrhœa, dysentery. Root used in bowel complaints of children (Chopra et al., 1956). Plant considered stomachache, alexipharmic, antipyretic, diaphoretic, expectorant, carminative, stimulant and antihelminthic, seeds
demulcent; stimulant, diaphoretic and diuretic used in cases of habitual constipation and piles (Ramchandran et al., 1986). Seeds considered as aphrodisiac, demulcent, diaphoretic, diuretic and stimulant. The juice of the plant is used as nasal douche and also applied in skin diseases. Seeds given internally to relieve constipation and piles (Srivastava, 1989).

Chemical constituents:

Essential oil contains 1,8-Cineole, eugenol, limonene, ocimene, geranial, Cis-3-hexanol, citronellol, a-terpineol, camphor, methyleugenol, methyl cinnamate as minor and linalool, methyl chavicol as major components. Methyl cinnamate may be a major constituent in some chemovars.

Reference:


The plant is most useful in folk as well as traditional system of medicine.

Ocimum gratissimum L.

Plate 3, Fig. 2.

Vern. Name: Ram Tulsi (H)
Locality: Taroda.
Habitat: Cultivated.
Flowers and Fruits - Nov - Mar.
Description:

Voucher Specimen No. 510/021.

**Ethnomedicinal significance:**

Leaf juice along with few drops of honey poured in ear to combat pus formation and earache by local tribes. Leaf juice is also effective in colic pain and worms in children. Seeds powder given in headache and dysentery. Plant is recommended for rheumatism.

Plant shows marked antibacterial activity use in earache, toothache, and abdominal colic in children. It is digestive tonic, stimulant, dimulcent, diuretic, antihelminthic, antiseptic, and styptic, employed in cough mixtures. Seeds given in headache, neuralgia, and dysentery; An infusion used in urinary disorders, decoction in seminal weakness. Herb also used in aromatic baths of fumigations for rheumatism and paralysis (Ramchandran *et al.*, 1986).

**Chemical constituents:**

Essential oil from leaves and flowers contain α and β-pinene, camphene, α-terpinene, Δ3-curene, myrcene, 1,8-cineole, p-cymene, limonene, camphor, linalool, α-terpineol, thymol, methyleugenol, methyl isoengenol, caryophyllene, humulene, β-selinene, colvène, longifolene.¹ A sesquiterpene alcohol, gratissimol ² A variety rich in eugenol is also known.³ Seed mucilage contains pentoses, hexoses, uronic acids and lipids.⁴

**References:**


The local tribes usually cultivate this plant in Kitchen garden; Specifically it
is recommended for earache. Also it is most helpful in many ailments and valued for its effectiveness.


**Plate 5, Fig. 5.**

**Vern. Name**: Bhootganja (G), Hejurchei (H).

**Locality**: Deothana.

**Habitat**: Frequent along banks of rivers and streams, also along guillies in forests.

**Flowers and Fruits** - Oct - Jan.

**Description**:


**Voucher Specimen No. 510/022.**

**Ethnomedicinal significance**:

Tribals crushed the roots and rubbed on the breast to release the milk when mammary glands swells due to excessive accumulation of milk. Extract of leaves used in rheumatism. Fresh leaves rubbed on forehead to cure headache. The ash of flower head mixed with curd and applied to cure ring worm. Ashes of flower
heads applied to burns and scalds. Decoction of leaves is taken internally as a tonic and febrifuge and for gastro-intestinal troubles.

Ashes of flower heads applied to burns and scalds. Ashes mixed with curd applied to ringworm and itchy skin diseases. Root crushed and rubbed on the breast when it swells and milk does not pass through the nipples. Decoction of leaves- tonic (Chopra et al., 1956).

Plant used in skin infection, ashes of flowers applied to scalds and burns. Leaves used against rheumatism. Seeds yield a fatty oil similar to olive oil (Ramchandran et al, 1986). The leaves are used in Brazil in the treatment of rheumatic infections (Caius, 1986).

The Plant parts burnt to ashes. Mixed with the mustard oil and applied on affected part due to paralysis (Tarafdar and Rai, 1981). It is also useful on swelling due to Flatulence when taken in combination with other drugs. Tribals women prefer the steam bath after delivery (Jain, 1965).

**Chemical constituents:**

A labdane diterpene - hepetaefolin - isolated from leaves and its stereostructure determined.¹ Crystal structure of methoxynepetaefolin and nepetaefolinol determined.² Campesterol, n-octa-cosanol, n-octacosanoic acid, quercetin, β-sitosterol-β-D-glucopyranoside and 4,6,7-trimethoxy-5-methylchromene-2-one isolated from roots.³

**References:**

3. Indin Drugs, 1988, 26, 127.
RUBIACEAE

**Morinda tinctoria** Roxb.

*Plate 8, Fig. 4.*

**Vern. Name**: Ach (H), Aali (M).

**Lacality**: Taroda

**Habitat**: Riverside on hills, prefers sandy soil

**Flowers and Fruits**: Oct - Dec.

**Description**:


**Voucher Specimen No. 510/023.**

**Ethnomedicinal significance**:

Extract of root bark is effective in skin diseases.

Root used internally as an astringent. Glycoside morindin isolated from wood (Chopra *et al.*, 1956).

**Chemical constituents**:

Morindine, damnacanthal and nordamnacanthal from heart wood.\(^1\) Morindone diglucoside isolated from root bark.\(^2\) 6-Primeveroside of morindone isolated from root bark.\(^3\) Damnacanthal and nordamnacanthal, a new anthraquinone ester-tinctomorone isolated from heart wood and its structure established.\(^4\) Morinodone synthesized.\(^5\) Morindone, damnacanthal, nordamnacanthal and β-sitosterol isolated from roots.\(^6\) Ursolic acid isolated from leaves; Alizarin-1-methyl ether rubiadin and mannitol from stem bark and anthragallol-2,3-dimethyl ether, saranjidiol,
ibericin and morindone-6-primeveroside from root bark. Fatty acids, campesterol, stigmasterol and β-sitosterol isolated from oil.

References:

CONVOLVULACEAE


Vern. Name: Kuwarvel (G)

Locality: Bhivkund

Habitat: Frequently in moist soil.

Flowers and Fruits: Aug - Nov.

Description:


Voucher Specimen No. 510/024.
Ethnomedicinal significance:

Extract of the whole plant applied as lotion over forehead to relieve headache. Roots are effective in toothache. Plant is considered as tonic and also effective in rheumatism and piles.

Plant used in rheumatism, piles and urinary disorders, tonic and laxative (Chopra et al., 1956). Decoction of roots used in toothache (Ramchandran Kamala et al., 1986). Plants bitter, astringent, calefacient, tonic useful in rheumatism, piles, swellings, urinary disorders, root extract in kidney diseases (Srivastava, 1989).

The plant is exclusively a folk-medicine and used as analgesic by the tribes.

ASTERACEAE


Plate 11, Fig. 1.

Vern. Name: Koyalamukhi (K), Fuli (M).

Locality: Cosmopolitan.

Habitat: Very common along road sides, fields.

Flowers and Fruits: Aug - Feb.

Description:


Voucher Specimen No. 510/025.
Ethnomedicinal significance:

Decoction of roots along with the roots of *Argemone mexicana* L. and *Sida acuta* Burm. f. is very effective in asthma. This practice is very common among the Korku tribes.

Chemical constituents:

Potulitrin and acetylpatulitrin isolated from aerial parts.

Reference:


Tribals also reported that, the roots of *Lagascea mollis* Cav., along with roots of *Sida acuta* Burm. f., *Dendrophoe falcata* (L.f.) Etting. (whole plant an epiphyte), *Argemone mexicana* L. and tip of the prop roots of *Ficus benghalensis* L. subjected to decoction and given as a remedy against chronic asthma. The formulation is widely, experimented among Korku tribes and found to be effective.


Vern. Name: Gobhi (G), Gojibha (M).

Locality: Jamthi.

Habitat: Found rarely in open ground or under partial shade in forest or hilly areas.


Description:

Voucher Specimen No. 510/026.

Ethnomedicinal significance:

Korku tribes prescribe the leaf extract for healing wounds and bruises; decoction of root is used to control diarrhea and dysentery. Roots are also effective to inhibit vomiting. These tribals boil the leaves in coconut oil and apply to ulcers and eczema, leaves are also effective in stomachache.

Plant is astringent, cardial tonic. Decoction of roots and leaves given in dysuria, diarrhea, dysentery and swellings or pains in stomach. Roots given to arrest vomiting. Root powdered with pepper applied to toothache (Chopra et al., 1956). Mucilagenous decoction of roots and leaves used as an emollient in dysuria, diarrhea, dysentery, swelling and against stomach pains. Roots prescribed to arrest vomiting, powder with pepper applied in toothache. Leaves used in application for eczema and ulcers (Ramchandran et al., 1986). Plants are astringent, cardiac tonic, alterative, febrifuge used in snake bite. Decoction of roots and leaves emolient given in dysuria, diarrhea, dysentery, swelling and pains in stomach. Roots given to arrest vomiting (Srivastava, 1989). The plant in combination with various drugs is given in diarrhea and in complaints having symptoms like epilepsy (Saxena et al., 1981). Tribals also use this plants for healing cattle wounds (Jain, 1965). The decoction of plant is used as a remedy against peptic ulcers (Padhye et al., 1991).

Chemical constituents:

References:
1. Phytochemistry, 1969, 8, 933.


Vern. Name: Maka (G), Bhangra (H), Maka, Bhringuraja (M).

Locality: Bhivkundi.

Habitat: A common weed in different types of habitats but grows luxuriently in moist damp areas.

**Flowers and Fruits** - Throughout the year.

**Description**:


**Voucher Specimen No. 510/027.**

**Ethnomedicinal significance**:

Tribals claimed that juice of plant is effective in enlargement of spleen. It is also used in Jaundice. They prescribe plant extract in cough and headache and in scorpion sting. It is also externally applied as a hair restorer, specially in infants. Leaf extract is effective in inflammation of mucous membrane of throat and nose.

Plant tonic effective in hepatic and spleen enlargements, emetic, plant juice in combination with aromatics administered for catarrh and jaundice. Leaves in
scorpion sting. Leaf juice along with honey used as remedy against catarrah in infants. Root emetic, purgative applied externally as antiseptic to ulcers and wounds in cattle (Chopra et al., 1956).

In Ayurveda drug is known as Bhringarajah, is acrid, bitter, hot and dry, reduces kapha and vata and is a good rejuvenator. It is good for the hair and skin, expels intestinal worms, cures cough and asthma and strengthens body. It is considered a specific in night blindness, eye diseases, headache and disease pertaining to hair and its growth. Traditionally the drug is extensively used against Jaundice. (Aiyer and Kolammal, 1962; Kurup et al., 1979).

The plant is popular in the preparation of established drugs for liver ailments like Liv-52, Livomyn, Tefroli etc. Its antihepatotoxic activity has been studied in detail by Handa et al., 1984.

Chemical constituents:

Leaves gave stigmasterol, α-tertheinymethanol. Wedelolactone, desmethylwedelolactone and desmethylwedelolactone-7-glycoside. Aerial part gave-β-amyrin and luteolin-7-o-glycoside. Root gave hentriacontanol, heptacosanol and stigmasterol. A new dithienylacetylene ester (I) isolated from roots and characterised as 5'-isovaleryl oxymethylene-2-dithiophe. Isolation and structure determination of 5'-senecioyloxymethylene-2-dithiophe (II)6. In addition 5'-tigloyloxymethylene-2-dithiophe (III) isolated from aerial parts and roots and its structure elucidated.

References:
As the plant is having a remedial properties for no, of ailments, it is much exploited by local tribes as well as it forms a chief constituent of many drugs. As such the plant requires cultivation of large scale and it may be brought under cultivation in the fields of tribes. The tribal population needs to be trained for farming of such medicinal plants, consequently enhancing the economic condition of these tribal population.


**Vern. Name**: Pittapapda (G), Seri (H), Patharsuva (M).

**Locality**: Dhanora.

**Habitat**: Common in open dry, grassy places, on hills.

**Flowers and Fruits**: July - Oct.

**Description**: Wild, aromatic, diffused, annual herb. Stem aerial, erect, herbaceous. Petiole slender. Leaf segment linear, pinnatisect. Inflorescence capitula. Flowers yellow, pedunculate, small, compressed, involucre bract with scarious margin, inner longer, disc-floret, tubular, hairy, pappus spreading. Achenes 7-8 cm long, linear, hairy, dark brown.

**Voucher Specimen No. 510/028.**
Ethnomedicinal significance:

Decoction of plants is used in general debility in women after childbirth by local tribes.

Plant is a bitter tonic used in female complaints and as emmenagogue (Chopra et al., 1956; Srivastava, 1989).

Chemical constituents:

Phellandrene, cineole, p-cymene, terpinen-4-ol, β-caryophyllene and 7-methoxy-2, 2-dimethylageratö-chromene identified in essential oil by GLC.

Reference:


The entire plant is used as decoction in folk medicine. In traditional systems, the plant is not much exploited.


Conyza cinerea L. Sp. Pl. 862, 1753.

Plate 11, Fig.3.

Vern. Name: Sahadevi (H), Sadodi (M).

Locality: Cosmopolitan.

Habitat: Very common in waste land, road side fields.

Flowers and Fruits: Most of the year except the hot summer.

Description:

Wild, annual herb with erect stem, branched racemosely. Leaves simple, shortly petiolate, variable in size and shape, generally ovate covered by pubescent hairs on both the side. Capitula pink, discoid, terminal, present in terminal corymb, homogamous showing only disc-floret, involucre bract many, seriate, lanceolate, pappus biseriate. Achenes 2 or 3 angled brown, hairy.
**Voucher Specimen No. 510/029.**

**Ethnomedicinal significance:**

Roots of this plant used as an antihelminthic, decoction of root is also given in diarrhoea and stomachache. It is also recommended against dropsy. Decoction of whole plant is given in piles. Dried powder of flowers prescribed in fevers and rheumatism by the local tribes. Tribals claimed seeds of this plant are effective in threadworms, roundworms, cough, flatulence, psoriasis and other skin diseases. Decoction of plants used to promote perspiration in febrile conditions, used as remedy against spasm of the bladder and strangury. Juice of plant given in piles. Root given against dropsy, flowers administered against conjunctivitis. Seeds used as antihelminthic (Chopra et al., 1956). Roots bitter used as an antihelminthic, their decoction given in diarrhoea and stomachache, juice against cough and colic, flowers used in fevers, rheumatism and conjunctivitis. Seeds antihelminthic and alexipharmic, effective against threadworms and round worms. Also given against cough, flatulence, intestinal colic, leucoderma, psoriasis and other skin diseases (Ramchandran et al., 1986). Plants diaphoretic, antihelminthic, used as a cure for spasm of the bladder and strangury. Roots used in dropsy, plant juice given in piles. (Srivastava, 1989).

**Chemical constituents:**

β-Amyrin acetate, β-amyrinbenzoate, lupeol and its acetate, β-sitosterol, stigmasterol and α-spinasterol isolated. Luteolin, its 7-o-glycoside, iso-orientin and chrysoeriol isolated from fresh flowers. α and β-amyris, their acetates, δ-amyrin acetate and 3β-acetoxyurs-13 (18)-ene isolated from roots. Isolation of a new triterpene-24-hydroxytaraxer-14-ene from roots together with campesterol and α-spinasterol; new compound characterised.
References:

LEEACEAE

Plate 4, Fig. 1 & 2.
Vern. Name: Saurayakand (K).
Locality: Ghatang.
Habitat: Occasional under the shades of trees.
Flowers and Fruits: Aug - Sept.
Description:

Voucher Specimen No. 510/030.

Ethnomedicinal significance:
Tribals crushed the leaves and applied to injury. Tubers are also effective in toothache.

Tubers used as a remedy against guinea worms. Leaves bruised and applied
to wounds (Chopra et al., 1956). Berries eaten. Root tubers used against guinea worms (Ramchandran et al., 1986).

The plant is exclusively a folk medicine with no reference in ayurvedic literature.

**STERCULIACEAE**


Plate 4, Fig. 5.

**Vern. Name** : Marophali (H), Muradsheng (M).

**Locality** : Salbardi.

**Habitat** : Plants fairly common on hill slopes and as an undergrowth of forest in lower parts of hills.

**Flowers and Fruits** - Aug - Oct.

**Description** :


**Voucher Specimen No. 510/032.**

**Ethnomedicinal significance** :

Fruit extract administered internally in abdominal troubles, indigestion, pain, loose motions, dysentery by local tribes. Root extract used in diabetes.

Fruit considered as demulcent, astringent, useful in the griping of bowels and flatulence of children. Bark in dysentery and diarrhoea. Juice of root in
diabetes. Root and bark is used in cough and cure for scabies when applied topically. (Chopra et al., 1956). Fruits and bark constitute the drug. It is demulscent, astringent, expectorant in action also used in dysentery, diarrhoea, diabetes and stomach infection (Srivastava, 1989). The seed powder (about 20 gms) is used thrice a day for one week in the treatment of dysentery and stomach pain. Bark is also used to treat diarrhoea and dysentery. The juice of the root is given in diabetes (Bhattacharjee, 1998). Fruit extract is used in earache (Saxena et al., 1981). Fruit is also used in stomach troubles (Jain, 1965).

Chemical constituents:

Seeds contain diosgenin.\(^1\) Roots gave cucurbitacin B and iso-cucurbitacin B, leaves yielded an ester tetratriacontanyl tetratriacontanoate along with tetratriacontanoic acid, tetratriacontanol and sitosterol\(^2\).

References:


Fruit is the medicinally significant part of this plant. It can be utilized as an alternative medicine in ayurvedic system.


Vern. Name: Jangali Ghatoli (G).

Locality: Deothana.

Habitat: Common in waste lands.

Flowers and Fruits: Sept - Feb.
Description:


Voucher Specimen No. 510/033.

Ethnomedicinal significance:

Tribals use 2 or 3 drops of leaf juice of this plant to control earache. Roots are used to control internal haemorrhages. Roots are also effective in women to increase fertility. Roots are useful in children diarrhoea. Leaf juice of this plant is effective against giddiness.

Plant is febrifuge, purgative and emollient. Roots chewed to control internal haemorrhages; their decoction is used for the same purpose and to induce fecundity in women (Ramchandran et al., 1986). Roots used in children's diarrhoea, the pulverized plant with hot water is taken morning and night in coughs. The leaves are used against giddiness (James A Duke, 1986).

Chemical constituents:

Tripeptides - adouetine X, adouetine Y, adouetine Y'-and a tetrapeptide - adouetinz, isolated; their structures elucidated; these were composed of leucine, 3-hydroxyleucine, isoleucine; Phenylalanine, 3 Hyle, ileu; Phe, 3-Hyle, iLeu; Phe, proline, 3-hydroxy-phe, phe respectively. Apigeninidin detected in flowers.
References:


The plant is specifically used by the tribals for ear problems. In conventional systems there is no mention of this plant as a source material for any pharmaceutical drugs. However, the plant is most suitable for drug formulations.

EUPHORBIACEAE


Vern. Name: Durapatki (G), Panjoli (H), Pavana (M).

Locality: Ganeshpur.

Habitat: Often found in hedges and in moist localities.

Flowers: Almost throughout the year.

Description:


Voucher Specimen No. 510/035.

Ethnomedicinal significance:

Leaf juice of this plant used in earache by the Gond tribes. Leaf juice along with camphor also applied over bleeding gums. Dried leaf powder applied on sores and burns. Root is also effective in cough and asthma.
Leaves are diuretic, cooling. Juice of leaves made into pills with camphor and allowed to dissolve in the mouth act as remedy for bleeding gums. It is also used against diarrhoea in infants. (Chopra et al., 1956; Ramchandran et al., 1986). Leaves diuretic, cooling, juice given in bleeding gums, in infantile diarrhoea, powdered leaves applied in sores and burns. Fruits given in inflammation, blood diseases; roots in cough and asthma (Srivastava, 1989).

Chemical constituents:

Stem contains friedelin, friedelan-3β-ol, glochidonol, 21α-hydroxyfriedelan, -3-one, 21α-hydroxyfriedel-4(23)-en-3-one, betulinic acid and sitosterol; Leaves contain Friedelin and sitosterol.\(^1\)

Leaves contain friedelin and sitosterol. Roots gave taraxeryl acetate, Friedelin, epifriedelinol, taraxerone, betulin, β-sitosterol, 21α-hydroxy-friedelan-3-one, glochidonol and octacosanol.\(^2\)

References:


It is not a component of well established drugs, but as a folk medicine. The plant is widely accepted for earache and bleeding gums.

**Euphorbia heyneana** Spr; Syn. **E. microphylla** Heyne ex Roth

Plate 8, Fig. 6.

Vern. Name: Chhota didam (G), Dudhi (M).

Locality: Cosmopolitan.

Habitat: Common on rocky habitats.

Description:

Annual, prostrate, dichotomously branched, glabrous, green herbs. Leaves obliquely oblong, entire at base, rounded at apex, glabrous on both surfaces. Involucres sub-solitary, axillary, broadly campanulate, lobes triangular, acute. Capsule obtusely keeled. Seeds obtusely tetrangular, sides concave, smooth, brown.

Voucher Specimen No. 510/036.

Ethnomedicinal significance:

Whole plant used to stimulate the flow of milk by local tribes. They believe roots of this plants are effective in malarial fever. Tribals uproot the plants, take out root and without knowing the patient, tied it on wrist for 2 or 3 days.

Plants used to stimulate: secretion of milk (Chopra et al., 1956). Plants also acts as galactagogue (Ramchandran et al., 1986).

Apart from stimulating action for lactation, its importance in malarial fever has been emphasized by the tribals. However, the authenticity of effectiveness just by touch therapy does not hold good.

Plate 12, Fig.3.

Vern. Name: Hartho (H), Vorepuvan, Posheri (M).
Locality: Borgaon.
Habitat: Occasional along streams and headges.
Flowers and Fruits - July - Oct.

Description:
Wild, perennial shrub, branches ending into thorn, angular. Leaves obovate, glaucus. Flowers greenish white in axillary cluster, unisexual, male flowers numerous, female one to five. Fruit globose, berry, white, 3 celled.

**Voucher Specimen No. 510/037.**

**Ethnomedicinal significance:**

Leaves extract along with cow's milk is effective in abnormal suppression of menstruation in women.

Leaves made into paste with tobacco used to destroy worms in sores. Plant fish poison (Chopra et al., Srivastava et al., 1989). Juice or paste of leaves along with tobacco to destroy worms in the sores. Stem bark employed as a fish poison (Ramchandran et al., 1986). The plant is particularly utilised as a folk medicine.


**Plate 14, Fig. 4.**

**Vern. Name:** Chitrang dudhan (G).

**Locality:** Cosmopolitan.

**Habitat:** Commonly used in gardens for borders and hedges.

**Flowers and Fruits - July - Jan.**

**Description:**

Succulent, xerophytic, green shrub with erect stem. Leaves simple, alternate, fleshy, ovate. Inflorescence sleepy, cyathium, cyathia in dichotomous cyme. Flowers unisexual, male flowers, achlymadous with single stamen, female flower achlymydous, solitary with tricarpellary syncarpous gynoecium, placentation axile.

**Voucher Specimen No. 510/038.**
Ethnomedicinal significance:

Roots are strongly emetic. Latex is used in leucoderma and warts. Leaves of this plant are suggested to stimulate lactation in women after child birth.

Latex emetic, irritant, used in venereal diseases (Ramchandran et al., 1986). Plant restores normal menstrual function in women (Dukes, 1986).

Chemical constituents:


References:


TILIACEAE


Vern Name: Narcha (H), Karruchantz (M).

Locality: Sayawada.

Habitat: Found occasionally along field hedges and along canal banks.


Description:


**Voucher Specimen No. 510/039.**

**Ethnomedicinal significance:**

The dried leaves are used as a remedy against dysentery by the local tribes. Young green leaves are used as a vegetable specially as a tonic. Leaves are also used in fever and in stomachache.

Infusion of leaves demulcent, laxative, carminative, stimulent to increase appetite, bitter tonic used in dysentery, fever, liver disorders. Decoction of root and unripened fruit in diarrhoea (Chopra et al., 1956; Srivastava, 1989). Leaves are consumed along with the diet as a tonic (Ramchandran et al., 1986).

**Chemical constituents:**

Seeds contain cardiac glycosides. These includes two monosides - helveticoside and corchoroside A and two polar glycosides - erysimoside and olitoriside. Leaves contain b-sitosterol glycoside.

**References:**


The plant is chiefly a folk medicine; not much popularised in traditional systems of medicine however it can be a alternative source of ayurvedic drugs.
**Corchorus trilocularis** L., Mant. 77, 1767; F.B.I. 1:397, 1874.

**Vern. Name**: Kadu Kosta (H) Dhanatri (M).

**Locality**: Sayawada.

**Habitat**: Commonly found in moist, shady places and as a weed in fields during the rainy season.

**Flowers and Fruits**: June - oct.

**Description**:


**Voucher Specimen No. 510/040**.

**Ethnomedicinal significance**:

The extract of this plant is effective in bone fracture. It is used as a plaster over fracture part. Seeds of this plant are eaten in fever by the local tribes.

Seeds in fever and obstruction of the abdominal viscera (Chopra et al., 1956).

**Chemical constituents**:

New cardenolide - trilocularin - and corchoroside B isolated from seeds and structure of former elucidated as 3-o-β-D-boivinosidocanarigenin.'

**Reference**:

1. Phytochemistry, 1975, 14533.

The local practioner mainly recommend this plant in bone fracture both in animals and human being.
**Grewia hirsuta** Vahl, Symb. 1:34, 1790; FBI 1 391, 1874.

**Vern. Name**: Ghatoli (G), Kukurbicha (H), Govli (M).

**Locality**: Salbardi.

**Habitat**: Along forest edges.

**Flowers and Fruits**: Aug - Dec.

**Description**:


**Voucher Specimen No. 510/041.**

**Ethnomedicinal significance**:

Root paste applied externally to hasten suppuration and in dressing the wound. Fruit pulp as well as root extract is strongly recommended by tribal against diarrhoea and dysentery.

Fruits edible, also used in diarrhoea and dysentery. Root paste applied to hasten suppuration (Ramchandran *et al.*, 1986; Srivastava, 1989; Chopra *et al.*, 1996).

It is an important folk medicinal plant. Thus the information collected through tribals is of significance as far as its medicinal properties are concerned.
LORANTHACEAE

Plate 13, Fig. 2 & 4.

Vern. Name: Dhawada bandha (K), Banda (H), Vanda (M).

Locality: Bhulori.

Habitat: Commonly met during the cold and hot season on a good number of host plants such as Buchanania lanzan, Pongamia pinnata, Holoptelia integrifolia.

Flowers and Fruits: Dec - May.

Description:
The large, branched, partial parasite growing on trunk of the trees. Leaves simple, alternate, variable in shape, leathery, oblong, obtuse with cuneate at the base. Flowers orange in axillary raceme, bracts minute, ovate. Calyx tomentose, shortly five lobed. Corolla tube curved, lobes five, reflexed. Stamens exerted. Style quadrangular, stigma knob shaped. Fruit berry 1 cm long, black, when ripened, oblong.

Voucher Specimen No. 510/042.

Ethnomedicinal significance:
Bark of this plant is used in impotency by Gond tribes. Korku tribes applied juice in leucoderma and other skin infection. Korku tribes also use the decoction of bark in asthma and to regulate menstrual cycle in women.

Bark is astringent, narcotic, used in wounds and menstrual troubles and also as a remedy against asthma (Chopra et al., 1956). Tender shoots contain tannin. Bark narcotic, astringent, used against menstrual troubles and asthma (Ramchandran et al., 1986).
Chemical constituents:

Strospeside, neritaloside and odoroside isolated from leaves of plant. \(^1\) \(\beta\)-Amyrin acetate, \(\beta\)-sitosterol, stigmasterol, oleanolic acid and its methyl easter acetate from stems. \(^2\) (+) Catechin and leucocyanidin obtained from bark. \(^3\) Quercetin and gallic, ellagic and chebulinic acids isolated from plant growing on Terminalia tomentosa (DC.) Wt & Arn. \(^4\).

References:


The plant is ethnomedicinally significant against asthma, skin diseases and regulating menstrual disorders.

**MENISPERMACEAE**


**Plate 14, Fig. 5.**

**Vern. Name:** Akanadi (H), Paharvel (M), Pahadmool (G).

**Locality:** Ghatang.

**Habitat:** Common in forest areas and at low levels in the hills.

**Flowers:** July - Oct.  **Fruits:** Cold season.

**Description:**

Wild perennial twining, branches striated, pubescent, herbaceous. Leaves simple, alternate, exstipulate, peltate, broad ovate, mucronate, margin ciliate, base cordate, petiole long, multicostate. Flowers green, male flowers in cymose and
female flowers in pendulose raceme, yellowish pale green, bracteate, bract minute, pubescent. Sepals 4 oblong, hairy. Petals 4, pubescent on outer side. Stamens 4, filament exserted (male specimen collected, plant dioecious).

Voucher Specimen No. 510/043.

Ethnomedicinal significance:

Root extract taken internally as antirheumatic and antihelminthic. Root extract also taken internally as cardiac tonic, in fever, diarrhoea, and urinary troubles. Leaves are externally applied in skin diseases. Korku tribes also used roots to prevent abortion. Roots are also used in snake bite.

Roots - bitter, antipyretic, diuretic, purgative, antidiarrhoea, dropsy, in urinary troubles and in snake bite. Leaves external application against itch (Chopra et al., 1956). The plant is antiasthmatic, diuretic, expectorant, emmenagogic, febrifugal, sudorific, as a snake bite cure, the roots are used to prevent abortion and to arrest menorrhagia (Duke James A. 1986). Root diuretic, antiperiodic, purgative, used in dyspepsia, dropsy and urinary troubles (Ramchandran et al., 1986). The entire plant has medicinal value. The root decoction is used in diarrhoea and in case of urinary trouble. The plant possess antihelminthic, antipyretic properties. It is cardiotonic and also used against stomachache (Bhattacharjee, 1998).

Chemical constituents:

Roots contain alkaloids - hayatin (dl-bebeerin), 1-bebeerine, hayatinine (dl-(4'-o-methylbeneerine)). Hayatidine, protoberberine alkaloids including cissamine. Cyclanoline. Insularine, iso-chondrodendrine-3 and two novel bis benzylisoquinoline alkaloids, Cissamparine and cissampine.
References:

Cissampelos pareira L. roots are used in tropical countries to prevent a threatened miscarriage. The herb is also used to stop uterine haemorrhages (Lewis et al., 1977). It is also referred as "Midwives herb" by indigenous people due to its analgesic properties and its many years of use in women's ailments.

The plant has gained world wide recognition as a herbal medicinal plant to help relieve symptoms associated with menstruation and to help balance female hormones. Recent reports also includes its usage as relief for inflammation of the testicles and minor kidney problems. Leaf, bark or root decoctions mixed with other ingredients forms a part of traditional formulations, especially "Dashmularishta". In homeopathy it is used as mother tincture.

Looking into the wide range effects of this plant; it requires mass scale cultivation; and ex situ conservation, in the botanical gardens.


Plate 9, Fig. 4.

Vern. Name: Gudvel (G), Giloe, Gulancha (H), Gulvel (M).
Locality: Belkheda.
Habitat: Grown as climber on trees or along the walls.

Description:
An extensive glabrous climber with succulent corky stem, stem bark lenticellate. Branches long, pendulus. It shows aerial roots. Leaves simple, exstipulate, petiolate, cordate, rounded at the base, glabrous, petiole short, slightly twisted. Flowers in fascicles. Sepals 6 in two whorls, outer three are smaller, inner three are larger, elliptical. Petals 6, equal, clawed, spathulate. Stamens 6, filament free. Female flowers solitary, sepals green, petals flat, staminodes six. Gynoecium tricarpellary. Fruit drupe. Seeds ovoid.
Voucher Specimen No. 510/044.

Ethnomedicinal significance:
Mature stem of this plant is the medicinally significant part. Tribals and other herbal practitioners use it against all kinds of fever and for urinary diseases specially to promote urination and for the treatment of dyspepsia, and flatulence. They also prescribed it in the treatment of general debility, jaundice, piles and intestinal worms. Several of them indicated about its important role in the treatment of diabetes. Externally drug is also effective in rheumatism. Stem is also effective in chronic diarrhoea and dysentery.

In Ayurveda this plant is well established and forms a part of ayurvedic medicine generally recommended for problems related to liver and stomach. Also, the stem powder is beneficial for diabetic patients. Local tribes prescribes the crude stem powder against fever, and general debility; as well as jaundice. The drug is also given in malarial fever, both in children and adult (Caius, 1986). Stem
is considered bitter, antipyretic and effective in chronic dysentery (Srivastava, 1989; Chopra, 1996 and Bhattacherjee, 1998).

**Chemical constituents:**

Stems contain cordifol, tinosporidine, a diterpenoid tinosporide and berberilin. Other constituents of stems are hepta cosanol and β-sitosterol. Leaves contain cordifolone and heptacosanol. The creeper contains tinosporon, tinosporic acid, tinosporol. δ-Sitosterol and cordifolide. A furanoid bitter principle-tinosporine. Quaternary alkaloids- magnoflorine and tembefaraine.

**References:**


It is worth to mention that the plant is exploited for its medicinal uses, by local practitioners. Also it forms a raw material for pharmaceutical industries, therefore, the plants needs conservation through repeated cultivation.

**Menispermum japonicum** Thunb, Fl. Jap. 193. 1784.  
**Stephania hernandifolia**  
Walp; FBI 1:103, 1872.  
**Vern. Name:** Kadupal (G).  
**Locality:** Belona.  
**Habitat:** Occasional in forest.

Description:


Voucher Specimen No. 510/045.

Ethnomedicinal significance:

Decoction of roots effective in diarrhoea and dysentery. It also controls body temperature.

Decoction of root is recommended for controlling diarrhoea. It is also given for urinary diseases. Root juice is used in heart troubles (Rao and Shanpne, 1981). In Ayurveda, plant is reported to be effective in urinary diseases, dyspepsia, diarrhoea etc. Roots used against fevers, diarrhoea, dyspepsia and urinary diseases (Ramchandran et al., 1986).

Chemical constituents:


References:

The alkaloids isolated from the plant imparts the medicinal significance as enumerated by the tribals.

**AMARANTHACEAE**


Plate 6, Fig. 2.

**Vern. Name**: Ranighas (K). Kanchari (M).

**Locality**: Consmopolitan.

**Habitat**: Common in moist places like margins of lakes etc.

**Flowers and Fruits**: July - Feb.

**Description**:


**Voucher Specimen No. 510/046.**

**Ethnomedicinal significance**:

Extract of this plant is used by the Korku tribals to stimulate secretion of milk. Also used in night blindness.

Plants are useful as galactogouge, chlogogue, febrifuge, stem and leaves used in snake bite (Chopra *et al.*, 1956; Srivastava, 1989). The leaves serves as a
famine food (Duke James A. 1986) accredited with galactogoucic properties; also used in night blindness, contains carotene (Ramchandran et al., 1986).

**Chemical constituents:**

- α- and β-spinasterols isolated.
- Lupeol isolated from roots.
- Isolation of 24-methylene cycloartanol, cycloecatenol, campesterol, α-spinasterol, β-sitosterol, stigmasterol, 5α-stigmast, 7 enol and their respective palmitates.
- Nonacosane, 16-hentriacontane, β-sitosterol, stigmasterol and handianol isolated.

A saponin having oleanolic acid as aglucone and glucose and rhamnose as sugar's isolated from leaves.

**References:**

4. Indian Drugs, 1984, 21, 139.

It is also a common sometimes growing as a weed. However, its significance as a remedy for nightblindness requires through investigation.


**Plate 8, Fig. 2.**

**Vern. Names**: Pagarzara (K); Chaya (H).

**Locality**: Cosmopolitan.

**Habitat**: Common in shady spots in gardens and fields.

**Flowers & Fruits**: Nov - Jan.
Description:
Wild, suberect, diffuse herb, branches hairy, herbaceous. Leaves simple, exstipulate, petiolate, opposite. Flowers in axillary spike, greenish white, sessile bracteate, bracteolate, complete, bisexual, monochlamydous, actinomorphic, hypogynous, perianth soft. Seeds black, shining.

Voucher Specimen No. 510/047.

Ethnomedicinal significance:
Plant extract is used as a remedy against leucorrhoea by the Korku tribes. Root paste used in the treatment of headache and strangury. Leaf extracts used in hepatitis. Roots also shows antihelminthic properties.

The ethnomedicinal information provided by local tribes is supported by Aiyer et al. (1963). The decoction of root is also useful in cough, diabetes etc. The plant is reported to contain the β-sitosterol palmitate, α-amyrin and β-sitoerol (Ramchandran, 1986).

Chemical constituents:
β-Sitosterol, its palmitate and α-amyrin from heart wood. Four flavonoid glucosides (I, II, III and IV) isolated and characterised. Flowering and fruiting parts contained hemicellulose, starch, an acid-soluble polysaccharide and water soluble polysaccharides; monosaccharides contents of polysaccharides determined.

References:

Vern. Name: Kutri (G), Latjira (H), Aghada (K).

Locality: Cosmopolitan.

Habitat: A very troublesome weed when in fruit; Common in waste open area.


Description:

Wild annual erect herb with straight, pubescent branches, upper branches quadrangular herbaceous, solid. Leaves opposite decussate, petiolate, ovate. Inflorescence terminal spike. Flowers greenish white, many, sessile, bracteate, bracteolate, bract and bracteoles persistent ending in spine. Complete, monochlamydous, bisexual, actinomorphic, hypogynous, segment five, imbricate spiny. Stamens 5, filament unequal, presence of staminodes in between fertile stamen. Gynoecium bicarpellary syncarpous, ovary glabrous, unilocular, style short, stigma capititate, placentation basal. Seeds subcylindrical, brown.

Voucher Specimen No. 510/048.

Ethnomedicinal significance:

Roots of this plant used in scorpion stings. Seed powder swallowed internally to treat hydrophobia. Branches of this plant used as a tooth brush. Leaves of this plant also used in scabies and eczema. Gond tribes insert the root in vagina as abortifacient. Plant is also useful in bronchial infections.

Plant is pungent, purgative, diuretic, in dropsy, piles, boils, skin eruptions, colic, snake bite. Infusion of roots astringent. Seeds emetic, in hydrophobia (Chopra et al., 1956). Plant used in renal dropsy and bronchial infections (Chopra et al., 1969). Seeds of this plant used to treat hydrophobia and snake bite. The branches serve as a tooth brush and the ashes are used for salt. Macerated roots are used in scorpion stings (James A. Duke, 1986).
This plant in combination with *Jatropha curcas* L. and bark of *Oroxyllum indicum* (L.) Benth. ex Kurz. is preferred in relieving the body ache (Gupta, 1981). Root powder as abortifacient, and relief from stomachache has been reported by Jain (1965).

**Chemical constituents:**

Ecdysterone from Roots.\(^1\) Two oleanolic acid based saponins from fruits and ecdysone from roots.\(^2\) Linoleic, oleic, palmitic, stearic, behenic, archidic, myristic and lauric acids present in seed oil.\(^3\)

**References:**


**ARISTOLOCHIACEAE**


**Plate 4, Fig. 3.**

**Vern. Name:** Gandhyan (G), Kidamari (H), Kidamar (M).

**Locality:** Tembi.

**Habitat:** Occasionally found, weed in cultivated fields.

**Flowers and Fruits:** Aug - Nov.

**Description:**

Wild annual decumbent herb. Stem weak with striad branches. Leaves simple, petiolate, reniform in shape, obtuse, entire, cordate at the base with a wide shallow sinous. Flowers solitary dark purple, pedicillate, with reniform bract at the base. Corolla tubular, cylindric, mouth trumpet shaped, lip linear dark purple with

**Voucher Specimen No. 510/049.**

**Ethnomedicinal significance :**

Decoction of this plant is used by the tribals in general debility after delivery in women. Decoction of root is used to expel worms in kids. Leaves juice is squeezed and mixed with castor oil and applied to control eczema.

Plant is purgative antihelminthic, emmenogouge, juice of leaves applied to foul and neglected ulcers. Bruised leaf mixed with castor oil applied to eczema on children legs. Decoction of root used for expelling round worms (Chopra et al., 1956). It is purgative and antihelminthic. Bruised leaves are mixed with castor oil and applied to control eczema. Decoction of roots was found efficacious in expulsion of round worms (Ramchandran et al., 1986). This species is useful for treating worms and ulcers (Bhattacharjee, 1998).

**Chemical constituents :**

Ceryl alcohol, β-sitosterol, aristolochic acid and KCl from leaves; aristolochic acid, KCl and KNO₃ from roots.¹ Isolation of N-acetylNorciferene and aristololactum.²

**References :**


The plant is chiefly a herbal medicinal source widely experimented by the local tribes. It is specifically considered effective in expulsion of worms in kids. The plant can be a potential herb for including it as a source material in formulation of drugs. So far, no attempts are made in this regard.
SCROPHULARIACEAE


Plate 11, Fig. 2.

Vern. Name: Doda Ionia (G), Brahmi (H), Nirbrahmi (M).

Locality : Bopalwadi.

Habitat : Frequent in marshy and swampy places.

Flowers and Fruits : Practically the whole year, more in early summer.

Description :

Prostrate, succulent, gregarious herb. Normal tap root at the base and also shown adventitious roots at the aerial nodes. Stem aerial, weak, spreading, herbaceous, cymosely branched, smooth, internode short, brownish. Leaves simple, sessile, opposite decussate, oblong, spathulate, green, entire, obtuse, succulent, fleshy, glabrous on both the surface. Flowers white, solitary axillary on slender pedicel, complete, bisexual, slightly zygomorphic, tetracyclic, pentameral.


Voucher Specimen No. 510/050.

Ethnomedicinal significance :

Extract of this plant along with the extract of Euphorbia heyneana Spr. is given to the women suffering from leucorrhoea by the Gond tribes. Plant is also used in epilepsy, stems and leaves used in snake bite and scorpion sting. Tribals considered it as a brain tonic and also used in asthma.

Plant nerve tonic, used in asthma, epilepsy, insanity, hoarseness, diuretic stem and leaves in snake bite (Chopra et al., 1956). Plant is said to improve
intellect, used in epilepsy, insanity and other nervous diseases. Leaves used as a diuretic and aperient (Ramchandran et al., 1986). Plant used as cardiac and nerve tonic, useful in insanity and epilepsy, asthma and hoarseness. Leaves diuretic and aperient (Srivastava, 1989). It is used as a nerve tonic, constipation, diuretic also used as remedy for bronchitis and rheumatism (Bhattacharjee, 1998).

**Chemical constituents:**

Nicotine, 3-formyl-4-hydroxy-2H-pyran, Luteolin and luteolin-7-glycoside isolated. Bacogenin A, obtained from acid hydrolysate of bacoside A, Bacogenin A₄, Bacogenin A₅, Isolation and structure of bacogenin A₅. Leaves gave a number of uncharacterised alkaloids including herpestin. Saponin-monnierin was also isolated from the plant.

**References:**

1. Phytochemistry, 1972, 11, 2649.

The chief constituents are brahmine, herpestine, alkaloids and saponin. The local practitioner reported that plant extract of Bacopa monnieri (L.) Wettstein should be applied externally in the form of lotion and extract of Euphorbia heyneana Spr. be taken internally for remedial measures in leucorrhoea.

In Ayurveda, it is recommended in epilepsy, ulcers, spleen enlargement, indigestion, its significance as a brain tonic is also noteworthy and this property is
attributed to saponin mixture consisting of Bacoside A, B and other saponins (Singh, et al., 1982).


**Plate 10, Fig. 3.**

**Vern. Name**: Nikaya Bhasma (G).

**Locality**: Cosmopolitan.

**Habitat**: Common in the crevices and fissures of ancient fort walls and buildings from where it hangs downwards.

**Flowers**: April - June, **Fruits**: June - Aug.

**Description**:

Wild branched perennial herb, usually develops on the crevices of wall. Stem thin herbaceous, racemosely branched. Leaves simple alternate, petiolate lower leaves opposite and upper alternate, upper leaves triangular and hastate. Inflorescence solitary axillary. Flowers yellow, complete, bisexual, hypogynous, pentameric, tetracyclic, zygomorphic, zygomorphy is due to formation of spur which is due to union of two anterior petal. Polysepalous, sepals 5, imbricate. Gamopetalous, imbricate. Stamens 4, didynamous, epipetalous, inserted. Gynococium bicarpellary syncarpous, ovary bilocular, ovules many, placentation axile, style terminal, stigma bifid. Fruit capsule, globose. Seeds minute, many echinulate.

**Voucher Specimen No. 510/051.**

**Ethnomedicinal significance**:

Extract of plant is used in gynaecological problems related to conception by
the local tribes. It is also effective in diabetes. Plant extract with curd is given in rheumatism.

Plant used in diabetes (Ramchandran et al., 1986; Srivastava, 1989; Chopra et al., 1996).

**Chemical constituents:**

A new flavone glycoside - pectohinarigenin-7-rhamnoside isolated from leaves and stems along with triacontane, \( n \)-pentacosane, \( n \)-octacosanol, \( \beta \)-sitosterol and pectolinarigenin.¹

**Reference:**


It is valued as herbal formulation for effective conception in women. However in ayurveda; its acceptance as pharmaceutical drug has not been reported.

**VERBENACEAE**

*Clerodendrum serratum* (L.) Moon, cat 46 No 382, 1824, F.B.I. 4:592, 1885.

*Volkameria serrata* L. Mant. 90. 1767.

**Plate 8, Fig. 3.**

**Vern. Name:** Barangi (H), Bharungi (M).

**Locality:** Salbardi.

**Habitat:** Found occasionally on rocky ground in forest areas.

**Flowers and Fruits:** July - Nov.

**Description:**

Wild perennial shrub, woody with angular branched stem. Leaves simple, opposite decussate, sessile, lanceolate, crenate, acute, smooth glabrous. Inflorescence terminal branched cymose. Flowers bracteate, many coloured, pubescent, zygomorphic, hypogynous, tetracyclic, pentamerous. Gamosepalous. Gamopetalous, corolla lobes unequal. Stamens 4, didynamous, epipetalous,
inserted. Gynoecium bicarpellary syncarpous, placentation axile. Fruit drupe, succulent, dark purple when ripe.

**Voucher Specimen No. 510/052.**

**Ethnomedicinal significance:**

Fresh root of this plant is used in toothache by the local tribes. It is used mainly by the Gond tribes. Also decoction of root used in rheumatism. Root is being used in bronchial inflammation. Ointment is effective in opthalmia which is made by boiling leaves with butter. Seeds are also used in beri-beri.

Root in febrile and catarrhal infections. Useful in malaria. Leaves used in fevers, boiled with oil and butter made into an ointment useful in cephalalgia and opthalmia, also used in snake bite (Chopra *et al.*, 1956). Root used in rheumatism and dyspepsia, seeds aperient, used in dropsy, leaves used as febrifuge; also employed in external applications against cephalgia and opthalmia. Seeds aperient, used in dropsy (Ramchandran *et al.*, 1986). Roots used in treatment of febrile, bronchial catarrh. Roots boiled in water with ginger and coriander, it is used in nausea, seeds are laxative (Srivastava, 1989).

**Chemical constituents:**

Glucose and D-(−) mannitol from root bark.¹ Hydrolysis of crude saponin from bark yielded oleanolic acid, queretaroic acid and new serratogenic acid.² Leaves contained α-stigmasterol and flavonoids - luteolin, luteolin 7-o-β-D-glucuronide.³ Apigenin, baicalein, scutellarein and 6-hydroxyluteolin, Phenolic acids - coffeic acid and ferulic acid.⁴

**References:**

The plant is a popular folk medicine commonly available in the region. It can be a potential source of traditional pharmaceutical drugs meant for ophthalmic complaints.


**Plate 6, Fig. 1.**

**Vern. Name**: Nirgundi (G), Sambhalu (H), Nirgur (M).

**Lacality**: Cosmopolitan.

**Habitat**: Occasionally found along the roads. Gregarious along river banks.

**Flowers**: June - Jan. **Fruits**: Cold season.

**Description**:

A large wild perennial shrub with quadrangular branches. Leaves trifoliate, alternate, petiole long, leaflet lanceolate. Flowers bluish in cymose terminal panicle, complete, bisexual, bracteate, zygomorphic, zygomorphy is due to unequal lobing of corolla tube. Calyx white tomentose. Corolla tomentose, bilipped, spreading. Filaments hairy. Fruits drupe, black when ripe. Seeds minute.

**Voucher Specimen No. 510/053.**

**Ethnomedicinal significance**:

Gond tribes use root extract of this plant internally to cure asthma. Bathing with warm water medicated by decoction of plant relieves the arthritic pains. Root decoction used in worms, also employed in dysentery and piles. Flowers used in diarrhoea, fever and liver complaints. Tribals claimed leaves are effective in back ache.
Leaves aromatic, tonic, vermifuge, dried ones smoked for relief of headache and catarrh. Root expectorant, febrifuge, tonic (Chopra et al., 1956). The leaves are mixed with cowdung and are massaged in backache. Leaves are also used to treat headache (Bhattacharjee, 1998).

**Chemical constituents:**

Leaves yielded an alkaloid - nishindine. Flavonoids-5-hydroxy-3,6,7,3', 4'-pentameth-oxyflavone. Irridoid glycosides - qucubin, angusid. Stem bark contains two leucoanthocyanidins. Bark contains a fatty acid, β-sitosterol, vanillic acid, p-hydroxy-benzoic acid and luteolin. Presence of flavonoid C-glycoside is also indicated.

**References:**


The medicinal properties of the plant mentioned by the tribals were confirmed through interrogation with different local practitioners and was found to be correct.

**ACANTHACEAE**


Burm. F. Fl. Ind. 9, 1768, Kalmegh.

**Plate 13, Fig. 1 & 3.**

**Vern. Name**: Bhuinimba (G), Kiryat (H), Olenkirayat (M).
Locality: Bhivkundi.

Habitat: Spontaneously found in moist, shady places.


Description:


Voucher Specimen No. 510/054.

Ethnomedicinal significance:

Stem and leaves constitute the drug. Dried powder of this plant is used by the local tribes for worms in children. It is also given for the treatment of liver and digestion complaints, general debility, fever, dysentery and excessive gas formation in stomach. The tribals particularly advise this plant for cure of jaundice.

Herb is an ingredient of medicine commonly used as a bitter tonic, plant is astringent, anodyne and alexipharmic. Plant extracts used in sluggishness of liver and in jaundice. Leaves used as antihelminthic, (Ramchandran et al., 1986). Srivastava (1989) noted it is used in general debility, dysentery, kalazar, sluggishness of liver and constipation in children.

Chemical constituents:

The plant contains diterpenoids - andrographolide, 14-deoxy-11-oxo-andrographolide, 14-deoxy-11,12-didehydroandrographolide, 14-deoxy
andrographolide and neoandrographolide. The roots gave flavones apigenin-7, 4'-di-o-methyl ether, 5-hydroxy 7,8,2',3'-tetramethoxy-flavone, andrographin and panicolin and α-sitosterol. Leaves contain homoandrographolide, andrographosterol and andrographone.

References:

As the plant tastes severely bitter, and possesses specific chemical constituents. It serves as a useful ingredient of pharmaceutical preparations. The plant *Andrographis paniculata* (Burm. f.) Wall. is equally important as "Neem". It is widely used by the tribals, thus depleting the population, causing threaten to the survival of plant. Thus, it is most important that the plant should be conserved ex-situ. The plant contains specific metabolites, therefore, its propagation through tissue culture technique needs special attention.

Plate 4, Fig. 4.

Vern. Name: Utkatara (G), Kateseraya (H), Pivali - Koranti (M).
Locality: Hirapur.
Habitat: Common in shady, protected areas and in waste places.

Description:

A much branched prickly bushy undershrub. Leaves elliptic, acuminate, spine tipped, glabrous, base tapering into the petiole, 2-4 spines in the axils. Flowers yellow, axillary, solitary below and leafy and spiny spikes upwards, bracts foliaceous, spine-tipped. Calyx - segment unequal, with sharp tips. Corolla slightly 2 lipped, upper 4-lobed, the lower entire. Stamens 2 fertile and 2 staminodes.
Fruit capsule ovoid, with a tapering beak, 2-seeded. Seeds hairy.

Voucher Specimen No. 510/055.

Ethnomedicinal significance:

   Root powder mixed with honey is applied on blisters in mouth. Leaves as such are chewed for relief in toothache.

   Leaf extracts are applied for catarrhal infections in children. Dried bark is used in cough (Chopra et al., 1956). The significance of the plant to disperse boils and glandular swellings is authenticated by Srivastava (1989).

Chemical constituents:

   Scutellarein-7-rhamnosylglucoside isolated from flowers.\(^1\) Structure of new iridoids barlerin and acetylbarlerin - isolated from leaves and stems.\(^2\) Structure of a flavone glycoside, assigned earlier as scutellarein-7-o-rhamnoglycoside.\(^3\) It has modified as 5,6,4'-trihydroxy-7-o-neohesperidosyl flavone and confirmed by its synthesis.\(^4\) A new acylated flavonoid-luteolin-7-o-β-D-glycopyranoside-isolated from roots and its structure elucidated.\(^5\)

References:


Plate 3, Fig. 1.
Vern.Name: Untkatra (G), Talimkhana (M).

Locality: Dhanora.

Habitat: Abundant in and around wet or marshy places.


Description:


Voucher Specimen No. 510/056.

Ethnomedicinal significance:

The entire plant is uprooted and boiled in water to eliminate the contents and patients are asked to take bath as a remedy for rheumatism, and to avoid post delivery complications. Leaf extracts are used in asthma and jaundice. Seeds are said to be aphrodisiac.

The ethnomedicinal properties of the plant as suggested by the local inhabitants is also supported by the work of Aiyyar and Kolammal (1963), Srivastava (1989), Sinha (1996) reported the use of this plant in the preparation of drug for venereal diseases like Gonorrhoea. The usefulness of plant in urogenital diseases, jaundice, dropsy and rheumatic pains is also suggested by Bhattacharjee (1998).
Chemical constituents:

Xylose and uronic acids from oil of seeds.\(^1\) Lupeol, stigmasterol and straight chain hydrocarbons from lipid extract of plant.\(^2\) Detection of palmitic, stearic, oleic acid and linoleic acids in seed oil.\(^3\) Apigenin-7-o-glycuronide and apigenin-7-o-glycoside isolated from flower.\(^4\)

References:
4. Indian Drugs, 1982, 19, 150.

SAPINDACEAE


Vern. Name: Ghanfodi (G), Kanphuti (H), Kapalfodi (M).

Plate 6, Fig. 3.

Locality: Dhanora.

Habitat: Common during the monsoon period in shady places or depressions, often climbing on shrubs.

Flowers and Fruits: Aug - Nov.

Description:

Wild, annual, herbaceous, tendrillar climber. Branches thin slender pubescent, internodes long. Leaves alternate, pinnately compound, petiole 2-3 cm, leaflet acute. Flowers polygamous, minute, white arranged in few flowered, umbellate cymose, peduncle axillary about 10 cm long with two opposite circinate tendril. Sepals 4, imbricate. Petals 4 arranged in two pairs, lower two are smaller. Stamens 8, filaments unequal. Fruit capsule covered by fruit wall which is bladder like. Seeds 3, smooth, black.

Voucher Specimen No. 510/057.
Ethnomedicinal significance:

Leaves useful as poultice in rheumatism. Leaf juice used in earache. The dried powder of leaves is used externally for healing wounds. Decoction of roots is used for abortion, whereas extract of plant except root is also used in throat infection by local tribes. Thus the whole plant is medicinally significant.

The medicinal use of the plant as a remedy for rheumatism, earache, stomachache, intestinal worms, has been elaborated by the works of Nadkarni (1954), Koman (1989), Pillai (1985), Ramchandran et al. (1986) and Srivastava (1989).

Chemical constituents:


References:

The literature survey reveals, a good account of the medicinal properties of the plant. The tribals and local practitioners have been using this plant excessively threatening its population in natural habitat. Therefore it is very essential that the plant Cardiospermum halicacabum L. be brought under cultivation and also the attempts are required to be made for its propagation through tissue culture techniques.
PAPAVERACEAE


Vern. Name: Pila Dhotra (G), Darudi (K), Bharband (H).

Locality: Cosmopolitan.

Habitat: A widely established weed in sandy mounds and in waste places, along roadsides and also of the cultivated and plantation areas.

Flowers and Fruits: Feb - June and more or less year round.

Description:

A wild prickly xerophytic herb, showing deeply situated tap root system. Stem aerial, erect, dichotomously branched covered by waxy coating. Leaves simple, alternate, exstipulate, subsessile, subamplexicaul, pinnatifid, lobes irregularly dentate, spiny glaucus, white spotted, prickles sharp. Inflorescence solitary axillary with prickly peduncle, yellow, complete, bisexual, actinomorphic, hypogynous, pentamerous. Sepals valvate, caducous. Petals in two whorls, six, yellow, imbricate, parallel veined, obovate, crumpled, deciduous. Stamens many polyandrous. Gynoecium 3-6 hexacarpellary syncarpous, unilocular, superior, placentation, parietal, placenta as many as carpel, ovary covered by soft spines, style reduced, stigma 4-6 lobed, reddish. Fruit capsular, loculicidal. Seeds many, small, black.

Voucher Specimen No. 510/058.

Ethnomedicinal significance:

Roots of this plant used in jaundice by local tribes. Yellow latex of stem is effective in healing wounds and skin diseases. Seeds are effective as expectorant.

Roots are alterative, in chronic skin diseases, seeds are laxative, emetic, expectorant, yellow juice of plant for dropsy, and jaundice (Chopra et al., 1956). Seeds yielded oil in cutaneous troubles, yellow latex from stem used in injury,
scabies and in opthalmia (Ramchandran et al., 1986). Plant is used as demulcent, emetic, expectorant, laxative and is used for cancer, itch and scabies, and applied externally in headache (James A. Duke, 1986). It used for herpetic eruptions (Srivastava, 1989).

Chemical constituents:

Flowers contain flavonoids-iso-rhamnetin and two of its glycosides isorhamnetin-3-glycoside and iso-rhamnetin-7-diglycoside.\(^1\) Roots and stems contain benzylisoquinoline alkaloids-protopine and berberine and tannins and resin.\(^2\) The oil gave two alkaloids - sanguinarine (toxic) and dihydrosanquinarine.\(^3\) The leaves and stems yield alkaloids - protopine and berberine, ceryl alcohol, \(\beta\)-sitosterol, organic acids - succinic, citric, tartaric and malic, inorganic salts - potassium nitrate, calcium phosphate and calcium sulphate and amino acids and monosaccharides.\(^4\) Latex yielded alkaloids - berberine and protopine.\(^5\)

References:

The earlier reports and information collected through the local practitioners reveals the significance of this plant specifically in jaundice and healing the wounds. However, its importance in opthalmic problems particularly the opacity of cornea is reported in ayurvedic literature. Phytochemically the plant is rich in alkaloids, thus it can form a suitable alternative in pharmaceutical drugs.
SANTALACEAE


Plate 12, Fig. 1.

Vern. Name: Safed Chandan (H), Chandan (M).

Locality: Borgaon.

Habitat: Common in forest, also planted in gardens.

Flowers: Sept - Dec. also March, Fruits: March - April also in Nov.

Description:

A glabrous perennial everygreen small trees with drooping branches, bark smooth aromatic. Leaves simple, alternate, lanceolate, acute, entire, petiolate, shining. Flowers small in axillary pedunculate cyme, greenish, crimson, inodorous, perianth campanulate with 4 valvate segment, disc. lobed and thick. Stamen 4 polyandrous, exserted. Fruit drupe, globose, purpleblack. (The yellowish-brown strongly - scented heart wood constitute the well-known sandal wood).

Voucher Specimen No. 510/059.

Ethnomedicinal significance:

Leaf extract of this plant used in dysentery by the local tribes. Wood-ground up with water into paste applied to the temples in headache, fever and local inflammation and in skin diseases. Wood also used in bilious fever.

Wood applied in headache, fever, local inflammation and skin diseases (Chopra et al., 1996). The oil extracted from the heart wood of the tree used to promote urination, inflammation of bladder, gonorrhoea and cough also in headache and tuberculosis of gall bladder (Bhattacharjee, 1998).

Chemical constituents:

Leaves contain a peptide-Y-L-glutamyl-S-L-cysteine sufoxide; a polyamine-

References:

The information enumerated by the tribals when cross-checked with ayurvedic literature; was found to be correct. It is also a well established raw material in ayurvedic formulations.

SOLANACEAE


Plate 8, Fig. 1.

Vern. Name: Asgandh (H), Askandha (M).

Locality: Jamthi.

Habitat: A common weed of waste places, roadsides, noted throughout the area.

Flowers and Fruits: Sept - April.

Description:

A small erect, shrub with a branched stem showing hairs. Leaves simple,
oblong, alternate, adnate, pubescent on both the surface, cuneate at the base. Flowers greenish in axillary cymose clusters, flowers small, complete, bisexual, actinomorphic, hypogynous. Gamosepalous, increscent calyx, Gamopetalous. Fruit berry, turn red when ripe, covered by green calyx. Seeds subreniform, brown wrinkled.

**Voucher Specimen No. 510/060.**

**Ethnomedicinal significance:**

This plant constitutes a well established source material for ayurvedic formulations, specially meant for senile debility, also used as an aphrodisiac. The tribals particularly prefer the root powder with milk to promote growth in children. It also possesses the property to retard the aging process in adults.

Leaves are useful on painful swellings and sore eyes (Ramchandran *et al.*, 1986). Leaves also possess antibiotic property (Srivastava *et al.*, 1989). Seeds are hypotenic, diuretic (Chopra *et al.*, 1956).

**Chemical constituents:**

Roots contain alkaloids - incotine, somnine, somni ferine, somniferinine, withanine, withananine, withananinine, pseudo-withanine.¹ Withasomine.² Visamine.³ Roots also contain withanolides.⁴ Leaves of offspring F3 (From Crossing of Chemotype-I and III). Contain withanolides Q and R.⁵ Withanolides P and S are also present in leaves.⁶

**References:**


Plate 8, Fig. 5.

**Vern. Name**: Kala Dhatura (H), Kala dhotra (M).

**Locality**: Ganeshpur.

**Habitat**: Wild, also cultivated in gardens.

**Flowers**: Chiefly in the rainy season, **Fruits**: Jan - April.

**Description**:


**Voucher Specimen No. 510/061**.

**Ethnomedicinal significance**:

The leaves of the plants are dried and applied as a remedy for boils, sores, muscular pain, joint pains. The tribals also use the seeds as antiseptic. Flowers of this plants are antiasthmatic. Fruit juice is effective in earache. Roots are antidiarrhoeal. Locally seeds and fruits are heated to evolve fumes which are condensed and applied on severe muscular and joint pains.
In traditional system, the plant is useful in ayurvedic formulation "Dhatturah" meant for the treatment of rabis, dogbites, poisonous insect bites etc. It is also reported to be bitter, acrid, astringent, germicidal, anodyne, antiseptic, antiphlogistic, narcotic, and sedative. The drug is also effective in various skin diseases, like itching, scabies, leprosy etc. (Kolammal, 1979; Kurup et al., 1979).

**Chemical constituents**:

All the plant parts reported to yield alkaloids hyoscyamine. Also, atropine and hyoscine are also extracted.¹ Fruits contain Daturaolone and daturadiol.² Roots also contain ditiglyloxytropane derivatives, tigloidine, apohyoscine, nor hyoscine, meteloidine, norhyoscyamine, cuscohygrine and tropine.³

**References**:


The established medicinal properties of this plant clearly indicates its relevance as a medicine in crude form used by the local tribes.

**RANUNCULACEAE**


**Plate 3, Fig. 3.**

**Vern. Name**: Badersheti (G), Murhari (H), Ranjani (M).

**Locality**: Khamla.

**Habitat**: A fairly common climber on shrubs and also found trailing amongst grasses.

**Flowers and Fruits**: Oct - Feb. Also in January.
Description:

Wild, perennial, extensive climber. Stem weak, sulcate with long internode. Leaves simple, opposite, entire, slightly lobed shows three distinct lobes, palmetified, petiole twining, long. Inflorescence axillary, corymbose panicles. Flowers white, complete, bisexual, pentamerous, hypogynous, actinomorphic. Sepals 4, petaloid, petals 0. Stamens indefinite, polyandrous. Gynoecium polycarpellary, apocarpous, style persistent, feathery white. Fruit etario of achene.

Voucher Specimen No. 510/062.

Ethnomedicinal significance:

The decoction of whole plant except root is given to cure asthma, whereas decoction of roots in alcohol distilled from Madhuca longifolia (Koen.) Macbr. flower is used to stop menstruation by the local tribes. Leaf paste is also effective in controlling parasitic worms and in snake bite.

The claim of its antidotal property against snake bite has been contradicted by Mhaskar and Caius (1986). They reported that no part of this plant is useful against snake bite. Root paste application on painful boils and leaf decoction in the treatment of asthma has been supported by Bhattacharjee (1998).

This plant can be utilized as an alternative medicine in respiratory problems. It is not much exploited for drug formulation. However, the plant is most suitable for its inclusion in pharmaceutical industry after an indepth study of its biological activities.

LYTHRACEAE


Plate 10, Fig. 2.

Vern. Name: Mayvi (G), Dadmari (H), Bharjambul (M).

Locality: Salbardi.
Habitat: Very commonly found in moist, shady localities and along the banks of streams, lakes etc.

Flowers and Fruits: July - Jan.

Description:

Voucher Specimen No. 510/063.

Ethnomedicinal significance:
Plant extract is used for ringworm and other parasitic skin infections, The plant is also used for treatment of rheumatism, pains and fever by the local tribes. Leaves and stem is also known to possess antibiotic activity.

Leaves acrid, used to raise blisters, in rheumatism and relieve pains, fevers and in skin diseases (Chopra et al., 1956). Acrid leaves are bruised and used against ring worm and other parasitic skin infections. Herb is reported to possess antityphoid and antitubercular properties (Ramchandran et al., 1986). Leaves acrid, rubifacient, used in fever, rheumatism and skin diseases (Srivastava, 1989).

Chemical constituents:
Hentriacontane, dotriacontanol and β-sitosterol glycoside from fruits and leaves, triacontan-1, 3o-diol from fruits only, ellagic acid and quercetin from leaves only and betulinic acid and lupeol from roots.
Reference:


The plant chiefly serves as herbal medicines among tribal populations. In traditional systems of medicine, it is not yet used as a source material. This plant can be utilised as an alternative source material for skin infections as well as antibiotics.

BIXACEAE


Plate 14, Fig. 2.

Vern. Name: Sinduriya (H), Shendri, Kesari (M).

Locality: Semadoh.

Habitat: A cultivated plant, occasionally found in waste lands.

Flowers and Fruits: July - Nov.

Description:

A small evergreen tree. Leaves ovate, petiolate, alternate, entire, acuminate, glabrous on both the surface. Inflorescence terminal panicle. Flowers white, terminal panicle. Capsule ovate, echinate. Seeds trigonus covered with red pulp.

Voucher Specimen No. 510/064.

Ethnomedicinal significance:

Root of this plant is used against fever and jaundice. Fruit pulp used in dysentery and kidney diseases by the local tribes. Seeds are good remedy for gonorrhoea. Seeds are also considered as aphrodisiac. Seeds also yield the dye which is used for colouring silk and cotton. Mainly used for colouring food stuff.

Fruits astringent, purgative. Root bark - antiperiodic, antipyretic. Seeds used in gonorrhoea (Chopra *et al.*, 1956). Extract of the plant is used in pharmaceutical
preparation. Fraction tested are sparmogenic, antispasmodic (Chopra et al., 1969).
The seeds of this honey plant are edible and are used to flavour rice, chocolate and meats. They are reportedly aphrodisiac, astringent, cardial and febrifugal (James A Duke, 1986).

**Chemical constituents:**

Bark gave tomentosic acid. Seeds gave carotenoids bixin. Nor-bixin, β-Carotene, cryptoxanthin, lutein zeaxanthin and methylbixin. Essential oil from seeds having ishwarane as major constituent.

**References:**


The plant specifically used as herbal medicines by local tribes. In addition to medicinal significance, it is cultivated for its importance as dye yielding source particularly colouring the food stuffs such as butter, ghee, cheese, chocolate etc.

**ANACARDIACEAE**

*Semecarpus anacardium* L. f., suppl. 182, 1781; F.B.I. 2:30, 1876.

**Plate 9, Fig. 5.**

**Vern. Name:** Soso (G), Bhilava (H), Biba (M).

**Locality:** Bela.

**Habitat:** Fairly common in hill forests.

**Flowers:** May - July, **Fruits:** Cold Season.

**Description:**

A small wild tree with a rough dark coloured bark which exudes juice. Leaves

**Voucher Specimen No. 510/065.**

**Ethnomedicinal significance:**

Juice of bark used in cough, asthma, indigestion, enlargement of spleen, ulcers, rheumatism and piles by the local tribes. Oil from fruit is used in injury and cuts. Juice is also effective in fever, dysentery, loss of appetite by local tribes. Fruit oil applied on forehead in headache, fruit is also considered as aphrodisiac and antihelminthic.

In traditional medicine it is highly valued for the treatment of tumours and malignant growths. Recent studies carried on the drug have also shown promising results in the treatment of cancer (Raghunathan and Mitra, 1982). The fruit is reported to be caustic astringent, alterative, antirheumatic, carminative, counter-irritant, rubefascient and vesicant. It is used in cough, asthma, indigestion, enlargement of spleen and ulcers (Kurup et al., 1979; Raghunathan and Mitra, 1982). Fruits pierced to ooze out oil which is warmed up and applied on cuts and injuries (Jain, 1965). Sometimes, the oozing oil is said to have allergic properties like appearance of rashes on skin.

**Chemical constituents:**

Nut shells contain biflavonoids biflavones A, C, ¹ Jediflavone, ² Semecarpuflavone. ³ Oil from nuts called Bhilavinol contains a mixture of phenolic compounds mainly of 1,2-dihydroxy-3-benzene and 1,2-dihydroxy-3-benzene. ⁴ Leaves contain amentoflavone as the sole biflavonoid. ⁵
References:

Chemically, the fruits of plant shows predominance of flavones.

CUCURBITACEAE


Plate 14, Fig. 3.

**Vern. Name**: Gargunaru (H), Shivlingi (M), Gotivel (K).

**Locality**: Gaulkheda.

**Habitat**: Fairly common during rainy season on hedges of fields.

**Flowers and Fruits**: Sept - Nov.

**Description**:

Wild annual slender, delicate tendriller climber. Stem weak, herbaceous, internode long. Leaves alternate, petiolate, 3-7 lobes cordate. Flowers unisexual, yellow, male flowers smaller than the female, incomplete, actinomorphic, epigynous. Fruit globose striped. Seeds with crenulate transverse ridge.

**Voucher Specimen No. 510/066.**

**Ethnomedicinal significance**:

Extract of this plant is recommended for control of leucorrhoea by Korku tribes. It also reduces gas formation in stomach. The plant is still a best folk
medicine for its inclusion in traditional systems of medicine, the biological activity has to be understood.

**Momordica dioica** Roxb. ex willd. Sp.Pl.4; 605, 1805; Hooker 2:617 (excl syns); Cook 1:563; Duthie 1, 339; Gamble 1 : 375; Haines 2:412; Maheshwari 169; Santapau 102; Patel 171. **M. balsamina** wall; W. & A. Prod. 349 (not of Linn).

**Plate 13, Fig. 5.**

**Vern Name**: Jangli Karela (H), Kartoli (M).

**Locality**: Makhla.

**Habitat**: Rarely occurs in a wild condition in the hilly tracts.

**Flowers and Fruits**: Rainy season.

**Description**:


**Voucher Specimen No. 510/067.**

**Ethnomedicinal significance**:

Tuberous roots of this plant is used in snake bite and scorpion sting by the local tribes. It is also effective in bleeding piles.

Root toasted and used to stop bleeding from piles, also used in urinary complaints. Root ground to paste smeared over the body as a sedative in high
fever. Used in snake bite and scorpion sting (Chopra et al., 1986). Tubers used in stomachache, general debility, roots astringent, applied on bleeding piles, bowel troubles, urinary disease, as sedative in fevers. Root paste in water in cough (Srivastava, 1989). Root of male plant is used for abortion. The root paste is also used as an antidote of scorpion stings (Painuli and Maheshwari, 1996).

**Chemical constituents:**

Seed oil contains α-eleostearic acid. 2-Acetyl-5-chloropyrrole present in the volatile flavour constituents.

**References:**


*Momordica dioica* Roxb. is entirely a folk medicine practised by the tribals. It is considered as a panacea in bleeding piles.

**VITACEAE**


*Vitis quadrangularis* Wall. ex Lawson; F.B.I. 1:645, 1875.

**Plate 9, Fig. 1.**

**Vern. Name:** Hadjud (G), Hadjora (H), Kandvel (M).

**Locality:** Belkheda.

**Habitat:** Occasionaly grown in hedges around fields also cultivated.

**Flowers and Fruits:** July - Aug.

**Description:**

Perennial, xerophytic rambling, tendriller, climber. Stem quadrangular, long, fleshy, succulent, angles slightly winged, branching sympodial, tendrils long,

**Voucher Specimen No. 510/069.**

**Ethnomedicinal significance:**

The quadrangular stems of the plant are broken into pieces and taken internally with some eatables for cervical spondylitis. It is also reported to be effective on bone fracture if the paste of the stem applied on affected parts. Dried leaf powder is recommended in stomachache, piles, etc.

The information narrated by the local inhabitants has been well supported by the records in Ayurveda where the ability of the plant to join the fractured bone, is authenticated. (Nadkarni *et al.*, 1954; Kurup *et al.*, 1979; Sharma, 1983; Nesamony, 1985).

**Chemical constituents:**

Plant contains phytogenic steroid.¹ Ketosteroids.² Sitosterol, δ-amyrin, δ-amyrone and triterpenoids - onocer-7-en-3α,21β-diol, onocer-7-en-3β, 2-1α-diol.³ 7-oxo-onocer-8-en-3β-, 21α-diol.⁴

**References:**

AIZOACEAE


Plate 9, Fig. 3.

Vern. Name: Wasu (G), Lal sabuni (H), Pandharighentuli (M).

Locality: Taroda.

Habitat: Found as a weed in wet waste places.

Flowers and Fruits: July - Nov.

Description:

Wild, prostrate, annual, succulent herb. Stem much branched, angular, slightly pubescent, branching cymose, herbaceous. Leaves simple, exstipulate, unequally paired, subopposite, slightly obovate, apex rounded, cuneate at the base, petioles dilated into a sheath at the base, reticulate, fleshy. Flowers solitary, sessile, pinkish white in pouch like petiolar sheath, actinomorphic, pentamerous. Calyx tubed lobed, slightly petaloid, petals absent. Stamens 10, polyandrous, anthers pink. Ovary truncate, unilocular with many ovules, style terminal, stigma filiform. Fruit capsular, globular with 6-8 seeds. Seeds black, reniform, smooth.

Voucher Specimen No. 510/072.

Ethnomedicinal significance:

Gond tribes mainly prefer this plant for jaundice in Children. They uproot this plant, cook with the rice and it is given to the patient 2 or 3 times a day for 3 days. Leaves are diuretic and used in oedema and dropsy. It is also effective in kidney diseases. Roots of this plants are abortifacient.

Leaves of the white variety diuretic, used in oedema and dropsy due to various causes; Root powder is bitter, abortifacient, used in amenorrhea (Chopra _et al._.}
1956; Ramchandran, 1956). It is diuretic, used in dropsy, body swellings caused by disorder of liver and kidney. It is also a mild abortifacient (Srivastava, 1989).

**Chemical constituents:**

Plant contains ecdysterone. Nicotinic acid and ascorbic acid. Roots contain trianthemeine.

**References:**


*Boerhaavia diffusa* L. is reported to contain alkaloid punarnavine (Gupta and Ahmad, 1984) and same has been isolated from *Trianthema portulacastrum* L. (Bhattacharjee, 1998). Thus it can be a alternative source for medicine wherein *Boerhaavia diffusa* L. is used as an ingredient of ayurvedic formulation.

**ZYGOPHYLLACEAE**


**Plate 6, Fig. 4.**

**Vern. Name:** Chilluparelue (G), Chota Gokhru (H), Gokaru (M).

**Locality:** Cosmopolitan.

**Habitat:** Very common on waste land along road sides, also shows good growth on black cotton soil.

**Flowers and Fruits:** June - Dec.

**Description:**

Seeds indefinite in each cocci.

Voucher Specimen No. 510/073.

Ethnomedicinal significance:

In tribals the roots of this plants are most preferred as a drug for the treatment of urinary diseases, specially haematuria, for which they claimed that it is a boon. It has great cooling effect and are also used for promotion of urination and as a nervine tonic. Roots and fruits of this plant is a popular amongst the tribal as it has aphrodisiac property. The decoction of leaves is effective in painful gum and to reduce inflammation. The leaves increases the menstrual flow, it also cures gonorrhoea.

Fruits cooling, diuretic, tonic aphrodisiac (Chopra et al., 1956; Ramchandran et al., 1986; Srivastava, 1989). This plant is most important ingredient of an Ayurvedic preparations. The drug is diuretic, tonic, aphrodisiac. The decoction of leaves is useful as a gargle for mouth trouble, painful gum and to reduce inflammation. The leaves increases the menstrual flow, also cures gonorrhoea. The fruits are useful in urinary complaints, painful micturition and impotence (Bhattacharjee, 1998).

Chemical constituents:

Aerial parts with fruits contain flavonoids - rutin, quercetin, Kaempferol. Roots contain phytosterols, campesterol, β-sitosterol and stigmasterol. The phytosterols present in roots are also present in flowers. An alkaloid harmol is also reported from the herb. The screening of literature reveals the occurrence of various alkaloids, steroids, flavonoids, sapogenins and also specific compounds. The significant records are cited below steroidal saponins from Tribulus terrestris.
L. are reported to have stimulating action on the sexual function' (Tomora et al., 1981).

**References:**


As such the roots, leaves and fruits of this plant are most useful as tonic, diuretic, aphrodisiac, urinary tract infections etc. In Ayurveda, it forms an important ingredient of ayurvedic formulations. Though the plant is common, it serves the purpose of remedial measures for many complaints.

**RHAMNACEAE**


**Plate 14, Fig. 1.**

**Vern. Name:** Papdi (G), Raidhani (H), Sakalyel (M).

**Locality:** Semadoh.

**Habitat:** Found in dry forest areas in shady places on the lower and middle slopes.

**Flowers:** Winter season, **Fruits:** Feb - April.

**Description:**

Perennial woody climber with strong tendrils, young branches pubescent. Leaves simple, shortly petiolate, alternate, oblong, slightly crenate, pubescent when young. Base oblong, apex acute, unicostate, veins 4 to 8 pairs. Flowers small,
numerous, green in terminal panicle, densely pubescent with offensive odour. Sepals 5, gamosepalous, lobes spreading, acute. Petals 5, involute. Stamens 5. Gynoecium bicarpellary, ovary immersed in the disc, bilocular, pubescent, style very short, stigma two. Fruit 4-5 cm long, single seeded surrounded adherent calyx tube and terminating into a apical wing.

**Voucher Specimen No. 510/074.**

**Ethnomedicinal significance:**

Juice of young shoot and bark applied to body as remedy for pains accompanying malarial fever. Root bark is effective in stomachache. Root bark powder is also effective in skin diseases. Gond tribes use the seeds of this plant soaked in water and extract taken internally as brain tonic.

Bark juice applied to the body as a remedy for pains which accompany malarial fever. (Chopra *et al.*, 1956). Seeds yield a fatty oil used for cooking (Ramchandran *et al.*, 1986). Root-bark powder is carminative, stomachic, stimulant, useful in general debility and mild fever. Bark Powder in skin diseases (Srivastava, 1989). The decoction of root bark (about 15 ml) is taken 3 times a day for a fortnight in case of debility. (Bhattacharjee, 1998). Root extract applied as ear drops externally for earache (Tarafdar and Rai, 1981).

**Chemical constituents:**

Two new anthraquinones isolated and characterised as 2,4,8-trihydroxy-1-methoxy-3-methylantraquinone and 2,4,8-trihydroxy-1,6-dimethoxy-3-methyl anthraquinone.¹ The anthraquinones have been isolated from the root bark of *Ventilago calvculata* Willd.²
MIMOSACEAE


Plate 12, Fig. 2.

**Vern. Name** : Lajwanti(H), Lajalu (M).

**Locality** : Malinpur.

**Habitat** : Rare, cultivated in gardens.


**Description** :


**Voucher Specimen No. 510/076.**

**Ethnomedicinal significance** :

Leaves crushed into a paste form and applied in hydrocele, glandular swellings and sores by local tribes. Roots and leaf paste is also recommended in piles and fistula.

Leaves - rubbed into a paste applied to hydrocele. Leaf and stem used in scorpion sting, leaves and roots used in piles and fistula (Chopra *et al.*, 1956). Roots extract in urinary complaints, leaf paste in water for glandular swellings.
externally leaf juice in piles, sores and hydrocele (Srivastava, 1989). The whole plant is used medicinally. It is astringent, cooling, antiseptic, alterative and blood purifier, it is used in burning sensation in body, diarrhoea and dysentry (Kurup et al., 1979).

Chemical constituents:

β-Sitosterol. Leaves contained alkaloids. Mucilage of seeds contained galactose and mannose in ratio of 1:1.

References:

The plant is specially beneficial in urinary complaints. The unusual property of sensitivity to touch imparts it additional significance in social belief.

BORAGINACEAE


Plate 9, Fig. 2.

Vern. Name: Kasali (G), Hetnuria (H), Jalashirasi (M).

Locality: Cosmopolitan.

Habitat: Noted on margins of fields and on an open hilly slopes.


Description:

Wild, erect small herb. Stem aerial, erect, branched, branching is of racemose type, herbaceous, covered by stiff hairs, solid. Leaves, alternate oblong, lanceolate, with cuneate base, unicostate, midrib with ascending lateral veins, leaves hairy on both the surface. Inflorescence panicle cyme. Flowers light blue, complete, bisexual,

**Voucher Specimen No. 510/077.**

**Ethnomedicinal significance:**

Roots of this plants are analgesic, applied to wounds. Seeds are used in skin diseases. Root paste applied on rheumatic swellings. Decoction of roots with water is given as a drink to children in dysentery by local tribes.


**Chemical constituents:**

Alkaloid - supinine isolated from seeds. Oleic, linoleic, octadeca-9, 12, 15-trienoic, octadeca 6,9,12-trienoic and octadeca 6, 9, 12,15-tetraenoic acids found in seed fat.

**References:**


The plant does not form a part of conventional systems of medicine, however, as a herbal medicine it is being practised among the tribals.
COMMELINACEAE


Vern. Name: Buchna (H), Jangali Kewati (G).
Locality: Bhivkund.
Habitat: Not common, found in moist shady places.

Description:
Straggling branched herb, showing diffuse ascending branches. Stem creeping and rooted at the nodes, herbaceous, internodes long, glabrous. Leaves simple, oblique, alternate, lanceolate, showing sheathing leaf bases. Inflorescence cymose, spathes in crowded heads, margin conate. Flowers blue. Fruit capsular, capsule three seeded. Seeds compressed on one side.

Voucher Specimen No. 510/078.

Ethnomedicinal significance:
The dried powder of the root stock with milk is recommended for general weakness, fresh roots has an antidotal property against snake bite. The roots are also helpful in curing disorders of gall bladder, and as mild laxative.

The ethnomedicinal properties suggested by the local practitioners has been confirmed through interrogation with four to five persons from different places. Also, the use of roots as an antidote for snake bite, as a laxative and in bilious infections has been reported by Chopra et al. (1956). The same information has been confirmed through Ramchandran et al. (1986) and found to be correct.

It has been observed that Commelina paludosa Blume. commonly found growing in the rocky places, exhibiting restricted occurrence. The literature survey does not reveal any mention of chemical constituents.
ORCHIDACEAE

Nervilia aragoana Gaud.

Plate 15, Fig. 5.

Vern. Name: Dudhkand (M).

Locality: Semadoh.

Habitat: Cultivated.

Flowering: May - June, Leaves: June - Aug.

Description:

Leaf long, petiolate, cordate, hastate at the base, apex acute, margin undulating. Flowers greenish yellow, lip shortly 3 lobed. Lateral lobe short, middle lobe subacute, irregularly crenulate.

Voucher Specimen No. 510/079.

Ethnomedicinal significance:

Small tubers of this plant used for lactation. Korku tribes gives decoction of leaves to the women after childbirth.

Decoction of leaves given after parturition (Ramchandran et al., 1986).

Chemical constituents:

Phytol, cycloeucalenol, stigmasterol, linoleic acid, linolenic acid, L-norleucine and a glycerin ester identified.1

Reference:


It is a specific ethnomedicinal plant for lactation in women, the tribals usually cultivates the plant in their house gardens.
**ZINGIBERACEAE**


**Plate 16, Fig. 3.**

**Vern. Name:** Jangli allam (G).

**Locality:** Bhivkundi.

**Flowers and Fruits:** July - Dec.

**Description:**

Perennial herb, with large root stock, rhizome large with many ellipsoid tubers. Leaves oblong, narrowed to the base, petiole as long as the blade. Inflorescence spike, peduncle shorter than the petioles. Flowers as long as the bract, pale green, corolla yellow.

**Voucher Specimen No. 510/080.**

**Ethnomedicinal significance:**

Rhizome extract is given as a hair tonic. Rhizome extract is also used in piles.

Rhizomes yield a form of arrow-root (Chopra *et al.*, 1956).

As a hair tonic the plant has specific usage, it is not much exploited in ayurvedic system as well as other systems of medicine. However, it can form a potential herbal medicinal source after detailed investigation.

**HYPOXIDACEAE**


**Plate 15, Fig. 2.**

**Vern. Name:** Kali Musli (H), Nelatatugadda (G).
Locality: Bhivkund.

Habitat: Common as forest undergrowth, among rocks and bushes.

Flowers and Fruits: July - Sept.

Description:


Voucher Specimen No. 510/081.

Ethnomedicinal significance:

Tribals used tuberous roots of this plant in several combinations but mainly for the treatment of sexual impotency, urinary and venereal diseases, and as a general health tonic, they also indicated about its role in asthma and jaundice. Some tribals also prescribed it in piles and in stomachache. It is also effective in diarrhoea.

Rhizome prescribed in piles, jaundice, asthma, diarrhoea, tonic, aphrodisiac (Chopra et al., 1956). Tuberous roots used for skin troubles. In combination with aromatics and butter they are used in piles, diarrhoea, jaundice and asthma (Ramchandran et al., 1986). Tuberous roots used in gonorrhoea, leucorrhoea, menstrual derangments, asthma, jaundice, diarrhoea, colic, seminal weakness and debility of old age (Srivastava, 1989). Flour from the root is made which is edible, the plant is used as a substitute of safed musali. (Bhattacharjee, 1998). Roots of this plant in combination with Carum carvi are effective in leucorrhoea.
The roots of *Curculigo orchioides* Gaertn., *Celastrus paniculatas* Willd. and *Asparagus racemosus* Willd. in combination are found to be effective in spermatorrhoea (Saxena *et al.*, 1981). Roots in combination with *Trachispermum ammi* (L.) Sprague are given in unconsciousness (Jain, 1981).

**Chemical constituents:**

Rhizomes contain glucosides 5,7-dimethoxymyricetin-3-o-α-l-xylopyranosyl-4-o-β-D-glucopyranoside.¹ Curculigoside.² Corchioside A³. Sapogenin-Yuccagenin an alkaloid - lycorine.⁴ 3-aliphatic hydroxy ketones-27-hydroxytriacontan-6-one, 23-hydroxy triacontan-2-one and 21-hydroxytetracontan-20-one; a long chain fatty acid-4-methylheptadecanoic acid.⁵

**References:**


This plant is gaining much importance now-a-days, because of its multifarious, uses such as urinary retention, chronic nephritis, impotency, chronic arthritis, weakening of knees and lumbar region, etc. Also various aliphatic compounds have been isolated from it (Misra *et al.*, 1984).

The traditional farmers are taking much interest in mass scale cultivation of this plant. However, there is an urgency to train the tribals for cultivation and farming of such medicinally important plants, in their fields. This would enhance their economic status and standard of living.
CANNACEAE


**Plate 17, Fig. 1.**

**Vern. Name**: Suneri (G), Sabajaya (H), Devakeli (M).

**Locality**: Ganeshpur.

**Habitat**: Occasional in forest near streams.

**Flowers and Fruits**: Oct - March.


**Voucher Specimen No. 510/082.**

**Ethnomedicinal significance**: Dried powder of Roots along with cow's urine is used as plaster on joints in rheumatism and joints swelling by the Gond tribes. Decoction of root is also given in body swelling. Roots are also used in fever and to increase a flow of urine.

Roots are diaphoretic, diuretic, in fevers and dropsy, demulcent, stimulant (Chopra et al., 1956). Roots are diaphoretic and diuretic (Ramchandran et al., 1986).

**Chemical constituents**: Leaves contain flavonoid glycosides. Plant gave β-lectin.
The plant is cultivated in and around the houses by tribal people. It is a commonly used folk medicine.

**ARACEAE**


Plate 17, Fig. 2.

**Vern. Name**: Arvi (H), Alu (M), Jangali Alu (K).

**Locality**: Bhivkund.

**Habitat**: Common as forest undergrowth in moist places.

**Flowers and Fruits**: July - Sept.

**Description**:

Perennial herb, rhizome swollen, subterranean. Leaf simple, ovate, peltate, reticulate with primary veins producing secondary which merged into collective vein. Inflorescence spadix, spathe in two parts, lower green and upper elongated, yellow. Spadix long about 15 cm in length.

**Voucher Specimen No. 510/083**.

**Ethnomedicinal significance**:

The tuber of this plant is used in fever and in general debility by the local Gond tribes. Decoction of tuber is also taken in heart problem. Juice of petiole is also used to cause reddening of skin and increases flow of blood in that part.
Juice of petioles stimulant, Rubefacient (Chopra et al., 1956). Juice of the petioles used as an astringent and styptic (Ramchandran et al., 1986). Petiole juice, styptic, stimulant and rubefacient. Decoction of tubers in heart-weakness, and acts as astringent (Srivastava, 1989).

**Chemical constituents:**

Plant contains 3,4-diglycosilic benzaldehyde.

**Reference:**


The plant tuber is typically prescribed for general debility and chronic fever.

**LILIACEAE**


**Plate 16, Fig. 1.**

**Vern. Name:** Safed musali.

**Locality:** Borgaon.

**Habitat:** Occasional, monsoon herb on rocky, lateritic hill - slopes.

**Flowers and Fruits:** Aug - Oct.

**Description:**


**Voucher Specimen No. 510/084.**
Ethnomedicinal significance:

Tuberous root powder with milk used as energetic tonic by local tribes.

Roots are edible and used as tonic (Ramchandran, 1986; Asolkar, 1992; Chopra, 1996). Recently the plant is gaining much importance for its energy rich components.

**ASPARAGACEAE**


**Plate 16, Fig. 2.**

**Vern. Name**: Sasarmuli (G), Satavar (H), Shatavari (M).

**Locality**: Deothana

**Habitat**: Wild in the hilly tracts of forest.

**Flowers**: Oct - Dec., **Fruits**: Dec - Jan.

**Description**:

A wild, an extensively scadent, branched, spinous, climber. Root stock tuberous, branches angular, woody. Leaves spiny, cladode 2-6 together. Flowers in spike, small, white, complete, bisexual, actinomorphic, hypogynous, trimerous, tricyclic, perianth segment 6, linear, obtuse, white. Stamens 6, polyandrous, anthers purple. Ovary tricarpellary syncarpous, superior, axile, style short terminal, stigma 3. Fruit gobose, red when riped.

**Voucher Specimen No. 510/086.**

Ethnomedicinal significance:

Tribals prescribed tuberous roots of this plant in dysentery and diarrhoea. They also give it for the treatment of sexual weakness and generally debility. It is
very nutritive and good health tonic with cooling and soothing effects on body. They also used it for the promotion of urination. It is also effective in lactation of women after childbirth. Some of them indicated about its possible role in treatment of epilepsy.

Roots diuretic, aphrodisiac, alterative, antidiarrhoeal, antidysenteric, galactogogue (Chopra et al., 1956). Roots tonic, diuretic and galactagogue, fresh root juice is mixed with honey and given for dyspepsia. Roots form a constituent of medicinal oil used for nervous and rheumatic complaints. (Ramachandran et al., 1986; Srivastava, 1989). The dried roots about 700 g are burnt and fumes are inhaled under a blanket for curing fever (Bhattacharjee, 1998).

The roots of plant is a chief constituent of ayurvedic medicines. It yielded Shatavarin I, II and IV (Dev, 1981).

**Chemical constituents:**

Flowers contain quercetin, hyperoside and rutin. Fruits contain glycosides of quercetin, rutin and hyperoside. Fully ripe fruits contain cyanidin-3-galactoside and cyanidin-3-glucor-hamnoside. Leaves contain rutin. Diosgenin and a flavonoid glucoside identified as quercetin-3-glucronide. The plant contains saponin-shatavarins I-IV. Roots contains, hemicellulose, glucoside, mucilage, sugar, uronic acid, and small amount of steroidal sapogenins.

**References:**


Plate 17, Fig. 3.

Vern. Name: Zagadya (K), Kalihari (H), Nagakaria, Kal-lavi (M).

Locality: Bhivkund.

Habitat: Occasionally found on slopes of hills.

Flowers: June - Oct.

Description:

A wild scrambling glabrous twiner, twins with the help of leaftip tendril. Root stock bifurcately branched. Stem herbaceous. Leaves sessile, alternate, sublanceloate, spirally twisted at the tip to form the tendril. Flowers in solitary axillary, pedicillate, large showy decorative, pedicel upto 15 cm lang. Flowers complete, bisexual, actinomorphic, hypogynous, trimerous, tricyclic, perianth segment 6, linear twisted, greenish at the base but turning to orange. Stamens 6, polyandrous, filament large upto 4 cm, golden yellow to red. Gynoecium tricarpellary syncarpous, placentation axile, styles 3. Fruit capsule, oblong. Seeds small.

Voucher Specimen No. 510/085.

Ethnomedicinal significance:

Tuberous roots used in snake bite and scorpion sting. It is also used for easy delivery. Very small quantity of root ingested to induce abortion. It is also effective in parasitical infection of skin. Tubers also acts a tonic, stomachache and antihelminthic in low doses (5-10 grains). It is highly toxic in higher doses. It is also prescribed for ulcers, piles, leprosy and gonorrhoea.

Roots are purgative, antihelminthic, used in leprosy, parasitic infection of
skin, piles, colic, in snake bite and scorpion sting (Chopra et al., 1956). The drug is gastro-intestinal irritant and may cause vomiting. It is used for promoting labour pains and as abortifacient (Chopra et al., 1969). Tubers tonic, stomachic, and antihelminthic in low doses (5-10 grains), highly toxic in higher doses. It is gastro-intestinal irritant. It may cause vomiting. Also used for promoting labour pain and as abortifacient. Useful in colic, ulcers, piles and gonorrhoea. Leaf juice is used as lice killer (Srivastava, 1989). The tubers possess abortifacient, stimulant and antihelminthic properties. It is used to treat leprosy (Bhattacharjee, 1998).

Chemical constituents:

The flowers, leaves and tubers contain colchicine, N-formyl-deacetyl colchicine, demethyl colchicine and lumicolchicine. Tubers also contain gloriosine. Leaves in addition, contain chelidonic acid. 2-Hydroxy-6-methoxybenzoic acid and β-sitosterol glycoside. Colchicine, demethylcolchicine and colchicoside have been reported from seeds.

References:


Gloriosa superba L. is promising medicinal plant having specific properties as abortifacient.

The chemical constituents reveals the presence of chemical mutagenic agent colchicine in roots as well as seeds.
COSTACEAE


Plate 15, Fig. 1,3,4 & 6.

Vern. Name : Nalguj (K), Keoo (H).

Locality : Bela (Kalalkund).

Habitat : Not common, on slopes of hills.

Flowers and Fruits : July - Sept.

Description :

Wild, erect, herbaceous, rhizomatous. Leaves simple, sessile, broad, arranged spirally, oblanceolate, glabrous. Flowers red, large, many, in terminal dense head.


Voucher Specimen No. 510/087.

Ethnomedicinal significance :

Korku tribes used this plant against rheumatic pains. The roots of the plant are boiled to evolve the medicated vapour, and the affected parts are exposed to these vapours for relief. The root stock is effective in fever, cough and other respiratory diseases. It is also claimed to be useful in snake bite. It also acts as antihelminthic.

Root bitter, astringent, purgative, depurative, stimulant, tonic, antihelminthic, used in snake bite (Chopra et al., 1956). Rhizomes bitter, astringent, purgative, depurative, stimulant, antihelminthic, said to be useful in snake bite (Srivastava, 1989). The previous reports authenticate that the root stock of this plant is used as astringent, purgative stimulant, and antihelminthic. It also cures, fever, cough and other respiratory disorders (Chunekar, 1982; Sharma, 1983 and Bhattacharjee, 1998).
Chemical constituents:

The chief constituents reported are sitosterol, β-sitosterol, prosapogenins etc. Rhizomes yielded aliphatic esters and acids along with various saponins. In addition seeds and roots contain α-tocopherol.

References:


During survey, it was noticed that the plant is not widely distributed. Only at restricted locations, that too in deep vallies, along the stream, the plant was found to be growing luxuriently. The tribals usually collect rhizomes and use for the treatment rheumatism/arthritis pains.
EQUISETACEAE

**Equisetum debile** Roxb. ex Vaucher.

**Vern. Name** : Hadjude (G).

**Locality** : Ratnapur (Dharni).

**Habitat** : Tapi riverside, grows on sandy soil in moist situation.

**Description** :

Perennial wild, rhizomatous herb, branches originates from condensed rhizome, branches spreading long, whorls, internode 2-6 cm long. Cylindrical, ridged. Leaves microphilous, non photosynthetic, sessile.

**Voucher Specimen No. 510/092.**

**Ethnomedicinal significance** :

Tribals used this plant in bone fracture, extract of this plant plastered over fractured part and decoction is given internally. Decoction of this plant is also effective in gonorrhoea as claimed by the local tribes.

Plant as cooling medicine and given in gonorrhoea (Chopra *et al.*, 1956; Bhattacharjee, 1998).

**Chemical constituents** :

Plant gave kaempferol-3-sophoroside-7-glucoside and kaempferol-3-sophoroside. Luteolin-5-glucoside and kaempferol-3, 7-diglucoside were absent. 1

**Reference** :


The plant as such is rare and found in specific locations in moist sandy soil along the banks of river. The tribals mostly rely on this plant for joining fractured bones. As the plant is having restricted distribution, it needs to be conserved, for its use in drug formulations.
SINOPTERIDACEAE

Cheilanthes tenuifolia (Burm. f.) Swartz.

Vern Name: Dodhamala (G).

Locality: Deothana.

Habitat: Seen only during rainy season in the crevices of moist rocks.

Description:
Rhizome thick, short, creeping bearing tuft of fronds, stipe elongated, dark, scales narrow, brown leaflet, triangular, lanceolate, glabrous, subtripinnate, ultimate lobes are pinnatifid, pinnae elliptic, membranous, veins not visible, main rachis winged, secondary and tertiary rachis with narrow winged. Sori at the end of vein.

Voucher Specimen No. 510/091.

Ethnomedicinal significance:
Gond tribes used this plant in leucorrhoea. They make the powder of this plant, 10 gm powder + 10 gm sugar dissolve in water and give it to drink twice a day for 3 days. Root of this plant is used as a general tonic by the tribals.

The santals prescribed a preparation from the roots for sickness attributed to witchcraft or the evil eye (Chopra et al., 1956). Decoction of this plant for hair wash. Roots are vulnerary, and general tonic (Maheshwari, 1996).

Chemical constituents:
Two ecdysone analogues-cheilanthone A, and cheilanthone B, isolated and characterised as 7,8-dihydroecdysone and 25-deoxy-7,8-dihydroecdysone respectively.
Reference:

The plant is having a restricted distribution mainly found in moist rocky crevices. It belongs to pteridophytic ferns, which are dwindling in the areas of their occurrence. Thus, it is most essential to conserve this plant through ex situ cultivation and tissue culture techniques. As suggested by the Gond tribes it is most effective in leucorrhoea.
PLATE - 1

Fig. 1 : Pergularia daemia (Forsk.) Chiov. ... Asclepiadaceae

Fig. 2 : Oxystelma secamone (L.) Karst. ... Asclepiadaceae

Fig. 3 : Calotropis gigantea (L.) R.Br. ... Asclepiadaceae
PLATE - 2

Fig. 1 : Abrus precatorius L. ... Fabaceae
Fig. 2 : Mucuna pruriens (L.) DC. ... Fabaceae
Fig. 3 : Pueraria tuberosa (Roxb. ex Willd.) DC ... Fabaceae
Fig. 4 : Psoralea corylifolia L. ... Fabaceae
Fig. 5 : Indigofera linifolia (L.f.) Retz. ... Fabaceae
PLATE - 3

Fig. 1: Hygrophila auriculata (K. schum) Heine ... Acanthaceae
Fig. 2: Ocimum gratissimum L. ... Lamiaceae
Fig. 3: Clematis triloba Heyne ... Ranunculaceae
PLATE - 4

Fig. 1 : Leea crispa Van ... Leeaceae
Fig. 2 : Tubers of Leea crispa Van ... Leeaceae
Fig. 3 : Aristolochia bracteata Retz. ... Aristolochiaceae
Fig. 4 : Barleria prionitis L. ... Acanthaceae
Fig. 5 : Helicteres isora L ... Sterculiaceae
PLATE - 5

Fig. 1 : Plumbago zeylanica L. ... Plumbaginaceae
Fig. 2 : Oxalis corniculata L. ... Oxalidaceae
Fig. 3 : Ruta graveolens L ... Rutaceae
Fig. 4 : Biophytum sensitivum (L.) DC. ... Oxalidaceae
Fig. 5 : Leonotis nepetifolia (L.) R.Br. ... Lamiaceae
Fig. 6 : Passiflora foetida L. ... Passifloraceae
<table>
<thead>
<tr>
<th>Fig.</th>
<th>Scientific Name</th>
<th>Family</th>
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<tbody>
<tr>
<td>1</td>
<td><em>Vitex negundo</em> L.</td>
<td>Verbenaceae</td>
</tr>
<tr>
<td>2</td>
<td><em>Alternanthera sessilis</em> (L.) R.Br.</td>
<td>Amaranthaceae</td>
</tr>
<tr>
<td>3</td>
<td><em>Cardiospermum halicacabum</em> L.</td>
<td>Sapindaceae</td>
</tr>
<tr>
<td>4</td>
<td><em>Tribulus terrestris</em> L.</td>
<td>Zygophyllaceae</td>
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PLATE - 7

<table>
<thead>
<tr>
<th>Fig.</th>
<th>Plant Name</th>
<th>Family</th>
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<tr>
<td>1</td>
<td><em>Abelmoschus ficulneus</em> L.</td>
<td>Malvaceae</td>
</tr>
<tr>
<td>2</td>
<td><em>Gossypium arboreum</em> L.</td>
<td>Malvaceae</td>
</tr>
<tr>
<td>3</td>
<td><em>Hibiscus sabdariffa</em> L.</td>
<td>Malvaceae</td>
</tr>
<tr>
<td>4</td>
<td><em>Abutilon pannosum</em> (Forst.f.) Schlect</td>
<td>Malvaceae</td>
</tr>
<tr>
<td>5</td>
<td><em>Sida acuta</em> (Burm.f.)</td>
<td>Malvaceae</td>
</tr>
</tbody>
</table>
Fig. 1: Withania somnifera (L.) Dunal ... Solanaceae
Fig. 2: Aerva lanata (L.) Juss ... Amaranthaceae
Fig. 3: Clerodendrum serratum (L.) Moon ... Verbenaceae
Fig. 4: Morinda tinctoria Roxb ... Rubiaceae
Fig. 5: Datura metel L. ... Solanaceae
Fig. 6: Euphorbia heyneana Spr. ... Euphorbiaceae
PLATE - 9

Fig. 1 : Cissus quadrangularis L. ... Vitaceae
Fig. 2 : Trichodesma zeylanicum (Burm.f.) R.Br. ... Boraginaceae
Fig. 3 : Trianthema portulacastrum L. ... Aizoaceae
Fig. 4 : Tinospora cordifolia (Willd) Miers ... Menispermaceae
Fig. 5 : Semecarpus anacardium L. ... Anacardiaceae
PLATE - 10

Fig. 1 : Catharanthus roseus (L.) G.Don ... Apocyanaceae

Fig. 2 : Ammania bacifera L. ... Lythraceae

Fig. 3 : Kickxia ramosissima (Wall) Janchen. ... Scrophulariaceae

Fig. 4 : Catharanthus roseus (L.) G.Don (White flower variety) ... Apocyanaceae
PLATE - 11

Fig. 1 : Lagascea mollis Cav. ... Asteraceae

Fig. 2 : Bacopa monnieri (L.) Wettstein ... Scrophulajíaceae

Fig. 3 : Vernonia cinerea (L.) Less. ... Asteraceae
Fig. 1: Santalum album L. ... Santalaceae
Fig. 2: Mimosa pudica L. ... Mimosaceae
Fig. 3: Securinega leucopyrus (Willd.) Muell. ... Euphorbiaceae
Fig. 4: Ocimum basilicum L. ... Lamiaceae
Fig. 5: Aerva lanata (L.) Juss ... Amaranthaceae
| Fig. 1 | **Andrographis paniculata** (Burm.f.) Wall | Acanthaceae |
| Fig. 2 | **Dendropthoe falcata** (L.f.) Etting (On Host Plant) | Loranthaceae |
| Fig. 3 | **Andrographis paniculata** (Burm.f.) Wall | Acanthaceae |
| Fig. 4 | **Dendropthoe falcata** (L.f.) Etting | Loranthaceae |
| Fig. 5 | **Momordica dioica** Roxb. | Cucurbitaceae |
PLATE - 14

Fig. 1:  *Ventilago denticulata* Willd  ...  Rhamnaceae

Fig. 2:  *Bixa orellana* L.  ...  Bixaceae

Fig. 3:  *Diplocyclos palmatus* (L.) Jeffrey  ...  Cucurbitaceae

Fig. 4:  *Pedilanthus tithymaloides* (L.) Poit.  ...  Euphorbiaceae

Fig. 5:  *Cissampelos pareira* L.  ...  Menispermaceae
| Fig. 1 : | **Costus speciosus** (Koen.) Smith (White flower species) | ... | Costaceae |
| Fig. 2 : | **Curculigo orchioides** Gaertn. | ... | Hypoxidaceae |
| Fig. 3 : | **Costus speciosus** (Koen.) Smith (White flower species) | ... | Costaceae |
| Fig. 4 : | **Costus speciosus** (Koen.) Smith (Red flower species) | ... | Costaceae |
| Fig. 5 : | **Nervilia aragoana** Gaud. | ... | Orchidaceae |
| Fig. 6 : | **Costus speciosus** (Koen.) Smith (Root Stock) | ... | Costaceae |
Fig. 1: *Chlorophytum tuberosum* Baker. ... Liliaceae
Fig. 2: *Asparagus racemosus* Willd ... Asparagaceae
Fig. 3: *Curcuma pseudomontana* Graham ... Zingiberaceae
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B : PHYTOCHEMICAL ANALYSIS

There has been knowledge of medicinal plants from time immemorial. Whole plants or plant parts like, roots, stems, tubers, leaves, flowers and seeds etc. acts as medicinally significant part. Tribals and other common man used plant and parts to cure their ailments.

To day it is estimated that about 64% of the total global population remain dependent on traditional medicine for their health care needs (Farnsworth, 1994; Sindiga, 1994).

As the medicinal plants has got importance to cure different ailments, which not cured by the other medicinal systems like Allopathy, it becomes necessary to find out the chemical constituents present in a particular medicinal plants and their plant parts which are used to cure the diseases. So, many plants are chemically analysed and their chemical constituents are recorded, but still there are certain plants which are medicinally significant but these plants are not recorded in scientific literature and data on their chemical analysis is lacking.

So in present work such plants are selected which are medicinally significant. Their parts like roots, tubers, leaves, seeds etc. are used as a crude drug to cure different ailments by the tribals and other herbal practitioners, but their chemical analysis needs to be done.

In present work preliminary phytochemical screening of the following 10 plants were undertaken.

1. Helinus lanceolatus Brandis Rhamnaceae (Root).
2. Dioscorea pentaphylla L. Dioscoreaceae (Tuber)
3. **Corallocarpus epigaeus** (Rottl et Willd) Clarke. Cucurbitaceae (Tuber),
4. **Cayratia trifolia** (Linn.) Domin. Vitaceae (Tuberous root),
5. **Firmiana colorata** (Roxb.) R. Br. Sterculiaceae (Root).
6. **Leea macrophylla** Roxb. Leeaceae (Tuberous root).
7. **Ampelocissus latifolia** (Roxb.) Planch. Vitaceae (Tuberous root).
8. **Tacca leontopetaloids** (L.) O. ktze. Taccaceae (Tuber).
9. **Tectaria macrodonta** (Fee) C. chr. Aspidiaceae (Rhizome).
10. **Boerhaavia diffusa** L. Nyctaginaceae (Root Stock).

**RHAMNACEAE**


**Plate 19, Fig. 2.**

**Vern. Name**: Raktabila (K).

**Locality**: Shirajbandh (Ghatang).

**Habitat**: In shady moist places in the forest.

**Flowers and Fruits** - Nov - April.

**Description**:


**Voucher Specimen No. 510/075.**

**Ethnomedicinal significance**:

Tribals strongly recommends roots of this plant in asthma. Roots are reddish or pinkish in colour. 20 gms of root powder added in 1 littre liquor distilled from *Madhuca indica* Gmelin flowers and allow it to ripen for 7 days so that contents
of powder gets extracted in alcohol. Then 1/2 cup at early morning and night
given to the patient for 7-10 days.

Chemical analysis:

The medicinally significant part is root. Dried root powder were subjected
to extraction by successive solvant extraction method for preliminary phytochemical
screening.

Alkaloids:

It was found that low concentration of alkaloids have been extracted in
Acetone while other extracts have shown -ve test for alkaloids with Mayer's
reagent. All extracts have shown -ve test for alkaloids with Dragendorff's reagent.
Low concentration of alkaloids have been extracted in Benzene, Chloroform,
Acetone, Ethanol and Water extracts with Hager's reagent. Low concentration
of alkaloids have been extracted in Chloroform, Acetone and Ethanol while others
have shown -ve test for alkaloids with Wagner's reagent.

Glycosides:

Low concentration of glycosides have been extracted in Petroleum ether and
Acetone extracts. Other extracts have shown -ve test for Glycosides.

Phytosterols:

Medium concentration of phytosterols have been extracted in P. ether extracts
and low concentration in Acetone extracts. Other extracts have shown -ve test
for phytosterols.

Saponins:

High concentration of saponins have been extracted in Acetone and Ethanol,
whereas medium concentration have been extracted in Benzene, Chloroform and
Water. Low concentration of saponins have been extracted in Petroleum ether
extracts.
**Phenolic compound/Tannin:**

High concentration have been extracted in Water extracts and medium in Ethanol extract.

**Proteins:**

Low concentration of proteins have been only extracted in Water extracts, whereas other extracts have shown -ve test for proteins.

Although the roots of this plants are medicinally significant, the literature survey does not reveal any information about the medicinal properties. So, the chemical analysis of root through successive solvent extraction method, exhibited the dominance of saponins in all the solvents. Alkaloids are present but in low concentration. Glycosides, Phytosterols and Phenolic compounds are not much significant. This plant has been extensively used as ethnomedicine in the Asthma. It can be potential constituents of conventional system of medicine. The plant is unique in respect of its occurrence in restricted habitat. During our investigation the plant was located at the hill top, only at restricted places. As such, it is a threatened plant of this region. So its conservation through cultivation and laboratory regeneration by tissue culture method is most essential.

**Dioscoreaceae**


**Plate 20, Fig. 3.**

**Vern. Name:** Utaran (K)

**Locality:** Shirajbandh (Ghatang)

**Habitat:** Common in forest areas.

**Flowers:** Aug- Oct, **Fruits:** Cold season.
Description:


Voucher Specimen No. 510/088.

Ethnomedicinal significance:

Tubers of this plant are boiled in water and fumes given to the patient suffering from body swelling.

Tubers useful to allay pain on swellings (Srivastava, 1989).

Chemical analysis:

The medicinal important part is Tuber.

Alkaloids:

It was found that low concentration of alkaloids exist in Ethanol and Water extracts with Mayer's reagent, other solvent extracts have shown -ve test for alkaloids. Medium concentration have been extracted in Water extracts and low in chloroform whereas other extracts have shown -ve test for alkaloids with Dragendorff's reagents. Medium concentration of alkaloids have shown in P. ether, Benzene, Chloroform, Acetone and Ethanol extracts whereas Water extracts have shown low concentration with Hager's reagent. Low concentration of alkaloids have been only extracted in ethanol extracts whereas other solvent extracts have shown -ve test for alkaloids with Wagner's reagent.

Glycosides:

Medium concentration of glycosides exist in Chloroform extracts and low in Ethanol extract. Other extracts have shown -ve test.
Phytosterols:

Medium concentration have been extracted in Benzene extracts. Low concentration in Water extracts. Other extracts have shown -ve test for phytosterols.

Saponins:

Low concentration of saponins have been only extracted in Acetone whereas other extracts have shown -ve test for saponins.

Phenolic compound/Tannin:

High concentration extracted in Ethanol and Water extracts, medium in Acetone whereas other extracts have shown -ve test.

Proteins:

All solvents extracts have shown -ve test for proteins.

The underground tuber of this plant is medicinally significant. The tuber is cut into chips and boiled with water. The medicated fumes relieve the patients from body swellings due to retention of water in tissues.

The chemical analysis reveals the presence of alkaloids and phenolic compounds, whereas glycosides and saponins are isolated in much less quantity. Phytosterols are also not significant. The plant is a source of popular crude drug among the tribals. However, the principle constituents and bioactive properties need to be investigated.

CUCURBITACEAE


Plate 18, Fig. 3. Plate 20, Fig. 4.

Vern. Name: Safed Bagh nakh (G), Akasgaddah (H), Akash garudand (M).
Locality : Baglinga.

Habitat : Occasional in moist shady places of forests on rocky soil.

Flowers and Fruits : Aug - Nov.

Description :

Climbing herb. Stem slender, grooved, zigzag, internodes long. Leaves suborbicular, pubescent on both surfaces, deeply 3-5 lobed. Flowers small, yellow in cymose clusters, unisexual, epigynous, pentamerous. Fruit stalked, ellipsoid, beaked, scarlet in the middle, green at base and beak. Seeds 6-9, pyriform, turgid, brown.

Voucher Specimen No. 510/068.

Ethnomedicinal significance :

Tubers are very bitter in taste. It is given in very small doses to cure different ailments. Tribals strongly recommend it for its antitumorous activity i.e. presence of tumor in stomach and it is also prescribed against chronic dysentery and stomachache.

Roots alterative, used against chronic dysentery, chronic mucous enteritis and snakebite (Chopra et al., 1956). Roots used against chronic mucous enteritis and dysentery. It also enters into liniments for rheumatism (Ramchandran et al., 1986).

Chemical analysis :

The medicinally significant part is tuber.

Alkaloids :

It was found that Acetone extract with Mayer's reagent have shown high concentration, however, medium concentration of alkaloids in Ethanol. P. ether, Benzene wereas Chloroform and Water extracts have shown -ve test for alkaloids.
All solvent extracts with *Dragendorff's reagent* have shown -ve test. High concentration have shown in P. ether, Benzene and Water extract with *Hager's reagent*. Low concentration have shown in Chloroform, Acetone and Ethanol extracts. High concentration of alkaloids have shown in Acetone and Ethanol extract however low concentration in Chloroform extract with *Wagner's reagent*.

**Glycosides:**

Low concentration of glycosides have only shown in Ethanol extract. P. ether, Benzene, Chloroform, Acetone and Water extracts have shown -ve test.

**Phytosterols:**

Low concentration of phytosterols only found in P. ether extract. Benzene, Chloroform, Acetone, Ethanol and Water extract have shown -ve test for phytosterols.

**Saponins:**

All solvent extract have shown -ve test for saponins.

**Phenolic compounds/Tannin:**

All solvent extracts have shown -ve test.

**Proteins:**

Low concentration of protein have shown only in Water extract. P. ether, Benzene, Chloroform, Acetone and Ethanol extracts have shown -ve test for proteins.

**Corallocarpus epigaeus** (Rottl. et. Willd) Clarke. is a unique ethnomedicinal plant especially for treating ulcers in stomach (tumors in stomach).

The root tubers after preliminary chemical analysis, reveals the predominance of alkaloids in almost all the solvents showing positive response with *Hager's reagent*. Whereas other components like saponins, phytosterols, glycosides, proteins are totally absent or if present, in negligible concentration. Phenolic compounds are not encountered at all.
The presence of alkaloids in maximum concentrations attributes its effectiveness against tumors in stomach. Also the bitterness is due to the presence of alkaloids. Though it does not form a constituent of drug formulation, it is widely accepted as ethnomedicine and practised in the region. The local practitioners dig out the tubers, dry them, powder them and prescribe for the above mentioned ailments. They are not aware of the bioactive properties. Therefore, it is essential to study its chemical constituents as well as bioactive properties. So that it can be utilised in drug formulation.

In tribal areas, there is a wealth of such medicinally potential herbs, which are in practice as ethnomedicine. Our attempt is to decipher the information by experimentation in laboratory. As a prerequisite, the phytochemical screening has been done for its further analysis. The plant is fast dwindling from the region demanding conservation both ex situ and artificial regeneration.

**VITACEAE**

*Cavratia trifolia* (Linn.) Domin, Biblioth, Bot.89:371.1927; *Vitis trifolia* Linn. sp. 203, 1753; *Cissus carnosa* Lam. Encycl. 1:31 1789; *Vitis carnosa* (Lam.) wt et Arn. Prodr. 127, 1834; *Cavratia carnosa* (Lam.). Gagenep in Not. syst 1:347, 1911; FBI 1:654, 1875; FGS 1:159, 1978.

**Plate 18, Fig. 1 & 4.**

**Vern. Name**: Nagbachnag (G), Amal-bel (H), Ambat-bel (M).

**Locality**: Borgaon

**Habitat**: Not common found on waste land.

**Flowers & Fruits**: July - Oct.

**Description**: Slender herbaceous climber, branched. Stem angular slightly grooved, hairy.
Leaves trifoliolate, leaflet elliptical ovate, margin serrate, subcordate, slightly dentate, tendrils axillary 2 or 3 times forked. Flowers greenish-white, corymbose cymose. Calyx minute. Petals ovate, obtuse. Fruit globose, berry glabrous.

**Voucher Specimen No. 510/070.**

**Ethnomedicinal significance:**

Tuberous fleshy root of this plant is bitter. It is used in snake bite by the local tribes in very low quantity. It is externally applied to boils. It is also effective externally in piles in very low quantity. It is advocated for stomachache.

In snake-bite, tribals ask the person to chew the roots in very low quantity, if it tastes bitter, the snake is believed to be non-poisonous and if it tastes normal, it indicates that snake must be poisonous. Thus, the root acts as an antidote to snake venom. However, root of this plant used in snake bite and in stomachache is not recorded in the literature.

Roots are astringent, ground with black pepper applied to boils. Poultice of leaves rubefacient, applied to yoke-sores on the neck of bullocks (Chopra *et al.*, 1986; Ramchandran, 1986). The root paste is applied externally on boils and pimples (Painuli and Maheshwari, 1996).

**Chemical analysis:**

The medicinally significant part is tuberous root.

**Alkaloids:**

It was found that all extracts have shown -ve test for alkaloids with *Mayer's* and *Dragendorff's reagent*. All solvent extracted high conc. of alkaloids in *Hager's reagent*. All extracts have shown -ve test for alkaloids with *Wanger's reagent*. 
Glycosides:

Low conc. of glycosides have been only extracted in Water extracts, other extracts have shown -ve test.

Phytosterols:

Low conc. of phytosterols have been only extracted in P. ether and Ethanol extracts, while other extracts have shown -ve test.

Saponins:

Medium conc. of saponins have been extracted only in Water extract, other extracts have shown -ve test.

Phenolic compound/Tannins:

All extracts have shown -ve test.

Proteins:

Low conc. of proteins have been extracted in P. ether, Benzene and Chloroform, other extracts have shown -ve test.

The information collected about the species Cayratia trifolia (Linn) Domin is entirely based on the interrogation with local herbal practitioners.

The information when corroborated with the chemical analysis, exhibits that its effectiveness is due to the dominance of alkoloids over other chemical components. Also the fleshy roots are poisonous, because of alkoloids. In low quantity only it is effective as ethnomedicine. It is also extensively valued ethnomedicinal plant of this region. The plant is a potential source of medicine but after detailed chemical analysis and determining bioactive principles. In crude form, it shows the cumulative effects. It is also a dwindling plant because of over exploitation, by the tribals for above mentioned ailments.

The plant is most suitable for medicinal farming in the fields of tribals. It is to be conserved in laboratory through biotechnology techniques.
STERCULIACEAE


Plate 19, Fig. 3.

Vern. Name : Uttamsagar (G), Bodula, Walena (H), Chawar (K).

Locality : Shirajbandh (Ghatang)

Habitat : Rare, on slope of hills.

Flowers and Fruits : March - June.

Description :

Medium sized tree with whorled branches. Leaves broad and crowded at the ends of the branches, palmately 3-5 lobed, cuspidate, tawny woolly when young, glabrous when mature, margin wavy, acute, and pointed at apex. Flowers in subterminal pendent, panicles, covered with orange red stellate - pubescence. Unisexual. Calyx tubular, widening gradually upwards. Male flowers with red staminal tube, anthers sessile, some flowers bisexual and in bisexual flower anthers aggregated on long gynandrophore just beneath the ovaries. Fruits follicular, woody, oblong, covered with hairs. Seeds 2 or 3 in each carpel.

Voucher Specimen No. 510/034.

Ethnomedicinal significance :

Dried powder of the root with milk is given internally in bone fracture.

Bark yields a fibre used for ropes. Wood suitable for paper pulp. Twigs and leaves used as cattle fodder (Ramchandran et al., 1986).

Chemical analysis :

The medicinal significant part is root.
Alkaloids:

It was found that low concentration of alkaloids have been extracted in Water extract with *Mayer's reagent*. Other extracts have shown -ve test. Low concentration have been extracted in Ethanol with *Dragendorff's reagent*. Other extracts have shown -ve test. Medium concentration have shown in Benzene, Acetone, Ethanol and Water extracts with *Hager's reagent* whereas P. ether, Chloroform, have shown low concentration alkaloids. All solvent extracts have shown -ve test for alkaloids with *Wagner's reagent*.

Glycosides:

Medium concentration of glycosides have been extracted in Water extracts and low concentration in Chloroform extracts. Other extracts have shown -ve test.

Phytosterols:

Water extracts have shown medium concentration of phytosterols. Whereas other extract have shown -ve test.

Saponins:

Medium concentration of saponins have been extracted in Water extracts other extracts have shown -ve test.

Phenolic compounds/Tannin:

All extracts have shown -ve test for phenolic compounds/tannin.

Proteins:

All extracts have shown -ve test for proteins.

The therapeutic use of dried powder of the root with milk for healing process in bone fracture, is the unique ethnomedicinal information collected from Korku and Gond tribes of this region.

Chemically, Water extracts of the plant reveals the occurrence of alkaloids, glycosides, phytosterols and saponin. Other solvents have shown negative results.
except the alkaloids, where all the six solvents exhibited positive test with Hager's reagent.

Broadly the healing property of the root powder can be attributed to alkaloids however, specificity has to investigated.

The plants of Firmiana colorata (Roxb.) R.Br. are not widely distributed and dwindling in the restricted locations of their occurrence. As such it is most essential to conserve this ethnomedicinal plant through ex-situ cultivation in the botanical gardens. So far, only the economic uses of the plants were reported. The present report of its medicinal significance is unique. The detailed chemical investigation of this plant is most essential.

**LEEACEAE**


**Plate 18, Fig. 5 and Plate 20, Fig. 2.**

**Vern. Name**: Hattikand (K), Dholsamudra (H), Dinda (M).

**Locality**: Amadoha (Chikhaldara).

**Habitat**: Not very common, occurs as a forest undergrowth.

**Flowers and Fruits**: July - Sept.


**Voucher Specimen No. 510/031.**
**Ethnomedicinal significance:**

Dried powder of the tuberous roots with coconut oil is used on wounds and sores. It is also prescribed against guinea worm and ringworm.

Roots are astringent used as a remedy against ring worm and to cure guinea worm. Root powdered and applied to obstinate sores to promote cicatrization, applied externally to allay pain (Chopra et al., 1956). Leaves eaten as a vegetable. Fruits edible. Mucilagenous root tubers anodynae; used on wounds and sores and against guinea worm and ringworm (Ramchandran et al., 1986).

**Chemical analysis:**

The medicinally important part is tuberous roots.

**Alkaloids:**

Medium concentration of alkaloids have been extracted in Water extract, other extracts have shown -ve test with *Mayer's reagent*. All extracts have shown -ve test for alkaloids with *Dragendroff's reagent*. High concentration of alkaloids have been extracted in water extracts and medium concentration have been extracted in other extracts with *Hager's reagent*. Medium concentration of alkaloid have been extracted in Chloroform and Water extract whereas low concentration have been extracted in Ethanol. Other extract have shown -ve test for alkaloids with *Wagner's reagent*.

**Glycosides:**

Low concentration of glycosides have been only extracted in Water extracts other's have shown -ve test for glycosides.

**Phytosterols:**

All extracts have shown -ve test for phytosterols.

**Saponins:**

Benzene, Acetone and Ethanol extracts have shown medium concentration of saponins whereas other extracts have shown -ve test.
Phenolic compound/Tanin:

Medium concentration have been extracted in Acetone, Ethanol and Water extract while other solvent extracts have shown -ve test.

Proteins:

Medium concentration of proteins have been extracted in Acetone and minimum in Chloroform other's have shown -ve test for proteins.

Leea macrophylla Roxb. has both external application for sores and wounds and also ingested internally against guinea worms and ringworms. However, it is not a constituent of conventional methods of treatment, its significance as folk medicine is unique to this region. Only reference in the context of its ethno medicinal importance could be traced. In the preliminary chemical analysis, the dominance of alkaloids; mostly with Hager's reagent, followed by Wagner's and Mayer's reagent is noteworthy. Saponins and phenolic compounds are present in small quantity.

The healing property of the plant is due to the presence of alkaloids, which are secondary metabolites.

During investigation the plant was noticed to have restricted distribution; but with much exploitation for the therapeutic significance. So, the plant is dwindling, demanding conservation in gardens and laboratory.

VITACEAE


Vern. Name: Khirkand (K), Panibel (H), Golinda (M).
Locality : Chunkhedi.

Habitat : Occasional in hill forests and among hedges.

Flowers and Fruits : July - Oct.

Description :

An extensive climber, with forked tendrils having hollow striated branches. Leaves simple, palmately lobed, cordate, dentate, many nerved from the base. Flowers small, pentamerous, reddish-brown in opposite cymes, peduncle with a forked tendril just below the cymes. Petals and anthers free. Berries globose, black, glabrous, 2-celled. Seeds ellipsoid.

Voucher Specimen No. 510/071.

Ethnomedicinal significance :

Dried powder of the tuberous roots applied to wounds. Decoction of roots given against dysentery. Juice of young leaves also prescribed in toothache by local tribes.

Roots applied to wounds (Chopra et al., 1956). Juice of tender leaves used against dental troubles and as a detergent for indolent ulcers. Decoction of roots given against dysentery (Ramchandran et al., 1986).

Chemical analysis :

The medicinally significant part is tuberous roots.

Alkaloids :

It was found that medium conc. of alkaloids could be obtained in Water extract and low conc. in Chloroform with Mayer's reagent. Other extracts have shown -ve test. High conc. of alkaloids have been extracted in Water extracts and low conc. in Ethanol, other extracts have shown -ve test for alkaloids with Dragendorff's reagent. High conc. of alkaloids have been extracted in Benzene,
medium in P. ether, Chloroform and Water and low conc. in Acetone and Ethanol extracts with Hager's reagent. High conc. have been extracted in Ethanol and Water extracts. Medium conc. in Chloroform and Acetone and other extracts have shown -ve test for alkaloids with Wagner's reagent.

**Glycosides:**

Medium conc. of glycosides have been extracted in Water extracts whereas as low concentration in Chloroform. Other extracts have shown -ve test for glycosides.

**Phytosterols:**

Medium conc. of phytosterols have been extracted in P. ether extracts; other extracts have shown -ve test.

**Saponins:**

High conc. of saponins have been extracted in Acetone and Ethanol, medium in Water and other extracts have shown -ve test for saponins.

**Phenolic compounds/Tannin:**

High conc. have been extracted in Acetone and Ethanol. Low conc. in Chloroform whereas other's have shown -ve test.

**Proteins:**

Low conc. of proteins have been only extracted in Water extract whereas other's have shown -ve test for proteins.

This plant is also a unique medicinal plant practised by the tribals of this region. Only stray references in respect of its ethnomedicinal properties could be traced.

The preliminary chemical analysis shows the predominance of alkaloids followed by saponins and phenolic compounds. The antiseptic and healing property may be due to the presence of alkaloids and phenolic compounds.

The species is widely distributed and offers a good material for studying pharmaceutical implications.
TACCACEAE


**Plate 20, Fig. 1 and Plate 18, Fig. 2.**

**Vern. Name:** Jatashankar (G), Ghungrukand (K).

**Locality:** Shirajbandh (Ghatang)

**Habitat:** Frequent on hill slopes in moist shady places among bushes and in hedges.

**Flowers and Fruits:** Sept - Nov.

**Description:**

A perennial herb. Corm globose. Stem aerial, erect. Leaves large 15-40 cm in diameter, 3 partite, the segments variously pinnatifid, margin undulate, petiole long, striated, terete, hollow. Flowers drooping, green, tinged with purple colour, bisexual, arranged in an umbel on a long naked hollow scape, bracteate and bracteolate, bracteoles filiform, numerous, much longer than the bracts. Stigma petaloid, inflexed like an umbrella over the style. Berries yellow, subglobose, 6 ribbed. Seeds ovoid, angular, longitudinally striate.

**Voucher specimen No. 510/-89**

**Ethnomedicinal significance:**

Corms of this plants are strongly recommended for antitumorous activity and against stomachache, also effective in body swelling and general debility. Some tribals claimed that corms are also effective in impotency. Decoction of corms prescribed in piles, diarrhoea and dysentery.

Corms useful against dysentery (Chopra et al., 1956).

Corms used against piles, their extract given against diarrhoea and dysentery (Ramchandran et al., 1986). Corms useful against treatment of piles, as rubefacient, used against dysentery and diarrhoea (Srivastava, 1989).
Chemical analysis:

The medicinally significant part is corm.

Alkaloids:

It was found that Benzene and Water extract have shown high concentration of alkaloids with *Mayer's reagent*. *P. ether, Chloroform, Acetone and Ethanol* have shown -ve test. High concentration of alkaloids have been only extracted in Water extract with *Dragendorff's reagent*. Other solvent extracts have shown -ve test. High concentration exhibited in Water extract, medium concentration in Chloroform extract and low concentration in Acetone extract with *Hager's reagent*. Other solvent extracts have shown -ve test, medium concentration of alkaloids appears in Benzene extract, low concentration in Acetone and Ethanol extract with *Wagner's reagent*, whereas other solvent extracts have shown -ve test for alkaloids.

Glycosides:

Low concentration of glycosides have been exhibited only in Water extracts. Other extracts have shown -ve test for glycosides.

Phytosterols:

Medium concentration of phytosterols have been extracted in Water extract. Low concentration in Benzene and Ethanol extract and other solvent extracts have shown -ve test for phytosterols.

Saponins:

Medium concentration of saponins extracted only in Water extract. Other solvent extract have shown -ve test for saponins.

Phenolic compound/Tannin:

All solvent extracts have shown -ve test.

Proteins:

All solvent extracts have shown -ve test for proteins.
As far as medicinal part is concerned, the underground corms are significant. The chemical analysis exhibited the occurrence of alkaloids, phytosterols, saponins. Glycosides are present in negligible concentration. The specific β sitosterol, ceryl alcohol and taccalin have been isolated (Lloydia, 1963, 26, 133). However, no bioactive properties could be traced, in literature.

The plant is widely distributed in this region, and also exploited by the tribals. Its medicinal farming is necessary. The significant uses of corms in curing piles has been emphasized by the local practitioners. Therefore, it can also be a potential constituent in herbal/Ayurvedic formulations.

**ASPIDIACEAE**

**Tectaria macrodonta** (Fee) C. Chr; Index Fil. Suppl. 3 : 181. 1934; Holttum, Ferns Malaya 505. 1968; Vasudeva and Bir, Indian Fern J. 4:12. 1987.

**Plate 18, Fig. 6 and Plate 20, Fig. 5.**

**Vern. Name**: Kala bachnag (G), (K).

**Locality**: Shirajbandh (Ghatang).

**Habitat**: On hills in shade, in all the ravines and forests, on forest floor or on dry barren hill sides with its beautifully drooping fronds.

**Description**: Rhizome stout ascending, thick covered at the apex with black subuate falcate scales. Stipes long, brown. Scales long, yellow, non-pellate, ovate, cells all uniform, margin with small projections. Upper portion of the stipe and main rachis covered with colourless hairs. Fronds long, broad. Lamina deltoid, pinnatifid. Pinnae lobes long, broad, very thin in texture, nearly glabrous on the surface beneath. Main veins fairly distinct to the margins. Sori rather large, in two rows between the main veins, at the apex of the free veinlets. Indusium reniform, sporangia with
annulus of 14-18 cells, paraphyses absent. Spores monoolete, bilateral, plano-convex in lateral view and oblong in polar view, exine light brown, thin with granulations, perine loose irregularly folded with the folds sometimes appearing as thin sharp ridges.

Voucher Specimen No. 510/093.

Ethnomedicinal significance:

Dried powder of the rhizomes used against sores and injury. The plant is used against asthma and bronchitis. It is also used as antihelminthic (Bhattacharjee, 1998).

Chemical analysis:

The medicinally significant part is Rhizome.

Alkaloids:

It was found that all solvant extracts have shown -ve test for alkaloids with Mayer's and Dragendorff's reagent. High concentration of alkaloids extracted in P. ether, Benzene and Chloroform extracts with Hager's reagent and low concentration of alkaloids extracted in Acetone Ethanol and Water extracts. Medium concentrations have been extracted in Water extract and low in Ethanol extract with Wagner's reagent.

Glycosides:

All solvents extracts have shown -ve test for Glycosides.

Phytosterols:

Medium concentration of phytosterols have been extracted in P. ether extract and low concentration in Benzene extract whereas other solvent extracts have shown -ve test.

Saponins:

High concentration have been extracted only in Water solvent extract and medium concentration have been extracted in Acetone extracts and low in
Chloroform and Ethanol extracts. P. ether and Benzene extracts have shown -ve test for saponins.

**Phenolic compound/Tannin :**

High concentration have been extracted in Water extract and medium in Acetone and Ethanol extract. Low in Chloroform extract. P. ether and Benzene extracts have shown -ve test.

**Proteins :**

Low concentration have been only extracted in Acetone extracts. While other solvents have shown -ve test for proteins.

*Tectaria macrodonta* is chiefly a folk medicinal plant, widely used by the tribals. Upon detailed phytochemical screening, the rhizome demonstrated the predominance of alkaloids, followed by saponins. Phenolic compounds are present but in low quantity. It is because of the alkaloids that the plant possesses antiseptic and healing property. The plant is greatly valued by the tribals of this region, against sores and injury. The information provided by the tribals is novel not reported so far, even in ethnomedicinal context.

**NYCTAGINACEAE**


Plate 19, Fig. 1.

**Vern. Name :** Lal Matia (G), Punarnava (H), Tambadi vasu (M).

**Locality :** Dhanora.

**Habitat :** Very common in open areas, grassy waste places, road sides and in the crevices of ancient walls.

**Flowers and Fruits :** Major part of the year.
Description:

A diffuse herb with stout root and many procumbent branches. Stem herbaceous, internode elongated, purple. Leaves simple, rounded at both the ends, petiole long. Flowers dark pink and 4 to 10 flowers are present in umbel like inflorescence at the tip. Bracteoles small, perianth united forming campanulate tube which is constricted above the ovary, glandular, lobes emarginate. Stamens 2 or 3. Fruit capsular 5 ribbed, glandular. Seeds small.

Voucher Specimen No. 510/090.

Ethnomedicinal significance:

Gond tribals of this area employ the root of this plant in jaundice. 10 Gm dried powder of root with 10 gm sugar is to be given for 3 times a day for 3 days. It is also effective in heart diseases, asthma, spleen enlargement and abdominal pains. It also acts as expectorant.

Roots are diuretic, laxative, expectorant, in asthma, stomachache, in oedema, anaemia, jaundice, scanty urine and internal inflammation. Antidotal activity of snake venom. (Chopra et al., 1956). The roots and shoot serve as a potherb, emetic and expectorant, used against asthma, and jaundice (James A. Duke, 1986). It is diuretic and laxative. It is also used to treat asthma, dropsy, jaundice, intestinal inflammation and gonorrhoea (Bhattacharjee, 1998).

Chemical analysis:

The medicinally significant part is root.

Alkaloids:

It was found that all solvent extracts with Mayer's and Dragendorff's reagent have shown -ve test for alkaloids.

High concentration have been extracted in P. ether, Benzene, and Chloroform with Hager's reagent, medium concentration of alkaloids have been extracted in Acetone and Water extracts. Low concentration extracted in Ethanol extracts. Medium concentration have been only extracted in Water extracts with Wagner's
*reagent* whereas other solvents extracts have shown -ve test for alkaloids with this reagent.

**Glycosides**:

Medium concentration of glycosides have been extracted in Water extracts while low concentration have been extracted in Ethanol extract. Other solvent extracts have shown -ve test for Glycosides.

**Phytosterols**:

Medium concentration have been extracted in Acetone solvent extracts whereas low concentration have been extracted in Benzene and Chloroform. P. ether, Ethanol and Water extracts have shown -ve test.

**Saponins**:

All extracts have shown -ve test for saponins.

**Phenolic compound/Tannin**:

Low concentration have been only extracted in Water extract whereas other solvent extract have shown -ve test.

**Proteins**:

Low concentration of proteins have been only extracted in Water extract whereas other extracts have shown -ve test for proteins.

The plant is a potent herbal medicine well practised against jaundice. The literature survey reveals that it is a well established constituent of ayurvedic medicine popularly known as "Punarnavasav".

The preliminary chemical screening exhibited the presence of alkaloids followed by phytosterols, glycosides and phenolic compounds.

The saponins are totally absent. Ojewole and Adisina (1985), reported the purine nucleoside viz. hypoxanthine - I. L. arabinofuranoside (HTAP) from roots of *B. diffusa* L. It is also used as a mild laxative, and a febrifuge for children.

The plant is being investigated. It is a significant plant for medicinal farming of herbs in the fields of tribals.
Table 2: Qualitative chemical examination of various extracts.
(obtained by successive solvent extraction of plant material).

<table>
<thead>
<tr>
<th>Rhamnaceae</th>
<th>Helinus lanceolatus Brandis.</th>
<th>(Low = +, Medium = ++, High = ++++, Absent = -)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant parts</td>
<td>Test</td>
<td>Reagent used</td>
</tr>
<tr>
<td>Roots</td>
<td>Alkaloids</td>
<td>Mayer's</td>
</tr>
<tr>
<td></td>
<td>Dragendorff's</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Hager's</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Wagner's</td>
<td>-</td>
</tr>
<tr>
<td>Glycosides</td>
<td>Liebermann Burchard's test</td>
<td>+</td>
</tr>
<tr>
<td>Phytosterols</td>
<td>Liebermann's test</td>
<td>++</td>
</tr>
<tr>
<td>Saponins</td>
<td>Foam test</td>
<td>+</td>
</tr>
<tr>
<td>Phenolic compounds/Tannins</td>
<td>Ferric chloride solution</td>
<td>-</td>
</tr>
<tr>
<td>Proteins</td>
<td>Biuret test</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 3: Qualitative chemical examination of various extracts.
(obtained by successive solvent extraction of plant material).

Dioscoreaceae

<table>
<thead>
<tr>
<th>Dioscorea pentaphylla L.</th>
<th>(Low = +, Medium = ++, High = +++ Absent = -)</th>
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<tr>
<td>Plant parts</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>Reagent used</td>
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<tr>
<td></td>
<td></td>
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<tr>
<td>Tubers</td>
<td>Alkaloids</td>
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<tr>
<td>Glycosides</td>
<td>Liebermann</td>
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<tr>
<td></td>
<td>Burchard's test</td>
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<tr>
<td>Phytosterols</td>
<td>Liebermann's test</td>
</tr>
<tr>
<td>Saponins</td>
<td>Foam test</td>
</tr>
<tr>
<td>Phenolic compounds/Tannins</td>
<td>Ferric chloride solution</td>
</tr>
<tr>
<td>Proteins</td>
<td>Biuret test</td>
</tr>
</tbody>
</table>

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Table 4: Qualitative chemical examination of various extracts.
(Obtained by successive solvent extraction of plant material).

**Cucurbitaceae**
*Coralocarpus epigaeus* (Rottl. et Willd) Clarke.  (Low = +, Medium = ++, High = +++, Absent = -)

<table>
<thead>
<tr>
<th>Plant parts</th>
<th>Test</th>
<th>Reagent used</th>
<th>Petroleum ether extract (60 to 80°C)</th>
<th>Benzene extract</th>
<th>Chloroform extract</th>
<th>Acetone extract</th>
<th>Ethanol extract</th>
<th>Water extract</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mayer's</td>
<td>P</td>
<td>B</td>
<td>C</td>
<td>A</td>
<td>E</td>
<td>W</td>
</tr>
<tr>
<td>Tubers</td>
<td>Alkaloids</td>
<td>Dragendorff's</td>
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<td>-</td>
<td>-</td>
<td>+++</td>
<td>++</td>
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<td>Hager's</td>
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<td></td>
<td>Glycosides</td>
<td>Liebermann</td>
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<td></td>
<td>Glycosides</td>
<td>Burchard's</td>
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<tr>
<td>Phytosterols</td>
<td></td>
<td>Liebermann's</td>
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<tr>
<td>Saponins</td>
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<td>Foam test</td>
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<td>-</td>
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<td>Phenolic</td>
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<td>Ferric chloride solution</td>
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<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>
Table 5: Qualitative chemical examination of various extracts.  
(Obtained by successive solvent extraction of plant material).

**Vitaceae**  
*Caratia trifolia* (Linn.) Domin Biblioth.  
(Low = +, Medium = ++, High = +++; Absent = -)

<table>
<thead>
<tr>
<th>Plant parts</th>
<th>Test</th>
<th>Reagent used</th>
<th>Petroleum ether extract (60 to 80°)</th>
<th>Benzene extract</th>
<th>Chloroform extract</th>
<th>Acetone extract</th>
<th>Ethanol extract</th>
<th>Water extract</th>
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<td>Root</td>
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<td>Dragendorff's</td>
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<td>Wagner's</td>
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<td>Burchard's test</td>
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<td>Liebermann's test</td>
<td>+</td>
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</tr>
<tr>
<td>Proteins</td>
<td>Biuret test</td>
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<td>+</td>
<td>+</td>
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<td>-</td>
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</table>
Table 6: Qualitative chemical examination of various extracts.
(Obtained by successive solvent extraction of plant material).

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<tr>
<th>Sterculiaceae</th>
<th>Firmiana colorata</th>
<th>Roxb. R.Br.</th>
<th>(Low = +, Medium = ++, High = +++; Absent = -)</th>
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</thead>
<tbody>
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<td>Plant parts</td>
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<td>Reagent used</td>
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<td>Alkaloids</td>
<td>Mayer's</td>
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<td>Hager's</td>
<td>+</td>
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<tr>
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</tr>
<tr>
<td>Glycosides</td>
<td>Liebermann's test</td>
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<td>Saponins</td>
<td>Foam test</td>
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<td>Phenolic compounds/Tannins</td>
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</tr>
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<td>Proteins</td>
<td>Biuret test</td>
<td>-</td>
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</tr>
<tr>
<td>Test</td>
<td>Water extract</td>
<td>Acetone extract</td>
<td>Ethanol extract</td>
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<tr>
<td>Mayer's Hager's</td>
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<td>Burchard's test</td>
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<td>Liebermann's test</td>
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<td>Liebermann's test</td>
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</tr>
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<td>Foam test</td>
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</tr>
<tr>
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</tr>
</tbody>
</table>

**Table 7:** Qualitative chemical examination of various extracts obtained by successive solvent extraction of plant material.
Table 8: Qualitative chemical examination of various extracts.  
(obtained by successive solvent extraction of plant material).

<table>
<thead>
<tr>
<th>Plant parts</th>
<th>Test</th>
<th>Reagent used</th>
<th>Petroleum ether extract (60 to 80⁰)</th>
<th>Benzene extract</th>
<th>Chloroform extract</th>
<th>Acetone extract</th>
<th>Ethanol extract</th>
<th>Water extract</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td>B</td>
<td>C</td>
<td>A</td>
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<td>W</td>
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<td>Tuberous root</td>
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<td>Dragendorff's</td>
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<td>-</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td></td>
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<td>++</td>
</tr>
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<td>+++</td>
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<td>Liebermann</td>
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<td>Phytosterols</td>
<td>Liebermann's</td>
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<td>-</td>
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<td>+++</td>
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<td>Tannins</td>
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<td></td>
</tr>
<tr>
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<td>Proteins</td>
<td>Biuret test</td>
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</tbody>
</table>
Table 9: Qualitative chemical examination of various extracts.
(Obtained by successive solvent extraction of plant material).

<table>
<thead>
<tr>
<th>Taccaceae</th>
<th>Tacca leontopetaloides (L.) O. ktze.</th>
<th>(Low = +, Medium = ++, High = +++; Absent = -)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant parts</td>
<td>Test</td>
<td>Reagent used</td>
</tr>
<tr>
<td>Tuber</td>
<td>Alkaloids</td>
<td>Mayer's</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dragendorff's</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hager's</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wagner's</td>
</tr>
<tr>
<td>Glycosides</td>
<td>Liebermann</td>
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<td>Burchard's test</td>
<td>-</td>
</tr>
<tr>
<td>Phytosterols</td>
<td>Liebermann's test</td>
<td>-</td>
</tr>
<tr>
<td>Saponins</td>
<td>Foam test</td>
<td>-</td>
</tr>
<tr>
<td>Phenolic compounds/Tannins</td>
<td>Ferric chloride solution</td>
<td>-</td>
</tr>
<tr>
<td>Proteins</td>
<td>Biuret test</td>
<td>-</td>
</tr>
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</table>
Table 10: Qualitative chemical examination of various extracts.
(Obtained by successive solvent extraction of plant material).

<table>
<thead>
<tr>
<th>Plant parts</th>
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<th>Reagent used</th>
<th>Petroleum ether extract (60 to 80°C)</th>
<th>Benzene extract</th>
<th>Chloroform extract</th>
<th>Acetone extract</th>
<th>Ethanol extract</th>
<th>Water extract</th>
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<td></td>
<td>Dragendorff's</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td></td>
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<td>+++</td>
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<td>+</td>
</tr>
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<td></td>
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<td>Wagner's</td>
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<td>+</td>
<td>++</td>
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<td>Glycosides</td>
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<td>Liebermann's test</td>
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<td>-</td>
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<td></td>
<td>Burchard's test</td>
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</tr>
<tr>
<td>Phytosterols</td>
<td></td>
<td>Liebermann's test</td>
<td>++</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Saponins</td>
<td></td>
<td>Foam test</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Phenolic compounds/Tannins</td>
<td></td>
<td>Ferric chloride solution</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>++</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>Proteins</td>
<td></td>
<td>Biuret test</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 11: Qualitative chemical examination of various extracts.
(obtained by successive solvent extraction of plant material).

Nyctaginaceae
Boerhaavia diffusa L.
(Low = +, Medium = ++, High = +++ , Absent = -)

<table>
<thead>
<tr>
<th>Plant parts</th>
<th>Test</th>
<th>Reagent used</th>
<th>Petroleum ether extract (60 to 80°)</th>
<th>Benzene extract</th>
<th>Chloroform extract</th>
<th>Acetone extract</th>
<th>Ethanol extract</th>
<th>Water extract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Root stock</td>
<td>Alkaloids</td>
<td>Mayer's</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dragendorff's</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hager's</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wagner's</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>++</td>
</tr>
<tr>
<td></td>
<td>Glycosides</td>
<td>Liebermann</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Burchard's test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phytosterols</td>
<td>Liebermann's test</td>
<td></td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>++</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Saponins</td>
<td>Foam test</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Phenolic compounds/Tannins</td>
<td>Ferric chloride solution</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Proteins</td>
<td>Biuret test</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>
Table 12. Plant parts involved in herbal formulations.

<table>
<thead>
<tr>
<th>Name of Plant</th>
<th>Ethnomedicinal significant part of the plant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Root/Tuber/Corm</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Mucuna pruriens (L.) DC</td>
<td>+</td>
</tr>
<tr>
<td>Pueraria tuberosa (Roxb. ex Willd)</td>
<td>+</td>
</tr>
<tr>
<td>Abrus precatorius L.</td>
<td>+</td>
</tr>
<tr>
<td>Psoralea corylifolia L.</td>
<td>+</td>
</tr>
<tr>
<td>Indigofera linifolia (L.F.) Retz</td>
<td>-</td>
</tr>
<tr>
<td>Catharanthus roseus (L.) G. Don.</td>
<td>+</td>
</tr>
<tr>
<td>Holarrhena pubescens</td>
<td>-</td>
</tr>
<tr>
<td>Sida acuta Burm F.</td>
<td>+</td>
</tr>
<tr>
<td>Abelmoschus ficuleneus L.</td>
<td>+</td>
</tr>
<tr>
<td>Hibiscus subdariffa L.</td>
<td>+</td>
</tr>
<tr>
<td>Gossypium arboreum L.</td>
<td>+</td>
</tr>
<tr>
<td>Abelmoschus pannosum (Frost.f.)</td>
<td>+</td>
</tr>
<tr>
<td>Schlect.</td>
<td>-</td>
</tr>
<tr>
<td>Ruta graveolens L.</td>
<td>-</td>
</tr>
<tr>
<td>Pergularia daemia (Forsk.) Chiov.</td>
<td>-</td>
</tr>
<tr>
<td>Oxystelma secamone (L.) Karst.</td>
<td>+</td>
</tr>
<tr>
<td>Calotropis gigantea (L.) R. Br.</td>
<td>+</td>
</tr>
<tr>
<td>Plumbago zeylanica (L.)</td>
<td>+</td>
</tr>
<tr>
<td>Passiflora foetida L.</td>
<td>+</td>
</tr>
<tr>
<td>Oxalis corniculata L.</td>
<td>+</td>
</tr>
<tr>
<td>Ocimum basilicum L.</td>
<td>+</td>
</tr>
<tr>
<td>Ocimum gratissimum L.</td>
<td>-</td>
</tr>
<tr>
<td>Leonotis nepetifolia (L.) R.Br.</td>
<td>+</td>
</tr>
<tr>
<td>Morinda tinctoria Roxb.</td>
<td>+</td>
</tr>
<tr>
<td>Merremia tridentata Roth.</td>
<td>+</td>
</tr>
<tr>
<td>Name of Plant</td>
<td>Ethnomedicinal significant part of the plant</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Root/Tuber/Corm</td>
</tr>
<tr>
<td>Lagescea mollis Cav.</td>
<td>+</td>
</tr>
<tr>
<td>Elephantopus scaber L.</td>
<td>+</td>
</tr>
<tr>
<td>Eclipta prostrata (L.) Mant</td>
<td>+</td>
</tr>
<tr>
<td>Glossocardia bosvallea (L.F.) DC</td>
<td>-</td>
</tr>
<tr>
<td>Vernononia cinerea (L.) Less</td>
<td>+</td>
</tr>
<tr>
<td>Leea crispa Van</td>
<td>+</td>
</tr>
<tr>
<td>Helicteres isora L.</td>
<td>+</td>
</tr>
<tr>
<td>Waltheria americana L.</td>
<td>+</td>
</tr>
<tr>
<td>Kirganela reticulata (Poir) Baill.</td>
<td>+</td>
</tr>
<tr>
<td>Euphorbia heyneana Spr.</td>
<td>+</td>
</tr>
<tr>
<td>Securinega leucopyrus (Willd) -Muell.</td>
<td>+</td>
</tr>
<tr>
<td>Pedilanthus tithymaloids (L.) Poit</td>
<td>+</td>
</tr>
<tr>
<td>Corchoms capsularis L.</td>
<td>+</td>
</tr>
<tr>
<td>Corchoms trilocularis L.</td>
<td>-</td>
</tr>
<tr>
<td>Grewia hirsuta Vahl.</td>
<td>+</td>
</tr>
<tr>
<td>Dendrophthoe falcata (L.F.) Etting</td>
<td>-</td>
</tr>
<tr>
<td>Cissampelos pareira L.</td>
<td>+</td>
</tr>
<tr>
<td>Tinospora cordifolia (Willd) Miers.</td>
<td>-</td>
</tr>
<tr>
<td>Stephania japonica (Thunb) Miers.</td>
<td>+</td>
</tr>
<tr>
<td>Alternanthera sessilis (L.) R.Br.</td>
<td>-</td>
</tr>
<tr>
<td>Aerva lanata (L.) Juss.</td>
<td>+</td>
</tr>
<tr>
<td>Achyranthes aspera L.</td>
<td>+</td>
</tr>
<tr>
<td>Aristolochnia bracteata Retz.</td>
<td>+</td>
</tr>
<tr>
<td>Name of Plant</td>
<td>Ethnomedicinal significant part of the plant</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Root/Tuber/Corm</td>
</tr>
<tr>
<td>Bacopa monnieri (L.) Wettstein</td>
<td>-</td>
</tr>
<tr>
<td>Kickxia ramosissima (Wall.) Janchen.</td>
<td>-</td>
</tr>
<tr>
<td>Clerodendrum serratum (L.) moon.</td>
<td>+</td>
</tr>
<tr>
<td>Vitex negundo L.</td>
<td>+</td>
</tr>
<tr>
<td>Andrographis paniculata (Burm.f.) Wall.</td>
<td>-</td>
</tr>
<tr>
<td>Barleria prinotis L.</td>
<td>+</td>
</tr>
<tr>
<td>Hygrophila auriculata (K. Schum) Heine.</td>
<td>+</td>
</tr>
<tr>
<td>Cardiospermum halicacabum L.</td>
<td>+</td>
</tr>
<tr>
<td>Argemone mexicana L.</td>
<td>+</td>
</tr>
<tr>
<td>Santalum album L.</td>
<td>-</td>
</tr>
<tr>
<td>Withania samnifera (L.) Dunal in DC.</td>
<td>+</td>
</tr>
<tr>
<td>Datura metal L.</td>
<td>+</td>
</tr>
<tr>
<td>Clematis triloba Heyne ex Roth</td>
<td>+</td>
</tr>
<tr>
<td>Ammania baccifera L.</td>
<td>-</td>
</tr>
<tr>
<td>Bixa orellana L.</td>
<td>+</td>
</tr>
<tr>
<td>Semecarpus anacardium L.</td>
<td>-</td>
</tr>
<tr>
<td>Diploecyclos palmatus (L.) Jeffrey.</td>
<td>-</td>
</tr>
<tr>
<td>Momordica diocea L.</td>
<td>+</td>
</tr>
<tr>
<td>Cissus quadrangularis L.</td>
<td>-</td>
</tr>
<tr>
<td>Trianthema portulacastrum L.</td>
<td>+</td>
</tr>
<tr>
<td>Tribulus terrestris L.</td>
<td>+</td>
</tr>
<tr>
<td>Ventilago denticulata Willd.</td>
<td>+</td>
</tr>
<tr>
<td>Mimosa pudica L.</td>
<td>+</td>
</tr>
<tr>
<td>Trichodesma zeulanicum (Burm.f.) R.Br.</td>
<td>+</td>
</tr>
<tr>
<td>Name of Plant</td>
<td>Ethnomedicinal significant part of the plant</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Root/Tuber/Corn</td>
</tr>
<tr>
<td><strong>Monocots</strong></td>
<td></td>
</tr>
<tr>
<td>Commelina paludosa Blume</td>
<td>+</td>
</tr>
<tr>
<td>Nervilia aragoana Gaud.</td>
<td>+</td>
</tr>
<tr>
<td>Curcuma pseudomontana Graham.</td>
<td>+</td>
</tr>
<tr>
<td>Curculigo orchioides Gaertn.</td>
<td>+</td>
</tr>
<tr>
<td>Canna indica L.</td>
<td>+</td>
</tr>
<tr>
<td>Colocasia esculenta (L.) Schott.</td>
<td>+</td>
</tr>
<tr>
<td>Chlorophytum tuberosum Baker</td>
<td>+</td>
</tr>
<tr>
<td>Asparagus racemosus Willd.</td>
<td>+</td>
</tr>
<tr>
<td>Gloriosa superba L.</td>
<td>+</td>
</tr>
<tr>
<td>Costus speciosus (Koen.) Smith.</td>
<td>+</td>
</tr>
<tr>
<td><strong>Pteridophyte</strong></td>
<td></td>
</tr>
<tr>
<td>Equisetum debile Roxb.</td>
<td>-</td>
</tr>
<tr>
<td>Cheilanthes tenuifolia (Burn.f.) Swartz.</td>
<td>-</td>
</tr>
<tr>
<td>Helinus lanceolatus Brandis.</td>
<td>+</td>
</tr>
<tr>
<td>Dioscorea pentaphylla L.</td>
<td>+</td>
</tr>
<tr>
<td>Corallocarpus epigaeus (Rottl. et. Willd) Clarke</td>
<td>+</td>
</tr>
<tr>
<td>Carvatia trifolia Roxb.</td>
<td>+</td>
</tr>
<tr>
<td>Firmiana colorata (Roxb.) R.Br.</td>
<td>+</td>
</tr>
<tr>
<td>Leca macrophylla Roxb.</td>
<td>+</td>
</tr>
<tr>
<td>Ampelocissus latifolia (Roxb.) Planch.</td>
<td>+</td>
</tr>
<tr>
<td>Tacca leontopetaloids (L.) O. Ktze.</td>
<td>+</td>
</tr>
<tr>
<td>Tectaria macrodonta (Fee) C. Chr.</td>
<td>+</td>
</tr>
<tr>
<td>Boerhaavia diffusa L.</td>
<td>+</td>
</tr>
</tbody>
</table>
Table 13. Medicinal plants used against various diseases.

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Local Name</th>
<th>Part used</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fever, Malaria:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Euphorbia hevneana</em> Spr.</td>
<td>Chhota didam (G), Dudhi (M)</td>
<td>Roots</td>
</tr>
<tr>
<td><em>Achyranthes aspera</em> L.</td>
<td>Kutri (G), Latjira (H), Aghada(K)</td>
<td>Roots</td>
</tr>
<tr>
<td><em>Datura metel</em> L.</td>
<td>Kala dhatra (H), Kala dhotra (M)</td>
<td>Roots, Fruits</td>
</tr>
<tr>
<td><em>Cissampelos pareira</em> L.</td>
<td>Akanadi (H) Paharvel (M),</td>
<td>Roots</td>
</tr>
<tr>
<td></td>
<td>Pahad Mool(G)</td>
<td></td>
</tr>
<tr>
<td><em>Calotropis gigantea</em> R.Br.</td>
<td>Akawa (K), Mandar (H), Rui (M)</td>
<td>Latex</td>
</tr>
<tr>
<td><em>Ruta graveolens</em> L.</td>
<td>Sadab (H), Satap (M)</td>
<td>Leaves</td>
</tr>
<tr>
<td><em>Bixa orellana</em> L.</td>
<td>Snduriya (H), Shendri, Kesari (M)</td>
<td>Root bark</td>
</tr>
<tr>
<td><em>Semecarpus anacardium</em> L.</td>
<td>Soso (K), (G), Bhilava (H), Biba (M)</td>
<td>Bark juice</td>
</tr>
<tr>
<td><em>Vernonia cinerea</em> L.</td>
<td>Sahadevi (H), Sadodi (M)</td>
<td>Flowers</td>
</tr>
<tr>
<td><strong>Toothache</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Barleria prionotis</em> L.</td>
<td>Utkatara (G), Kateseraya (H),</td>
<td>Leaves</td>
</tr>
<tr>
<td></td>
<td>Pivali-Koranti (M)</td>
<td></td>
</tr>
<tr>
<td><em>Clerodendrum serratum</em> (L.) Moon</td>
<td>Barang (H), Bharungi (M)</td>
<td>Roots</td>
</tr>
<tr>
<td><em>Leea crispa</em> Van.</td>
<td>Sauraya Kand (K)</td>
<td>Tubers</td>
</tr>
<tr>
<td><strong>Earache</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Cardiospermum halicacabum</em> L.</td>
<td>Ghan Fodi (G), Kanphuti (H),</td>
<td>Leaves</td>
</tr>
<tr>
<td></td>
<td>Kapal Fodi (M)</td>
<td></td>
</tr>
<tr>
<td><em>Kirganelia reticulata</em> (Poir) Baill</td>
<td>Durapakki (G), Panjoli (H), Pavana (M)</td>
<td>Leaves</td>
</tr>
<tr>
<td><em>Waltheria americana</em> L.</td>
<td>Jangali Ghatoli (G)</td>
<td>Leaves</td>
</tr>
<tr>
<td><em>Ocimum basilicum</em> L.</td>
<td>Babui Tulsi (H), Sabza (M), Rantulas (G)</td>
<td>Leaves</td>
</tr>
<tr>
<td><em>Datura metel</em> L.</td>
<td>Kala dhatra (H), Kala dhotra (M)</td>
<td>Fruits</td>
</tr>
<tr>
<td><strong>Headache</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Passiflora foetida</em> L.</td>
<td>Mulaibuti (H), Gangurli (M)</td>
<td>Leaves</td>
</tr>
<tr>
<td><em>Aerva lanata</em> (L.) Juss.</td>
<td>Pagarzara (K), Chaya (H)</td>
<td>Roots</td>
</tr>
<tr>
<td><em>Leonotis nepetifolia</em> (L.) R.Br.</td>
<td>Bhootganja (G), Hejurchei (H)</td>
<td>Leaves</td>
</tr>
<tr>
<td><em>Mucuna pruriens</em> (L.) DC.</td>
<td>Kiwanch (H), Kanchkuri (M)</td>
<td>Leaves</td>
</tr>
<tr>
<td>Botanical Name</td>
<td>Local Name</td>
<td>Part used</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td><strong>Eye complaints</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vernonia cinerea (L.) Less</td>
<td>Sahadevi (H), Sadodi (M)</td>
<td>Flowers</td>
</tr>
<tr>
<td>Clerodendrum serratum (L.) Moon</td>
<td>Barangi (H), Bharungi (M)</td>
<td>Leaves</td>
</tr>
<tr>
<td>Oxalis corniculata L.</td>
<td>Amrulsak (H), Ambuti, Anjati(M)</td>
<td>Leaves</td>
</tr>
<tr>
<td><strong>Cold, Cough, Asthma</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clematis triloba Heyne</td>
<td>Bandersheti (G), Murhari (H),</td>
<td>Leaves</td>
</tr>
<tr>
<td></td>
<td>Ranjani (M)</td>
<td></td>
</tr>
<tr>
<td>Pergularia daemia (Forsk) Chiov</td>
<td>Utranvel (G), Utranjutuka (H),</td>
<td>Leaves</td>
</tr>
<tr>
<td></td>
<td>Utarani (M)</td>
<td></td>
</tr>
<tr>
<td>Ocimum basilicum L.</td>
<td>Babui Tulsi (H), Rantulas (G)</td>
<td>Leaves</td>
</tr>
<tr>
<td>Hygrophila auriculata (K.schum) Heine</td>
<td>Untkatara (G), Talimkhana (M)</td>
<td>Leaves</td>
</tr>
<tr>
<td>Calotropis gigantea (L.) R.Br.</td>
<td>Akawa (K), Mandar (H), Rui (M)</td>
<td>Flowers</td>
</tr>
<tr>
<td>Lagescea mollis Cav.</td>
<td>Koyalamukhi (K), Fuli (M)</td>
<td>Roots</td>
</tr>
<tr>
<td>Sida acuta Burm.f.</td>
<td>Terore (K), Barjara (H)</td>
<td>Roots</td>
</tr>
<tr>
<td>Argemone mexicana L.</td>
<td>Pila dhotra (G), Darudi (K),</td>
<td>Roots</td>
</tr>
<tr>
<td></td>
<td>Bharband (H)</td>
<td></td>
</tr>
<tr>
<td>Dendrophthoe falcata L.</td>
<td>Dhawada bandha (K), Banda (H),</td>
<td>Stem bark</td>
</tr>
<tr>
<td></td>
<td>Vanda (M)</td>
<td></td>
</tr>
<tr>
<td>Semecarpus anacardium L.</td>
<td>Soso (K),(G), Bhilava (H), Biba (M)</td>
<td>Bark juice</td>
</tr>
<tr>
<td><strong>Liver disorders, jaundice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eclipta prostrata (L.) L.</td>
<td>Maka (G), Bhangra (H), Maka,</td>
<td>Whole plant</td>
</tr>
<tr>
<td></td>
<td>Bhringuraja (M)</td>
<td></td>
</tr>
<tr>
<td>Bixa orellana L.</td>
<td>Sinduriya (H), Shendri,Kesari (M)</td>
<td>Roots</td>
</tr>
<tr>
<td>Curculigo orchoides Gaertn.</td>
<td>Kali Musali (H), Nelatatygadda (G)</td>
<td>Roots</td>
</tr>
<tr>
<td>Oxystelma secamone (L.) Karst.</td>
<td>Didam (K), Dudhia lata(H)</td>
<td>Roots</td>
</tr>
<tr>
<td></td>
<td>Dudhani (M)</td>
<td></td>
</tr>
<tr>
<td>Trianthema partulacastrum L.</td>
<td>Wasu (G), Lalsabuni (H),</td>
<td>Whole plant</td>
</tr>
<tr>
<td></td>
<td>Pandhari ghetuli</td>
<td></td>
</tr>
<tr>
<td>Botanical Name</td>
<td>Local Name</td>
<td>Part used</td>
</tr>
<tr>
<td>----------------</td>
<td>------------</td>
<td>-----------</td>
</tr>
<tr>
<td><em>Boerhaavia diffusa</em> L.</td>
<td>Lalmatia (G), Punarnava (H)</td>
<td>Root stock</td>
</tr>
<tr>
<td></td>
<td>Tambadi Vasu (M)</td>
<td></td>
</tr>
<tr>
<td><em>Hygrophiila auriculata</em> (K. schum) Heine</td>
<td>Untkatara (G), Talimkhana (M)</td>
<td>Leaves</td>
</tr>
</tbody>
</table>

**Health Tonic and General Debility**: Aphrodisiac

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Local Name</th>
<th>Part used</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Cheilanthus tenuifolia</em> (Burm f.) Swartz.</td>
<td>Dodhamala (G)</td>
<td>Whole plant</td>
</tr>
<tr>
<td><em>Tribulus terrestris</em> L.</td>
<td>Chilluparelue (G), Chota</td>
<td>Roots, Fruits</td>
</tr>
<tr>
<td></td>
<td>Gokhru(H), Gokhru (M)</td>
<td></td>
</tr>
<tr>
<td><em>Abelmoschus ficuleneus</em> L.</td>
<td>Jangali bhendi (G), Ranbhendi (H)</td>
<td>Roots</td>
</tr>
<tr>
<td><em>Pueraria tuberosa</em> (Roxb. ex Willd) DC</td>
<td>Bhuikoha (G), Sural (H), Tubers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ghor-bel (M)</td>
<td></td>
</tr>
<tr>
<td><em>Withania somnifera</em> (L.) Dunal</td>
<td>Asgandh (H), Askandha (M)</td>
<td>Roots</td>
</tr>
<tr>
<td><em>Abrus precatorius</em> L.</td>
<td>Gungchi, Ratti (H), Gunja (M)</td>
<td>Seeds</td>
</tr>
<tr>
<td><em>Hibiscus sabdariffa</em> L.</td>
<td>Lal Ambari (H), Lal Ambadi(M)</td>
<td>Seeds</td>
</tr>
<tr>
<td><em>Mucuna pruriens</em> (L.) DC.</td>
<td>Kiwanch (H), Kanchkuri (M)</td>
<td>Seeds</td>
</tr>
<tr>
<td><em>Hygrophiila auriculata</em> (K.schum) Heine</td>
<td>Untkatara (G), Talimkhana(M)</td>
<td>Seeds</td>
</tr>
<tr>
<td><em>Tinospora cordifolia</em> (Willd.) Miers</td>
<td>Gudvel (G), Giloe, Gulancha (H), Gulvel (M)</td>
<td>Stem</td>
</tr>
</tbody>
</table>

**Lactation**

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Local Name</th>
<th>Part used</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Euphorbia heyneana</em> Spr.</td>
<td>Chhota didam (G), Dudhi (M)</td>
<td>Whole plant</td>
</tr>
<tr>
<td><em>Oxystelma secamone</em> (L.) Karst.</td>
<td>Didam (K), Dhdhia lata (H), Dudhani (M)</td>
<td>Whole plant</td>
</tr>
<tr>
<td><em>Nervilia aragoana</em> Gaud.</td>
<td>Dudha Kand (M)</td>
<td>Tubers</td>
</tr>
<tr>
<td><em>Asparagus racemosus</em> Willd.</td>
<td>Sasarmuli (G), Satawar (H), Shatavari (M)</td>
<td>Root tubers</td>
</tr>
<tr>
<td><em>Pueraria tuberosa</em> (Roxb. ex Willd) DC.</td>
<td>Bhuikoha (G), Sural (H), Ghorbel (M)</td>
<td>Tuber</td>
</tr>
<tr>
<td><em>Pedilanthus tithymaloides</em> (L.) Poit.</td>
<td>Chitrang dudhan (G)</td>
<td>Leaves</td>
</tr>
</tbody>
</table>

**Bone fracture**

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Local Name</th>
<th>Part used</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Corchorus trilocularis</em> L.</td>
<td>Kadu costa (H), Chikna (M)</td>
<td>Whole plant</td>
</tr>
<tr>
<td><em>Equisetum debile</em> Roxb.</td>
<td>Hadjude (G)</td>
<td>Whole plant</td>
</tr>
<tr>
<td>Botanical Name</td>
<td>Local Name</td>
<td>Part used</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>---------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td><strong>Cissus quadrangularis</strong> L.</td>
<td>Hadjud (G), Hadjora (H),</td>
<td>Stem</td>
</tr>
<tr>
<td></td>
<td>Kandvel (M)</td>
<td></td>
</tr>
<tr>
<td><strong>Guinea worms</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Leea crispa</em> Van.</td>
<td>Saurya Kand (K)</td>
<td>Tubers</td>
</tr>
<tr>
<td><strong>Stomach troubles including Dysentery</strong>, <strong>Diarrhoea, Dyspepsia, Colic infection etc.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Cissampelos pareira</em> L.</td>
<td>Akanadi (H), Pahar Vel (M),</td>
<td>Roots</td>
</tr>
<tr>
<td></td>
<td>Pahad Mool (G)</td>
<td></td>
</tr>
<tr>
<td><em>Tacca leontopetaloids</em> (L.) O. ktze.</td>
<td>Jatashankar (G)</td>
<td>Tubers</td>
</tr>
<tr>
<td><em>Elephantopus scaber</em> L.</td>
<td>Gobhi (G), Gojibha (M)</td>
<td>Roots</td>
</tr>
<tr>
<td><em>Vernonia cinerea</em> (L.) Less</td>
<td>Sahadevi (H), Sadodi (M)</td>
<td>Roots</td>
</tr>
<tr>
<td><em>Stephania japonica</em> (Thunb) Miers</td>
<td>Kadupal (G)</td>
<td>Roots</td>
</tr>
<tr>
<td><em>Tinospora cordifolia</em> (Thunb) Miers</td>
<td>Gudvel (G), Giloe, Gulancha (H),</td>
<td>Stem</td>
</tr>
<tr>
<td></td>
<td>Gulvel (M)</td>
<td></td>
</tr>
<tr>
<td><em>Ocimum basilicum</em> L.</td>
<td>Babui Tulsi (H), Rantulas (G)</td>
<td>Leaves</td>
</tr>
<tr>
<td><em>Oxalis corniculata</em> L.</td>
<td>Amrulsak (H), Ambuti, Anjati (M)</td>
<td>Leaves</td>
</tr>
<tr>
<td><em>Corchorus capsularis</em> L.</td>
<td>Narcha (H), Karruchantz (M)</td>
<td>Leaves</td>
</tr>
<tr>
<td><em>Grewia hirsuta</em> Vahl.</td>
<td>Ghatoli (G), Kukurbicha (H),</td>
<td>Fruits</td>
</tr>
<tr>
<td></td>
<td>Govli (M)</td>
<td></td>
</tr>
<tr>
<td><em>Bixa orellana</em> L.</td>
<td>Sinduriya (H), Shendri, Kesari (M)</td>
<td>Fruits</td>
</tr>
<tr>
<td><strong>Skin diseases : Wounds, blisters, eruptioons, sores etc.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Plumbago zeylanicum</em> L.</td>
<td>Chitrak (H), Chitramula (M)</td>
<td>Roots</td>
</tr>
<tr>
<td><em>Achyranthes aspera</em> L.</td>
<td>Kutri (G), Latjira (H), Aghada (K)</td>
<td>Leaves</td>
</tr>
<tr>
<td><em>Aristolochia bracteata</em> Retz.</td>
<td>Gandhyan (G), Kidamari (H),</td>
<td>Leaves</td>
</tr>
<tr>
<td></td>
<td>Kidamar (M)</td>
<td></td>
</tr>
<tr>
<td><em>Cissampelos pareira</em> L.</td>
<td>Akanadi (H), Paharvel (M),</td>
<td>Leaves</td>
</tr>
<tr>
<td></td>
<td>Pahad Mool (G)</td>
<td></td>
</tr>
<tr>
<td><em>Leea crispa</em> Van.</td>
<td>Sauraya Kand (K)</td>
<td>Leaves</td>
</tr>
<tr>
<td><em>Elephantopus scaber</em> L.</td>
<td>Gobhi (G), Gojibha (M)</td>
<td>Leaves</td>
</tr>
<tr>
<td><em>Eclipta prostrata</em> (L.) L. Mant</td>
<td>Maka (G), Bhangra (H), Maka.</td>
<td>Leaves</td>
</tr>
<tr>
<td></td>
<td>Bhringuraja (M)</td>
<td></td>
</tr>
<tr>
<td>Botanical Name</td>
<td>Local Name</td>
<td>Part used</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Biophytum sensitivum (L.) DC.</td>
<td>Zapilzara (K), Lajalu (H), Lajri (M)</td>
<td>Whole plant</td>
</tr>
<tr>
<td>Indigofera linifolia (L.f.) Retz.</td>
<td>Kawwa Dubal (G)</td>
<td>Whole plant</td>
</tr>
<tr>
<td>Ammania baccifera L.</td>
<td>Mayvi (G), Dadmari (H),</td>
<td>Whole plant</td>
</tr>
<tr>
<td></td>
<td>Bharjambul (M)</td>
<td></td>
</tr>
<tr>
<td>Rheumatism - Got, Arthritis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammania baccifera L.</td>
<td>Mayvi (G), Dadmari (H),</td>
<td>Whole plant</td>
</tr>
<tr>
<td></td>
<td>Bharjambul (M)</td>
<td></td>
</tr>
<tr>
<td>Merremia tridentata (L.) Hall.f.</td>
<td>Kuwarvel (G)</td>
<td>Whole plant</td>
</tr>
<tr>
<td>Kickxia ramosissima (Wall.) Janchen</td>
<td>Nikaya Bhasma (G)</td>
<td>Whole plant</td>
</tr>
<tr>
<td>Hygrophiila auriculata (K. schum) Heine</td>
<td>Untkatara (G), Talimkhana (M)</td>
<td>Whole plant</td>
</tr>
<tr>
<td>Cissampelos pareira L.</td>
<td>Akanadi (H), Paharvel (M),</td>
<td>Roots</td>
</tr>
<tr>
<td></td>
<td>Pahad Mool (G)</td>
<td></td>
</tr>
<tr>
<td>Clerodendrum serratum (L.) Moon</td>
<td>Barangi (H), Bharungi (M)</td>
<td>Roots</td>
</tr>
<tr>
<td>Pergularia daemia (Forsk.) Chiov</td>
<td>Utranvel (G), Utranjutuka (H),</td>
<td>Leaves</td>
</tr>
<tr>
<td></td>
<td>Utarani (M)</td>
<td></td>
</tr>
<tr>
<td>Ruta graveolens L.</td>
<td>Sadab (H), Satap (M)</td>
<td>Leaves</td>
</tr>
<tr>
<td>Datura metel L.</td>
<td>Kala dhatura (H), Kala dhotra (M)</td>
<td>Leaves</td>
</tr>
<tr>
<td>Vitex negundo L.</td>
<td>Nirgudi (G), Sambhalu (H),</td>
<td>Leaves</td>
</tr>
<tr>
<td></td>
<td>Nirgur (M)</td>
<td></td>
</tr>
<tr>
<td>Hypertension, Diabetes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kickxia ramosissima (Wall.) Janchen</td>
<td>Nikaya Bhasma (G)</td>
<td>Whole plant</td>
</tr>
<tr>
<td>Catharanthus roseus (L.) G. Don</td>
<td>Sadabahar (H), Sadaphuli (M)</td>
<td>Leaves</td>
</tr>
<tr>
<td>Antidotes to snake bite and Scorpion sting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caryatia trifolia Domin</td>
<td>Nagbachnag (G)</td>
<td>Roots</td>
</tr>
<tr>
<td>Achyranthes aspera L.</td>
<td>Kutri (G), Latjira (H), Aghada(K)</td>
<td>Roots</td>
</tr>
<tr>
<td>Cissampelos pareira L.</td>
<td>Akanadi (H), Paharvel (M),</td>
<td>Roots</td>
</tr>
<tr>
<td></td>
<td>Pahad Mool (G)</td>
<td></td>
</tr>
<tr>
<td>Costus speciosus (Koen.) Smith</td>
<td>Nalguj (K), Keoo (H)</td>
<td>Root stock</td>
</tr>
<tr>
<td>Botanical Name</td>
<td>Local Name</td>
<td>Part used</td>
</tr>
<tr>
<td>---------------</td>
<td>------------</td>
<td>-----------</td>
</tr>
<tr>
<td><em>Bacopa monnieri</em> (L.) Wittstein</td>
<td>Doda ionia (G), Brahmi (H), Nirbrahmi (M)</td>
<td>Stem, leaves</td>
</tr>
<tr>
<td><em>Abrus precatorius</em> L.</td>
<td>Gungchi, Ratti (H), Gunja (M)</td>
<td>Roots</td>
</tr>
</tbody>
</table>

**Urinogenital trouble, Menstrual trouble, Veneral diseases etc.**

<table>
<thead>
<tr>
<th>Species</th>
<th>Local Name</th>
<th>Part used</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Cheilanthus tenuifolia</em> (Burm f.) Swartz.</td>
<td>Dodhamala (G)</td>
<td>Whole plant</td>
</tr>
<tr>
<td><em>Equisetum debile</em> Roxb.</td>
<td>Had jude (G)</td>
<td>Whole plant</td>
</tr>
<tr>
<td><em>Bacopa monnieri</em> (L.) Wettstein</td>
<td>Doda ionia (G), Brahmi (H), Nirbrahmi (M)</td>
<td>Whole plant</td>
</tr>
<tr>
<td><em>Diplocyclos palmatus</em> (L.) Jeffrey</td>
<td>Shivlingi (M), Gotivel (K)</td>
<td>Whole plant</td>
</tr>
<tr>
<td><em>Aerva lanata</em> (L.) Juss</td>
<td>Pagarzara (K), Chaya (H)</td>
<td>Whole plant</td>
</tr>
<tr>
<td><em>Catharanthus roseus</em> (L.) G. Don.</td>
<td>Sadabahar (H), Sadafuli (M)</td>
<td>Leaves</td>
</tr>
<tr>
<td><em>Securinega leucopyrus</em> (Willd.) Muell</td>
<td>Hartho (H), Vorepuvan, Posheri (M)</td>
<td>Leaves</td>
</tr>
</tbody>
</table>
Fig. 1: Cayratia trifolia (Linn) Domin ... Vitaceae
Fig. 2: Tacca leontopetaloids (L.) O. ktze (Corm) ... Taccaceae
Fig. 3: Corallocarpus epigaeus (Rottl. et Willd) Clarke. (Tubers) ... Cucurbitaceae
Fig. 4: Cayratia trifolia (Linn) Domin (Root stock) ... Vitaceae
Fig. 5: Leea macrophylla Roxb. (Tuberous roots) ... Leeaceae
Fig. 6: Tectaria macrodonta (Fee) C. chr. (Rhizome) ... Aspidiaceae
PLATE - 19

Fig. 1: Boerhaavia diffusa L. .... Nyctaginaceae

Fig. 2: Helinus lanceolatus Brandis. .... Rhamnaceae

Fig. 3: Firmiana colorata (Roxb.) R.Br. .... Sterculiaceae
PLATE - 20

Fig. 1: **Tacca leontopetaloids** (L.) O. ktze.  ...  Taccaceae

Fig. 2: **Leea macrophylla** Roxb  ...  Leeaceae

Fig. 3: **Dioscorea pentaphylla** L.  ...  Dioscoreaceae

Fig. 4: **Corallocarpus epigaeus** (Rottl et Willd) Clarke.  ...  Cucurbitaceae

Fig. 5: **Tectaria macrodonta** (Fee) C. Chr.  ...  Aspidiaceae
C. SOCIO-CULTURAL ASPECT

Introduction:

The worship of Nature is a tribal belief and these tribal communities maintain symbiotic relationship with flora and fauna of the region. It is because of their sacred feelings about plants, that number of important taxa are still conserved in the forests. The best example of such belief that protected the plant from extinction is Ginkgo biloba. The study of cultural diversity alongwith biological diversity is an important aspect of the concepts and methods of conservation. The culture means the understanding of customs, beliefs, taboos, rituals, religious association with bioresources.

Cultural diversity in India can be exemplified by the fact that apart from vast rural populations, more than 200 tribes of aborigines exceeding 30 million in population live in the close vicinity of forests occupying remote places. In Maharashtra alone there are about 50 tribes showing great diversity in culture, traditions, customs, food habits and medicinal practices (Vartak et al., 1980). The primitive ethnic societies have realized the importance of biological conservation thousands of years ago. Plants have become part and parcel of life and culture of these tribal communities. It is an interesting and most significant to unravel the mysteries of their cultural diversity. They love plants, adore their peculiarities, consider them as beautiful creations of God, sometimes feel them as symbols of good and bad omens, revere them as God during festivals, use them as bioresources to fulfill need of food, shelter and healthcare. Such a study of close relationship has been described as a meta-level of understanding between biologists and people (Ford, 1994). During last two decades some collaboration between biologists and
ethnographers witnessed (Jain and Fernandes, 1996). These aboriginal inhabitants of remote places are skilled naturalists and their interpretation of biological phenomenon is very advanced. They provide indigenous knowledge about blooming of flowers, fruit dispersal and even animal plant relationship. They are quite familiar with plant resources and habits of wild life too (Joshi, 1996). Cultural associations are also witnessed with specific trees. The indigenous agricultural practices also have a direct impact on biodiversity. The traditional farming system in different cultures often ensure corridors of natural vegetation which act as resource zones, biodiversity conservation units and gene banks (Alcorn, 1995).

Small villages situated at the foot hills of Satpuda in Amravati District, are inhabited by different tribes. These tribes mainly includes Korku and Gond. There are also some people from caste Balai. We also find people of Gawali, Burad and Gawalan in some area, but Korku and Gond are the major tribes.

People of Korku and Gond tribes exclusively depend upon Forest for their day to day needs which are fulfilled with the help of forest produce. They use wood, grass and bamboos for erecting their huts. They graze their cattlefolk in forest. Very few of them own agricultural land but it is on very small scale. This land is also not very fertile unfortunately these tribal people do not have sufficient money to cultivate the land. Therefore they don't pay much attention towards farming. Obviously they do some or the other petty work to earn their livelihood. Indeed their economic condition is serious. Most of them are jobless, very few of them get some work under EGS and schemes of forest department. It is because of insufficient money to fulfil their daily needs and unemployment, most of them depends upon forest. There is also a lack of education. Now a days we find that there are primary schools in many villages but very few children go to school after
4th Std. because there are no middle schools in this area. They also can't afford to send their children to other schools for taking further education because of their utter poverty. When these people starve, they go to nearby big towns in search of employment. After working for some periods in cities they again return to their forest villages.

These tribals are far away from the modern city culture. They don't have any modern sources of entertainment. Wine prepared from *Madhuca indica* flowers and sex are the only main sources of their entertainment. Almost all families have more than 8 to 9 members because of lack of education and lack of family planning awareness. They don't get enough food or clothing. There is no facility of proper hospitals in this area. Naturally these tribals approach to village bhagat and Bhumka for treatment. Due to poverty they cannot afford to go to city doctors. Sometimes they make use of medicinal plants, simultaneously Bhumakas and Village Bhagat make use of "Mantras" to cure their ailments. Because of ignorance and lack of education, these tribals believe in supernatural things their blind faith and superstitions compel them to approach to such quacks like Bhagat and Bhumaka. Many times they succumb to these diseases. When author talked with them about the importance of family planning, then they would argue that all children in the family don't survive and secondly they need children for doing manual work, children earn money to help the family and therefore these tribals are not inclined for undergoing the family planning operation. Author never find sign of unhappiness or distress on the faces of these tribals despite their very hard life with full of struggle. They would not express anything about their difficulties to others. Many times they don't get sufficient food, even then, they live happy life and adjust with the changing situations.

They make use of medicinal plants to cure their ailments and their cattlefolk
as well. They get knowledge of these medicinal plants from their ancestors. They have also updated their knowledge in this field by conducting different experiments. Every tribal village has got one Bhumka or village doctor, he makes use of medicinal plants to cure ailments. They are always reluctant to share their knowledge of these medicinal plants with others. They prefer to remain silent so far as sharing of this knowledge is concerned. Author could gather some knowledge from these village doctors after frequent visits and close association, friendship with them.

The medicinal plants are important not only in their day to day life but also in their social culture. The plants are also given the status of God. The tribals consider these plants as almighty God. They make use of some of these plants in marriage ceremony, different festivals and also in last rites. Different tribes make use of these plants in a different methods. These plants are given special place by these tribes. They argue that, behind this there are traditional reasons. Today also these tribals have maintained their traditions.

This investigation is a short attempt to study the cultural aspect of the plants found in the piedmont belt of Sutpuda in the area of Amravati district. Author have discussed with the old persons of the different families of Korkus, Gonds tribes and Balai caste. This study is a result of detailed discussion with these tribals about importance of plants in socio-cultural life of these tribes.

The Origin of "Gotras":

Author have tried to get information about the origin and development of different "Gotras" in these tribals and got a very interesting information. The old and respected tribals narrated a story which throws light on the origin and development of Gotras as under:
God created this universe. At that time he created one man and one women, their union resulted in birth of children and one big family came to be formed. The God was puzzled and did not know how the number of this family would be increased. For increasing their numbers, marriages amongst them were necessary. But marriages could be possible only amongst different Gotras, therefore different Gotras were necessary. Thereafter the God told that family, that he would come to them next day and would create a separate Gotras for them. He also asked all family members to stay at home. But next day God did not go there. He had sent another person to that family, all family members were very scared of that strange person. Perhaps they thought that he must be a monster so they were very much afraid of him. Due to his horrible face, all family members ran away and took shelter at different places. After some time the God came to that home but he did not see anybody. The God shouted and asked every member of the family about the place, where they had taken shelter. Then one member said that he had hidden himself behind the debris. The God then told him that from that moment his Gotras would be "Kasdekar", in tribal language. "Kasa" means soil. In course of time it came to be known as "Dhurve". Then The God asked another person where did he take shelter, he replied that he had taken shelter of a Teak tree (Tectona grandis L.). Then The God said that from that day his Gotra would be Sawalkar, in tribal language teak is known as Sakum-Sipna. The person who had taken shelter under the Semecarpus anacardium L. (Biba tree) had got the Gotra Bethekar. In tribal language Bethe means Biba. Gradually Bethekar became Belsare and Bhilavekar. In tribal language zara means grass obviously the person taking shelter in the grass acquired the Gotra as Zarekar which further became Jawarkar. The member of the family who was sitting under the Syzygium cumini (L.) Skeels. family Myrtaceae (Jamun tree) acquired Gotra Jamunkar. Thereafter, it became Uike and Patorkar.
The man who had hidden himself in water came to be known as of Mawaskar or Mawse Gotra. In tribal Colloquial language mawas means water. The person who had taken shelter under the belly of cow acquired the Gotra Tandelkar while the one who had hidden himself behind the big fish came to be known as of Dhikar and Dahikar Gotras. In colloquial language, Dhikar means big Fish.

The tribals in this region firmly believed in the above mentioned story and since time immemorial they have been strictly following this Gotra system in their social life.

Every tribal village has got one big rectangular "Otta" and tribals keep one stone and give it a status of God. They considered it as a Patel of the village. This God gets the first preference so far as respect from the villagers is concerned. The villagers believe that this God protects the village. This God is known as "Muthadeo". Similarly at the outskirts of the village generally under the Peepal tree (Ficus religiosa L. Moraceae) we find a big stone painted with "Shendur", they called it as a "Khedadeo" that is God of the village. The villagers worship these Gods on the auspicious day of Vijayadashmi (Dasera). During this ceremony almost all tribes i.e. Korku and Gond participate, thus the "Muthadeo" and "Khedadeo" are the two important Gods of all villagers.

On "Vijayadashmi", villagers worship Muthadeo in the morning. Then the senior citizens of seven different Gotras worship the Khedadeo. These old persons of the village are known as "Sanao". They first worship the Khedadeo and thereafter other villagers assembled at the Khedadeo at this place. Villagers offer Goat and Cock to God. Food is also prepared for all villagers at this place. All villagers collect money for this, they take their lunch here and thereafter take the "darshan" of Khedadeo and greet each other. When it is dark they take Bamboo
Dendrocalamus strictus (Roxb.) Nees. (Poaceae) and prepared torch of it, they burn this Bamboo torch which is known as "Dhundari". Since this day up to the end of June only Dhundari is used. Mainly Dhundari is used to have light, heat and protection from wild animals.

'Holi' - The Most Important Festival of Tribal:

Holi is considered as the festival of colours, joy and happiness. Holi is the most celebrated festival by the tribals. On the full moon night of the month Falgoon the tribals go to the forest and bring Bamboos (Dendrocalamus strictus (Roxb.) Nees. Poaceae) and branches of other trees in the village. The elders decorate bamboos and branches of trees attractively in the main square of the village. Here the wooden logs are applied with oil and colours. The holi is well decorated. On the next day the procession starts from the house of village Patel or Pradhan which is accompanied with music of Ghungru, Basari and Drum. The procession reaches to the Holi square. Here the women and men performed the circular dance with the rhythm of drum. The Police Patel or Sarpanch or head of village panchayat worship the Holi and thereafter it is put on fire. Head of every tribal family performed the puja of holi with "Aarti". According to their culture they put a coconut in the burning Holi after worshipping the holi. The tribal men, women and youth go to everyone's house, apply Gulal and offer greetings of holi. This programme of extending holi greetings continue till late night. For the whole night women and men dance with drum rhythm in the main holi square. There they also enjoy the delicious mahua wine, Dalpuri, and other non-vegetarian food. This fagoon festival is celebrated for five days. On the next day they celebrate the holi "Kar". During this period of holi they enjoy wine and non-vegetarian diet. The tribals purchase new colourful cloths for this ceremony. We find different colours in the village just like the rainbow. The tribals move in the village or the
adjacent villages singing and dancing. In this way we find folkdance, folksong and folkmusic in their rich traditional way.

Korku Tribe:

Korku's give importance to trees according to different Gotras and different God of different families, especially during marriage ceremony and different festivals these trees are worshipped. Mainly Korkus worship *Ficus racemosa* L. Moraceae (Umbar), *Boswellia serrata* Roxb. Burseraceae (Salai), *Lannea coromandelica* (Houtt.) Merr. (Moine), *Syzygium cumini* (L.) Skeels. myrtaceae (Jambul), *Adina cordifolia* (Roxb.) Hook. Rubiaceae (Haldu), *Dendrocalamus strictus* (Roxb.) Nees. Poaceae (Bamboo), *Tectona grandis* L. Verbenaceae (Sag), *Zizyphus mauritiana* Lamk. Rhamanaceae (Bor), *Diospyros melanoxylon* Roxb. Ebenaceae (Tembhrun), *Aegle marmelos* (L.) Corr. Rutaceae (Bel), *Lagerstroemia parviflora* Roxb. (Lendi) Lythraceae etc.

Marriage ceremony:

During marriage ceremony in some Gotras of Korkus they erect one wooden log of a *Ficus racemosa* L. tree (Umbar), and it is worshipped. This wooden log is tied with a new piece of cloth at the top. During marriage ceremony both bride as well as bridegroom are asked to have round (pradakshina) for 5 to 7 times. After the marriage rites are over, and newly married couple departs, the relatives of bride takes away the tied piece of cloth and touch the body of the couple with this piece as a mark of blessing and protection for their future life.

These tribals narrated one story signifying the importance of worship of *Ficus racemosa* L. tree. In our ancient puran there is a story of Hiranyakashyap. When Hiranyakashyap was killed by Narsimha, his nails were poisoned and due to that he became very ferocious that time. The Goddess Laxmi came who brought
fruits of *Ficus racemosa* L. The God Narsinha became calm and quite when he inserted his nails in fruits of *Ficus racemosa* L. Thereafter he became very pleased and he blessed the *Ficus racemosa* L. tree in presence of Goddess Laxmi that who so ever would worship the *Ficus racemosa* L. tree his nature might become sober, calm and quiet. Such person would be happy in life. It is also said that the bride and bridegroom do not know about the nature of each other. If either of them is short tempered then his or her nature would become calm and quiet if the wooden log of *Ficus racemosa* L. tree erected at marriage pendal and if it is worshipped by such couple.

**Importance of *Boswellia serrata* Roxb. Burseraceae (Salai) and *Lannea coromandelica* (Houtt.) Merr. (Moine) tree:**

Korkus not only gives importance to *Ficus racemosa* L. tree but also *Boswellia serrata* Roxb. (Salai) and *Lannea coromandelica* (Houtt.) Merr. (Moine) has got importance in their social life. These two trees are equally important for these tribals. On the eve of marriage ceremony the son in law and some young villagers go to the forest for bringing a wooden log of *Boswellia serrata* Roxb. tree. First they worship the tree. According to them worship of *Boswellia serrata* Roxb. tree means to extend invitation to it for marriage ceremony. After worship and prayer they cut the log of the tree. They also cut some branches of *Syzygium cumini* (L.) Skeels. tree and bring these things in a bullockcart. The persons bringing this bullockcart as well as the bullock are also worshipped and "Aarti" is performed either by aunt of the bride or bridegroom. On the same day marriage pendal is prepared infront of the door. At the centre of the pendal salai log is fitted. Pendal is covered by the branches of *Syzygium cumini* (L.) Skeels. tree. Bamboo arches are decorated around the pendal. Turmeric is applied to the wooden log of *Boswellia serrata* Roxb. and all relatives worship it. Men and women dance
and move around this wooden log in accompaniment of musical instruments. Musical instruments includes Drum, Basari, Chipali, Thapati, Chourasi etc. in this way preparation of marriage ceremony is made by both the parties. Marriage ceremony is conducted by the respected person of the village who is well acquainted with the religious rites of the marriage ceremony. On the third day of marriage when bride goes to the house of bridegroom they dig one peat in the pendal which is covered by one wooden plank on which newly married couple sit and here the programme of bathing and removing turmeric of the bodies of bride and bridegroom is performed.

When these tribals were asked why they use wooden log of *Boswellia serrata* Roxb. in marriage ceremony, they gave an explanation that *Boswellia serrata* Roxb. tree is considered as God by them. Secondly they have been worshipping this tree traditionally and so they worship the same as their ancestors did.

The trees used in different festivals and occasions by the tribals are -

**Mahashivratri :**

On this holy day four branches of *Syzygium cumini* (L.) Skeels (Jamun) tree are brought and a small pendal is erected by the side of the house with the help of these branches and two stones are kept in this pendal. The tribals apply shendur to these stones and these stones are worshipped as God.

**Holi :**

Holi is celebrated by this tribe and they use *Dendrocalamus strictus* (Roxb.) Knees. (Bamboo) and *Diospyros melanoxylon* Roxb. (Tembharun) for burning. When the new crop is ready they bring branches of *Syzygium cumini* (L.) Skeels, *Ficus racemosa* L. and *Aegle marmelos* (L.) Corr. trees. They erect one small
pendal using these branches and there they worship God Mahadeo (Shankar). Then only they used the new grains.

Funeral:

The Korkus bury the dead in the soil. After the burial, they put the branch of Zizyphus mauritiana Lamk. (Bor) on dead body and they also put small branch of Lannea coromandelica (Houtt.) Merr. (Moine) tree. The wood of this tree has got peculiar smell, due to this strong smell no animal dare to take out the dead body after last rites are over, the tribals return to their home and express their sorrow by chewing leaves of Lagerstroemia parviflora Roxb. (Lendi) tree.

Shidoli ("Shradha"):

Shidoli is the occasion when the Korku's perform "Shradha" of their ancestors. In short this tribe perform this rite in memory of deceased father or grandfather and mother and grandmother and generally it is done by the third generation. Tectona grandis L. (Teak) is of prime importance on this occasion. They bring wooden log of Tectona grandis L. from the forest and prepare one frame of it. They engrave pictures of the dead person in the family on this teak wood frame. Thereafter they kill goat and cock as sacrifices and they perform the "Puja". When author asked them about the motive behind this "Shidoli" programme they answered that after death soul of the body wanders here and there. They sketch the pictures of ancestors on the teakwood frame and worship it just to convert the wandering soul into God they call this rite as "Shidoli".

Teak tree as God:

These tribals considered teak tree as God. The tribals bring teak tree at home only after the performance of puja on "Ashadi Ekadashi" day. This tribe dont use vegetables of climbers for eating unless and until it is worshipped. After
the commencement of rainy season, they bring vegetables at home and performed
the puja or sometimes they worshipped these vegetables in the forest only. Then
they used these vegetables for eating.

**Holy and Unholy trees**

As per their belief some trees are holy while the others are unholy or of less
importance. According to them *Boswellia serrata* Roxb. (Salai), *Lannea
coromandelica* (Houtt.) Merr. (Moine), *Ficus racemosa* L. (Umbar), *Tectona
grandis* L. (Sag), *Syzygium cumini* (L.) Skeels (Jamun), *Adina cordifolia* (Roxb.)
Hook. (Haldu), *Dendrocalamus strictus* (Roxb.) Nees. (Bamboo), *Zizyphus
mauritiana* Lamk. (Bor), *Aegle marmelos* (L.) Corr. (Bel), *Diospyros melanoxylon*
(Roxb.) (Tembhrun) are holy trees. It is their belief that the God resides on
*Boswellia serrata* Roxb. and *Adina cordifolia* (Roxb.) Hook. According to Korku
*Careya arborea* Roxb. Myritaceae (Kumbhi) and *Dalbergia paniculata* Roxb. (Fasi)
Leguminosae trees are considered as unholy even the wood of these trees is not
used as fuel or they are not brought at their home. They think that if the branch or
a trunk of these trees is brought at home then family God would leave the house.
They considered *Careya arborea* Roxb. (Kumbhi) and *Dalbergia paniculata* Roxb.
(Fasi) tree as monster therefore they say that these two trees never grow near the
*Adina cordifolia* (Roxb.) Hook (Haldu) tree.

Following are the main, Gods worshiped by this tribe namely Mahadeo,
Bhumkababa, Muthawa deo, Akhadimata, Nagdevata, Hardoli mata, Marimata,
Khedadeo, Shivardeo, Sanjaideo, Kunwaradeo etc.

**Gond Tribe**

In this tribe mainly Rajgond, Pradhan Gond, Gaiki Gond, Zadi Gond, Parteki
Gond, Gawari Gond, Bharadi Gond are the subcaste, out of these subcaste, Rajgond is considered as the superior one. People from the subcaste Pradhan Gond perform the religious work as priest. They are known as Patau. Thus pradhan gond are considered as superior next to Rajgond. They also have their separate family God based upon their different Gotras. According to Gotras they are also divided into Sahadeve and Satdeve. Marriages are performed between Sahadeve and Satdeve. Marriages amongst Sahadeve and sahadeve or satdeva and satdeva are prohibited and such marriages are not recognised by the Gond society. The society bycotts such family.

Mahadeo Parwati is the main God of this tribe, at the same time they worship Dandivan, Kacchivan, Sahadeo, Matia, Gadwa, Patau and Pitar. They also give very much importance to following trees in their life. The trees like *Boswellia serrata* Roxb. (Salai), *Terminalia alata* Heyne. (Sajad), *Madhuca indica* Gmelin (Mohwa), *Lannea coromandelica* (Houtt.) Merr. (Moin), *Syzygium cumini* (L.) Skeels. (Jamun), *Aegle marmelos* (L.) Corr. (Bel), *Ficus racemosa* L. (Umbar), *Butea monosperma* (Lamk.) Taub. (Palash), *Adina cordifolia* (Roxb.) Hook (Haldu), *Zizyphus mauritiana* Lamk. (Bor), are very important out of these trees *Boswellia serrata* Roxb. (Salai), *Madhuca indica* Gmelin (Mohwa), *Terminalia alata* Heyne. (Sajad) and *Butea monosperma* (Lamk.) Taub. (Palash) have the most significant place in their life.

**Marriage ceremony**

On the previous day of marriage they prepare a pendal for which they use wooden log of *Boswellia serrata* Roxb. tree and branches of *Madhuca indica* Gmelin tree. If *Boswellia serrata* Roxb. is not available then they used wooden log of *Lannea coromandelica* (Houtt.) Merr. tree. Young boys of the village do this
work. If the marriage is to be performed in Satadeve family then the boyes from Sahadeve family would bring the wooden logs from the forest and vice-versa.

Before cutting the branches of *Boswellia serrata* Roxb. tree and *Madhuca indica* Gmelin tree they are worshiped and they considered this prayer as an invitation to these trees for the marriage ceremony. Bark of these logs is not removed. They draw the sketches of Sun and Moon on these *Boswellia serrata* Roxb. tree logs with the help of peculiar instrument. They also draw the pictures of bride and bridegroom. They shows the bridegroom holding dagger in one hand and hand of the bride in another hand. Wooden logs of *Boswellia serrata* Roxb. tree and branch of *Madhuca indica* Gmelin are fitted at the centre of pendal and thus pendal is erected. They apply turmeric to the log of *Madhuca indica* Gmelin and log of *Boswellia serrata* Roxb. and worshipped it. On this pendal they spread branches of *Syzygium cumini* (L.) Skeels and *Ficus racemosa* L. Bride as well as bridegroom are required to put five branches in the beginning only, thereafter other people do the remaining work. One "Oata" is prepared at the centre and four oil lamps are lighted at the four corners of this "Oata", the bride and bridegroom are asked to sit there and the people present there, put the white cotton thread around the "Oata" even the pendal is also covered by white cotton thread, Marriage rites are performed by a person who is well acquainted with religious rituals. Marriage ceremony is performed at the home of bridegroom, if she demanded so by the bridegroom. On the other hand, marriage ceremony is performed at the house of bride, if the bridegroom is to start living at the house of the bride even after the marriage.

The reason behind the use of *Boswellia serrata* Roxb. tree for preparing a marriage pendal is like this. They says that when the marriage of God Mahadeo
and Goddess Parwati was fixed, Mahadeo had prepared the marriage pendal of Gold and Silver. But Parwati declined for such pendal and requested Mahadeo that, her family is poor while the family of Mahadeo was rich one. Obviously she meant that, her family members could not prepare pendal of Gold and Silver, therefore she requested that branches of *Boswellia serrata* Roxb and *Madhuca indica* Gmelin should be use for preparing a marriage pendal as a symbol of Gold and Silver. The tribals narrate the above mentioned story and say that their society is also very poor. Therefore, whenever marriage ceremony are to be performed, they follow the example of marriage of Mahadeo and Parwati. It is their belief that if there is a branch of *Madhuca indica* Gmelin and *Boswellia serrata* Roxb. wooden log in the marriage pendal and if the whole pendal is encircled with the cotton thread then the evil spirit would not affect the family members. There is also no danger during the marriage ceremony.

This tribe does not permit the intercaste or intersubcaste marriage if this rule is not followed strictly and an intercaste or intersubcaste marriage takes place, then the society bycotts such newly married couple. If such couple wants reentry into the society they are required to perform a special religious rites. Such a person has to desert his wife, then and then only he is reaccepted by the society. This solemn ritual is performed by the "Patau", who is the man from main subcaste pradhan.

**Importance of *Terminalia alata* Heyne (Sajad):**

This tribe believe that *Terminalia alata* Heyne tree is inhabited by the God. Family God resides at the particular place according to Gotras, for example Family God of Parteki Gotra is at Chittagadh, Madhya Pradesh, while Family God of some Gotras are at "Mainee khapa paresia" in Chhindwara district of M.P. Here
the Family Gods are under the Terminalia alata Heyne tree. At such place the boycotted person is required to worship the God then he hug this tree. Then and then only such boycotted person is reaccepted by the society such a person has to desert his wife. If he is not inclined to give up his wife then the women is asked to beg at five houses. She has to prepare food with the help of things which she has collected by begging, then all family members have their meals and then she is formally accepted by the society. In this way Gond gives importance to Sajad tree.

People from this tribal society consider the person sinful and impure if he is injured and have absces or ulcers on his person (body) and there is green colour disease carrying fly. Such an individual is not accepted by anybody. Even he is not allowed to enter the home or not allowed to touch them. Such a person is even not offered drinking water. At Lawapati in Melghat there is one tree of Terminalia alata Heyne (Sajad) under which they believe that Gods Kacchivan and Dandivan lives. At this place the boycotted person is purified. Again the patau does the holy rites. While the religious rite is being performed, they dig peats on the riverside. If the boycotted person belongs to Shahadeve then six peats are dug and if he belongs to Satdeve then seven peats are dug. At this place first they sacrifices black coloured chick, the blood of which is spread all over the peats. The boycotted person is asked to take bath. Thereafter they throwout the water from the peat. Again white coloured chick is sacrifices, the blood of whom is spread in the peats then the patau worship all peats and then boycotted person is asked to drink one drop from each peat thereafter all others are offered drops of water from these peats for drinking. Thereafter the sinner is taken under the Sajad tree. Here the patau sacrifices red colour cock, while the sinner kills white colour cock. Again the Sajad tree is worshipped. First the patau embraces the
tree and thereafter the sinner at last all the persons present there hug the Sajad tree. Then the "Chicken" (flesh) of the sacrifices cocks is prepared and all of them enjoy the food and return to their places. In this way the sinner is again brought in the main stream of the society.

In ancient times whenever the building or bridge were constructed, the human beings were used to be sacrifices, that time people used to kidnap children to offer them to God as sacrifices (Narbadi)) to avoid such unfortunate incidence the tribals used to worshipped Boswellia serrata Roxb. tree before the beginning of "Mruga nakshytra" i.e. the rainy season. They believed that Chirma God (in tribals language Chirma means thief) lived under this tree.

The trees used in different festivals and occasions by this tribals:

These people donot use fruits of Madhuca indica Gmelin tree before its worship. They also bring branch of Boswellia serrata Roxb. tree. They put two fruits of Madhuca indica Gmelin on the leaf of Boswellia serrata Roxb. They also keep six or seven stones as a symbol of God and worship them. They collect fruits of Madhuca indica Gmelin and after drying them oil is extracted which is mostly used by the tribals for various purposes.

Makarsankrant:

During this festival branches of Terminalia alata Heyne (Sajad) tree are brought and worshipped.

Nagapanchami:

On the eve of Nagapanchami branches of Boswellia serrata Roxb. tree are brought and they are cut into 6 or 7 small pieces which are worshipped at home as God.
Some Important Trees:

**Butea monosperma (Lamk.) Taub (Palash):**

Leaves of this tree worshipped during marriage ceremony. Last rites and naming ceremony of a child. Even during marriage ceremony the leaves are worshipped. After death 2.5 leaves are kept on the chest of the dead person, 2.5 leaves on the belly and 2.5 leaves on the mouth. During the naming ceremony of a child three leaves are kept in "Aarti" and they are worshipped.

**Adina cordifolia (Roxb.) Hook (Haldu):**

Adina cordifolia (Roxb.) Hook is considered as holy tree by this tribals they prepare small statues of God like Kacchivan and Dandivan from the wood of this tree. These statues are worshipped.

These tribals also considered Terminalia alata Heyne. (Sajad), Boswellia serrata Roxb. (Salai), Adina cordifolia (Roxb.) Hook (Haldu), Lannea coromandelica (Houtt.) Merr. (Moine), Madhuca indica Gmelin (Mohwa), Butea monosperma (Lamk.) Taub. (Palash) and Aegle marmelos (L.) Corr. (Bel) as holy trees. On the contrary Careya arborea Roxb. (Kumbhi) and Dalbergia paniculata Roxb. (Fasi) trees are not used even as a fuel. Since they are considered as unholy.

In almost all tribes and caste Ficus benghalensis L. and Ficus religiosa L. are worshipped as Rushi's.

**Balai Caste:**

In the balai society Zizyphus mauritiana Lamk. has got a prime importance place. They considered Zizyphus mauritiana Lamk. as God. In all stages of human life they worshipped this tree. When the new baby is born in the family the women from the home as well as village worshipped nearby this tree. After delivery of
the child, they carry the dirty clothes and other waste material to this tree.

The son-in-law of the family where the marriage is to takes place and respected villagers and some women go to the *Zizyphus mauritiana* Lamk. tree adjacent to the village. They sing a song while going and there they worshipped the tree. Even when the death occurs, they take the dead body by the side of this tree they keep the dead body on the ground and change the direction of the dead body. Either they burn the dead or bury in the ground. After the last rites are over, all villagers assembled under this tree. Every person picks up one small stone in the hand and while putting it down, put one leaf of this tree in mouth. After chewing it for some time they throw it out. Thereafter they have a round (i.e. Pradakshina) around it and return home. After reaching home they put the neem leaves in a mouth, chew it and throw it out in this way they express their sorrow. The tribals dont perform the last rites unless and until the dead body is carried near this tree. Thus they considered it as a holy tree.

When they are asked about the reasons for considering the importance of *Zizyphus mauritiana* Lamk. in their life (culture). They replied that God Mahadeo and Goddess Parwati went to forest after their marriage. After some days of living together in that hut God Mahadeo left the place for conducting "Tapashya" on the top of the mountain. That time Parwati was alone. When Mahadeo returned, he did not find Parwati in the hut. When he was searching Parwati, he saw Ram and Laxman coming back from the forest after completing their punishment. Mahadeo made enquiry about Mata Parwati to the Ram-Laxman. They replied that they had not seen Parwati but said that they found yellow coloured threads of "Sari" on branch of this tree. At this juncture, Mahadeo said that, home of Parwati's parents is just ahead in that direction. When he reached to his inlaws house, he
found Parwati there. This story concludes with the note that Parwati could be discovered only because threads of her Sari was found attached in the branch of this tree therefore Balai people considered this tree as a holy tree.

Marriage Ceremony:

*Boswellia serrata* Roxb. and *Lannea coromandelica* (Houtt.) Merr. are considered as important trees during their marriage ceremony. On the previous day of the marriage pendal is prepared. For doing this son in law with young boyes brings wooden logs of *Boswellia serrata* Roxb. and *Lannea coromandelica* (Houtt.) Merr. tree. First they put the rice grain i.e. Akshata under these trees. Thereafter one log of each tree is cut. They considered as putting "Akshata" means extending invitation to these trees for marriage ceremony. These logs are brought to home. In the courtyard infront of the door on-one side these logs are erected. Their bark is not removed and then pendal is prepared. In the brides pendal there are nine logs, while in bridegrooms pendal there are twelve logs. They put branches of *Syzygium cumini* (L.) Skeels tree (Jamun) on the pendal. This tree shades coolness and it is used for shelter. At the central place at the pendal they asked the young couple to sit and they encircled the logs with the thread of the cloth to be offered as present to the newly married couple.

The marriage ceremony is performed by either a priest or a man of religious knowledge. They also draw sketches on the wall according to their Gotras during marriage ceremony for example the family from Belkar Gotra draw sketch of *Aegle marmelos* (L.) Corr. tree (Bel) while the people from Harsule Gotras draw a picture of *Adina cordifolia* (Roxb.) Hook tree. Sketches of *Bombax ceiba* L. (Katsawar) tree are drawn by persons from Semal Gotra.
They give a very interesting account of the reasons behind the importance being given to *Boswellia serrata* Roxb. and *Lannea coromandelica* (Houtt.) Merr. tree during marriage ceremony. They told to the author that, after death, soul of their ancestors resides on above trees. Soul of father inhabits the *Boswellia serrata* Roxb. while that of mother inhabits the *Lannea coromandelica* (Houtt.) Merr. tree. Hence as a symbol of father and mother they erect logs of *Boswellia serrata* Roxb. and *Lannea coromandelica* in the marriage pendal. That is why they called log of *Boswellia serrata* Roxb. as "Bapthuni" and log of *Lannea coromandelica* (Houtt.) Merr. tree as 'Maithuni". They also says that, if the parents of bride and bridegroom are not alive during marriage ceremony, then the wooden logs of the above trees symbolically represent them, and they believe that the marriage has taken place in the presence of parents. They also dont take out these wooden logs in haste. During rainy seasons new leaves grow to these logs, if it happens then they consider that the newly married couple would give birth to baby. It is their belief that logs of *Boswellia serrata* Roxb. and *Lannea coromandelica* (Houtt.) Merr. tree symbolise that as the life of their parents prospered life of newly married couple would also become happy, and prosperous.

**Holy tree:**

*Bombax ceiba* L.:

In Balai society, according to Gotras some families considered *Bombax ceiba* L. (Katsawar) as holy tree and worshipped it as their family God. During marriage ceremony, "Akshya truitia" and "Pitrumoksha Amawasya" they worshipped this tree.
PLATE - 21

Fig. 1 : Herbal Informant from Borgaon (Local practitioner of herbal medicine)

Fig. 2 : Herbal Informant from Pimprithana (Vaidu among the Gond tribe)

Fig. 3 : Herbal practitioner from Bela (Vaidu among the Korku tribe)

Fig. 4 : Local Herbal practitioner from Biba.

Fig. 5 : Herbal practitioner with his associates collecting ethnomedicinal plants from forest.

Fig. 6 : Herbal practitioner among Korku tribe from Makhala.
PLATE - 22

Fig. 1 : Herbal informant from Semadoh

Fig. 2 : A senior Herbal practitioner among Gond tribe from Ganeshpur

Fig. 3 : Herbal informant with his colleague from Barugavan.

Fig. 4 : A senior herbal informant from Barugavan specialized in bone fracture treatment.
Fig. 1: An old person from Gond tribe of Bhulori who provided information about socio-cultural practices.

Fig. 2: An old lady from Gond tribe of Ganeshpur who provided information about medicinal plants and importance of plants in their religious functions.

Fig. 3: Tribals in the forest collecting medicinal plants for herbal drugs.
Fig. 1: An old person from Bhulori belonging to Korku tribe who provided information about socio-cultural beliefs.

Fig. 2: Showing symbolic presentation of "Shidoli" function among Korku tribes.

Fig. 3: Harvested crop offering to the God before use.
PLATE - 25

Fig. 1 to 7: Showing symbolic presentation of "Shidoli" function among Korku tribe.
PLATE - 27

Fig. 1 : An old lady with her son from Gond tribe of Ganeshpur village who provided information of medicinal plants and socio-cultural aspect.

Fig. 2 : Gond tribe (Thatya) dancing in a village "bazar" to collect money from shopkeeper in Diwali festival.

Fig. 3 : Gond family who provided information about socio-cultural practices.
PLATE - 28

Fig. 1 : Persons from Gond tribe (Thatya) dancing in a village "bazar" to collect money from shopkeeper in Diwali festival.

Fig. 2 : Family from Balai caste of village Bhiroja who provided information about their customs and significance of plants in their religious functions and different occasions in their life.

Fig. 3 : Senior persons from Balai caste of village Chikhali, who provided information of socio-cultural practices.