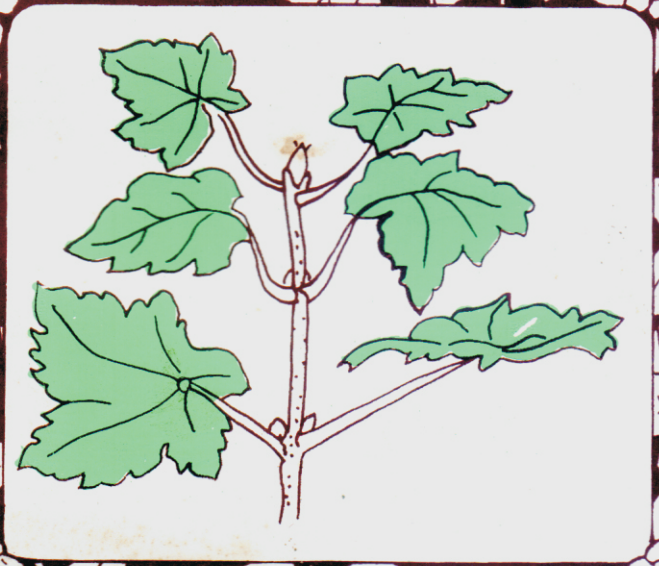
TRIBAL FOLK MEDICINE OF TRIPURA



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TRIBAL FOLK MEDICINE OF TRIPURA

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FOREWORD

The monograph on "**Tribal Folk Medicine of Tripura**" is a new addition to our publications. Herbal folk medicine has an important role in rural life to meet their medical requirement. In the remote corner of this hilly state where the tribals are mainly residing, there are scarcity of medical facilities. The people are to depend on the village Medicineman who practice herbal medicine, magic and charms. The herbal plants have their own natural value. The modern medicines are only extracts of those herbal plants, natural salts etc. **Dr. Kishore Deb Barma** is an Ayurbedic Doctor of Health Department, Govt. of Tripura. In this monograph, Dr. Deb Barma has done a commendabale work in identifying the plants which are used by the Tripura Tribal people in treatment of ailing persons. Moreover, Dr. Deb Barma tries to explain the nature, use and medical value of those plants and herbs in his monograph. I hope, this monograph will be much helpful to the persons who are specially dealt with herbs and plants, ayurbedic medicine and researchers and also medical students.

S. Sailo
Director,
Tribal Research Institute,
Govt. of Tripura.

Dated, Agartala,
The 21st January 1994.

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INTRODUCTION

From time immemorial folk medicine has been playing important role in the rural life of India. Starting from Atharvadedic period upto the present century tribal people mostly rely on folk medicine. The tribals of Tripura is no exception to this rule and they use herbal medicine for various diseases.

But the number of herbal practitioners among the tribals gradually decreasing. Another difficulty with this system of medicine is that the identity of the medicinal plants is an well guarded secret, which is not generally divulged to other. Moreover in the absence of any literature regarding the description of these medicinal plants their identity is a problematic matter. Tripura with its agroclimatic conditions possess a rich flora, though deforestation, jhum cultivation etc. have destroyed a good number of plants,

still a good number common weeds possess medicinal value, which was hinted by the senior author.

As student of Botany and Ayorvedic practitioner respectively the authors took interest in this project & the work revealed that most of the medicial plants used by tribal possess medicinal properties recognised in the Indian Pharmaceutical Codex. The Junior outher collected the medical plants used by tribal practitioners or 'Achai' from various Sub-Divisions of the state and the task was a dificult one as the 'Achai' or village doctors keep the identity of medicainal plants & their uses as well guarded secret.

The plants collected was identified with the help of standered flora and their properties were found out from books listed in the bibliography. It was interesting to note that therapeutic uses of most of the plants were identical with these found in the standered literature.

The present work include some 56 medicinal plants belonging to 41 families collected from intensive survey of the interior tribal areas of the state. The families are arranged in the sequence of Mutchinson's system and the species alphabatically according to their botanical name which is followed by names in Bengali and Tripuri, short description, chemical composition parts used, therapeutic uses

Thanks due to Director of Research, Govt. of Tripura for the financial help and it is hoped that this treatise will be of help to the student of medicine and persons interested in similar work.

Dilleniaceae

Dillenia indica, L.

Names; Bengali : Chalta.
Tripuri : Thaipolak.

Trees evergreen, upto about 30m high with rather crooked trunk and irregular branches forming the crown; wood red. Leaves petiolate, oblanceolate, glabrous above, pubescent beneath, serrate, flowers large. Calyx accrescent. Petals white, caduceus. Fruit 7-13 cm in diameter Parts used Fruit.

Chemical composition— Pulp consist mostly of pectlic matter of jailly like consistency. Chief ingredients of the fresh ripe fruits are tannin, glucose and malic acid.

Therapeutical uses :— A decoction of the fruit is used in pyorrhoea for gargling.

Caesalpinaceae

Cassia fistula, L.

Names; Bengali : Shonalu.
Tripuri : Sundal.

A deciduous middle-sized tree with speading crown; bark gray, smooth, with horizontal wrinkles; wood brickred darkening on exposure. Leaves 25-45 cm long, rachis puberulous; leaf lets 4-8 pairs, Flowers

yellow, 4-5 cm acros, in axillary lax drooping racemes; pods 30-60 × 2.5. cm cylindric, indehiscent.

Parts used : Leaves, fruits and other parts of the plant Chemical composition :— By steam distilling the finely powdered fruit, a drark yellow volatile oil with honey like odour is obtained, water which distils over with the oil contains normal butric acid, Pulp consists of sugar, gum, astringent matter, and water.

Therapeutical used : - Leaves grounded and dust used as a laxative which is safe for children and pregnant women. Pulp is laxatic and generally used with senna (Cassia angustifolia).

Caesal pinaceae
Cassia occidentalis L.
Names; Bengali : Kalkasunda.
Tripuri : Masinga.

Annual, Leaf rachi with a gland at the base; stipules obliquely cordate, acuminate, leafl ts 4-5 pairs, 4-7.5 × 2-2.8 cm, ovate to oblong-lanceolate. ciliate acuminate, at the margin, Flowers yellow, in short axillary or terminal corymbose racemes Pods 7 5-12.5 × 6-8 cm. subfalcate, compressed with transverse depressions between seeds, sutures thickend. Seeds 20-30, compressed, pale borwn.

Parts used :— Seed and the fruit.

Chemical composition :— Seeds contain fatty matters tannic acid, sugar, gum, starch, cellulose.

Therapeutical uses :— Seed used as paste externally in the fungal infection such as ring worm, itching etc

Caesalpinaceae

Cassia tora, L.

Names; Bengali : Chakunda.

Tripuri : Latha.

Annual. Stem about 30 cm high Leaflets in 3 pairs, obevate, cuneate mucronulate, slightly hairy, deep green above, pale and almost glaucous beneath, a single yellowish cylindrical gland between the lowest pairs of leaflets. Racemes short, 3 flowered, axillary petals dull yellow, Legumes 7-10 cm long, slender, stright, quadrangular, about 3 or 4 seeded, slight contracted between the seeds.

Parts used :— Seeds

Chemical composition :— Both leaves and seeds contains a glucoside resembling chrysophanio acid.

Therapeutical uses :— Seeds are very useful in obdurate skin diseases, such as ring worm and itching etc.

Mimesaceae
Mimosa pudika, L.
Names; Bengali : Lajjabati.
Tripuri : Shyamsundru

Undershrub deciduous, straggling and spreading, densely prickly and bristly all over. Leaves sensitive, pinnac 4, digitate, Flowers pink, in heads on slender axillary peduncles, pods jointed, prickly.

Parts used :— Root.

Chemical composition :— Root contains tannin 10% and ash 5.5%.

Therapeutical uses :— Juice of the root is used in fungal infection in skin diseases. Decoction of the roots used in whit discharge (leucorrhoea) as a vagina wash.

Papilionaceae
Cajanus cajan (L) Mill
Names; Bengali : Arhar.
Tripuri : Muimasing.

An erect shrub upto 3 m height, with many silky brances. Leaves 3 foliolate, gland dotted beneath; leaflets oblong-lanceolate, acute, entire densely silky beneath; Flowers in loose corymbose cymes or in a

terminal panicle. Ped 5-7 cm long, seeds yellow or black.

Parts used :— Leaves, seeds.

Chemical composition :— Seeds have nitrogenous matter, oil fatty matter, carbohydrates, nutritive salts and watery matter.

Therapeutical uses :— Juice of the leaves is given with a little salt in jaundice, but seeds and leaves ground into a paste, wormed and applied over the mamma has the effect of the checking the secretion of milk, and poultice made with the seeds reduce swelling.

Papilionaceae

Clitoria ternatea, L

Names; Bengali : Nil Aparajita.

Tripuri : Krishnakali.

A selender twiner. Leaves 8-12 cm. long, pinnately 5 foliolate leaflets 2.5-5 cm, elliptic or ovate, obtuse, subcoriaceous, petiole about 2 cm. long, stipules persistent, flowers blue or white, solitary or axillary peduncles; bractecles large foliaceous, peristent, obtuse, pod flat, linear, about 8 cm. long flowers often double under cultivation.

Parts used :— Flowers, roots.

Chemical composition :— Root bark contains starch, tannin and resin, seeds contain a fixed oil, a bitter acid resin, tannic acid, glucose, seeds full of granular starch.

Therapeutical uses :— Juice or the root is used in painful micturation. Flower used in constipation of children.

Nyctaginaceae

Boerhavia diffusa L.

Names; Bengali ; Punarnava.

Tripuri : Purnadalak/Tuisa jalap.

Herbs diffuse, leaves in unequal pairs, broadly ovate, whitish beneath. Flowers very small, rose coloured, sessile or nearly so in heads on slender peduncles from the leaf axils and axillary and terminal panicles. Fruit a nut, clavate, 5 rib bed glandular

Parts used :— Whole plant.

Chemical composition :— The plant contains a alkaloid punarnavine a crystalline acid $C_{10}H_{18}O_3$. Dry plant contains 0.52% of potassium nitrate.

Therapeutical uses :— A decoction of the whole plant is used in scanty micturation, burning micturation and also in swelling of the legs, oedema, ascitis.

Moringaceae
Moringa oleifera (L) Lamk.
Names; Bengali : Sajina.
Tripuri : Sajan.

A rapidlv growing soft-wooded tree. Leaves somewhat crowded towards the top ; leaflets ovate, obovate or oblong, rounded or slightly emarginate at the apex. Flowers white, fragrant. Capsule pendent, 18-45 cm long, seeds winged.

Parts used :— The root of the young tree, seeds.

Chemical composition :— Alkaloid viz. moringine, moriginine, certain amorphous bases, antibiotic petrygospermin active against both gram possitive, gram negative and acid fast bacteria.

Therapeutical uses :— The root of the young tree is grounded into paste and applied locally in chronic rheumatism as a pultice, also used in a variety of conditions like intermittent fever, epilepsy, hysteria, dropsy, enlargment of the spleen and dyspepsia. The oil expressed from the seeds used externally for relieving pain of the joints in gout and acute rheumatism.

Bombacaceae

Bombax ceiba L.

Names; Bengali : Simul.

Tripuri : Borchuk.

Trees very large, deciduous, with a straight cylindrical stem and horizontally speading branches in whorls, buttressed at the base and with hard conical prickles; bark grey leaves digitate, leaflets 5-7, lanceolate long, petioled. Flowers upto 7.5 cm. long, red, stamens less than 100, filaments flat. Capsule 10-15 cm. long, oblong, velvety, 5 valved, seeds numerous, surrouneded by masses of white silky hairs.

Chemical composition : Seed, yield a good nondrying oil. Gum called mocharas or suparika-shub contains tannin and gallic acid.

Parts used .— Root, throns.

Therapeutic uses :— The juice of the root is to be taken with sugar in case of burning micturation with pain and spermatorrhea. In pimples, paste of throns with chandan is used. Young root used in importance.

Malvaceae.
Hibiscus macrophyllus Roxb.
Names; Bengali : Udal
Tripuri : Lambak.

Trees small, deciduous, with long tuffed yellowish brown bristles and stellate tomentum. Leaves 18-30 cm. across, orbicular, deeply cordate, acuminate, entire or minutely crenate, palmately 7-9 nerved; petiole slighly longer than the blade stipules large, oblong, convolute. Flower large, about 8-10 cm. accross, in axillary and terminal cymes. Capsule oblong, 3.5-3.8 × 2.5 cm., pointed; seeds bearded with hairs.

Parts used :— Stem and the roots.

Therapeutical uses :— Fresh juice of the bark is used in blood dysentery, dysentery, scanty and painfull micturation.

Malvaceae.
Hibiscus rosasinensis L.
Names; Bengali : Jaba
Tripuri : Jaba

Shrub large, leaves 6-12 cm. long, ovate, acute, more or less serrate glabrous or with few scattered

hairs on the venis beneath, 3 nerved at the base. Flowers rose red, in upper axils on short or long jointed peduncle anther unilocular, horse shoe shaped, longitudinally dehiscent.

Parts used :— Bud and root

Chemical composition :— Contain thiamine, riboflavin niacin and ascorbic acid, cyanidin diglucoside, carotine etc.

Therapeutical uses :— Buds pasted and taken with rice wash water and watery extract of the root is used in irregular menstruation.

Euphorbiaceae.

Jatropha curcas L.

Names; Bengali : Keran.

Tripuri : Keron

A soft wooded deciduous shrub. Leaves 7.5-15 cm. wide, suborbicular, ovate or cordate, 3-5 lobed, shortly acuminate or acute, glabrous or sparesely pubscent on the nerves beneath; petiole 7.5-22 cm. long. Flowers greenish yellow, in long peduncled panicle, pubescent cymes Styles connate at the base, stigma bifid. Fruit about 2.2-3 cm long.

Parts used :— Stems of the plant.

Therapeutical uses :— Fresh juice of the stem is used in blood dysentry and the tender stems in pyorrhoea as tooth brush.

Euphorbiaceae
Ricinus communis L
Names; Bengali : Verenda.
Tripuri : Letak.

An evergreen soft wooded shrub or almost a small tree; young parts covered with a glaucous bloom. Leaves alternate 15 cm across, palmately lobed, peltate serrate, membranous, petiole as long as the lamina, stout, bollow, Flowers monoecious, in terminal panicled racemes; males crowded on upper part of raceme. Capsule of 3 bivalved cocci. Seeds oblong with large caruncle.

Parts used :— Bark, leaves, seeds.

Therapeutical uses :— Fresh juice of the bark and leaf is used in rheumatic arthritis as hot compress oil. The fresh juice of bark also used as a mild laxative. Oil from seeds called casteroil used as a purgative and in making contraceptive jelleys and creams.

Dipterocarpaceae
Shorea robusta, Gaerth, F.
Names; Bengali : Shal.
Tripuri : Shal.

Trees large, with narrow conical crown when young, but with broad spreading crown when mature; generally deciduous but seldom fully leafless; young shoots buff tomentose, bark dark grey or dark brown, with deep irregular furrows. Leaves at first red or pinkish, afterwards pale green, then dark green; old pale yellow, drying brown, 10-30× 5-18 cm.

Parts used :— Bark of the plant.

Chemical composition :— Bark contains tannic principles and yields on boiling with water, an extract similar to catechu, which is astringent. Resin (gum) which exudes from incisions made in the bark is a mild astringent.

Therapeutical uses : Bark boiled with water used for gargling in case of pyorrhoea.

Myrtaceae.
Psidium guayava L
Names; Bengali : Peyara.
Tripuri : Gayam.

Large shrubs or small trees, bark exfoliating in thin flakes. Leaves opposite, 6-15 × 4-8 cm.; elliptic oblong, or oblong, entire, glabrous above, pubescent beneath. Flower white, in one tofew flowered axillary peduncles. Berry globose or pyriform, varying in size and form, containing many seed immersed in sweet pulp, white or pink.

Parts used :— Green leaves.

Therapeutic uses :— Green leaves said to be taken orally in dysentery, diarrhoea etc, their decoction used in cholera for arresting vomiting and in diarrhoea also.

Combretaceae

Terminalia chebula, Retz.

Names; Bengali : Hartaki.

Tripuri : Bakhla.

Trees deciduous, bark grey or ash coloured leaves 8-20 cm. ovate, acute alternate or sub opposite glabrous shortly acuminate at the apex, coriaceous, with two small gland at leaf base, spikes terminal or form upper axils on new shoots, flowers minute rusty pubescent when young, all bisexual. Fruit 2.5-5 cm long, ellipsoid or obovoid, yellowish green when ripe, with 5 ribs on the body.

Chemical composition :— Tannins, polyphenolic comppounds viz. chebuline acid, chebulagic acid, gallic acid, corilagin, number of unidentified phenolic constituents.

Parts used :— Fruit (ripe).

Therapeutical use :— They are mild and efficient laxative, also have some effection on blood pressure as cadiac tonics. Powder of the fruit used to strength the gum The fruit is an ingredent of the known prepration "Triphala".

Rhamnaceae

Ziziphus mauritaina Lamk.

Names; Bengali : Barai/Kul.

Tripuri : Barui.

Trees decidous or almost evergreen, young parts rusty tomentose, bark dark gray or blackish. Leaves variable, oblique-ovate or suborbicular, entire or serrulate, glabrous above, rusty or gray tomentose beneath, petiole short, prickles solitary or in pairs. Cymes axillary, subsessile. Flowers minute, greenish yellow. Calyx glabrous within. Petals clawed, reflexed. Disk 10 lobed Ovary 2 celled; styles 2 united to the middle. Drupe of various shapes and sizes, red or orange when ripe.

Parts used :— Green fresh leaves.

The extract of green fresh leaves used in white discharge (leucorrhoea).

Vitaceae

Cissus quadrangularis L

Names; Bengali : Harjora.

Tripuri : Naljora.

Climbers large, stem quadrangular, fleshy, contracted at the nodes. Leaves simple, 2.5-3.5 cm, across, cordate, or reniform, shortly petiolate; tendril long, simple, leaf opposed, flowers whitish, tetramerous, in umbellate cymes.

Parts used :— Stem.

Chemical composition :— Plant contains moisture 13%, protains 12.8%, fat and wax 10%, fibre 15.6%, carbohydrates 36.6%, mucilages and peptin 1.2%, vitamin C 398 mg in 100 gm tender stem parts 232 mg per fibrous bottom portion and 479 mg in fleshy expressed sap Ash 18.2% mostly as carbohydrates and to smaller extent phosphates of sodium, potassium, magnesium and calcium. Carotene 267 mg per 100 mg fresh plant, potassium tartarate and calcium oxalate.

Therapeutic uses :— pasted stem applied in the effected part of the fracture of the bone.

Rutaceae.

Aegle marmelos (L) Correa.

Names; Bengali : Bel.

Tripuri : Bel.

Trees small, deciduous, with erect stout axillary throns. Leaves alternate, petiolate, trifoliate, leaflets elliptic or ovate-laneolate. Flowers greenish white, in lateral and subterminal panicles appearing with the leaves, petals 4-5 imbricate with fleshy gland. Stamens many. Fruit large, chambered, many seeded with woody rind, pulp orange coloured sweet, aromatic.

Chemical composition :— Alkaloids viz. dictamine, gamafamarin aegeline, aegelenine, etc. and mucilage and pectin are valuable chemical constituents.

Parts used :— Green fruit, ripe fruit and leaves.

Therapeutic uses :- The half ripe fruit is regarded as an astringent, digestive, stomachic and is said to be an excellent remedy for diarrhoea owing to the presence of tannin or mucilaginous substances. It is used particularly in chronic diarrhoea. The unripe fruit sliced dried up then ground into fine powder, used in the treatment of diarrhoea an dysentary. The ripe fruit is sweet, aromatic and cooling when taken fresh it possesses laxative properties. The antibiotic activity of the leaf and fruit of this plant has been confirmed in some recent experiment.

Meliaceae.
Azadirachta indica A. Juss.
Names: Bengali : Nim.
Tripuri : Nim.

Trees large, deciduous. leaves pinnate, leaflets 9-15, opposite or alternate, lanceolate, oblique, acuminate, serrate, glabrous, shortly petiolate. Panicles axillary, flowers white.

Parts used :— Leaves, bark.

Chemical composition :— Active principle is a light yellow noncrystalline, bitter, resinous substance without alkaloidal properties, sugar is present and tannin occurs in the outer portion of bark.

Therapeutical uses :— Leaves are used internally and externally in skin diseases, bark usefull in fever & skin disease. Antibiotic activity of the leaves have been confirmed experimentally.

Apocynaceae.
Alstonia scholaris L.
Names: Bengali : Chhatim.
Tripuri : Chethuang.

Trees large, ever green Leaves in whorls, oblanceolate or elliptic oblong, bluntly acuminate or rounded, coriaceous, glabrous, shining above, pale

beneath; leteral nerves numerous, terminating in a submarginal nerve, base narrowed into a short petiole. Flowers greenish white in panicled cymes, pubescent, bracts leafy, bracteles minute. Calyx 5 fid, pubescent. Corolla constricted at the middle of the corolla tube, anthers acute, ovary of 2 distinct carpels. Follicles 2, long, slender, pendulous, seeds oblong with tufts of brown hairs at both ends.

Chemical composition :— Bark contains alkaloid "ditamine" and echitamine (Bacon) and also echicaoutehin an amorphous yellow mass

Parts used :— Green leaves, bark of tree.

Therapeutic uses :— The Juice of green leaves are used in loose motion for children and also in indigestion etc. Bark is useful in malaria and other fever, it is also valuable remedy in chronic diarrhoea and in advanced stages of dysentry, it is also useful in skin disease.

Apocynaceae.

Holarrhena Antidysenterica (Roth) A. DC.

Names; Bengali : Kurchi

Tripuri : Kurcha/Kuichama.

Trees small, diciduous, brak greyish brown, warty. Leaves elliptic or elliptic-oblong, acute or

acuminate, coriaceous, glabrous or sparsely pubescent, lateral nurves 10-14 on each side, petiole short flowers white, fragrant, in terminal corymbo e cymes, bracts minute, pubescent, Follicles 2, very long sometimes upto 30 cm. long, divaricate, slightly curved Seeds oblong, compressed, tipped with a decidous come.

Parts used :— Bark of the plant and seeds.

Chemical composition :— Bark and seeds contain nonoxygenated alkaloid wrightine, conessine, Kurchisine and holarrheuine.

Therapeutical use :— Juice of the bark is used in amoebic dysentery and anthelmentic cases, i.e. the bark is cousidered as powerful antidysenteric. The seeds are said to have astringent, febrifuge, antidysenteric and anthelmentic properties. Leaves also possess certain medicinal properties.

Apocynaceae

Plumeria rubra L var. acutifolia (Poir) Bailey

Names; Bengali : Golachi/Katgolap

Tripuri : Golachi.

Trees small, dichotomously branching. Leaves generally 6-8 cm wide, obovate, obtuse or shortly acuminate, glabrous beneath, with conspicuous marginal vains. Flowers white with yellow centre, very fragnant, 5 cm. or more acrees, in terminal cymes which are shorter than the leaves.

Parts used :— White latax of the stem.

Chemical composition :— Bitter glucoside, essential oil plumeric acid.

Therapeutical uses :— Milky latex of the stem is used in enguinal gland inflammation, boil, absceses, it is also applied externally in tonsili is.

Asclepiadaceae.
Calotropis gigantea (L) Dryand.
Names; Bengali : Akanda.
Tripuri : Angan.

Plants are perinnial large shrubs with milky latex. Leaves simple, opposite and decussate, rarely whorled, exstipulate, leaf blade obovate entire.

Inflorescence cymose. Flowers actinomorphic, bisexual, pentamerous and hypogynous, sepals 5, united in deeply partite calyx. Stamens 5, Fruit of two follicles, seeds comose with scanty cartilagious, endosperm; embryo large.

Chemical composition :— Various principles of the calotropis barks and sap are 'Madar albon', 'Madar fluavil'; closely resembling the alnan and fluavil found in gutta percha, black acid resin, caoutchoue, yellow bitter resins.

Parts used :— Leaves and root.

Therapeutical uses :— Hot compress with leaves used in case of rheumatic arthritis and colic pain.

Juice of the bark is used in cold and cough. The leaves are also applied locally in the form of a poultice on rheumatic joints, inflammation, swellings.

Rubiaceae.

Hedyotis corymbosa (L) Lamk

Names; Bengali : Khet papra

Tripuri : Ksherpapra.

Herbs annual, slender, profusely branching, diffused, leaves 6.5 × 0.5-6 cm. linear or narrowly elliptic or elliptic lanceolate, slightly pubescent beneath, acute, narrowed at the base, often recurved at the margin, lateral nerves indistinct, stipules sheathing, membraneous, with a long and several shorter teeth or bristles. Flowers very small, 2-3 mm long in corymb inflorescence. Capsule ovaid or subglobose 1-2 mm across. Seeds minute. angular, testa reticulate.

Parts used :— Whole plant.

Chemical composition :— Air dried plant contains :- Alkaloid 0.12%, biflorin, stored plant contains ursolic acid, sitosterol, ebanolic acid.

Therapeutical uses :— Juice of the leaves is used in cough and cold after addition with ocimum sanctum (Tulsi) and honey. A decoction of the whole plant, with root and the leaves are used in liver complaints also.

Rubiaceae.
Peaderia foetida L
Names; Bengali : Gandha bhadali.
Tripuri : Dukhupui.

Climbers slender, foetid. Leaves opposite entire, 5-12 × 2-6 cm. elliptic ovate or lanceolate, acuminate, membranous, glabrous. lateral nerves 5-7 on each side, base rounded or subcordate, petiole 2.5-7.5 cm. long, very foetid after being crushed. Flowers in axillary and terminal panicles, Fruit ellipsoid, reddish, compressed, seeds compressed.

Chemical composition :— It contains an essential volatile oil of an offensive odour, two alkaloids :— Viz. Alpha paederine and Beta paederine.

Parts used :— Leaves.

Therapeutical uses :— Extract of the leaves are used in diarrheea, indigestion.

edaliaceae.
Sesamum inducum L
Names; Bengali : Til.
Tripuri : Shiping.

Annuals erect; often much branched, gandular pubescent strongly smelling. Leave lowes opposite, often deeply divided or palmately compound, higher ones short petioled, ovate-lanceolate or oblong.

Flowers solitary, axillary. Fruits crowned by a conspicuous subulate beak, glandular pubescent. seeds white, brown or black, smooth or finely reticulate.

Parts used :— Leaves.

Therapeutical uses :— Juice of leaves are used externally as hair shampoo for dandruff.

Verbenaceae.
Vitex negundo L
Names; Bengali : Nishinda.
Tripuri : Nishinda.

Shrubs with ashy white thin bark and aromatic smell, young shoots grey pubescent. Leaves digitately 3-5 foliolate, flowers lavender to blue on elongated panicles. Drupe about 5 mm across, ribbed gland dotted.

Parts used :— Leaves.

Chemical composition :— Leaves contain colourless essential oil, traces of an alkaloid and a colouring matter.

Therapeutical uses :— Juice of the leaves are used in arthritis. The leaves are heated and then applied to the painful rheumatic swellings. Macerated leaves made into paste with water are given as a cooling application on forehead in headache.

Menispermiaceae
Tinospora cordifolia (wild) Hook. f & Th.
Names; Bengali : Gulanch.
Tripuri : Duksa sungsari.

Large climbers with succulent stem and corky aerial roots, stems and branches specked with white glands, young shoots glabrous, leaves 8-10 cm. across, ovate, cordate rather fleshy, glabrous acute of cuspidate acuminate, petiole more then half the length of the lamina. Flowers in axillary or terminal raceme when the plant is leafless Male flowers fascicled. Females solilary on longer pedicel, bracts often foliaceous. Fruits red, pea sized.

Chemical composition :— Berberine, bitter substance

Parts used :— Whole plant.

Therapeutical uses :— Watery extract of the stem of the plant is used in burning sensation all over the body and loose motion, the drug is useful as tonic and antiperiodic & also aphrodisiac, starch obtained from root and stem useful in d'arrhoea and dysentery.

Piperaceae.
Piper longum L.
Names; Bengali : Pipul.
Tripuri : Pepui.

Herbs trailing or climbing. Leaves 2.5-10 × 1-6 cm. ovate, cordate, acuminate, membranous, glabrous, 5-7 nerved, petiole 0.5-2.2 cm. long. Male spikes slender, yellow. Fruiting spike 1.8-2.5 × 6-7.5 cm. fleshy.

Parts used :— Fruits.

Chemical composition :— Resin, volatile oil, starch, gum, fatty oil, inorganic matter and an alkaloid, piperinel 2%.

Therapeutical uses :— Powdered long pepper administered with honey relieve cough and cold, asthma, and hiccup. It also act as stomachic, in dyspepsia, and flatulence in paraplegia and arthritis and also as a local application for relaxing sore-throat, piles and skin diseases.

Piperaceae.

Piper nigrum L.

Names; Bengali : Golmarich.

Tripuri : Golmarich.

Climbers stout. Leaves 7.5-15 × 2 5-7.5 cm. ovatelanceolate, or elliptic, acuminate, membranous, oblique or cuneate at the base, petiole short, spike very long, slender pendulous, bracts of female cupular, adnate without raised margin, bracteoles forming a cup around the ovary. Fruiting spike fleshy and fruit is ovoid red when ripe.

Parts used :— Fruit (dry).

Chemical composition :— A volatile alkaloid peperine or pipirine 5 to 9%, piperidine or piperridin 5% a blasamie volatile essential oil 1 to 2%, fat, mesocarp contains chaviein, a blasamie volatile oil, starch, lignin, gum, fat 1%, proteids 7% and ash containing organic matter 5%.

Therapeutical uses :— It is useful in asthma and cough & cold, Dried fruit is stimulent, carminative, diuretic, seeds have shown antibiotic activities.

Amaranthaceae.

Achyranthes aspera L.

Names; Bengali : Apang.

Tripuri : Uttar lengra.

Perennial stiff herb, branching from the base, stem thickened above the nodes. Leaves opposite, petiolate, variable, 2.5-12.5 cm. long, usually elliptic, oblong or ovate, narrowed at the base, adpressed pubescent; lateral nerves 6-8 on each side. Spikes terminal, erect; spines short, often tinged with purple.

Parts used :— Root of the plant.

Chemical composition : - Pungent oil; sterols viz. B & Y sitisterol, terpenoid constituents.

Therapeutical uses :— Waterv extract from the root is used in loose motiou and it is also used in piles, boils, skin eruption, colic pain etc.

Amaranthaceae

Amaranthus spinosus L

Names; Bengali : Kanta nutia (Nateshag)

Tripuri : Kata maira.

Annuals much branched, armed with sharp axillary spines, glabrous or slightly pubsecent. Leaves alternate, ovate to lancellate, lower ones larger and long petioled. Flower clusters dense; lower axillary, upper in axillary and terminal spikes. Seed shining black or brownish black.

Parts used :— Whole plant including root.

Chemical composition :— Plant contains Moisture 85.0%. Protein 3.0%, Fat 0.3%, Carbohydrates 8.1%, Mineral matter 3.6%, Calcium 0.8%, Phosphorus 0.05%, Iron 22.9 mm/100g.

Therapeutical uses :— Watery extract of the plant is used in the amoebiosis, colic pain, scanty menstruation with pain, spermatorrhoea, painful micturation, vomiting and leucorrhoea etc.

Plunbaginaceae.

Plumbago zeylanica L

Names; Bengali : Chita.

Tripuri : Chita.

Shrubs straggling. Leaves 3-12 × 2-5 cm. young leaves with caducous small auricles. Flowers in terminal racemes, rhachis with sessile gland, often red

tipped. Calyx glabrous, glandular all over green. Coralla white, lobes shorter than the tube obovte. Anthers blue-purple. Ovary and style glabrous.

Chemical composition :— Root bark contains- Plumbagin, free glucose and fructose 2.7%, enzymes protease and invertase.

Parts used :— Roots.

Therapeutical uses :— The roots have been largely used as abortificients in the tribal folk medicine.

Crassulaceae
Kalanchо pinnate (Lamk) Pers
Names; Bengali : Pathar Kuchi
Tripuri : Kusakathang.

It is a small herbaceous plant with long tubular pendulus flower. Leaves opposite glabrous, thick, irregular margin, deep green in colour.

Parts used :- Leaves.

Chemical composition : Leaves contains (i) Malic acid (ii) Isocitric acid (iii) Citric acid.

Therapeutical uses :— Extract of the leaves used internally in amoebiasis, blood dysentery, burning micturation and applied externally in acute cut injuries, bruises etc.

Umbelliferae
Centella asiatica (L) Urban
Names; Bengali : Thankuni
Tripuri : Samsota.

Herbs with long creeping stems, rooting at the nodes; Leaves reniform crenate, or dentate, palmately nerved deeply cordate, long petioled; Seeds much laterally compressed.

Parts used :— The whole plant-leaves, fruits-, roots etc.

Chemical composition :— An oleoresin vellarine is the active principle of the leaves, resin and some fatty aromatic body. gum, sugar, tannin, albuminous matter, present in fresh plant.

Therapeutical uses :— Juice of the leaves are used in amoebiasis. Leaf powder is used as a remedy for eczema, leprosy, secondary syphilitic ulcers either as an ointment with vaseline or as a dusting powder.

Compositae.
Blumea lacera (Burn f) DC
Names; Bengali : Kukur Shuka.
Tripuri : Blairu.

Herbs large. Strongly aromatic. Leaves large, upto 12.5 cm. long obovate or lyrate, coarsely toothed with rather few sharp teeth. Heads in axillary

and terminal panicled clusters; cypsela subtetragonous, not ribbed. Pappus white.

Parts used :— Leaves of the plant.

Chemical composition :— The herb gives 0.085% essential oil containing Blumea camphor.

Therapeutical uses :— The leaves are used as vegetable in case of swelling of the legs and a decoction of the leaves act as diuretic.

Compositae
Tagetes erecta L
Names; Bengali : Barha genda
Tripuri : Shatara banga.

Harbs annual, erect, leaves opposite, pinnatisect; segments oblong-lanceolate, flower heads large, showy.

Parts used :— Root of the herb & leaves.

Chemical composition :— The whole plant contains :— Essential oil 0.06% (d-limonene ocimene, 1-linalyl acetate, 1-linalool, tagetone and nonanal).

Therapeutical uses :— Watery extract of the root is used in irregular manstruation and leaves are used as heamostatic.

Solanaceae
Datura stramonium L
Names; Bengali : Dhato r
Tripuri : Dhotara

Bushy plant. Leaves large, ovate, sinuate or deeply toothed. Flowers large, white, solitary, pedicelled. Calxy long, tabular, 5 toothed. Coralla funnelshaped, limb plaited, entire or shortly 5 to 10 lobed. Stamens 5, adnate near the base of the coralla tube, anthers linear, included. Ovary 2 celled or spuriously 4 celled, ovules many, style filiform, stigma 2 lobed. Fruits spinous capsule. Seeds many compressed.

Chemical composition :— Atropine, hyoseine hyoscyamine.

Parts used :— Leaves, flowering tops and seeds.

Therapeutical uses :— Leaves are to be fried and used in the skin disease such as scabis etc. The leaves made into cigaretee and smoked to relieve asthmatic attacks and they are also used in the treatment of parkinsonism and also leaves are applied to boil, sores and fish bite and the juice of flower is used for ear-ache. The seeds have similar properties as the leaves.

Solanaceae

Solanum melongena L

Names; Bengali : Begun.

Tripuri : Pantak.

Erect herbareous, closely covered with short prinkles, in some cultivated forms completely

unarmed. Leaves large elliptic 10-18 cm, subentire, sinuate or shallowly lobed with rounded lobes.

Chemical composition :— Fresh Fruit contains 88.26% moisture and the completely dried material contains ether extract 4.20%, albuminoids 16.37%, soluble carbohydrates 55.23%, woody fiber 17.00%, and ash 7.20%. Green leaves are the main source of antiscorbutic vitamin C.

Parts used :— Flowers and leaves.

Therapeutical uses :— Extract of the flower is used in asthama.

Acanthaceae

Adhatoda zeylanica Medik.

Names; Bengli : Basak.

Tripuri : Basak.

Shrubs bushy, leaves lanceolate, acuminate, entire. Flowers white, in dense bracteate spikes, axillary or terminal; bracts conspicuous ovate obovate or elliptic, bracteoles narrower. Corolla 2 lipped, white tube dialated in the middle, pupscent outside, throat transversely striated with purple. Stamens 2 filaments hairy at the base. ovary pubscent, 2 celled. Seeds suborbicular compressed, tuberected.

Chemical composition :—Leaves contain an odorous volatile principle probably of the nature of an essential oil, fat, resin, a bitter non-volatile

alkaloid called vasicine. The largest amoun of vasicine contained in the root-bark and to the extent of 0.25% in the leaves.

Parts used :— Leaves.

Therapeutical uses :— Juice of the leaves are used in the cold cough and bronchial asthma etc. The juice of leaves softens the thick sputum, facilitates its coming out and thus brings quick relief to bronchitis.

Acanthaceae.

Andrographis paniculata (Burm f) wall.ex Nees.

Names; Bengali : Kalamegh

Tripuri : Chirata.

Errect branched, annual herb, branches four angled Leaves lanceolate. Flowers small pinkish. Fruit-capsuler, 1.5-2 cm.

Parts used :— Whole plant, locally sometimes called chirata for its bitter principle, and used as substitutes of chirata.

Therapeutical uses :— Extract of plant is used in loose motion, colic pain and amoebiasis, also useful in fevers, worms, general weakness and gas formation in stomach.

It is also used for children suffering from liver and digestion complaints.

Oxalidaceae.

Oxalis corniculata L

Names; Bengali : Amrul

Tripuri : Amchukai

Waste place herbs, small, trailing with erect branches fibrous roots and stem rooting at nodes, leaves palmately 3 lobed, petiole-slender, pubescent, ciliate at the margin. Flowers actinomorphic with peduncle slender deflexed in fruit, sepals 5, imbricate, presistent. Petals 5, yellow. imbricate, oblong, emerginate at the apex, about twice the length of sepals. Stamens 10 united at the base, alternately shorter and longer. Ovary linear-oblong, 5 lobed, 5 locular, styles 5, distinct. Capsule with loculicidal dehiscence, valves persistent to the axis. Fruits bursting out elastically.

Chemical composition :— The plants has an acid taste due to presence of acid oxalate of potassium. Leaves have long been considered cooling, refrigerant and antiscorbutic, astringent, appetising.

Parts used :— Leaves of the plant.

Therapeutical uses :— A decoction of the leaves are used in cough and cold and also fresh juice of the leaves mixed with sugar is said to be used in dysentery. In Ayurvedic treatment, the leaves of the plants have been used in fever, dysentery and scurvy. In dysentrey the fresh juice of the leaves mixed with honey or sugar is said to be used.

Cuscutaceae.

Cuseuta reflexa Roxb.

Names; Bengli : Swarna lata.

Tripuri : Swarna lata.

A parasitic herbaceous leafless parasite. Stems very long, cordlike, twining. Flowers small, sessile, in lax lateral divaricate spikes.

Parts used :— Whole plants

Chemical composition :— Alkaloid 0.1%.

Therapeutical uses :— It is cooked with crabs/ prawns and is taken as a remedy for liver enlargement and joundice etc. It is also cooked alone.

Lamiaceae.

Leucas lavendulaefolia Rees.

Names; Bengali : Dronapushpi.

Tripuri : Dang kalasa.

Annuals, erect, slender, puberulous. Leaves opposite, linear lanceolate, entire or distantly serrate, acute, tapering at the base. Flowers in axillary and terminal whorls, white. Nutlets about 2 mm long, oblong rounded at the apex.

Chemical composition :— Flowers contains a small quantity of essential oil and alkaloid.

Parts used :— Flowers, Leaves.

Therapeutical uses :— Leaves are to be pasted and applied externally in joint pain with swelling, paralysis and extract of flowers used in cough as expectorant.

Lamiaceae.
Ocimum sanctum L.
Names; Bengali : Kala tulsi/Tulsi.
Tripuri : Tulsi kasam.

Herbs, undershrubs or shrubs, strongly, aromatic. Leaves opposite or whorled, petiolate. Flowers in whorls of 6-10, arranged in spikes, recemes or panicles, pedicels recurved.

Parts used :— Leaves and seeds.

Chemical composition :— Leaves contain an yellowish green essential oil which if kept for a time crystallizes and is then known a basil camphor. Essential oil contains a new terpene. Seeds contains a large amount of mucilage.

Therapeutical uses :— Juice of the leaves is used in bronchitis, cough and cold & asthma. Oil from leaves can destroy bacteria and insects. Seeds useful in complaints of urinary system.

Broneliaceae.
Anamas comosus (L) Merr.
Names; Bengali : Anaras
Tripuri : Anarasa.

Herbs tufted. Leaves long, spinyserrate. Flowers in a terminal cone-like, very dense, globose or oblong spike, bracts bearing a solitary flower embedded in the axil, only the subspinescent tipes of bracts projecting, the upper most bracts empty, more or less leafv, often forming a viviparous coma. Perianth biseriate outer calyx like and inner corolla like. Stamens 6, filaments free or slightly adnate by their edges to the petals 3, opposite and adnate below to the perianth segments, anther linear. Pistil syncarpous, tricarpellary. Seeds few ovoid or oblong, compressed, endosperm with a minute embryo.

Chemical composition :— A part from sugar, citric acid, malic acid the fruit contains protease, bromelin and is a valuable source of vitamins A and C.

Parts used :— Fresh leaf and fruit.

Therapeutical uses :— Fresh juice of the leaves are used in anthelmintic and purgative cases. The fruit ifself is largely consumed and is believed to possess anticorbutic properties.

Zingiberaceae.

Costus speciosus (Koen ex Retz.) Sm.

Names; Bengali : Keo.

Tripuri : Mailuma kathama.

Herbs with tuberous, horizontal root stocks; stem spirally twisted, leafy, about 1.5-2 m high. Leaves 15-30 cm long, subsessile, oblong or oblanceolate, acute or acuminate, glabrous above, silky pubescent beneath. Flowers very large, in dense terminal globose or ovoid spikes, 5-10 cm long, bracts bright red, ovate, acuminate or mucronatc; bracteoles solitary. Calyx tube short, funnel shaped, teeth 3, deltoid-ovate, cuspidate. Corolla white, sometimes with a reddish tinge, tube as long as calyx, lobes ovate-oblong, apiculate. Lip suborbicular, white with a yellow centre, concave, plicate, crisped. Disk pubescent and with a tuft of hairs at the base Stamen one perfect with a tuft of hairs at the base of the filament, connective petaloid, pubescent, produced into two glabrous appendages, as long as the linear anther cells; style slender, stigma semilunar, ciliate. Ovary 3 celled with many ovules in each cell. Capsule globosely trigonous, red. Seeds black with a white .

Parts used :— Fresh and dried rhizome.

Chemical composition :— The rhizome contains - starch and fibre.

Therapeutical uses :— Fresh juice of the rhizome used in cold and cough, asthma and dyspepsia. Alkalaids from rhizome possess antispasmatic, cardiotonic and diuretic activities.

Zimgiberaceae.
Curcuma domestica Valeton
Names; Bengali : Haldi.
Tripuri : Sutui.

Herbs rhizomatous, bearing scape from the centre of the leafy tuft, rhizome orange-yellow. Leaves upto 60 cm. long, in tufts, oblong-lanceolate, tapering to the base, petiole shorter than the blade. Spikes short with the peduncle often exserted, 5-7.5 cm only from the sheaths with one or two large barren bracts below.

Parts used :— Rhizomes.

Chemical composition :— Analysis of Indian turmeric gave the following values, moisture 13.1%, protein 6.3%, fat 5.1%, mineral matter 3.5%, fibre 2.6%, carbohydrades 69.4% and carotine calculated as vitamin A, 50 I. U./100g.

Therapeutical uses :— Rhizome is to be pasted and then applied externally in the acute cut injury, pin prick, fracture and dislocation of the bone.

Zingiberaceae.
Zingiber officinale Rose.
Names; Bengali : Ada.
Tripuri : Haiching.

Herbs rhizomatous with erect slender stem. Leaves distichous, 15-30 × 1.2 cm. narrowly lanceolate, tapering to the apex. Spikes radical, 3.8-7.5 cm. long, peduncle 15-30 cm. long, bracts subor-bicular, cuspidate. Flowers greenish with a small purplish black lip. Stamen derk purple, as long as the lip, rather shorter than the corolla.

Parts used :— Stem (Rhizome).

Chemical composition :— Indian ginger contains an aromatic volatile oil, 1 to 5%, light yellow colour having a characteristic odour and a yellow pungent body an olioresion "gingerin" the active principle.

The essential oil and resin, to which ginger owes its pungent flavour occur just beneath the skin or epidermis.

Therapeutical uses :— Extract of the rhizome is used as expectorant in cough and cold.

Liliaceae.

Aloe barbadensis Mill.

Names; Bengali : Ghrita kumari

Tripuri : Ghrit kanchan.

Herbs acaulescent, propagating by stolons. Leaves in a basal rosette, numerous, 30-60 cm. long, erect, narrowly lanceolate, acuminate, thick, succulent glaucous green, smooth except for the spiny teeth on margins.

Parts used :— Leaves.

Chemical composition : The active constituent of aloes is a mixure of glycosids called 'aloin'. The proportion of 'aloin' varies in different specimens of aloes. The principle constituent of aloin is barbaloin which is pale-yellow crystalline glycoside soluble in water.

If the juice is dried in the sun or concentrated over a low fire it gives an amorphous, opaque, waxy extract called hapatic or livery aloes. But if the juice is concentrated rapidly over a strong fire, the material obtained on coolong is amorphous and semi transparent and is called "Glassy" a "Vitreous" aloes.

Therapeutical uses :— Leaves are being used successfully in the local treatment of amoebiosis, burning sensation all over the body, burning micturation etc.

Araceae.

Alocasia indica (Roxb.) Schott.

Names; Bengali : Mankachu.

Tripuri : Fenkachu.

Herbs robust, root stock about 1-2 m, leaves large, 60-90 cm. hardly peltate, sagittately cordate, repand, end lobes triangular, acute with whitish midrib and 6-8 strong, pale secondary nerves.

Parts used :— Root stock and tubers.

Chemical composition :— Root contains acicular crystals of oxalate of lime to which its acridity is due.

Therapeutical uses :— The root stock is to be grounded into paste and locally applied as poultice to painful parts in gout and rheumatism, it also relieves the oedema.

Amaryllidaceae.
Allium sativum L.
Names; Bengali : Rasun.
Tripuri : Rison.

Annuals small; bulbs compound enclosed in silky white envelope or skin. Scape upto 60 cm long, terete, exceeding leaves. Leaves several at the base. Umbels small.

Parts used :– Bulbs.

Chemical composition :— An acrid volatile oil which is the active principle, strach, mucilage, albumin, sugar etc. Volatile essential oil (0.25%) obtained by distilling the bruised bulbs contains allyl, propyl disulphide and other organic sulphide or sulpher compounds.

Therapeutical uses :— Crushed bulb is heated then mixed with kerosin applied externally as massage in rheumatic arthritis, paralysis and the bulb also used internally in dyspepsia.

Poacea.

Cynodon dactylon L. Pers.

Names; Bengali : Durba.

Tripuri : Durpa.

Perennial creeping, culms upto 80 cm. long, glabrous. Leaves conspicuously distishous on the barren shoots and at the longer part of culms. Leaf blade linear. 2-15 cm. long and upto 3 mm wide.

Parts used :— Roots and whole plant.

Therapeutical uses :— Freshly expressed juice of the grass is useful in haemoturia and also applied to cuts and wounds as it checks bleeding.

Orchidaceae.

Vanda tesselata (Rexb.) Hook ex G Don

Names; Bengali : Rasna.

Tripuri : Khum chuk.

Epiphytes scandent. Leaves 7.5-20 × 1 2-2 8 cm conduplicate, keeled, linear-oblong, apex. 2 lobed, rounded. Scapes axillary, stout. Flowers 3.7 to 5 cm. across, several in a receme.

Parts used :— Leaves, roots

Chemical composition : Plant contains tannins, saponins, sterols, fatty oils, resins & colouring matters.

Therapeutical uses :— The roots of the plant are fragrant, bitter and considered to be useful in rheumatism. They are prescribed in a variety of forms. They enter into the composition of several medicated oils used for external application in rheumatism and disease of the nervous system

BIBLIOGRAPHY

Biswas, K. & E. Ghosh. 1950-52, Bharatiya Banaushodi, Calcutta, 2 vols. (In Bengali).

Chopra, R. N., S. I. Nayar & I. C. Chopra, 1956, Glossary of Indian Medicinal Plants, C S I R, New Delhi.

Chakraborty, N. K. 1989, Useful Plants of Tripura Jute Field, J. Econ. Tax. Bot Vol. B. No. 2. Useful Weeds of Tripura (In Press).

Dastur, J. F. 1951, Medicinal plants of India and Pakistan, Bomby.

Deb, D. P. 1981-1983. Flora of Tripura, Vol I & II, New Delhi.

Jain, S. K. 1968, Medical plants, New Delhi.

Kirtikar, K. R. & B. D. Basu, 1935, Indian Medicinal Plant (2nd Ed) Allahabad, 4 Vols.

Maheshwar, P. & Umrao Singh, 1965. Dictionary of Economic Plants of India, Delhi.

Mukharjee, B. 1953, The Indian Pharmaceutical Codex. New Delhi

Usher, G. 1984, A Dictionary of Plants used by man. Delhi.

Watt, G. 1889-1899, A Dictionary of Economic Products of India, 6 Vols. Calcutta.

Wealth of India, 1948-1976. Raw Materials Vol I-II, New Delhi.