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MEDICINAL PLANTS OF ULTAPANI FOREST RANGE UNDER HOLTUGAON DIVISION, MANAS BIOSPHERE RESERVE (ASSAM)

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ABSTRACT : Ultapani is one of a "hotspot" area situated in Holtugaon forest division under Manas Biosphere Reserve, Assam. Ultapani forest range is located in between $26^0$68.18// N to$26^0$81.18// N and $90^0$24.44// E to $90^0$41.90// E. Vegetation of the forest is unique in the world as most of its plants are evergreen and semi-evergreen. It consists of lots of floristically diverse plants, of which some of them are rare, endangered and threatened. Moreover, the forest of Ultapani forest range under Holtugaon division is rich for its valuable plant resources. Among these some plants have medicinal values, some are edible fruits, while, some of them are oil and timber yielding plants with great economic prospects. But the valuable asset of this forest is now threatened due to over exploitation of forest resources by forest mafias and encroachment for agricultural and human settlements by economically poor people in the forest lands living there in. Therefore, authors thought that the medicinal plants of the study area need to be surveyed, conserved and protected in their natural habitat. Considering this view point in mind, a survey has been carried out on certain naturally occurring medicinal plants of the study area. The present paper throws light on the description and uses of certain species of medicinally important plants along with their botanical and local names.

Key Words: Medicinal plants, Ultapani forest range, Holtugaon division, Manas Biosphere reserve.

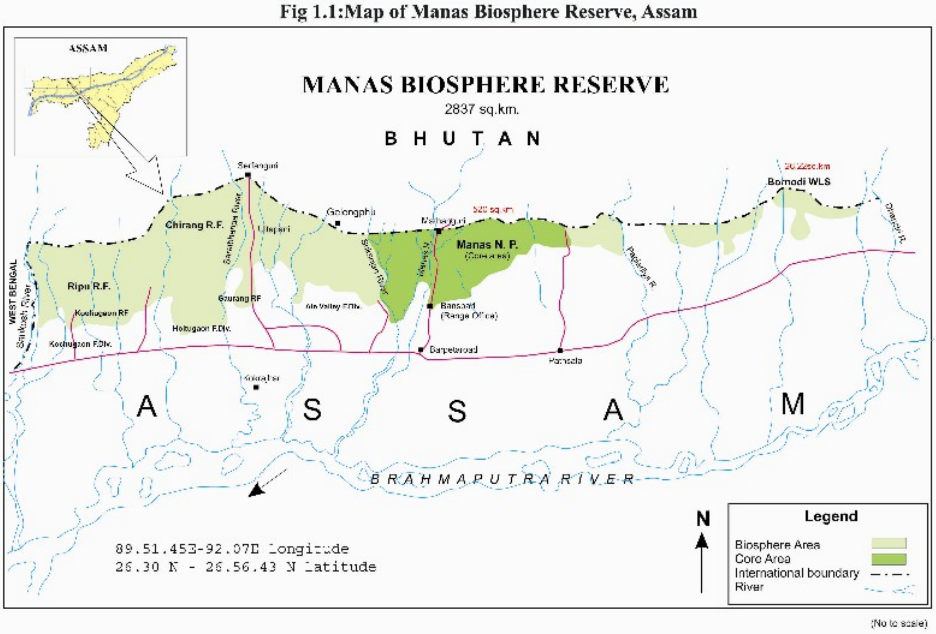
INTRODUCTION

Manas Biosphere Reserve in North East India has been known for its unique rich biodiversity. It is located in between $89^0$51.45 // E to $92^0$70.00// E and $26^0$30.00 // N to $26^0$56.43 //N with a total area of 2837 sq. km and core area of 500 sq. km ($90^0$48′00// - $91^0$15′00// E &$26^0$36′00 // - $26^0$49′00 //N). The total area of Manas Biosphere Reserve is subdivided into 13 reserve forests. Ultapani Forest range is located in $26^0$68.18// N to $26^0$81.18// N and $90^0$24.44// E to $90^0$41.90// E. It is situated under the Chirang Reserve forest which is also a part of the Manas Biosphere Reserve. Vegetation of the forest is unique in the Nature. The Biosphere Reserve is a house of rare, endangered and threatened plants with their medicinal properties which is unique in nature. The plants having various proprieties are useful in our day to day life. Some are used as medicine, while some are consumed as edible fruits.

In Ultapani forest range, almost all types of plant of "Samukha" river produce pneumatophore which is one of the unique characters of this forest. In Ultapani region we were also observed hot water spring. It may be due to presence of Sulphur, Calcium carbonate, and Calcium silicate etc, present in the water of that spring.Ultapani forest range is also popularly known as butterfly zone which is utterly tried to conserve by NGO "Bio-diversity conservation society, Ultapani'' for different types of butterflies. For flora and fauna this area is unique in the world for which this area can be developed as tourist spot.

Different tribal communities belonging to the villages such as the Bodo, Rabha, Assamease, Nepali, Bengali, etc. and tribes of Bhutan. These peoples are dependent upon the forest resources for their day to day livelihood practice. Many of the traditional healers, Kabiraj, bez, also collect the medicinal plants for treatment of various diseases. In the process they unearth the roots, rhizomes, bulbs, flowers, bark, fruits and other medicinally important parts of the plants for extracting drugs and unused parts of the plants were left in the forest. In this way, sometimes they destroy the important medicinal plants. A good numbers of people like Borthakur & Goswami (1995), Jamir and Rao (1990), Jamir (1997), Kilangnaro & Jamir (2011), etc. work in the field of ethhnobotany during last few years, but ethnomedicinal work on the medicinal plants of the Ultapani Forest Range is not studied. Present paper deals with the occurrence of valuable medicinal plants in the study area that are generally used in the treatment of several diseases like jaundice and other common ailments.

Fig 1.1:Map of Manas Biosphere Reserve, Assam



Knowledge of medicinal plants uses was practiced from ancient time of human civilization. The basic needs of human life such as food, shelter and clothing, human being discovered the utilization of natural resources to their uses in daily life. So, villagers collect forest products for their survival and various diseases.

MATERIALS AND METHODS

Extensive field survey was carried on different parts of the Manas Biosphere Reserve during period of 2009- 2011. Information on medicinal plants was collected from bez, kabiraj, oja or traditional hillers who have knowledge on medicinal plants used in different diseases. Voucher specimens were prepared by following the methods of Jain & Rao (1977). Collected plant specimens were identified by matching with the specimens at the herbarium of G. U., Assam and herbarium of BSI, Shillong. Finally identification of the voucher specimens was confirmed by consulting literature such as “Flora of British India”, “Flora of Assam”, etc. The name changes were verified with the help of Bennet's *Name changes in Flowering plants of India and adjacent regions* (1987).

ENUMERATION

From the survey in study area the authors observed that some plants have highly medicinal importants. In the present paper, descriptions of the certain plants with their medicinal values of the study area are elaborated. The species are enumerated alphabetically, each followed by local names in Assamese, Boro, English, etc.

Table: 1 Medicinal plants of the study area:-

Name of the Species	Family	Vernecular name	Description	Medicinal uses
Ageratum conyzoides Linn.	Asteraceae	larser (Bodo)	An erect hispid annual herb. Leaves ovate-rhomboid, acute, hairy with ciliate margins. Heads pale-blue.	Juice of leaves is commonly used in cuts and injuries to prevent bleeding . It has healing properties. Leaf juice is used medicinally in treatment of malaria (Bodo).
Andrographis paniculata (Burm. f.) Wall . ex Nees	Acanthaceae	Kalmegh, Mahatita (Ass.); Sorai-gukha (Bodo)	An erect herb; Leaves opposite, lanceolate, entire, acute. Flowers white, axillary or terminal, raceme.	whole plant used in dysentery, diarrhoea, malarial fever, stomach troubles, worm troubles (Bodo).
Aristolochia cathcartii Hook.f.	Aristolochiaceae		A large climber with corky furrowed bark; Leaves broadly ovate or ovate-lanceolate, acuminate,base cordate.	Rhizome of A. cathcartii has been used in stomach pain. crushed 5-10 leaves of this plant along with water and given to patient twice after meal to promote flow of urine.
Aristolochia indica L.	Aristolochiaceae	Iswarimul, Arkamul (Assamese).	A woody glabrous twiner. Leaf shape varied from linear to obovate-oblong, Flowers axillary or solitary fasciculate.	Leaf and root paste is applied in stomach ache and as an antidote for poisonous snake bite and sting of insets. Decoction leaf paste used to relief stomach pain during menses (internal). Fresh or shade dried leaves are crushed with Piper nigrum and made into pills. Two pills taken twice daily as remedy for snake bite and scorpion bite.
Artemisia nilagirica (Clarke.) Pamp	Asteraceae	Chirota (Ass.); Nagadona (Bodo)	A tall aromatic pubescent herb. Lower leaves white tomentose beneath, upper leaves smaller, lanceolate. Head brown-yellow, sessile, globose, arranged in raceme.	Stem and flowering branches are used as bitter tonic after putting in hot water, and purifies the blood, also applied as remedy of worm troubles,asthmatic troubles, disorder of brain and nervous affections. Plant is also used in rheumatic pain (Rabha).

Bombax ceiba Linn	Bombacaceae	Simolu (Ass.); Sumblee biphang (Bodo);	A deciduous tree, trunk continuous and straight. Leaves lanceolate, acuminate. Flowers bright red or crimson red, large. Calyx cup shaped.	Gum from the bark is used in diarrhea, dysentery, menorrhea (Bodo). Paste of young stem applied to bone fractured (Bhutia). Juice of bark and root is good emetic.
Calotropis gigantea (Linn.) R.Br.	Asclepiadaceae	Akon (Ass.); Gogondo (Bodo)	A large shrub. Leaves cute, base cordate with auriculate lobes. Flowers bluish-purple.	Warmed leaf is applied locally in pain (Ass). Root bark is used in cough, skin diseases. Milky juice is purgative and good for toothache. Juice of young leaf used in treatment of ear (Bodo).
Careya arborea Roxb	Barringtoniaceae	Pani-amra (Ass.)	Large deciduous tree. Leaves alternate, obovate, acuminate, glabrous. Flowers white and pink. Fruit globose.	Bark and fruits are astringent, with honey given in cough and cold (Bodo). Bark and fruits are used as astripent and demuleent
Centella asiatica (Linn.)	Apiaceae	Bor manimuni (Ass.); Manimuni geder (Bodo)	A prostrate creeping herbs, rooting at nodes. Leaves many at each node, reniform, glabrous and long petiolate. Flowers small, pink or yellow.	Whole plant is medicinally used in stomach troubles, dysentery, liver trouble, nerve disorder and improve appetite. It is a blood purifier, good for skin, generally given to women after child birth (Bodo).
Curcuma amada	Zingiberaceae	Aam adaa (Ass), Ada phubor (Bodo)	Leaves large, lanceolate, acuminate. Rhizome aromatic and pale yellowish white in colur.	5 gm of rhizome used to prevent or control excess manturaal problem. In stomach problem fresh or burning rhizome is also used for sudden relief (Bodo).
Dioscorea alata L.	Dioscoreaceae	Kathalu	Quite glabrous, stem acutely angled or winged leaves sub-hastately or deeply cordate, orbicular or ovate, 5-7 nerved;	Boiled bulb is taken orally twice a day for 15 days to cure piles and gonorhoea. Tuber is also taken orally for treatment of piles and leprosy. The production of D. alata has been limited by difficulties experienced in sales and storage, but its use in poultry feeds would increase sales and encourage increased production by farmers.
Dioscorea pentaphylla L.	Dioscoreaceae	Pachpatitia kathalu	Plant climber, twining to right direction. Leaves acute, lanceolate and acuminate.	Leaf & paste mixed with mustard oil is rubbed on the effected part to treat rheumatism.
Eclipta prostrata (Linn.)	Asteraceae	Kehraj (Ass.); Daogang jula, Dabse jula (Bodo).	Erect , annual herbs. Leaves opposite, linear-oblong, lanceolate, acute. Head white.	Leaf paste applied in cut and wound, leaf juice is applied in cardiac troubles (Bodo). Juice is applied in fever and jaundice.

Elephantopus scaber Linn.	Asteraceae	Hasti-pada (Ass.); Moirathikhi (Bodo)	Erect, dichotomously branched, biennial or perennial herbs. Leaves oblanceolate. Heads pinkish-violet, sessile.	Decoction of root and leaves are applied in dysentery and stomach pain, vomiting, liver troubles and in fever (Bhutia).
Entada pursaetha DC.	Mimosaceae	Ghila-lota (Ass.); Filla Bendwang (Bodo)	An immense woody climber, stem angled and much twisted.. Flowers yellow, spike,	Leaves are used as antiseptic in cuts & wounds (Bhutia). Powder of seeds is used for hair washing, and also given to women after childbirth to relief pain. Stem and Bark is used in skin disease. Decoction of seed coat is used in dysentery (Bodo).
Glycosmis arborea (Roxb.) DC	Rutaceae	Chawl-dhowa (Ass.); Mairong rondoi (Bodo);	An evergreen bushy shrub. Leaflets usually 5, oblong, lanceolate, glabrous above. Flowers white, in terminal and axillary panicles	Branchlets are used as tooth brush (Assamese & Bodo).
Hydnocarpus kurzii		Dumalu (Bodo)	Plant tree. Leaves acuminate and lanceolate. Fruits large, Greyish brown in colour.	fruits are highly poisonus but oil extracted from fruits help to relief from pain
Morus australis Poir.	Moraceae	Nuni-goach (Ass), Thaikunsap (Bodo)		Flowers are eaten and beads of roots is used in jaundice (Bodo).
Mucuna pruriens (Linn.) DC. Prodr.	Papilionaceae	Bandor-kekua (Ass.); Mokhra gerlla (Bodo); Tinpatia lewa (Rabha).	A twining annual, slender climber. Leaves 3-foliate; ovate or rhomboid, glabrous above, grey silky beneath. Flowers dark purple in large, racemes.	Decoction of roots mixed with honey is given in cholera. Root are diuretic and cleaner of kidney, made into ointment for elephantiasis. Root is used in jaundice of children (Rabha). Dried seeds are used in expulsion of intestinal worms (Bhutia).
Osbeckia nepalensis Hook.	Melastomaceae	Boga-phutukola (Ass.)	A small and erect shrub; stem sharply 4-angled, covered with stiff hairs. Flowers white, in compound cymes.	Flowers are applied to sore of the mouth of small children (Bodo).
Oroxylum indicum (Linn.) Vent.	Bignoniaceae	Bhat-ghila (Ass.); Kharong (Bodo); Dingdinga (Rabha).	A small deciduous tree. Seed surrounded by broad hyaline wing.	Stem, fruits are medicinally used in jaundice, malaria. Bark is used for stomach trouble (Bodo & Rabha). Root bark is astringent, tonic.Tender fruits are carminative and stomachic.
Oxalis corniculata Linn.	Oxalidaceae	Horu-tengesi (Ass.); Singri gakhwi (Bodo); Am singur (Rabha).	A small diffused herb; creeping and rooting at nodes. Leaflets acute, ciliate margins; petiole long. Flowers yellow, in axillary umbels.	Whole plant is cooling, stomachic, refrigerant, good remedy for dysentery (Bhutia), relives intoxication from wine, Datura stramonium Linn. and other intoxicating things.

Phlogocanthus thyrsiflorus (Roxb.) Nees in Wall.	Acanthaceae	Tita-phool (Ass.); Barshikha bibar gija (Bodo).	An evergreen shrub; Leaves oblanceolate, acuminate. Flowers deep red, in thyrsoid, elongated terminal spike.	Leaves and flower are applied in worm trouble, cough, asthma, bronchitis (Bodo & Rabha). Stem bark used in stomach ache and dysentery (Rabha).
Piper longum	Piperaceae		Plant climber, Leaves lanceolate and acuminate, glabrous.	mixture of 10-12 seeds of Piper longum, 4-5 long and small amount of cinnamum with hot water is used to cure Pnemunia?, Taiphoid, cough (Bodo).
Rauvolfia serpentina (Linn.) Benth. ex Kurz.	Apocyanaceae	Sarpagandha (Ass.); Chando gukha (Bodo); Chandotita (Rabha).	An evergreen undershrub. Leaves 3 whorled, elliptic-lanceolate, acuminate, dark glossy green above. Flowers reddish-pink,	Root is applied in malarial fever, blood pressure (Rabha & Bodo). Leave juice is good for eyes. It is also used as antidote in snake bite.
Scoparia dulcis Linn.	Scrophulariaceae	Bon-dhonia (Ass.); Bongphang rakheb fisa (Bodo)	An erect herb; branches angular. Leaves ovate-lanceolate, elliptic, acute. Flowers white, in axillary whorls.	Whole plant is used in diabetes and paste of root is given in leprosy. Root decoction is treated as abortifacient (Bhutia).
Spilenthes paniculata Wall. ex D.C.	Asteraceae	Piraza (Ass.); Usumai (Bodo)	An erect or trailing herb. Leaves opposite, ovate or lanceolate, acute. Heads yellow, terminal.	Relieve toothache by stem chewed to produce saliva in mouth. Leaf juice is used medicinally in treatment of malaria
Stephania japonica (Thunb.) Miers	Menispermaceae	Tubuki-lota (Ass.)	Climber, leaves broadly ovate, acute. Flowers yellow.	Paste of leaves is used in septic inflammation and boils, root and stem decoction is also used in diabetes (Bodo, Bhutia).
Sterculia villosa Roxb.	Sterculiaceae	Udal (Ass.); Tekundu (Bodo);Odola (Rabha).	A middle size tree. Leaves oblong or ovate, acuminate. Petiole long. Flower dull yellow.	Juice of stem bark used in constipation (Rabha).
Vitex negundo Linn.	Verbenaceae	Posotia (Ass.); Nishinda (Bodo)	A large aromatic shrub, branches spreading, 4-angled. Leaves digitately 3-5 foliolate, opposite decussate; lanceolate, acuminate. Flowers purplish-blue panicles.	Decoction of leave is given with Piper longum Linn. in catarrhal fever, malarial fever. Leaves are aromatic, vermifuge, smoke of dried leaves used to relief headache and asthma (Bodo). Oil of leaves is good for sinuses and rheumatic pains.
Wrightia arborea (Dennst.)	Apocyanaceae	Dudh-khoroi (Ass.); Thou-khuri (Bodo); Kholosing (Rabha).	A deciduous tree. Leaves opposite, lanceolate, acuminate. Follicle united entire length, grooved at the junction.	Juice of bark is used in menstrual and renal troubles (Bodo, Bhutia), used as antidote in scorpion sting (Rabha).
Zingiber zerumbet (Linn.) Rosc. ex Sm.	Zingiberaceae	Jamlakhuti, Debi-tokan (Ass.); Burithokhon (Bodo); Kokrek (Rabha).	Tall herb; stem spirally twisted, tuberous. Leaves long, spirally arranged, elliptic acuminate. Inflorescence globose or ovoid spike; flowers white, bract reddish.	Paste of rhizome is also applied in stomach trouble of cattle. Decoction of rhizome taken in jaundice and urinary trouble and in intestinal worm trouble (Bodo).

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