

## Ethno-Medico Botanical Study of Sundargarh District, Orissa, India

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### ABSTRACT

Ethnomedicinal plant wealth of Sundargarh district is one of the richest in Orissa state of India. The knowledge of the tribal associated with the traditional healing practices using wild plants is now fast disappearing due to modern healthcare system. Ethnobotany is the interdisciplinary scientific study of the interaction between plants and people throughout the world since time immemorial. It concerns itself with not only how people use plants and what plants people use, but also what people think about plants and how plants affect human culture and history, all within the context of modern botany, anthropology, biochemistry, linguistics, plant genetics etc. It also relates how people of a particular culture and region make use of indigenous plants as food, shelter, medicine, clothing etc. Ethnobotany became established as a genuine academic and research activity in the second half of the twentieth century, i.e. about the period when certain concerns about the application of indigenous knowledge for the discovery of new molecules for curing diseases is accepted by the World Health Organisation. The tribal people and ethnic races throughout the world have their own cultures; customs; cults; religious rites; taboos; legends; witchcrafts & foods and systems of medical practices. They know enormous use of wild plants for their basic needs, sustenance and livelihood and have developed a unique understanding of forest resources. The total Scheduled Tribe population of Orissa state, according to 1991 Census is 70,32,214, which accounts for 22.21 percent of the total population of the State. The total population of Sundargarh district one of the 30th districts of Orissa is 15, 73617(1991) which constitutes 50.7% of the tribal population of the district. Of the 62 designated Scheduled Tribes in Orissa state as many as 40 tribes are found in this district. The present paper is the outcome of the ethnobotanical observations and survey conducted amongst the tribals residing in Bonai, Sundargarh and Panposh Forest Divisions of Sundargarh district related to plants used for food, diseases, pesticides, stupefiers, industrial, and other related aspects during 2001-2005, by the second author which accounts for 83 plant species with 78 genera in 42 families. Most of the claims are found to be new and interesting.

**Key words:** Ethnobotanical, Sundargarh, Orissa

### Introduction

For millennia, human in every corner of the world have accumulated knowledge about plants. This knowledge has been gathered and transmitted orally and textually through generations. Some of the knowledge is the product of modern science; a precise method for learning about plants. Ethnobotanical research is providing fundamental information in the search for new drugs, foods, pesticides, natural products, gene resources and chemicals. The tribals, in general are endogamous groups sharing common language and culture. They are living under varying geo-ecological setting of hills and forest areas and far away from modern convenience of life. They are the economically backward ethnic group. They are food gatherers; hunters, forest-land cultivators, and minor forest produce collectors. They live-in isolation near to nature. Various scientists have described them by different names, "Aboriginals"(1904 Herbert Risley and Lacey), "Jungle People" or " Hill tribe" (1941V.Elwin & Thakar). They have vast knowledge of plants, which they apply, on their daily life.

Orissa with its 7 million tribal population of 62 different ethnic groups inhabiting in the dense and thick tropical forest areas possesses rich empiric knowledge about plant wealth. Sundargarh district one of the 30th districts of Orissa state occupies the northwestern portion of Orissa state in India was first constituted a district on 1948. This district is situated between 21° 35' N and 22° 32' N latitudes and 83° 32' and 85° 22' longitudes. The district is bounded on the north by the Ranchi district of Jharkhand state, on the west and northwest by the Raigar district of Chattisgarh, on the south by Jharsuguda, Sambalpur and Deogarh districts of Orissa, on the east by Singhbhum district of Jharkhand and also Keonjhar and Angul districts of Orissa. It extends over an area of 9675

Sq.km.Geographically the district is not a compact unit, it is an undulating table-land of different elevations, vast inaccessible forests and broken rugged hill ranges with rocky streams, rivers, and springs. The important rivers are Ib and Brahmani.The district is rich in mineral and plant wealth besides cave paintings. The rainfall is fairly uniform in the district and receives high rainfall during Southwest monsoon (June to September) and retreating Northeast monsoon (.December-January). Average annual rainfall ranges between 160-200cm.The minimum and maximum temperatures are in the range of 11<sup>0</sup> to 44<sup>0</sup>C.May is the hottest month and December is the coldest month.36% of the geographical area of the district has semi evergreen or tropical dry deciduous forest. The district has a large tribal population. Nearly 50.7 % of the rural population consists of tribal population represented by 40 ethnic tribal communities. The numerically important Scheduled tribes are Oraon, Munda, Kharia, Kisan, Bhuiyan, and Gond etc.

A detailed perusal of the ethnobotanical records reveals that a number of outstanding botanists led several ethnobotanical studies in different parts of Orissa (Bal 1942;Jain, 1971 & 1987;Brahmam&Dutta.1981; Chaudhury Rai. *et al* 1975;Brahmam. &Saxena.1990; Das &Mishra, 1987;Das&Kant.1998; Girach *et al*1998; Mukherjee&. Namhata.1990; Murty *et al* & Chopra 1997;Prusti 1998; Prusti & Mishra 2005;Saxena & Dutta, 1975. Reports on Sundargarh district (Satapathy &Panda.1992; Kulkarni. *et al*, 1993, Satapathy & Brahmam.1996; Satapathy & Chand. 2003, Prusti, & Panda.2005) are available. From the literature it reveals that Sundargarh district with rich flora has remained botanically almost unexplored. Therefore study has been undertaken to record less-known ethnobotanicals from different tribal communities of this district.

### **Materials and Methods**

During the ethnobotanical field survey of the district the second author carried out extensive field studies (2001-2005) in the tribal areas of Bonai, Panposh and Sundargarh Forest Divisions, and recorded tribal use of plants for various purposes, such as for food, fodder, medicines, household materials etc. The methodology followed for the study was that of Jain&Mudgal (1999). The local doctors 'Baidis' or medicine men of different tribal communities and tribals having knowledge on plant use were taken to the forest areas, the local name of the plants, their uses and method of preparations and dose was noted from them. The information gathered was crosschecked from other persons who actually use the plants. The plants were correctly identified with the help of Flora book (Haines, 1921-25;Saxena & Brahmam, (1996.4 Vols.). Matching of voucher specimens was done with the authentic herbarium specimens available at Regional Research Laboratory, Bhubaneswar.In the enumeration a disease-based approach is given to understand the health-profile of the tribals of the district giving the binomial nomenclature of the plant, family name, and locality from where the plant was collected, followed by method of preparation and dose if available. The local name of the plant is given in inverted commas at the end of each claim. The Specimens are preserved in the herbarium of P.N.College.In the enumeration a disease-based approach is given to understand the health-profile of the tribals of the district giving the binomial nomenclature of the plant, family name, and locality from where the plant was collected, followed by method of preparation and dose if available is also given.

### **Results and Discussion**

The tribals of Sundargarh district have developed vast knowledge of plants as observed by the authors during their field survey from 2004 to 2006 of ethnobotanical work which they have acquired through their traditional practices since time immemorial. Use of certain plants for some particular purposes (e.g. Insect repellants, Stupefiers, Cancer, Rheumatism, Diabetes etc) is restricted to some people only and normally they are quite reluctant to share their knowledge with any outsider. There is an urgent need of documentation of this irreplaceable knowledge. It may be lost when traditional cultures collapse with advent of modernization. g. The present studies aimed at documenting all Ethnobotanical Products data covering most important eco-sensitive zones of Sundargarh district .The video graphic documentation is more useful in identification of plant species in the field and it may also useful for conservation strategies. Generally, it was noted that Non-Timber Forest Products were under threat, due to decline of forests in various ways and the disappearance of traditional knowledge and values which accounts for 83 plant species with 78 genera in 42 families. Most of the claims are found to be new and interesting to the indigenous system of Indian medicine.

### **Enumeration**

#### ***Accidents & derangements***

*Croton bonplandianus* Baill.

F: EUPHORBIACEAE

Locality:San Beura,

Sap is applied locally to treat cuts due to sharp-edged tools. 'Gondri'.

*Desmodium triflorum* (L.) DC.

F: FABACEAE

Locality: Bonai,

Dried powder of wholeplant and toasted rice powder in equal quantities is mixed well. The mixture thus obtained is taken on empty stomach to cure bone-fracture. 'Hadjodi'.

*Dose:* 5-10 g twice daily.

Simultaneously, the whole plant together with an egg is ground to a fine paste, applied over the fractured limb and bandaged for bone setting.

***Holarrhena antidysenterica*** Wall.

F: APOCYNACEAE

Locality: Bonai,

The root is rubbed on a stone with a few drops of water and the paste thus obtained is given internally and applied externally in snakebite. 'Kurai'.

***Calotropis gigantea*** R.Br.

F: ASCLEPIADACEAE

Locality: Bonai,

The fresh root, together with milk of cow, is ground to a fine paste and taken as an antidote for snakebite. 'Arka'

***Adiantum philippense*** L.

F: ADIANTACEAE

Locality: Dhumsara,

The whole plant (green) is pounded to a fine paste and applied to the fracture, and bandaged. 'Oran'

***Cassia obtusifolia*** Linn.

F: CAESALPINIACEAE

Locality: Lefripara, Jayashree, 239

The whole plant is pounded to a fine paste and applied to the fractured portion of the limb. 'Chakunda'

***Careya arborea*** Roxb.

F: BARRINGTONIACEAE

Locality: Lefripara,

Bark paste is tied over the cuts due to sharp-edged instruments. 'Kumbi'

***Rauvolfia tetraphylla*** Linn.

F: APOCYNACEAE

Locality: Lefripara,

Root paste (25 g) is fed to the victim slowly in snakebite. 'Patalagarudi'.

### ***Alopecia & allied illness***

***Streblus asper*** Lour.

F: MORACEAE

Locality: Bonai,

The root, together with the juice of the leaf is ground to a fine paste and applied daily on the head. 'Sahada'.

*Note:* Before the application the bald portion of the head is rubbed with the lower portion of a fresh leaf.

***Tridax procumbens*** Linn.

F: ASTERACEAE

Locality: San Beura,

Juice of wholeplant is mixed in equal quantity of the fruit juice of *Phyllanthus emblica* and the whole mixture is transferred into an earthen-pot and buried deep underground for one month. The admixture thus obtained is used as hair tonic to prevent immature graying of hair and also to maintain it in black with luster. 'Kesadudura'.

### ***Cancer***

***Phyllanthus lawii*** Grah.ex Muell.- Arg.

F: EUPHORBIACEAE

Locality: Bonai,

Dried root powder (10g) and fresh juice (25 ml) of the bark of *Moringa oleifera* together with old 'gur' (molasses) (10 g) is eaten on empty stomach twice daily for three days only.

Followed by the above treatment the root powder (10 g) together with same quantity of powdered sugar candy is taken orally for another 7 days in stomach and other cancers barring brain and lung cancer. 'Jhar'.

### ***Cardiac***

***Symphorema polyandrum*** Wight

F: VERBENACEAE

Locality: Bonai,

Bark is grounded to a fine paste and the paste thus obtained is mixed in cow's ghee and applied externally to treat cardiac ailments of rheumatic patient. 'Mahasindu'.

### **Chest**

**Hiptage benghalensis** (L.) Kurz.

F: MALPIGHIACEAE

Locality: Kulposh,

Dried flowers (50 g) and dried bark (50 g) made in to a fine powder. The powder along with a glass of cow milk is taken on empty stomach to treat tuberculosis. 'Madhavalata'.

Dose: 5-6 g twice daily for 40 days.

**Solanum virginianum** Linn.

F: SOLANACEAE

Locality: Kulposh,

Fresh-root juice is mixed in pure honey and taken internally on empty stomach to treat Asthma. 'Bejibaigan'.

**Terminalia chebula** Retz.

F: COMBRETACEAE

Locality: Kurlokhaman,

Rind of fruit is wrapped with young leaves of mango and tied with the stem of *Abrus precatorius*. The rind thus cooked is eaten as an expectorant. 'Harida'.

**Vitex negundo** Linn.

F: VERBENACEAE

Locality: Kello Raipuri,

a) Fresh leaf-juice mixed in honey is taken on empty stomach in Asthma.

Dose: 5ml twice daily.

b) Fresh leaves are boiled in water till vapourisation. The vapours are inhaled through mouth to reduce cough. 'Begunia'.

### **Dental**

**Argemone mexicana** Linn.

F: PAPAVERACEAE

Locality: Bonai,

Fresh root is made in to a fine paste and applied to the caries teeth for relief from pain. 'Odosmari'.

**Solanum virginianum** Linn.

F: SOLANACEAE

Loc: Bonai,

Powder of seeds is smoked in a pipe to get rid of worms in the caries teeth. 'Bejibaigan'.

**Jatropha gossypifolia** Linn.

F: EUPHORBIACEAE

Locality: Kurlokhaman,

Stem is regularly used as toothbrush in swollen gums and caries teeth. 'Bondrijotta'.

**Pongamia pinnata** (L.) Pierre

F: FABACEAE

Locality: Kulposh,

Twigs are employed as toothbrush regularly for healthy gums and sparkling teeth. 'Karanja'.

### **Diabetes**

**Catharanthus roseus** (L.) G. Don

F: APOCYNACEAE

Locality: Bonai,

Leaves (only 3nos) are soaked in water overnight and filtered. The solution thus obtained is taken orally on empty stomach in Diabetes Mellitus. 'Sadabihari'.

### **Galactagogue**

**Ipomoea aquatica** Forssk.

F: CONVULVULACEAE

Loc: Kulposh, Jayshree381

Leaf is eaten as vegetable regularly by lactating mothers to increase the secretion of milk.

'Kalum'.

**Plumeria rubra L.**

F: APOCYNACEAE

Locality: Kurlokhaman,

- a) Fruit (follicle) is grounded to a fine paste and given internally on empty stomach to improve secretion of mother's milk.
- b) Seed-paste with sugar candy water is also given to improve secretion of mother's milk. 'Kathchampa'.

**Sida acuta Burm.f.**

F: MALVACEAE

Locality: Kulposh,

Wholeplant together with rice washed water is grounded to a fine paste and the paste is given internally to check diarrhoea due to indigestion. 'Bachuramuli'.

Dose: 3-5 very 2 hours.

**Holarrhena antidysenterica Wall.**

F: APOCYNACEAE

Locality: Kulposh,

Water-extract of bark is given internally in blood dysentery. 'Kurai'.

**Abutilon indicum (L.) Sweet.**

F: MALVACEAE

Locality: Kulposh,

Leaves (7 nos) together with 7 black peppers are grinded to a fine paste and the paste thus obtained is taken on empty stomach with rice-washed water in jaundice. 'Chotapedi pedica'.

**Desmodium triflorum (L.) DC.**

F: FABACEAE

Locality: Kurlokhaman,

Wholeplant paste is given to lactating mothers for de-worming of children. 'Kuradia'.

Dose: 2-3 g once daily for 10 days.

**Soymida febrifuga (Roxb.) A. Juss.**

F: MELIACEAE

Locality: Kello Raipuri,

Stem bark is grinded to a fine paste and taken together with curds on empty stomach in water stools. 'Roin.'

**Punica granatum Linn.**

F: PUNICACEAE

Locality: KelloRaipuri,

Fruit- skin paste with curds is taken orally to check diarrhea and water stools. 'Dalimb'.

**Ardisia solanacea Roxb.**

F: MYRSINACEAE

Locality: KelloRaipuri,

Water-extract of root is give infernally in Blood dysentery. 'Narasingha koda'.

**Phoenix accaulis Buch-Ham. ex Roxb.**

F: ARECACEAE

Locality: Bonai,

a) Immature-fruit is made in to a fine paste and the paste thus obtained is taken with rice washed water to check vomiting.

b) Leaf-juice is mixed in honey and is taken on empty stomach as a vermifuge. 'Bui khajuri'

**Cucumis trigonus Roxb.**

F: CUCURBITACEAE

Locality: Kulposh,

Fruit is cooked and eaten to act as drastic purgative. 'Bengdimbu'.

**Terminalia bellirica (Gaertn.) Roxb.**

F: COMBRETACEAE

Locality: Kello Raipuri,

Pulp of raw fruit is pounded and consumed to check Dysentery. 'Bahada'.

**Anogeissus latifolia (Roxb.ex DC.)Wall.ex Guill. &Perr.**

F: COMBRETACEAE

Locality: Kello Raipuri,

Root-bark is pounded to a fine paste and given internally to check Diarrhoea. 'Dhaunla'.

Dose: 5 g thrice daily.

**Tamarindus indica Linn.**

F: CAESALPINIACEAE

Locality: San Beura,

Root barks of *Tamarindus indica* and *Anogeissus latifolia* in equal quantities are given internally to check Diarrhoea. 'Tentuli'.

Dose: 3-4 g thrice daily.

***Achyranthes aspera*** Linn.

F: AMARANTHACEAE

Locality: San Beura,

Fresh 'root-paste is taken internally to relieve stomachache due to indigestion. 'Apamaranga'.

Dose: 3-5 g daily for 3 days.

***Phyla nodiflora*** (L.) Greene

F: VERBENACEAE

Locality: Kulposh,

Wholeplant (10 g) and 7 black peppers are grounded to a fine paste and the paste thus obtained is taken on empty stomach, along with rice washed water of 3 consecutive days in Jaundice. 'Gosinga'.

Note: Bland diet is advised for 40 days.

***Erycibe paniculata*** Roxb.

F: CONVOLVULACEAE

Locality: Kurlokharna,

Ripe fruits are eaten in between the meals to act as a mild laxative. 'Dud koli'.

## ***Gynecology***

***Clitorea ternatea*** Linn.

F: FABACEAE

Locality: Bonai ,

100 g of root together with a little milk is grounded to a fine paste and the paste thus obtained is taken orally on empty stomach on 2nd, 3rd, and 4th, day of menstruation for sure conception. 'Aparajita'.

Note: The above treatment can be repeated till desired result is obtained.

***Portulaca oleracea*** Linn.

F: PORTULACACEAE

Locality: Kulposh,

Root together with milk is grounded to a fine paste and the paste thus obtained is taken orally on empty stomach on 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> day of menstruation, for 6month to effect fertilisation. 'Lunlunia'.

Dose: 10 g once daily.

***Zingiber officinale*** Rose.

F: ZINGIBERACEAE

Locality: Kulposh,

Dried rhizome powder and dried whole plant powder of *Phyllanthus fraternus* in equal quantities is boiled in milk down to one-fourths and filtered. Pregnant woman takes the solution thus obtained on empty stomach only once in 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> month to overcome pre-natal diseases and for easy delivery. 'Sunthi'.

***Tephrosia purpurea*** (L.Pers.)

F: FABACEAE

Locality: Kulposh,

Dried leaf powder and pasted rice powder in equal quantities is-taken orally on empty stomach followed by rice washed water to treat Leucorrhoea Haematuria as well. 'Onakulthia'.

Dose: 10 g powder once daily for 20-30 days.

***Homonoia riparia*** Lour.

F: EUPHORBIACEAE

Locality: Kulposh,

Fresh root-paste is consumed on empty stomach with 2 black. peppers to, treat post-delivery complaints. 'Pani Begunia'.

Dose: 5 g once daily for 3 days only.

## ***Insect repellants***

***Argemone mexicana*** L.

F: PAPAVERACEAE

Locality: Bonai,

Whole plant is cut into small pieces and placed in an earthen pot. Then the pot with the contents is heated on fire till it turns into ash. The ash thus obtained is used to drive away bed bugs. 'Odosmari'.

***Annona squamosa*** Linn.

F: ANNONACEAE

Locality: San Beura,

Leaf paste is applied on the doorframes to check the entry of insects in to the house. 'Ata'.

*Celastrus paniculata* Willd.

F: CELASTRACEAE

Locality: Kurlokhaman .

A piece of root is tied around the neck of cattle to ward off flies. 'Pengu'.

### **Intoxicants**

*Schleichera oleosa* (Lour.) Oken

F: SAPINDACEAE

Locality: Dhumsara R.F.,

Seeds after, moving the coat, are pounded and added to the brew of *Madhuca indica* to improve the quality. 'Kusum'.

*Physalis minima* Linn.

F: SOLANACEAE

Locality: San Beura,

Juice of wholeplant (500 ml) is mixed in 1.5 l of toddy obtained from the stem of *Phoenix sylvestris* to enhance its intoxicating properties. 'Phuttika'.

Note: It is dangerous to exceed the ratio, as the whole beverage might become poisonous.

### **Malaria**

*Vanda tessellata* (Roxb.) Hook.ex G.Don.

F: ORCHIDACEAE

Locality: Dhumsara R.f.,

Water-extract of leaves is given orally together with honey .to prevent Malaria. 'Rasna'.

*Andrographis paniculata* (Burm.f.) Wall.ex Nees.

F: ACANTHACEAE

Locality: Dhumsara R.F.,

Water extract of leaf is taken with honey to treat Malaria. 'Chiraita'

*Phyllanthus amarus* Schum. & Thonn.

F: EUPHORBIACEAE

Locality: Dhumsara R.F.,

Whole plant is pounded to a fine paste and given in malarial fevers.

Dose: 5 g thrice daily for 5 days. 'Badi onla'

### **Neurological**

*Phyllanthus fraternus* (Buch. -Ham.ex Roxb.) Webster

F: EUPHORBIACEAE

Locality: Kulposh,

Water-extract of wholeplant of *Phyllanthus fraternus* and the seeds of black gram in equal quantities is mixed in a little gingelly oil and the mixture is

used for local application to treat Paralysis. 'Badi onla'.

Note: Dried fish and chicken is prohibited.

*Mammea suriga* Kosterm

F: CLUSIACEAE

Locality: Kulposhi,

Root-paste is applied to forehead for relief from partial headache. 'Churiana'

*Calotropis gigantea* R.Br.

F: ASCLEPIADACEAE

Locality: Kulposh,

The temporal part is pricked with a clean needle so that some blood oozes out. After cleaning the blood milky latex of the plant is applied to relieve pain due to Migraine. 'Arka'.

*Gardenia turgida* Roxb.

F: RUBIACEAE

Locality: Kulposh, Jayashree 209

Juice of wholeplant is mixed in equal quantity of gingelly oil and applied on head to increase the power of Memory. Above juice is mixed in equal quantity of leaf juice of *Bacopa monnieri* and 'applied on" head for greater memory power. 'Kurdu'.

*Vetiveria zizanioides* (L.) Nash

F: POACEAE.

Locality: Kulposh,

Root-paste mixed in mustard oil is applied on the head as a remedy for reeling of head and headache. 'Bena'.

*Vitex negundo* Linn.

F: VERBENACEAE

Locality: Kello Raipuri,

Fresh leaf juice mixed in- castor oil and applied on the head for relief from headache. 'Begunia'.

### **Ophthalmic**

*Blepharispermum subsessile* DC.

F: ASTERACEAE

Locality: Kulposh,

Expressed juice of leaf is used as eye drop's in eye troubles. 'Rasha'.

*Spilanthes calva* DC.

F: ASTERACEAE

Locality: Kulposh,

Juice of wholeplant, gingelly oil and cow milk in equal quantities and mixed together. The admixture is, applied to head to stop reddening of 'eyes with burning sensation. 'Roipur'.

*Ocimum canum* Sims

F: LAMIACEAE

Locality: Kulposh,

Seeds are soaked in, water overnight and the swollen seeds are placed in the eyes as a cure for Conjunctivitis. 'Banatulasi'.

*Pterocarpus marsupium* Roxb.

F: FABACEAE

Locality: Kell.

Juice of bark is applied in the mouth. 'Piasal'.

*Vitex negundo* Linn.

F: VERBENACEAE

Locality: Kello Raipurii,

Leaves are chewed to promote healing of ulcers in the mouth. 'Begunia'.

### **Pesticides**

*Haldinia cordifolia* (Roxb.) Ridsd.

F: RUBIACEAE

Locality: San Beura,

Green bruised leaves are spread evenly all over the watered field before sowing the rice. This will act as pesticides for the crop. 'Kurmi'.

*Chloroxylon swietiana* DC.

F: RUTACEAE

Locality: San Beura,

Leaflets are spread all over, the field before ploughing and watering the rice held. This will act as a pesticide. 'Bherua'.

*Cleistanthus collinus* (Roxb.) Benth ex Hook.f.

F: EUPHORBIACEAE

Locality: Dhumsara R.F.,

Green leaves one evenly sprayed on the land before ploughing and sowing rice to act as a pesticide. 'Korda'.

### **Rheumatism**

*Symphorema polyandrum* Wight.

F: VERBENACEAE

Locality: Bonai ,

a) Dried bark is, grounded to a fine powder and powder is taken with honey to check backache and Rheumatism.

b) Above powder together with the earth of anthill is mixed well and slightly warmed on fire and applied externally to treat joint pain. 'Mahasindu'.

*Pygmaepremnaherbacea* (Roxb.)Mold.

F: VERBENACEAE

Locality: Bonai,

Root together with the bark of *Symphorema polyandrum* and the root of *Cissampelos pariera* in equal quantities is made in to a fine



powder. The powder is mixed in cow's milk and taken orally to treat Rheumatism for 30-40 days once daily. 'Ghantiana'.

**Sphaeranthus indicus** Linn.

F: ASTERACEAE

Locality: Kulposh,

Powder of whole plant is given internally to treat Rheumatism. 'Gondru mundi'.

*Dose:* 5 g just before lunch and dinner for 20 days.

**Blepharisperrum subsessile** DC

F: ASTERACEAE

Locality: Kulposh,

Water-extract of root is taken with honey to relieve backache due to Rheumatism. 'Rasna'

**Moringa oleifera** Lam.

F: MORINGACEAE

Locality: Kurlokhamani,

Bark-paste is taken orally with raw rice-washed water on empty stomach to treat Rheumatism. 'Sajana'.

*Dose:* 5 g of bark powder once daily for 30 days.

*Note:* Bark does not include dead tissue.

**Rabies**

**Clerodendrum viscosum** Vent.

F: VERBENACEAE

Locality: Kello Raipuri ,

One ripe fruit is taken internally and one ripe fruit, made in to a paste is applied externally in dog bite for 3 days only. 'Komutia'

**Skin**

**Argemone mexicana** Linn.

F: PAPAVERACEAE

Locality: Bonai,

a) Latex is applied externally to treat Eczema.

b) Seeds grounded to a fine paste together with equal quantity of turmeric powder and the paste thus obtained is applied externally to treat Eczema, 'Odosmari'

**Evolvulus nummularius** (Linn.) L.

F: CONVULVACEAE

Locality: Kulposh,

Wholeplant-paste is applied locally for suppuration of boils. 'Hadsunga'.

**Mangifera indica** Linn.

F: ANACARDIACEAE

Locality: Kurlokhaman

Gum is slightly heated on gentle fire and applied locally to treat cracks of soles that appear in winter. 'Amba'

*Note:* Application is made before going to bed.

**Ludwigia octovalvis** (Jacq.) Raven

F: ONAGRACEAE

Locality: Kulposh,

Ash of wholeplant is mixed in mustard oil. The ointment thus obtained is applied externally to treat Eczema and skin diseases. 'Panidhataki'.

**Ixora pavetta** Andr.

F: RUBIACEAE

Locality: Kulposh,

Bark powder is applied, locally to treat chronic wounds. 'Telkurma'.

**Schleichera oleosa** (Lour.) Oken

F: SAPINDACEAE

Locality: Kulposh,

Seed-oil is applied externally to Scabies. 'Kusum'.

**Stupefiers**

**Acacia auriculiformis** A.Cunn. ex Benth.

F: MIMOSACEAE

Locality: Bonai

- a) Leaf-paste is thrown into the pond as a stupefying-agent to catch fish easily.
- b) Seed-paste is also used as a fish-poison. 'Akasia'

## ***Urino-genital***

***Phyla nodiflora*** (L.) Greene

F: VERBENACEAE

Locality: Kulposh,

Whole plant-juice (10ml) followed by sweetened milk is taken on empty stomach to treat Spermatorrhoea. 'Gosinga'.

***Terminalia arjuna*** (Roxb.ex DC.) Wight & Arn.

F: COMBRETACEAE

Locality: Kulposh,

Dried bark- powder is taken along with rice-washed water to check blood in urine. 'Arjuna'.

## ***Wild Food***

***Argemone mexicana*** Linn

F: PAPAVERACEAE

Locality: Bonai,

Stem is cut into pieces of 3 inches and the pieces are cooked into a curry. (The curry prepared and offered to the senior author by local people at Bonai was very delicious)'Odosmari'.

***Phoenix acaulis*** Buch. -Ham. ex Roxb.

F: ARECACEAE

Locality: Kulposh,

Apical bud is eaten in times of famine. It is said to be nutritious. 'Buikhajuri'

***Erycibe paniculata*** Roxb.

F: CONVULVULACEAE

Locality: Bonai,

Ripe fruits are eaten. 'Dud koli'.

***Bombax ceiba*** Linn

F: BOMBACACEAE

Locality: San Beura,

Fresh bark pulp is added to boiling sugarcane juice to obtain a clean 'gur', jaggery. 'Sima'.

***Diospyros melanoxylon*** Roxb.

F: EBENACEAE

Locality: San Beura,

Fresh leaves are used to cover the mouth of the earthen pot for quick ripening of the fruits inside. 'Kendu'

Note: This does not change the taste of the fruit unlike Carbide spraying for the purpose.

***Acacia pennata*** (L.) Willd.

F: MIMOSACEAE

Locality: Kulposh,

Seed is rubbed on a stone with a "little water and the paste thus obtained is added to muddy water to obtain clean water. 'Gohira'.

***Abelmoschus esculentus*** (L.) Moench

F: MALVACEAE

Locality: San Beura

Whole plant powdered to a fine paste and added to the boiling sugarcane juice to obtain a clear,'gur,'jaggery. 'Bhindi

## **Conclusion**

Even though the tribals use most of the wild plants in different ways in their day-to-day life, The food habits and healing systems are fast changing due to non- availability of genetic resources. The rich and untapped flora, which tribal societies have been using for food, medicine, etc need to be investigated with a view to develop new sources of proteins, fats, starches, alkaloids, therapeutic agents etc. The tribals of Sundargarh district represent an invaluable, indigenous knowledge base, some of which are documented but by large to be explored. The ethnomedical knowledge of these tribals may provide a strategy for discovery of clinically useful compounds from plant sources.

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