

Floristic and Medicinal Uses of Some Plants of Chandaka Denudated Forest Patches of Bhubaneswar, Orissa, India

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ABSTRACT

The present paper reports 17 plant species belonging to 13 families, mostly used for various disease and disorders by the local people and herbal healer of Chandaka areas of Bhubaneswar. The local population of the region primarily depends upon these plants for curing of various ailments and their disorders. They are enumerated with binomial, family, vernacular name and floristic study and medicinal uses of the plants and their parts . Further studies on chemical and pharmacological actions are suggested to validate the claims.

Key words: Phytotherapeutic claims, Herbal healer, Ailments and disorders.

INTRODUCTION

Use of plant based drugs and chemicals for curing various ailments and personal adornment is as old as human civilization. In India, the sacred Vedas dating back between 3500 B.C and 800 B.C give many references of medicinal plants. One of the remotest works in traditional herbal medicine is “*Virikshayurveda*”, compiled even before the beginning of Christian era and formed the basis of medicinal studies in ancient India. “*Rig Veda*”, one of the oldest Indian literatures written around 2000 B.C. mentions the use of Cinnamon (*Cinnamomum verum* Prel.), Ginger (*Zingiber officinale* Rose.), Sandalwood (*Santalum album* L.) etc. not only in religious ceremonies but also in medical preparation (Bentley and Trimen, 1980). Plants and plant-based medicaments are the basis of many of the modern pharmaceuticals we used today for our various ailments (Abraham, 1981; Atal & Kapur, 1982). At one time, nearly all medicines were derived from biological resources. Even today they remain vital and as much as 67%-70% of modern medicines are derived from natural products (State of the Environment Report, 2001). Nearly 80% of the world populations rely on traditional medicines for primary health care, most of which involve the use of plant extracts (Sandhya et al., 2006). In India, almost 95% of the prescriptions are plant-based in the traditional systems of Unani, Ayurveda, Homoeopathy and Siddha (Satyavati et al., 1987).

Ancient ethnic communities around the world had learnt to utilize their neighborhood herbal flora for various curative as well as offensive purposes (Subramoniam and Pushpangadan, 1995). Due to lack of literacy, their knowledge on plants developed often at the cost of their dear life through centuries old experience could not be perfectly documented and it had rather descended from one generation to another as a domestic cultural heritage. As the ethnic groups migrated from place to place in search of their livelihood, their folklore knowledge also became fragmented and traveled with them often with ‘additions and deletions . Their findings in course of time have

become basic leads for chemical, pharmacological, clinical and biochemical investigations, which ultimately gave birth to drug discovery. The present paper is an attempt to collect all the information available on floristic and medicinal uses of plants of Chandaka denudated forest patches of Bhubaneswar used by different local people and herbal healer for combating various ailments and disorders .

STUDY AREA

Bhubaneswar, the new capital of Orissa, is situated 65 km away from Bay of Bengal at an altitude 25.9 meters and Latitude of 25 ° 15' North and longitude of 85 ° 52' West. Prior to 1950 the present new Capital of Bhubaneswar was under a rich forest cover known as Chandaka reserve forest Cunningham, A. (1988)., Smith, A. (1895). , Mander, M. (1998). , Boufford, D.E. (2001). Dembner, S. (1993). Anonymous.(1998) , Das.G. K. and Oudhia.P.(2000)., Oudhia. P.(1999a). Symmonds, R. (1998). Nedoluzhko, V.A. (1984). At present around the Chandaka reserve forest is covered with massive official buildings, institution, and residential colonies. .The relics of latest erstwhile forest is found at a distance of 10 km from the state capital . During the construction of new capital the trees along with their stumps were removed including the shrubs and the annual weeds . During last 50 year their has been a great change in the distribution of many flora including some medicinal flora . Cunningham, A.B. (1991). Ellis, C.G. (1986) .The objective of present study is to study the floristic and medicinal use of plants around the denudated forest patches and their distribution.

Materials and Methodology

A literature survey was carried out on the study area before the field work started (Das and Misra, 1987; Das and Misra, 1988a; Das and Misra, 1988b, Hemadri and Rao, 1989; Hemadri, 1991; Dash, 1994; Das and Misra, 2000). Most of the works were based on surveys types. Very few works were in the field of medicinal use and floristic studies. The present work is the outcome of extensive survey of different denudated forest patches of Chandaka reserve forest and to collect information on the medicinal uses of different plant species for different disorders. During field work, interviews were conducted with local knowledgeable villagers, the herbal healer called 'Vaidyas' (local physicians in Indian System of Medicine), old woman and medicinal plant vendors. Plant specimens were collected and identified with local flora (Saxena and Brahmam, 1996). The medicinal value and taxonomy of each plant was enumerated in the following pattern: a) Binomial ; b) Local name c) Family; d) Habit and habitat ; e) Floristic ; e) Medicinal use; and f) Time of fruiting and flowering

Results and Discussion

The data on floristic and medicinal uses of plants for various disease and disorders was collected from the local inhabitants of Chandak denudated forest patches , and analyzed. The enumeration and utilization of these plants are described below.

ENUMERATIONS OF PLANTS

1. *Abelmoschus moschatus* Medik

ORIYA NAME : Takabhendi

FAMILY : Malvaceae

HABIT & HABITAT

An erect, annual herb, found growing as a wild in the hilly and tribal regions of Orissa , also cultivated throughout the state .

PLANT DESCRIPTION :

A hirsute or hispid, herb; leaves polymorphous, lower leaves ovate, acute; upper leaves palmately 3-7 lobed, lobes serrate or irregularly toothed, hairy on both surfaces; flowers bright yellow with purple centre, large, usually solitary axillary, sometimes in few-

flowered racemes ; capsules ovate, acute, hispid ; seeds many, sub-reniform, black, musk-scented.

Flowering and Fruiting : November to January

MEDICINAL USES:

1. The seeds are valued medicinally for their diuretic, antiseptic, cooling , tonic, carminative and aphrodisiac demulcent and stomachic properties.
2. A decoction or infusion or tincture of seeds is useful in nervous debility, hysteria and other nervous disorders.

2. *Abrus precatorius* L.

ORIYA NAME : Runja

FAMILY : Fabaceae

HABIT & HABITAT

A climbing shrub, found on hedges near villages and also in the forest track.

PLANT DESCRIPTION :

A deciduous climbing shrub with glabrescent, mostly greenish yellow branches; leaves, pari-pinnate; leaflets ovate, obovate or oblong; inflorescence rigid, thick, strongly falcate; flowers crowded, sub-sessile, pale purple to yellowish; pods rectangular, bulgy; seeds ovoid, scarlet with a black spot round the hilum, or black with a white spot, or uniformly black or white, glossy.

Flowering : August-October

Fruiting :December - January

MEDICINAL USES

1. The extract of the root together with the root extract of 'satawar' (*Asparagus racemosus* Willd.) and plant of Nirmuli (*Cuscuta reflexa* Roxb.) is given one tsp, thrice a day, for three days after menstruation to check conception.
2. Two seeds of white variety are soaked overnight in 20 ml of water and swallowed along with water, empty stomach on the 4th day of menstruation to avoid conception for two years.

3. *Achyranthes aspera* L..

ORIYA NAME : Apamaranga

FAMILY : Amaranthaceae

HABIT & HABITAT

Herb, commonly found as a weed of waysides and waste places throughout plains of Orissa and through out India.

PLANT DESCRIPTION

An erect or procumbent, annual or perennial herb; stems angular, ribbed, simple or branched from the base, often tinged with reddish purple colour; leaves thick, ovate elliptic or obovate - rounded, but variable in shape and size; flowers greenish white, numerous in auxiliary or terminal spikes; seeds sub-cylindric, reddish brown.

Flowering and Fruiting : August to December

MEDICINAL USES

1. Whole shade dried plant is powdered with 4 times 'Misri' (crystalline sugar) and two tsp of this powder with cow's milk or water taken twice a day, 1 hour before each meal, for one month, for liver troubles.
2. Fresh leaves, mixed with black pepper and garlic, ground into a paste and made into pills and taken as anti-periodic, especially in ,quartan fevers.

4. *Acorus calamus* L.

ORIYA NAME : Bacha

FAMILY : Araceae

HABIT & HABITAT

A semi-aquatic, perennial herb, thrives best in marshy and moist places.

PLANT DESCRIPTION

A semi-aquatic, perennial, aromatic herb with creeping rhizomes; rhizome horizontal, jointed, somewhat vertically compressed, spongy within, pale to dark brown or occasionally orange brown in colour; leaves grass like or sword shaped, long and slender; flowers small, yellowish-green, in a spadix; berries green, angular, 1-3 seeded; seeds oblong.

Flowering and Fruiting: April-August

MEDICINAL USES

1. It is-Used in folk medicine for coughs, colds, bronchial throat and stomach troubles. In tribal pockets of Mayurbhanj the rhizome powder is used for epileptic fits.
2. A piece of rootstock is chewed for obtaining melodious voice. The decoction of rhizome is used as hair wash to kill lice.
3. In painful menses, paste of about 20 gm of rhizome with about 15g rhizome of 'pan' (*Piper betel* L.) and about 10 g rhizome of 'Kamal' (*Nelumbo nucifera* Gaertn.) is made into 10 pills and one pill given daily for 10 consecutive days from the first day of menses.

5. *Alpinia galanga* (L.) Willd

ORIYA NAME :

FAMILY : Zingiberaceae

HABIT & HABITAT

A rhizomatous perennial herb, found in the deep forest patches of Orissa and is extensively cultivated all over the state and the country in shady situations.

PLANT DESCRIPTION :

A perennial herb with tuberous aromatic root stock; leaves oblong-lanceolate, acute, glabrous, 30-60 cm long, ligule rounded; flowers greenish white, streaked with red, in dense-flowered, 30 cm long panicles; capsules orange or red, globose.

Flowering and Fruiting : March-June.

MEDICINAL USES

1. Dried rhizome powdered about 2 tsp taken with slightly warm water twice daily after meal continuously for 15

days as a curative for rheumatism and bronchial asthma..

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

ORIYA NAME : Bhuinimba

FAMILY : Acanthaceae

HABIT & HABITAT

Annual herb, grows abundantly in moist, shady, waste grounds and sometimes in dry forest patch .

PLANT DESCRIPTION

An erect annual herb; stem dark green, quadrangular with longitudinal furrows and wings on the angles of the younger parts, slightly enlarged at the nodes; leaves glabrous, lanceolate ; flowers small, in lax spreading axillary and terminal racemes or panicles ; capsule linear-oblong, acute at both ends, seeds numerous, subquadrate, yellowish brown.

Flowering and Fruiting : October-December

MEDICINAL USES

1. The juice of the bruised leaves is mixed with honey in 1: 1 proportion and is given to children in fever and cough. Nothing sour is allowed during the period of treatment.
2. The whole plant is dried in the shade, made into powder and given with water for malarial fever and other intermittent fevers.
3. Whole plant of 'kalmegh' and stem bark of 'neem' (*Azadirachta indica* A. Juss.) and 'kureya' (*HoZarrhena antidysenterica* (L.) Wall. ex G. Don.) are taken in equal quantities, pounded well and mixed in water about 6 times by volume. A red hot brick is then dropped into it and filtered. The extract thus obtained is given internally for jaundice. Dose: 5 ml, 3-4 times a day for 3 days.

7. *Bacopa monnieri* (L.) Pennell

ORIYA NAME : Brahmi

FAMILY : Scrophulariaceae

HABIT & HABITAT

A creeping herb, commonly growing on river banks and marshy places throughout plains of Orissa .

PLANT DESCRIPTION

A prostrate or creeping, juicy, succulent, glabrous annual herb, rooting at the nodes with numerous ascending branches; leaves simple, opposite, decussate, sessile, obovate-oblong or spatulate, entire, fleshy, obscurely veined, punctuate on long slender pedicels; fruits ovoid, acute, 2-celled, 2-valved capsules.

Flowering and Fruiting : Almost throughout the year.

MEDICINAL USES

1. Decoction of the leaves (about 50 ml) with honey (1tps) is taken twice before meal as a preventive of cold and cough .
2. Plant juice with black pepper is given, twice a day for three days as a curative in malarial fever.
3. Leaf Juice (10 ml) with 10 ml of honey is given, once a day in empty stomach for 30 days as a preventive in epilepsy.

8. *Boerhavia diffusa* L.

ORIYA NAME : Purunisaga

FAMILY : Nyctaginaceae

HABIT & HABITAT

A very variable, diffusely branched herb, abundantly occurring as a weed throughout plains of Orissa .

PLANT DESCRIPTION :

A diffusely branched pubescent or glabrous, prostrate herb; root-stock stout, flisiform, woody; stems creeping, often purplish, swollen at the nodes; leaves long - petioled, ovate or oblong-cordate, entire or sinuate, usually whitish and smooth beneath and rough, green on upper surface, arranged in unequal pairs at each node; flowers red, pink or white, in small umbels arranged in auxiliary and terminal panicles; fruits ovate, oblong, pubescent, 5-ribbed, viscid, glandular anthocarps.

Flowering and Fruiting : Major part of the year.

MEDICINAL USES

1. Half tsp of powdered plant is taken with water, thrice a day in empty stomach to get relief from menstruation troubles.
2. Roots of the plant and black pepper (*Piper nigrum* L.) are mixed together and crushed to obtain paste which is taken once daily in empty stomach for 7 days, for treatment of cold.
3. The paste of the leaves is applied as poultice on boil for early maturation. The paste of root, made after boiling it with soap and salt, is externally used for ripening of boils.
4. The root of the plant is crushed with little amount of water and taken with milk, in the morning, as a tonic and also to treat malaria.

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

ORIYA NAME : Sadabihari

FAMILY : Apocynaceae

HABIT & HABITAT

An erect, annual herb, a native of Madagascar, occasionally found wild but commonly grown in gardens throughout the country.

PLANT DESCRIPTION

A much branched, handsome, annual herb; leaves opposite, deep green, oval, oblong or obovate, glossy, slightly foetid; flowers fragrant, white to pinkish purple in terminal or auxiliary cymose clusters ; follicle hairy, many seeded; seeds oblong, minute, black.

Flowering and Fruiting : Throughout the year

MEDICINAL USES

1. Pasty mass of fresh twig with two leaf buds is taken with slight hot water in empty stomach for one month as a curative for diabetes.
2. Water Soaked dried roots ground along with ginger and taken orally to relieve stomach

10. *Centella asiatica* (L.) Urban

ORIYA NAME : Thalkudi

FAMILY : Apiaceae

HABIT & HABITAT

A prostrate, faintly aromatic, stoloniferous perennial herb, commonly found as a weed in crop fields and other moist places of India.

PLANT DESCRIPTION

A prostrate, slender, herbaceous, creeping perennial with rooted nodes and long inter~ nodes; leaves fleshy, simple with elongated petioles and sheathing leaf bases, broadly cordate, orbicular-reniform, crenate-dentate, smooth on upper surface and sparsely hairy on the lower; flowers red, pink or white, in fascicled umbels; fruits oblong, dull brown, laterally compressed, pericarp hard and thickened.

Flowering and Fruiting : April-October

MEDICINAL USES

1. Leaves are taken to improve memory and serve as a nerve tonic. 3-4 fresh leaves with 11-12 black peppers are given to children to improve the memory.
2. Two to three tsp of leaf paste is administered, empty stomach, for 2-3 days in dysentery.

11. *Chlorophytum tuberosum* Baker

ORIYA NAME : Safed Musali

FAMILY : Liliaceae

HABIT & HABITAT

Herbs commonly found in deep forest patches of Orissa and Northern Peninsular India.

PLANT DESCRIPTION :

An annual herb with a short, hard root stock having fascicled roots ; leaves sessile, membranous, usually uniform, falcate, acuminate, margins crisped or undulate ; scape- terete, naked, usually longer than the leaves; flowers white, in simple or shortly branched racemes; pedicels jointed below the middle; capsule obovoid, emarginated, shining, transversely veined ; seeds black.

Flowering and Fruiting : July to November.

MEDICINAL USES

1. Roots are used as a vegetable by the tribals and considered to be a tonic and aphrodisiac and powdered tubers are used for the treatment of leucorrhoea.

12. *Costus speciosus* (Koenig) Sm..

ORIYA NAME : Panikenduli

FAMILY : Zingiberaceae

HABIT & HABITAT

A succulent herb, found throughout Orissa and India in moist localities.

PLANT DESCRIPTION

A succulent, annual herb with spirally twisted leafy stem and horizontal rhizomes; leaves simple, spirally arranged, oblanceolate or oblong, glabrous above, silky pubescent beneath; flowers white, large, fragrant, in dense terminal spikes; bracts bright red; fruits globose or ovoid capsules; seeds sub-globose or obovoid.

Flowering and Fruiting : August to November

MEDICINAL USES

1. The juice of the rhizome is applied on head for cooling and to relieve headache and the juice of the rhizome is poured in the ear to relieve Ear ache.
2. Paste of rhizome is prepared and taken twice daily with water for intestinal worms.

13. *Curcuma amada* Roxb.

ORIYA NAME : Ambaada

FAMILY : Zingiberaceae

HABIT & HABITAT

A rhizomatous herb, cultivated throughout Orissa and India.

PLANT DESCRIPTION

A rhizomatous aromatic herb; leaves long, petiolate, oblong-lanceolate, tapering at both ends, glabrous green on both sides; flowers white or pale yellow in spikes in the centre of the tuft of leaves, lip semi-elliptic yellow 3-lobed, the mid-lobe emarginate.

Flowering and Fruiting : Rainy season

MEDICINAL USES

1. The rhizomes are aromatic, cooling, appetizer, carminative, stomachic, demulcent, laxative, diuretic, expectorant, anti-inflammatory, antipyretic and useful in vitiated conditions of pitta and skin diseases.

14. *Gloriosa superba* L.

ORIYA NAME : Panchangulia

FAMILY : Liliaceae

HABIT & HABITAT

A perennial branched herbaceous climber, common in forest of Orissa and throughout India and in Andaman Islands.

PLANT DESCRIPTION :

A handsome, herbaceous, tendrillar climber with underground cylindrical white tuberous rhizome; leaves alternate, sessile or nearly so, ovate-lanceolate, with acuminate tips spirally twisted to serve as tendrils; flowers showy, large, solitary or corymbose with perianth segments which have wavy margins, greenish at first, becoming yellow and finally scarlet or crimson; fruits linear-oblong capsules, seeds many, rounded.

Flowering and Fruiting : August, October

MEDICINAL USES

1. Root, made into paste with mustard oil, is applied on body for curing periodic fever. This should be continued for four days and the juice of leaves and roots is applied externally as an antibiotic for poisonous insect bites.

15. *Phyllanthus amarus* Schum. & Thonn.

ORIYA NAME : Pithipatra

FAMILY : Euphorbiaceae

HABIT & HABITAT

An erect annual herb, found as a weed in cultivated and wastelands, throughout the hotter parts of Orissa and India.

PLANT DESCRIPTION

A glabrous, branched annual herb with slender, spreading, leaf-bearing branchlets; leaves numerous, distichous, sub-

sessile, elliptic-oblong, obtuse, base rounded; flowers yellowish, greenish or whitish, axillary; male flowers in groups of 1-3, female flowers solitary; fruits depressed-globose, smooth, capsules underneath the branches; seeds trigonous, pale brown with longitudinal parallel ribs on the back,

Flowering and Fruiting : July-October

MEDICINAL USES

1. Root extract (50ml) is taken in empty stomach for seven days as curative treatment for jaundice.

16. *Plantago ovata* Forsk.

ORIYA NAME : Bhusi

FAMILY : Plantaginaceae

HABIT & HABITAT

Annual herb, cultivated in various parts of India but chiefly in Gujarat.

PLANT DESCRIPTION :

A stem less or sub-caulescent softly hairy or woolly annual herb; leaves narrowly linear or filiform, entire or distantly toothed; flowers in cylindric or ovoid spikes; capsules ellipsoid, obtuse, the upper half coming off as a blunt conical lid, membranous, glabrous; seeds ovoid-oblong, boat-shaped, smooth, yellowish brown.

Flowering and Fruiting: March-April

MEDICINAL USES

1. Dried seeds and husk (Hindi- 'Subgol-ki~bhusi') emollient, demulcent and laxative, used in chronic constipation, dysentery and diarrhoea and inflammatory conditions of gastrointestinal and genito-urinary tract. Mucilage present mainly in the husk.

17. *Hedychium spicatum* Buch.-Ham. ex Smith

ORIYA NAME : Hedychium

FAMILY : Zingiberaceae

HABIT & HABITAT

A rhizomatous herb, occurring mainly in different parts of western and central India

PLANT DESCRIPTION

A perennial rhizomatous herb; rhizome horizontal, fleshy, bearing erect leafy shoots; leaves large with long clasping sheaths, sessile, Oblong, lanceolate, acuminate, glabrous, beneath; flowers white, fragrant, ascending, dense terminal spikes ; capsule oblong, glabrous; seeds many, arillate.

Flowering and Fruiting : August to October

MEDICINAL USES

1. Small piece of fresh rhizome..(about 10 g) is partially cooked in burning flame and chewed with one glass, of hot milk for the treatment of asthma and internal injury.

The investigations revealed the medicinal plants of 17 species of 17 genera belonging to 13 families. Among all the species, Herbs are found to be more (9) followed by Rhizome (3), Creeper (3) and Climber (2) .The use of plant resources as remedies is probably as ancient as man himself. The aforesaid uses are the ones practiced in day-to-day life of local people living around the denudated forest patches . The use of traditional medicine for various

disease and disorders is widespread in Orissa and in this region with higher percentage of the population relying on it.

Conclusion

Traditional healthcare practices of indigenous people pertaining to human health are termed as ethnomedicine. Ethnomedicine is the mother of all other systems of medicine. Recently the importance of these traditional medicines has been realized worldwide as some of them proved to be very effective (Marini-Bettolo, 1980) and some other prescriptions of these traditional healers may be of benefit to human kind when thorough scientific analysis is conducted into their properties. The study revealed that whatever knowledge on plants exists with the people of Khurdha district of Chandaka areas, they are on fast declining because lack of interest of local youth to learn the traditional knowledge from the old herbal healer. The highly interesting findings for Gynecological disorder require further research, while the efficacy of the various indigenous practices will need to be subjected to pharmacological validation. Therefore, greater efforts are required to document traditional knowledge of the local people so as to prepare a comprehensive account of it, which will open new vistas in plant research which is much more safe, less costly and Eco-friendly.

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