

## MEDICINAL PLANTS USED BY TRIBALS OF MAYURBHANJ (ORISSA)

V. MUDGAL AND D. C. PAL

*Botanical Survey of India, Howrah*

## ABSTRACT

The traditional uses of medicinal plants by tribals of Mayurbhanj (Orissa) have been compared with the biological activity reported in experimental reports. While some of the tribal claims are supported by the experimental reports some require to be studied experimentally as well as clinically.

The present study is based on the plants collected from Poradiha, Bhanjabasa and Meghasini of Baripada forest division, Mayurbhanj (Orissa) in March, 1980. This area is inhabited chiefly by the Sabars, Santals, Bhumij etc. The traditional uses of plants by those tribals for medicinal purposes are recorded in Table-1.

A comparison of these uses with the reported therapeutic and pharmacological value of plants has been made (Table-1). It would be seen from the table that some of

the tribal claims are justified from existing experimental reports. However, more clinical and experimental verification is required for the others.

*Andrographis paniculata* (Burm. f.) Wall. ex Clarke, *Embllica officinalis* Gaertn., *Holarrhena antidysenterica* Wall., *Strychnos nux-vomica* L., *Terminalia belerica* Roxb., and *T. chebula* Retz. were also found and used by the tribals but their frequency in this forest is negligible.

Table 1

Abbreviations : Fl = Flower, Fr = Fruit, Lf = Leaf, Pl = Whole plant, Px = Plant without root, Rb = Root bark, Rt = Root, Sb = Stem bark, Sd = Seed, St = Stem

| Botanical name followed by field no. of voucher Specimens, Local name, Locality and Family                      | Traditional uses   | Pharmacological action and Therapeutic uses as mentioned in Ayurvedic texts and experimental reports. Number in bracket corresponds to the reference cited. | Remarks   |
|---|--|---|---|
| 1   | 2  | 3   | 4   |
| <b><i>Aristolochia indica</i> L.</b><br>18306, Iswar-mula, Puradiha. (Aristolochiaceae)                         | Rt decoction with 7-black pepper is given as medicine in fever                     | Pl diuretic (7) ; Rt tonic, stimulant in fever (3) ; cure syphilis (15) and fever etc. (4)  | Use appears justified   |
| <b><i>Bridelia crenulata</i></b><br>Roxb. <i>B. retusa</i> Spreng, 18313, Kosi-gacha, Puradiha. (Euphorbiaceae) | Sb decoction with country liquor is given after manstruation to prevent pregnancy. | Rt and Sb astringent (3) Sb antiviral, anticancer, effect respiration, cardiovascular system, not tested for antiferility activity (2).                     | Experimental testing for anti-fertility activity is required. |

Date of receipt: 20.9.80. Date of acceptance: 5.5.81

| 1  | 2  | 3   | 4   |
|--|--|---|---|
| <b>Butea monosperma</b> (Lamk.) Taibert<br><i>B. frondosa</i> Koenig ex Roxb. 18331, Gachpalas, Poradiha. (Fabaceae) | In stomach diseases. Sd after removing the Sd coats are made into powder and mixed with country liquor and given for 3 days after menstruation as medicine to prevent pregnancy. | Sd effective in roundworm infection (9). In constipation, skin, anthelmintic diseases etc. (17, 4). Fl astringent, diuretic (3). Fland Sd have no significant biological activity (6). Antiestrogenic activity at higher doses in Fl (13). No activity in Fl but Sd show antifertility activity (10). Insignificant antifertility activity in flowers (11). | Some experimental trials confirm the antifertility potentiality. The possibility of regional variations in medicinal activity cannot be ruled out for contradictory reports. It seems that the drug needs to be studied by clinical trials. Due to its anthelmintic property the use for stomach trouble by tribals seems to be reasonable. |
| <b>Butea superba</b> Roxb. 18304, Lat-palas, Poradiha. (Fabaceae)  | Uses of Fl and Sd are similar to <i>B. monosperma</i> . Bark juice for new cuts.   | Px devoid of any biological activity (2). Lf in heat eruption of child (3). Sd anthelmintic (8). The flower shows somewhat same chemical composition to <i>B. monosperma</i> (16).  | No experimental report available for wound healing and antifertility activity.  |
| <b>Casearia elliptica</b> Willd. <i>C. tomentosa</i> Roxb. 18336, Masli-bisa, Poradiha. (Flacourtiaceae)             | Fruits are crushed and thrown in water for poisoning the fishes.   | Fr diuretic (4). Fr fish poison, Sb in dropsy (3). Px antiviral activity and effect respiration (1).  | —   |
| <b>Clausena excavata</b> Burm. 18345, Agnijal, Bhanjbasa (on way to Meghasini) (Rutaceae)                            | Rt decoction in malarial fever.  | Diuretic, useful for digestion (3).   | No experimental report available.   |
| <b>Cochlospermum religiosum</b> (L.) Alston 18343, Dalina, Poradiha. (Bixaceae)                                      | Tender fruits are boiled and eaten.  | Gum used as sedative, in cough and gonorrhoea (3). Substitute of <i>Sterculia urens</i> Roxb. and <i>Astragalus gummifer</i> Labill (4). Sb diuretic and effect nictitating membrane (2).   | No report on medicinal value of fruit.  |
| <b>Croton oblongifolius</b> Roxb. 18305, Putla, Poradiha (Euphorbiaceae)   | Decoction of Rb with black pepper is given as medicine for diarrhoea and dysentery.  | Bark and Rt purgative, bark useful in liver diseases (3). Rb in inflammation, fever etc. (4). Px effect nictitating, membrane, neuromuscular transmission and isolated heart (2).   | A purgative can not be effective in diarrhoea.  |
| <b>Cryptolepis buchana</b> Roem. & Schult. 18332, Kongha, Poradiha. (Asclepidaceae)                                  | Rb made into paste with water and applied after warming as medicine for rheumatism.  | Cure ricketts in children (12). Lf toxic (3). Effect blood pressure, central nervous system and possesses anti-amphetamine activity (1). In gout diseases of joints (15).   | —   |
| <b>Dendrophthoe falcata</b> (L. f.) Etting, <i>Loranthus falcatus</i> L. f. 18325, Banda, Laximpur. (Loranthaceae)   | Sb decoction with country liquor is given for preventing pregnancy.  | Sb astringent, narcotic disorder, asthma, mania (3). Px antiviral activity, effect respiration and blood pressure (1). Sb in menstrual troubles (3).  | According to a number of persons of Luxmipur even the single dose of the plant solves the purpose of antifertility. One person cautioned the authors for not giving high doses. However, critical experimental trials are required to reach any valid conclusion.   |
| <b>Ehretia acuminata</b> R. Br. <i>E. laevis</i> Roxb. 18340, Pan-gacha, Poradiha (Ehretiaceae)                      | Sb chewed to heal young sores.   | Px devoid of any biological activity (2).   | —   |
| <b>Entada pursaetha</b> DC <i>E. scandens</i> Benth. 18357, Gila-phal, Meghasini. (Fabaceae)                         | Cotyledons are powdered and boiled with water. The vapours relieve watering eyes.  | Seed poisonous and anti inflammatory (3). Px effect central nervous system and cardiovascular system (7).   | —   |

| 1   | 2   | 3   | 4  |
|---|---|---|--|
| <b>Garcinia xanthochy-mus</b> Hook. f. ex T. Anders. 18348, Chero-gacha, Bhanjbasa. (Clusiaceae)                              | Green as well as ripe Fr are eaten  | Fr anthelmintic, cardiotonic, improve appetite and allays thirst (3).   | —  |
| <b>Helicteres isora</b> L. 18321, Atmura, Poradiha (Sterculiaceae)  | Fr decoction in fever due to cough and cold.  | Fr demulcent, astringent and used in flatulence of children (3). Effect isolated issue (guineapig ileum) (1).                                   | —  |
| <b>Holoptelea integrifolia</b> (Roxb.) Planch., <i>Ulmus integrifolia</i> Roxb. 18335, Chorla, Poradiha. (Ulmaceae)           | Sb paste with water applied to treat ring-worm infection and scabies.   | Sb anti-inflammatory. Sd in ringworm (4). Sb devoid of any biological activity (1).   | Efficacy of the drug seems to be doubtful.   |
| <b>Plumbago rosea</b> L. <i>P. indica</i> L. 18338, Lalchandua, Poradiha. (Plumbaginaceae)                                    | St latex applied on head to cure headache. Rb paste with water applied locally in rheumatic pain in joints.                             | Rt in rheumatism (3). Poisonous in high doses and stimulant in low doses (4).   | —  |
| <b>Rubia cordifolia</b> L. <i>R. murijista</i> Roxb. 18350, Alti, Bhanjbasa. (Rubiaceae)                                      | Rt decoction in urinary trouble. Rt are boiled in water and used as dye.  | Rt tonic, astringent ; St in cobra bite and scorpion sting (3). Px hypoglycaemic activity and effect central nervous systems (5).               | Diuretic activity of Rt is to be tested.   |
| <b>Schrebera swietenoides</b> Roxb. 18318, Aksia, Poradiha. (Oleaceae)  | Fr in treatment of 'Aksir' (hydrocoel).   | Rt in leprosy (3). Sd antidysentric, medicorelogious use of Fr to treat 'Aksir' of children in Bihar (4). Px effect central nervous system (2). | —  |
| <b>Smilax perfoliata</b> Lour. <i>S. proliфера</i> Wall. & Roxb. 18312, Ramdatun, Poradiha (Smilacaceae)                      | Rt powder taken with rice powder in the form of cake to cure white and blood discharge with urine.                                      | Rt for blood dysentery and treats 'aradaud' a urinary complaint in which urine is dark and reddish (3).   | Not tested experimentally.   |
| <b>Soyimida febrifuga</b> A. Juss. 18342, Sawam, Poradiha. (Meliaceae)  | Sb decoction is given in fever.   | Sb astringent, used in intermittent fever (3). Sb effect central nervous system (2).  | —  |
| <b>Strychnos potatorum</b> L.f. 18303, Kothaka, Poradiha. (Loganiaceae)   | Sd with pulp are crushed and thrown in stagnant water for poisoning the fishes. Powder of the seed is taken as raw for sedative effect. | Sd contains brucine, local application in eye diseases ; in dysentery, diabetics and gonorrhoea (3).  | Effective due to brucine, sometimes used as adulterant of <i>S. nux-vomica</i> in pharmacopoeal preparation. |
| <b>Thysanolaena maxima</b> O. Ktze. 18339, Phul-jharu, Bhanjbasa. (Poaceae)   | Fl paste with country liquor given after menstruation to prevent pregnancy.   | Pl effect isolated ileum (6).   | Not tested for antifertility activity.   |
| <b>Ventilago calyculata</b> Tul. 18334, Piskogacha, Poradiha (Rhamnaceae).  | St cut into pieces and blown by mouth. Thus oozed water drops are drunk.  | Bk juice relieves pains of malarial fever (3). Pl effect central nervous system (2).  | —  |
| <b>Xantolis tomentosa</b> (Roxb.) Rafinesque. <i>Sideroxylum tomentosum</i> Roxb. 18302, Jastimadhv, Bhanjabasa (Sapotaceae). | Sb decoction in cough and cold.   | —   | The plant is not reported as of medicinal value in literature.   |

## ACKNOWLEDGEMENTS

The authors are grateful to the Director and Joint Director, Botanical Survey of India for encouragement. Thanks are also due to the Forest Department, Government of Orissa for necessary help during the course of study and to the tribals of Sabar and Santal communities (particularly Sarvashri Ishwar and Santosh of Laxmipur) and a local Kaviraj for supplying the formation of uses of plant medicines in the field.

## REFERENCES

1. BHAKUNI, D. S., M. L. DHAR, M. M. DHAR, B. N. DHAWAN AND B. N. MEHROTRA. Screening of Indian Plants for biological activity : Part II. *Indian Journ. Exp. Biol.* 7: 250-262. 1969.
2. —, —, —, —, B. GUPTA AND R. C. SRIMAL. Screening of Indian Plants for biological activity : Part III. *Ibid.* 9 : 91-102. 1971.
3. CHOPRA, R. N., S. L. NAYAR AND I. C. CHOPRA. Glossary of Indian Medicinal Plants. Council of Scientific and Industrial Research, New Delhi. 1956.
4. CHUNKEKAR, K. C. Bhavprakasa Nighantu, Chukhambha Shanskrit Sansthan, Varanasi, 1979.
5. DHAR, M. L., M. M. DHAR, B. N. DHAWAN, B. N. MEHROTRA AND C. ROY. Screening of Indian Plants for biological activity : Part I. *Indian Journ. Exp. Biol.* 6: 232-247, 1968.
6. —, —, —, —, R. C. SRIMAL AND J. S. TANDON. Screening of Indian Plants for biological activity : Part IV. *Ibid.* 43-54. 1973.
7. DHAWAN, B. N., G. K. PATNAIK, R. P. RASTOGI, K. K. SINGH AND J. S. TANDON. Screening of Indian Plants for biological activity : Part VI. *Ibid.* 15: 208-219. 1977.
8. INAMDAR, N. C. AND H. H. SIDDIQUI. A note on *B. superba* seeds. *Ind. Journ. Pharm.* 25: 102. 1963.
9. KALEYSARAJ, R. AND P. A. KURUP. Investigation on the anthelmintic principle of *B. frondosa* seeds. *Ibid.* 24: 63: 1962.
10. KHANNA, U., S. HANDA AND R. R. CHAUDHURY. The effect of *B. monosperma* (Lamk.) Kuntze on the fertility of female rats. *Ibid.* 28 (12) : 343. 1966.
11. KHOLKUTE, S. D., V. MUDGAL AND P. J. DESHPANDE. Screening of indigenous medicinal plants for antiferility potentiality. *Planta Medica* 29(2) : 151-155. 1976.
12. KIRTIKAR, K. R. AND B. D. BASU. Indian Medicinal Plants. Allahabad. 1935.
13. LUMAS, K. P. AND J. P. UNIYAL. Preliminary report on oestrogenic activity of petals of *Butea frondosa* flowers. *Indian Journ. Exp. Biol.* 4(4): 246. 1960.
14. MURTI, V. V. S., S. NEELAKANTANAN, T. R. SHESHADRI AND B. VENTATARAMONI. Some special chemical components of commercial weed and related plant materials : Part VIII—Heart wood of *Morinda tinctoria* Roxb *Journ. Sci. & Industr. Res.* 18B : 367-70. 1959.
15. PANIGRAHI, G. Gandhamadan Parbat, Orissa--A potential source of important indigenous drugs. *RRL Bull.* 1(2) : 111-116. 1963.
16. RAO, V. S. AND T. R. SHESHADRI. Chemical composition of the flowers of *B. superba*. *Journ. Sci. & Industr. Res.* 8B(10) : 178. 1947.
17. RAY, P. AND H. N. GUPTA. Caraka Samhita (A scientific synopsis). New Delhi. 1965.