

ETHNO-MEDICO-BOTANICAL KNOWLEDGE FROM KAUKHALI PROPER AND BETBUNIA OF RANGAMATI DISTRICT

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Abstract

A survey was carried out between July 2001 and June 2002 in Kaukhali proper and Betbunia area of Rangamati district to document the medicinal plants of that area and their uses. During this work 34 species representing 23 genera and 17 families were found, which are used by the Chakma and Marma tribes and the Bangalis living there for the treatment of 31 diseases. Botanical and tribal names of the plants, parts used, name of the diseases, and name of the users have been mentioned.

Introduction

Kaukhali proper is about 10 km west to Rangamati town. Betbunia is a Union under Kaukhali P.S. situated about 9 km south of Kaukhali proper and about 18 km south-west to Rangamati town. Being a hilly area they are rich in floral diversity. Inhabitants of those areas are mostly tribal, dominated by Chakma and Marma. Many of them still depend on local medicinal plants for the treatment of different diseases. A good number of Bangali families are also living there. They also use quite a good number of medicinal plants for the treatment of different diseases. In recent years due to development of good communication, modern doctors and medicines have reached there, resulting decline in the use of traditional medicine. Therefore the knowledge of traditional use of medicinal plants by the local people is likely to be lost in near future, and for this it is necessary to document as much as possible the existing available information.

Only a limited work has been done on the tribal folk medicine in the Chittagong Hill-Tracts i.e., Alam 1992, Chakma, *et al.* 2003, Rahman *et al.* 1998; Rahman and Uddin 1998, Rahman 2003, Uddin 2001, Yusuf *et al.* 2002. Keeping this in mind this survey was done to document those valuable ethno-medico-botanical knowledge. The survey was carried out for about a year. During this work 34 species representing 23 genera and 17 families were documented which are used for the treatment of 31 diseases. Local names of those plants, parts used, method of use and doses are mentioned.

Materials and Methods

Uses of medicinal plants have been documented on ethnobotanical data sheet by interviewing tribal healers and elderly people of the study areas, namely, Kaukhali and Betbunia. The study was made for about one year, between July 2001 and June 2002 by repeatedly visiting the areas in different seasons to get the information on the plants. The information were verified by repeated inquiries and asking the tribal healers as far as possible. The voucher specimens of most of the species have been collected, identified and preserved in the herbarium of BCSIR Laboratories, Chittagong. Plants are arranged alphabetically by their botanical names followed by tribal names, family names and voucher number. In case of most common and well-known plants voucher number has not been mentioned.

Results and Discussion

Data collected on the uses of medicinal plants by the tribes and Bangali of the study areas are given below in the tabular form (Table 1)

Uses of the following 18 plants described above viz., *Abrus sp.*, *Alocasia cuculata*, *Alstonia scholaris*, *Asparagus acerosus*, *Boreria articularies*, *Clerodendrum indicum*, *Costus speciosus*, *Desmodium triquetrum*, *Pavetta sp.* *Leucas zeylanica*, *Leucas aspera*, *Mitracarpus hirtus*, *Ocimum americanum* (citril type), *Plumbago zeylanica*, *Pouzolzia zeylanica*, *Scoparia dulcis*, *Sida orientalis*, *Synedrilla nodiflora* do not match with the reports consulted. Probably the usage is new so far known. Additional uses along with the reported one was documented in case of *Achyranthes aspera*, *Acorus calamus*, *Amaranthus spinosus* and *Rauvolfia serpentina* (Kirtiker and Basu 1975, Alam *et al.* 1996, Khan *et al.* 2002, Chakma *et al.* 2003).

In case of *Cassia fistula* same use was reported for bark and wood (Kirtiker 1975) instead of fruit pulp as recorded here. Marma tribe uses the root of *Plumbago zeylanica* in case of suppression of menses. It has a rational basis, because “plumbagin” contained in the root has stimulant effect on muscular tissue of uterus and on nervous system (Kirtikar and Basu 1975). It was observed during the investigation that tribal of Betbunia and Kaukhali generally use single plant for the preparation of medicine, rarely two or more than two plants. But the Bangalis in Kaukhali were found to use a number of plants instead of single plant. Moreover, they use some minerals also, which was not found in tribal preparations. Probably this is due to the influence of Ayurvedic and Unani systems of medicine on them. The local people reported during the investigations that the number of tribal practitioners has declined to only a few now-a-days than in the past.

Table 1. Ethno-medico-botanical data from Kaukhali proper and Betbunia of Rangamati.

Scientific name, family name, voucher number	Local name	Locality	Diseases	Uses
<i>Abrus precatorious</i> L. (Leguminosae) Voucher No. 1190	Bengali.- Kunch, Rati, Jostimadhu	Kaukhali	Gastric pain	Dry roots of this plant along with the dry leaves of <i>Coccinea cordifolia</i> , <i>Cassia angustifolia</i> and whole herb of <i>Ipomea quamoclit</i> , <i>Cleome viscosa</i> and <i>Clitoria ternatea</i> are pounded together and pills (size of a small marble) made from this is given orally. Dose: 1 tablet daily in the morning with water (Users: Bangali).
<i>Abrus</i> sp. (Leguminosae) Voucher No. 1098	Marma- Yattaripru	Betbunia	Urinary arrest/ Oliguria	Root paste mixed with rice-socked water is prescribed orally. Dose: 1 cup twice daily for 3 days (Users: Marma).
<i>Achyranthes aspera</i> L. (Amaranthaceae)	Marma- Chainchi	Betbunia	Impotency, Jaundice, Dropsy	Root paste is given orally with honey for impotency. Dose: 1 teaspoonful once daily for 3-4 days. In jaundice and dropsy, necklets made of root pieces worn on head and kept till cure (Users: Marma).
<i>Acorus calamus</i> L. (Araceae) Voucher No.1106	Marma- Laonochi	Betbunia	Paralysis, Epileptic faint	Rhizome paste along with the bile of Python and fruits of <i>Myristica fragrans</i> is rubbed on the affected parts in paralysis. Bruised leaves are put before nose of the patient of epilepsy for relief (Users: Marma).
<i>Albizia procera</i> Benth. (Leguminosae)	Chakma- Sadakoroi	Betbunia	Thread worm	Fresh leaves or paste of the young leaves are prescribed orally along with rice. Dose: Teaspoonful of paste twice daily for 2-3 days (Users: Chakma).
<i>Allium sativum</i> L. (Liliaceae)	Chakma- Rasun	Betbunia	Localized baldness (Alopecia)	Blood of <i>Monopteros cuchia</i> is applied over head after cleaning and then paste of garlic is applied along with the jhul i.e., spider net along with dirt (Users: Chakma).
<i>Alocassia cuculata</i> Schott.(Araceae) Voucher No. 1104	Marma- Sapposraku	Betbunia	Hardness of Abdomen (Peterdhola)	Rhizome paste is swallowed along with ripe banana. Dose: About a tablespoonful once daily for 2-3 days (Users: Marma).
<i>Alstonia scholaris</i> (L.) R.Br. (Apocynaceae) Voucher No. 1100	Marma- Chailoi	Betbunia	Arthritic pain	Leaf paste is warmed and applied as a poultice twice daily over affected parts. (Users: Marma).
<i>Amaranthus spinosus</i> L. (Amaranthaceae)	Chakma- Kata marish	Betbunia	Fever and Ranikhet disease in chicken	Root extract along with the fruit of <i>Myristica fragrens</i> is given in fever along with rice soaked water. Dose: Half glass twice daily for three days. Infant dose is half. In ranikhet of chicken root juice mixed with boiled rice and cow dung is prescribed. Dose: Half teaspoon 2-3 times a day (Users: Chakma).

Scientific name, family name, voucher number	Local name	Locality	Diseases	Uses
<i>Asparagus acerosus</i> Roxb. (Liliaceae) Voucher no. 1097	Marma-Saktichara, Chulanopay	Betbunia	Arthritis, leucorrhoea, abdominal pain	Paste of the roots along with other ingredients is given orally. Dose: One teaspoon twice daily for a week for arthritis and leucorrhoea and one table spoon twice for one day in abdominal pain (Users: Marma).
<i>Borreria articularies</i> (L.f.) F.N.Will. (Rubiaceae) Voucher no. 1162	Bengali – Ekdaira	Kaukhali	Bronchitis	Dried leaves of this plant along with the leaves of <i>Nyctanthes arbortristis</i> is grind together and tablet (size of a pea) made and given orally. Dose: 1 tablet twice daily for 15 days (Users: Bangali).
<i>Cassia alata</i> L. (Leguminosae)	Chakma- Dadgach	Betbunia	Thread worm	Decoction of the leaves is prescribed orally before meal at night. Dose: One glassful for 2 days (Users: Chakma).
<i>C. fistula</i> L. (Leguminosae)	Marma- Miaopiga	Betbunia	Dysentery	Inner portion of the young fruit is prescribed orally. Dose: Small amount (5-6 gms) twice daily for a week (Users: Marma).
<i>C. occidentalis</i> L. (Leguminosae) Voucher No. 1101	Marma- Kajor	Betbunia	Respiratory problem	Decoction of the leaves is prescribed orally. Dose: Half cup of decoction twice daily for 2-3 days (Users: Marma).
<i>Clerodendrum indicum</i> (L.) Kuntze. (Verbenaceae) Voucher No. 1196	Bengali- Ekdaira gach	Kaukhali	Carbuncle	Leaves of the plants along with the whole herb of <i>Commelina diffusa</i> , <i>Cynodon dactylon</i> and <i>Plumbago indica</i> is made into paste and applied over the carbuncle. It is applied after washing with warm water and continues for a week (Users: Bangali).
<i>C. viscosum</i> L. (Verbenaceae) Voucher No. 1096	Marma- Vegach	Betbunia	poisonous insect bite	Paste of few young leaves is applied as a poultice on the affected area (Users: Marma).
<i>Costus speciosus</i> (Koinig) Sm. (Costaceae)	Marma- Kedogi	Betbunia	Pus in ear	Juice of the roasted stem of the plant is squeezed out and given as a drop in ear. Dose: few drops 2-3 times a day for three days (Users: Marma).
<i>Cyathula prostrata</i> Bl. (Amaranthaceae) Voucher no. 1086,1163	Chakma & Bangali – Uphutlengra	Betbunia and Kaukhali	Urinary calculi, Headache	In Betbunia, red iron dipped in to the juice of the root and the juice is prescribed orally for urinary calculi. Dose: Half cup of juice twice daily. In primary stage 3 doses only. In Kaukhali garland made from the root pieces is tie on head to get relief from headache (Users: Chakma & Bangali).

Scientific name, family name, voucher number	Local name	Locality	Diseases	Uses
<i>Desmodium triquetrum</i> DC. (Leguminosae) Voucher no. 1092	Marma- Pha loy joy	Betbunia	Threadworm, bleeding piles	Decoction of the fresh leaves is prescribed orally. Dose: 2 teaspoon 2-3 times a day for 2-3 days in both the cases (Users: Marma).
<i>Holarrhena pubescens</i> (Buch.- Ham.)Wall. (Apocynaceae)	Chakma- Kuruch	Betbunia	Dysentery	Paste of the bark is prescribed along with curd. Dose: 1 table spoon twice daily for three days (Users: Chakma).
<i>Kaempferia parviflora</i> L. (Zingiberaceae) Voucher no. 1089	Chakma- Kala halud	Betbunia	Poisonous insect bite	Paste of the rhizome and leaf is applied as poultice on bite area.
<i>K. rotunda</i> L. (Zingiberaceae) Voucher no. 1105	Marma- Bhujuraphul	Betbunia	Scabies, wound	Paste of the rhizome along with some other ingredients (untoled) is applied as a poultice. It is applied once daily for a week.
<i>Leucas aspera</i> (Willd.) Link. (Lamiaceae) Voucher no. 1164	Bengali – Shetadron, Donkalash	Kaukhali	Earache, arthritic pain	Slightly wormed leaf juice is pour into ear to cure earache. For arthritic pain leaves are cooked and taken as vegetables.
<i>L. zeylanica</i> (L.) R.Br. (Lamiaceae) Voucher no. 1095	Marma- Paichangcha	Betbunia	Convulsion due to fever	Necklet made with the pieces of roots are tie on arms and legs and kept till cures.
<i>Melia sempervirens</i> (L.) All. (Meliaceae) Voucher no. 1157	Bengali - Ghoranim	Kaukhali	Skin disease	Leaf paste of this plant along with camphor, copper sulfate, alum and borax is applied superficially. It is applied twice daily until cure.
<i>Mitracarpus hirtus</i> (Rubiaceae) Voucher no. 1161	Bengali – Padmamukhi	Kaukhali	Blood dysentery	Dried herb, dried mango seed kernel, dried green fruit of <i>Aegle mermelos</i> and fruits of <i>Terminalia balerica</i> is grind together and tablet (size of a pea) made from the powder is prescribed orally. Dose: 2 tablets thrice daily for 5 days.
<i>Ocimum americanum</i> L.- Camphor type (Lamiaceae) Voucher no. 1159	Bengali – Tulsi	Kaukhali	Cataract	Juice of this plant along with <i>Ludwigia hyssopifolia</i> is given in eye as a drop. Dose: Two drops thrice daily for 7-8 days.

Scientific name, family name, voucher number	Local name	Locality	Diseases	Uses
<i>Ocimum americanum</i> L.- Citral type (Lamiaceae) Voucher no. 1090	Chakma-Sabrang	Betbunia	Eye disease of chicken	Leaves rubbed on eyelids 2-3 times daily for 4-5 days.
<i>Pavetta</i> sp. (Rubiaceae) Voucher no. 1102	Marma-Sangraimay	Betbunia	Menstrual irregularity	Root paste of this plant along with the root of <i>Clerodendrum viscosum</i> and <i>Plumbago zeylanica</i> is prescribed orally. Dose: 1 tablespoonful 2-3 times a day for a week.
<i>Plumbago zeylanica</i> L. (Plumbaginaceae) Voucher no.1099	Marma-Kaincho apru	Betbunia	Suppression of menses	Paste of the root along with the root of <i>Clerodendrum viscosum</i> is prescribed orally. Dose: About a tablespoonful once daily for 2-3 days.
<i>Pouzolzia zeylanica</i> (L.) Benn. (Urticaceae)	Chakma-Biskatali	Betbunia	Pustules	Paste made from the leaves of this plant along with the leaves of <i>Sida rhombifolia</i> is applied as a poultice over pustules to hasten suppuration.
<i>Rauvolfia serpentina</i> (L.) Benth.ex Kurz. (Apocynaceae) Voucher no. 1093	Chakma-Surchan	Betbunia	High blood pressure, respiratory problem	Fresh root juice or dried root powder soaked in water is prescribed orally. Dose: 1 teaspoonful twice daily.
<i>Scoparia dulcis</i> L. (Scrophulariaceae) Voucher no. 1165	Bengali - Bondhoinna	Kaukhali	Jaundice	Tablet (size of a pea) made from the whole plant along with cardamom, black pepper and borax are prescribed orally. Dose: 2 tablet twice daily for 2 weeks.
<i>Sida orientalis</i> Cav. (Malvaceae) Voucher No. 1167	Bengali - Bailodi	Kaukhali	Tumor in the uterus	Tablet (size of a marble) made from the leaves of this plant along with the leaves of <i>Melochia chorchorifolia</i> , <i>Ludwigia hyssopifolia</i> and the flower of <i>Nelumbo nucifera</i> are prescribed orally. Dose: 2 tablet daily until cure.
<i>Synedrilla nodiflora</i> Gaertn. (Asteraceae) Voucher no.1094	Marma-Ochonsagor biai	Betbunia	Scabies	Water boiled along with the leaves of this plant is used as a bath for seven days.
<i>Tagetis erecta</i> L. (Asteraceae)	Bengali-Genda	Kaukhali	Piles	Leaves of this plant are pounded along with the fruits of <i>Phyllanthus emblica</i> , <i>Terminalia chebula</i> , <i>T. belerica</i> and roots of <i>Glycyrrhiza glabra</i> and the juice is expressed out. This juice is given orally in piles. Dose: 1-2 tablespoonful once daily for 20-21 days.
<i>Zingiber montanum</i> (Koenig) A.Dietr. (Zingiberaceae)	Marma- Paley	Betbunia	Flatulence	Rhizome paste is prescribed orally. Dose: 1 teaspoon 2-3 times a day.

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References

- Alam, M. K. 1992. Medical ethnobotany of the Marma Tribe of Bangladesh. *Economic Botany* **46**(3): 330-335.
- Alam, M. K., Choudhury, J. and Hassan, M.A. 1996. Some folk formularies from Bangladesh. *Bangladesh J. life Sci.* **8**(1)49-63.
- Chakma, S., Hossain, M.K., Khan, B.M. and Kabir, M.A. 2003. Ethno-botanical knowledge of Chakma community in the use of medicinal plants in Chittagong Hill Tracts, Bangladesh. *MFP News*, XIII(3) : 3-7. Dehra Dun, India.
- Khan, M.S., Hassan, M.A. and Uddin, M.Z. 2002. Ethnobotanical survey in Rema-Kalenga Wildlife Sanctuary (Habiganj) in Bangladesh. *Bangladesh J. Plant Taxon.* **9**(1) : 51-60.
- Kirtikar, K.R. and Basu, B.D. reprint 1975. *Indian medicinal plants Vol. I-IV.* Bishen Singh Mahendra Pal Singh, New Connaught Place, Dehraun.
- Rahman, M.A., 2003. Ethno-medico-botanical knowledge among tribals of Bangladesh. *In: Ethnobotany and Medicinal Plants of Indian Subcontinent.* Scientific Publisher, Jodhpur, India pp. 89-93.
- Rahman, M.A., and Uddin, S.B. 1998. Some anti-rheumatic plants used by tribal people of the Hill tracts districts. *Biodiversity Newsletter, University of Chittagong* **2**(2): 4.
- Rahman, M.A., Uddin, S.B. and Khisha, A. 1998. A report on some anti-jaundice plants from tribal community of Hill tracts districts. *Biodiversity Newsletter, University of Chittagong* **2**(1): 4.
- Uddin, S.B. 2001. A comparative ethnobotanical study among the tribal communities of Chittagong Hill-Tracts. Bangladesh. Ph.D. thesis submitted to the University of Aberdeen.
- Yusuf, M., Rahman, M..A., Chowdhury, J.U. and Begum, J. 2002. Indigenous knowledge about the use of Zingibers in Bangladesh. *J.Econ. Taxon. Bot.* **26**(3): 566-570.