

## Research Paper

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# Ethnomedicinal study of the Marma community of Bandarban district of Bangladesh

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## ABSTRACT

An ethnomedicinal survey of the Marma indigenous community, living in the Bandarban district of Bangladesh was carried out in order to document the utilization of medicinal plants by them. Information was documented from elderly men and women as well as from the professionals (Baidya). A total of 66 species, in 62 genera and 38 families were documented which is known to be used for the treatment of 40 diseases/illness. Voucher specimens were collected during the documentation and preserved at the Herbarium of Chittagong University (CTGUH). An enumeration of the species have been presented with their botanical name following the family name in bracket, Bangla name, indigenous name, mode of preparation, doses and with the mode of application. Ecology of the species along with their frequency of distribution has also been presented.

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## INTRODUCTION

Ethnobotany is the study of the relationship between plants and people: from "ethno" - study of people and "botany" - study of plants. Ethnobotany is considered a branch of ethnobiology. Ethnobotany studies the complex relationships between (uses of) plants and cultures. The focus of ethnobotany is on how plants have been or are used, managed and perceived in human societies. Different ethnic groups of Bangladesh and their colorful lifestyles have significantly enriched the entire culture of Bangladesh. For centuries, Bangladesh has been the dwelling place of different ethnic groups. In fact, 35 smaller groups of indigenous people covering about two percent of the total population have been living in different pockets of the hilly areas and as well as plain lands of the country (Uddin, 2010). With a marked concentration of 13 ethnic groups in the Chittagong Hill Tracts [CHT], the rest of the ethnic groups live in scattered settlements throughout the country. The existence of numerous ethnic groups has

enriched the human geography of the region that exhibits cultural and social diversity.

Bangladesh is endowed with vast resources of medicinal plants. More than five thousands of angiospermic species have been estimated which are found in Bangladesh (Pasha and Uddin, 2013). Among them, 750 species have been reported to be used in traditional medicines for the treatment of several diseases (Yusuf et al., 2009). Some medicinal plants from Bangladesh are used in the preparation of alternative medicine namely; Kabiraji, Hakimi, Unani, Ayurvedic, Homeopathic and as well as Allopathic systems of medicine (Chopra et al., 1982; Kritiker and Basu, 1993). The use of plants as medicine is getting important day by day.

Hutchinson (1909) was one of the pioneers of ethnobotanical study in this subcontinent as well as in Bangladesh. The earliest reference to the uses of plants by Bangla tribes is found in Lewin (1912). Several workers

works in this purposes in the Indian subcontinent but Rajput (1965) worked on the tribes of CHT and it was the start of ethnobotanical work in Bangladesh. Thereafter Sirajuddin (1971), Saigal (1978), Tanchangya (1982), Shelly (1992) have worked on this line but these are less detailed and largely dependent on Hutchinson's earlier work. Khan and Huq (1975), Hassan and Khan (1986); Mia and Huq (1988) also worked on some medicinal plant of Bangladesh.

The CHT is situated in the interior of Bangladesh and has not been accessed for many years due to rivalry problems. However, the available scattered information on the plant uses by tribes of the area is reviewed here. The maximum works have been done after 1990. Kadir (1990) worked on medicinal plant of Bangladesh and their conservation strategy. Alam (1992, 1998) documented the ethnobotanical information and medicinal plant used by Marma. Several work was also done by Tanchangya (1982), Chakma (1992, 1993), Hasan and Huq (1993), Tripura (1994), Yusuf et al. (1994), Hasan and Khan (1996) on this field. The most recent work was done by Gain (2000), Baker and Momen (2001), Millat-e-Mustafa et al. (2001), Khan et al. (2002), Rahman et al. (1998, 2000, 2003, 2007), Anisuzzaman et al. (2007), Uddin et al. (2008), Uddin (2010).

## METHODOLOGY

In this study, data have been documented by following the field interview, plant interview and group interview techniques. During the field interview, the information has been noted in the documentation data sheet. In addition audio recordings have been done with a digital voice recorder in order to document accurate data and as an historical document. Taping is faster and more accurate than note taking and allows interviewers to maintain a more free-flowing conversation during the interviews (Rao and Henry, 1996), (Alexiades, 1996), (Cotton, 1997).

All the information regarding plant species, habitat, Bangla names, availability and uses has been recorded. Ethnobotanical information was obtained through informal interviews conducted during the same period with "baidyas", indigenous leaders and elderly people. Several techniques have been used for interviewing according to the situation to gather ethnobotanical data. Mostly Semi structured and Open- ended interview techniques have been adopted.

All voucher specimens have been collected during documentation and preserved in the Chittagong University Herbarium (CTGUH). The specimens have been identified consulting with the experts, through several herbarium studies by comparing herbarium specimens and studying several available literatures. The description and the current nomenclature have been compared with Pasha

and Uddin (2013).

## Enumeration

The species have been arranged alphabetically following their botanical name and the family in the bracket and voucher number has attributed at the end of species name. Bangla and indigenous name, short botanical description with the status of the species, traditional uses and mode of administration have been presented respectively.

### *Achyranthes aspera* L. (Amaranthaceae) [RM 4].

Bangla name: Apang

Marma name: Merokh

An erect, diffuse herb, fine-pubescent. Leaves are simple, opposite, decussate, obovate-orbicular, entire, round. Flowers greenish-white, in terminal spikes. Fruits deflexed. Seeds shining. Common in wasteland.

**Information for usage:** Root chewed daily to relief toothache.

Leaf is given as eye drops in hysteria (Alam. 1992).

### *Achyranthes aquatica* L. (Amaranthaceae) [RM 27].

Bangla name: Jal apang

Marma name: Nahrangquinlun.

An under shrub. Leaves are opposite, simple, ovate or elliptic. Flowers in terminal spikes, greenish white or pink, deflexed. Fruits utracles. Seeds oblong, brown. Common in marginal land.

**Information for usage:** A piece of root tied with a thread round the neck of children for the treatment of Phobias.

### *Acorus calamus* L. (Araceae) [RM 48, RT 76].

Bangla name: Bach

Marma name: Lanki

Semi aquatic aromatic herb with creeping root stocks. Leaves are simple, sessile, and linear with wavy margins. Flowers in spadix, fruits berries. Rare in marshy area.

**Information for usage:** A piece of root tied with a thread round the head and also use as necklace as a remedy for Phobias at night and in addition paste of leaves are applied to affected areas to treat eczema.

### *Aegle marmelos* (L.) Correa (Rutaceae) [RM 50].

Bangla name: Bel

Marma name: War-e-si apang.

A medium sized thorny tree. Leaves are trifoliolate, ovate, sub-crenulate, acute, glabrous. Flowers white, in auxiliary panicles. The fruit is a large globose berry. Seeds embedded in fleshy pulp. Occasionally found around the house.

**Information for usage:** It is suggested to put leaf under the pillow for having good sleep and paste of young leaves is taken to treat insomnia.

**Allium sativum** L. (Liliaceae) [RM 56, RT 79].

Bangla name: Rasun

Marma name: Krachhaipru .

Annual bulbous herb. Bulb scaly grown under ground. Leaves are fleshy, simple, radical, cylindrical and fistular, leaf base sheathing. Flowers are white in cymose umbles. Capsules are small seeds black. It is cultivated in marginal land.

**Information for usage:** Paste prepared from bulb mixed with Black piper (*Piper nigrum*) is taken to treat gastritis.

**Amaranthus spinosus** L. (Amaranthaceae) [RM 74, RT 80].

Bangla name: Kanta notye

Marma name: Krypayen, Chuban.

An erect spinescent herb. Leaves alternate, simple, lanceolate. Flowers in axillary and terminal dense spikes, greenish- white. Fruits capsules. Seeds dark brown. Common in beside the road.

**Information for usage:** Extract prepared from root is taken one cupful twice or thrice daily until cured and it is used for the treatment of malaena (dysentery with blood). Paste prepared from leaf mixed with sugar candy is taken one or two tea spoonful twice/thrice daily for the treatment of dysuria.

**Andrographis paniculata** (Burm.f.) Wall. ex Nees (Acanthaceae) [RM 10].

Bangla name: Kalomegh.

Marma name: Chirota

An erect herb. The slender stem is dark green. The lance-shaped leaves have hairless blades measuring up to 8 cm long by 2.5 wide. The small flowers are borne in spreading racemes. The fruit is a capsule around 2 cm long and a few millimeters wide. It contains many yellow-brown seeds. Frequent in hilly area.

**Information for usage:** Tablet prepared from paste of leaf is taken twice daily for 3 days for the treatment of fever. Extract of leaf is taken one or two tea spoonful twice daily until cured from fever & intestinal worm.

**Asphodelus tenuifolius** Cav. (Liliaceae) [RM 13].

Bangla name: Asfodel

Marma name: Shishong

An annual or perennial herb. Leaves numerous, basal. Inflorescences racemose or paniculate, many-flowered, bracteate. Bracts persistent. Flowers: tepals 6, erect to spreading. Stamens 6, distinct. ovary 3-locular, ovules 1 or 2 per locule. Fruits capsular, globose. Frequent in hilly area.

**Information for usage:** Extract prepared from whole plant taken one or two spoonfuls twice daily for three days for the treatment of bleeding from nostril (Epistaxis), ear (Otorregis) and applied into the anus for intestinal worm.

**Azadirachta indica** A. Juss. (Meliaceae) [RM 43].

Bangla name: Nim.

Marma name: Tamakha.

A large tree. Leaves imparipinnate. Leaflets ovate-lanceate, asymmetrical, serrate. Flowers white, in axillary racemose panicles. Drupes ovoid-oblong, one seeded, seed pendulous. Frequent in hilly area.

**Information for usage:** Leaves and fruits boiled in water and used to take bath twice or thrice daily for three-four days for the treatment of chicken pox and measles.

**Basella rubra** L. (Basellaceae) [RM 34, RT 86].

Bangla name: Puishak

Marma name: Cumbishi.

A climber, stem succulent. Leaves are alternate, broadly ovate, entire, base cordate, apex acute. Flowers in axillary spikes. Utricles globose, red or black. Cultivated in shade of the house. It is common around the house.

**Information for usage:** Paste prepared from leaves applied to the affected areas for burning, in head to reduce headache, general weakness and insomnia twice daily for three days.

**Blumea lacera** (Burm.f.) DC (Asteraceae) [RM 53].

Bangla name: Blumea.

Marma name: Towma.

An erect herb. Stems hairy. Leaves amplexicaule, irregularly toothed. Flowers in heads, unisexual, grayish yellow. Fruits cypselas, minute. Pappus white. Occasional in marginal land.

**Information for usage:** Leaf inhalation used to treat who is possessed by an evil spirit.

**Boehmeria macrophylla** var. *scabrella* (Roxb.) D.G.Long (Urticaceae) [RM 17].

Bangla name: Kankura.

Marma name: Mrangna.

Spreading shrub. Leaves are simple, opposite, sub-orbicular to ovate, acuminate. Flowers greenish-yellow, in long axillary spikes. Seeds obovoid, minute. Rare in beside the road.

**Information for usage:** Extract prepared from leaf is taken twice daily for two-three days to treat piles. In addition warmed water with the leaf extract used to wash anus.

**Bridelia montana** (Roxb.) Willd. (Euphorbiaceae) [RM 7].

Bangla name: unknown.

Marma name: Chichalay.

A large shrub or small tree. Leaves simple, rhombic-obovate, acute. Flowers pale green, in axillary or spicate sessile cluster. Drupes globose. Frequent in Hilly region.

**Information for usage:** Whole plant boiled with water and used to take bath twice or three times daily as a remedy for weak eye sight of old women and in general weakness.

***Butea monosperma*** (Lam.) Kuntze. (Fabaceae) [RM 44].

Bangla name: Polash.

Marma name: Puichowan.

Medium sized tree. Stem with irregular branching. Leaves are pinnately trifoliolate, leaflets coriaceous, obovate, pubescent. Flowers in a dense fascicles, racemose, orange-coloured. Fruits pod, long. Seeds oval, compressed, dark brown. Frequent in hilly areas.

**Information for usage:** Paste of leaf is applied to the affected area. After 24 h skin removed from the affected areas as a treatment for eczema, ring worm and contagious diseases.

***Calotropis gigantea*** (L.) R. Br. (Asclepiadaceae) [RM 31, RT 87].

Bangla name: Akund.

Marma name: Jijonma.

An erect, bushy shrub. Leaves are simple, opposite-decussate, obovate. Flowers purplish-white, in umbellate cymes. Follicles ovoid. Seeds ovate, flat, comose at apex. Frequent around the house and roadsides.

**Information for usage:** Warmed leaf applied to affected areas to remove the thorn (thorn usually removed within one/two hours) and also as a remedy of pain.

***Centella asiatica*** (L.) Urban (Apiaceae) [RM 57, RT 91].

Bangla name: Tankuni

Marma name: Mrungkhoea.

A prostate herb, rooting at nodes. Leaves are simple, orbicular and crenate-dentate. Flowers reddish-white, in axillary umbels. Cremocarps ribbed. Frequent in marginal land.

**Information for usage:** Extract prepared from whole plant is taken to stop vomiting. For the treatment of dysentery and diarrhoea leaf extract is taken one or two cupfuls twice daily for seven days. Paste prepared from leaves is also taken in dehydration.

***Cinnamomum tamala*** (Buch-Ham.) Nees & Eberm. (Lauraceae) [RM 19].

Bangla name: Tejpata.

Marma name: Shifruu.

An evergreen tree. Bark and leaves often aromatic. Leaves are alternate, infrequently opposite. Leaf blade with (1- 3) primary veins. Inflorescences in panicles. Flowers bisexual. Tepals deciduous or persistent. Stamens 9, anthers 4-locular, 4-valved. ovary ovoid-ellipsoid. Drupe bluish black, nearly globose. Rare in hilly areas, often cultivated in home garden.

**Information for usage:** Extract prepared form leaf mixed with mildly hot water is taken two or three tea spoonfuls twice daily for two-three days to treat difficulty of breath during chest pain (dyspnoea).

***Cissus quadrangularis*** L. (Vitaceae) [RM 37].

Bangla name: Harjora

Marma name: Pyandhum

A fleshy, tendrillar climber. Stems quadrangular. Leaves simple, entire or lobed, ovate or reniform. Flowers pale brown, in short peduncled umbellate cymes. Frequent in hilly areas.

**Information for usage:** Latex of leaf applied to the affected areas to remove the thorn with in a few minutes.

***Clerodendrum indicum*** (L.) Kuntze (Verbenaceae) [RM 5].

Bangla name: Bamanhati.

Marma name: Narayanbaing, Narayamblue.

An erect shrub. Leaves simple, linear lanceolate. Flowers in lax cymose panicles, white. Fruits drupes, black when ripe. Frequent in marginal land.

**Information for usage:** Extract prepared from leaves added in water found during washing of rice for cooking is taken one or two cupfuls three times daily until cured to treat irregular menstruation and extract prepared from leaf mixed with zinger and red sandal, taken one spoonful twice daily for seven days for the treatment of jaundice and haematuria (urine become red with irritation).

***Clerodendrum viscosum*** Vent. (Verbenaceae) [RM 70].

Bangla name: Bhaint.

Marma name: Khunka.

A large shrubs; branches 4- angled. Leaves simple, ovate or orbicular, serrate, tomentose beneath. Flowers white, in terminal, sub- corymbose panicles. Drupes bluish- black. Common in Slope of hill.

**Information for usage:** Leaf is used as a masticatory to treat toothache.

***Cymbopogon flexuosus*** (Nees ex Steud.) W.Watson (Poaceae) [RM 69].

Bangla name: Gandhatrina.

Marma name: Chabalan apan.

Perennial herb from a short stout rhizome. Nodes glabrous

or pubescent. Leaf sheaths glabrous, auricles often present; leaf blades linear. Ligule 2-5 mm. Spathate compound panicle very large, lax, decomposed, grayish green. Rachis internodes and pedicels ciliate on margins. Sessile spikelet narrowly elliptic-oblong. Frequent in marginal land.

**Information for usage:** Extract prepared from root is applied to whole abdomen (externally) to treat abdominal pain.

***Cynodon dactylon*** (L.) Pers. (Poaceae) [RM 33].

Bangla name: Durba ghass.

Marma name: Durba.

Perennial creeping grass. Stem prostrate. Leaves short, narrow, flat, subulate, glaucous, ligule hairy; spikelets minute. Spike radiating, green or purplish. Abundant in marginal land.

**Information for usage:** Extract prepared from root is taken twice a day for seven days to treat piles and bleeding from anus.

***Desmodium gangeticum*** L. (Fabaceae) [RM 3].

Bangla name: Salpani

Marma name: Chungmue.

An erect undershrub. Leaf 1-5-foliolate, leaflets petiolulate, stipels 1 in lateral and 2 in terminal leaflet; stipules free or united, striate and ciliate. Inflorescence terminal or axillary. Fruit sessile or stipitate, transversely jointed, articles variously shaped, glabrous to densely pubescent, hairs straight or hooked. Frequent in the slope of hill.

**Information for usage:** Extract prepared from root is taken one or two cupfuls twice a day to treat high blood pressure.

***Eclipta prostrata*** (L.) L. (Asteraceae) [RM 58].

Bangla name: Kalokhesi.

Marma name: Bahushi.

An erect or prostrate herb. Leaves simple, oblong-lanceate, strigose. Flowers white or pale blue, in heterogamous heads; pappus absent. Achenes compressed, black. Common in marginal land.

**Information for usage:** Extract prepared from leaves is taken one cupful twice or three times daily until cured to treat excessive menstruation.

***Enhydra fluctuans*** Lour. (Asteraceae) [RM 35].

Bangla name: Halancha

Marma name: Rohaakhone

Aquatic herb. Rooting at nodes. Internodes hollow. Leaves opposite, linear-oblong, truncate. Flowers in heads, yellow. Fruits achenes, laterally compressed. Frequent in marshy land.

**Information for usage:** Extract prepared from whole plant and filtered extract is taken for the treatment of liver blister. In addition paste prepared from leaf applied to affected areas.

***Euphorbia hirta*** L. (Euphorbiaceae) [RM 65].

Bangla name: Dudhia lata.

Marma name: Chinu.

A prostrate or erect, hirsute herb. Leaves simple, ovate, elliptic or lanceate, serrate, acute. Cyathia greenish, in axillary cymes. Seeds 4-angled. Commonly found beside the roads.

**Information for usage:** Extract prepared from leaves is taken as much as patient can until cured to treat dysentery.

***Ficus scandens*** Roxb. (Moraceae) [RM 1]

Bangla name: Lata dumur

Marma name: Shefung

A climbing herb with milky or watery latex, sometimes spiny. Leaves stipulate, alternate, rarely opposite. Inflorescences axillary, frequently paired, racemose, spicate, capitate, or rarely cymose. Fruit usually a drupe. Seed solitary; endosperm present or absent. Frequent in slope of hill.

**Information for usage:** Stem used as a thread to tie the affected area in fracture and also used in snake bite to tie just over the affected area.

***Flacourtia jangomas*** (Lour.) Raeusch. (Flacourtiaceae) [RM 8].

Bangla name: Paniola.

Marma name: Tamagry.

A medium sized deciduous tree. Leaves are ovate-lanceolate, acuminate. Flowers are greenish yellow or white. Fruit are globose. Occasionally found in hilly area.

**Information for usage:** Extract prepared from root is taken one or two cupfuls twice daily for three days for the treatment of bone swelling.

***Flemingia stricta*** Roxb. (Fabaceae) [RM 16].

Bangla name: Charchara.

Marma name: Prungchum.

A tall shrub, branches triquetrous. Leaves 3-foliolate; leaflets oblong-lanceate, acuminate. Flowers are pinkish-yellow, in racemes. Pods are glabrescent. Occasionally found in slope of hill.

**Information for usage:** Ash prepared from leaf is used as tooth powder for two-three days for the treatment of toothache and in bad smell in mouth.

***Glycosmis pentaphylla*** (Retz.) A.DC. (Rutaceae) [RM 26, RT

101].

Bangla name: Datmajan.

Marma name: Tatiang.

An erect shrub with glandular punctate, usually strong smelling. Leaves are alternate or opposite, simple or palmately or pinnately compound. Flowers are often sweet-scented, actinomorphic or sometimes zygomorphic. Fruit is variable. Commonly found in marginal land.

**Information for usage:** Extract prepared from root mixed with cold water and taken one tea spoonful twice or thrice daily to treat pain during maturation (Dysmenorrhea).

***Heliotropium indicum*** L. (Boraginaceae) [RM 75, RT 104].

Bangla name: Hatisur

Marma name: Chaonamo ban.

Succulent herb. Stem are densely hairy. Leaves are alternate, simple, lobed, hairy, ovate-oblong. Flowers are in scorpioid cymes, violer. Fruits are nutlets, deeply lobed. Seeds white. Occasionally found in the slope of hill.

**Information for usage:** Paste prepared from flowers mixed with black piper is applied to boils.

***Holarrhena antidysenterica*** (Roxb. ex Fleming) Wall. Ex A.DC. (Apocynaceae) [RM 11].

Bangla name: Kurchi.

Marma name: Shinhapran.

A large shrub or small tree. Leaves are simple, ovate-elliptic or oblong, acuminate. Flowers are white, in terminal cymes. Seeds are oblong. Occasionally found in hilly area.

**Information for usage:** A piece of stem is tied with a thread round the waist to treat uterine prolapsed.

***Hyptis suaveolens*** (L.) Poit. (Lamiaceae) [RM 42].

Bangla name: Tukhma

Marma name: Sikalma

A tall, hispid, aromatic shrub. Leaves are simple, ovate-lanceolate, serrate, acuminate. Flowers are pale blue, in axillary umbels. Nutlets are ovoid, blackis-brown. Frequently found in Hilly area.

**Information for usage:** Extract prepared from stem, mixed with alcohol and taken for griping. The alcoholic extract is taken with salt if stool become hard (Tenemus during constipation) and without salt in loose motion.

***Ixora nigricans*** R.Br. ex Wight & Arn. (Rubiaceae) [RM 9].

Bangla name: Rangon.

Marma name: Rongma, Frareko.

A small tree. Leaves are elliptic-lanceolate, linear lanceolate, acute or acuminate. Flowers are white. Fruit are subglobose, black. Occasionally found in hilly area.

**Information for usage:** Extract prepared from leaves is taken and in addition paste prepared from root applied to the whole body as a remedy for unconsciousness of children. Extract prepared from root is taken one cupful four times daily for two days against vomiting and over bleeding.

***Jasminum sambac*** L. (Oleaceae) [RM 20].

Bangla name: Beli.

Marma name: Chioy.

An scandent shrub, evergreen. Leaves are opposite or alternate, rarely whorled, simple. Flowers are bisexual, usually heterostylous, they are usually fragrant. Fruit a berry, didymous or one half aborted. Seeds are without endosperms. They are rare in slope of hill.

**Information for usage:** Extract prepared from stem is taken twice a day until cured to treat asthma.

***Jatropha curcas*** L. (Euphorbiaceae) [RM 67, RT 106].

Bangla name: Ban Veranda.

Marma name: Tachiapan.

They are shrubs. Stem are soft wooded with latex. Leaves are alternate, pinnately lobed. Flowers are in cymose panicles, yellowish green. Fruits are capsules, triangular. Seeds are brownish black. Frequently found in hilly area.

**Information for usage:** Latex of stem is applied in mouth and tongue for the treatment of blister and eruption in mouth.

***Justicia adhatoda*** L. (Acanthaceae) [RM 63, RT 77].

Bangla name: Basak

Marma name: Dasiban.

It is an erect shrub. Leaves are opposite, simple elliptic lanceolate. Flowers are in thyrsiform spikes, white, bilobed. Fruits are capsules. Seeds are tubercular-verrucose. Rare in hilly areas.

**Information for usage:** Extract prepared from root is applied to the affected area twice or three times daily until cured for the treatment of skin cancer; extract prepared from leaves is taken twice or three times daily until cured for the treatment of cough. For the remedy of body pain it has been suggested to uproot the whole plant on Saturday or Tuesday without taking breath. In addition a coin has to be sacrificed under the plant.

***Kalanchoe Pinnata*** (Lam.) Pers. (Crassulaceae) [RM 64, RT 107].

Bangla name: Patarkuchi.

Marma name: Raikhapombom.

An erect, succulent herb. Stems are reddish when young. Leaves are 3-5 foliolate. Leaflets are oblong or ovate-elliptic, obtuse at apex. Flowers are greenish-yellow in

paniculate cymes. Follicles are linear. Occasionally found around the house.

**Information for usage:** Paste prepared from leaves is applied in lower abdomen to reduce pain during delivery. Extract prepared from mildly warmed leaf mixed with honey is taken one or two tea spoonful twice daily for three-four days for the treatment of asthma in children.

***Leucas aspera*** (Roth) Spreng. (Lamiaceae) [RM 71].

Bangla name: Swetdron.

Marma name: Chunchowban.

An erect herb. Leaves are opposite, simple, linear-lanceolate, flowers are in axillary whorls, tubular, bi-lipped, white. Fruits are nut lets, brown. Commonly found in marginal land.

**Information for usage:** Extract prepared from leaves is filtered and applied into the eye, one or two drop twice daily for three days for the treatment of high fever and unconsciousness. A piece of root tied with a thread round the neck as a necklace for protection from evil spirit.

***Mallotus philippinensis*** (Lam.) Mull.Arg. (Euphorbiaceae) [RM 21].

Bangla name: Kamela.

Marma name: Nikhrow.

Medium sized dioecious tree. Leaves are simple, peltate, palmately veined. Flowers are in axillary racemes; unisexual; male flowers with many stamens; female flowers trilocular. Fruits are capsules with red glandular hairs. Seeds are smooth black. Frequently found in marginal land.

**Information for usage:** Warmed leaf applied to the affected areas for the treatment of joint pain and bruising.

***Manilkara zapota*** (L.) P. Royen (Sapotaceae) [RM 22].

Bangla name: Sofeda

Marma name: Rowapa

Evergreen small tree. Leaves are alternate, simple, entire, penninerved, leathery. Flowers are small solitary, cymes cluster in the leaf axiles. Fruits are round, berry, pericarp rough, brownish and fleshy. Occasionally found in the hilly areas and home gardens.

**Information for usage:** Paste prepared from whole plant, mixed with hot water taken one cupful twice daily for three days for the treatment of asthma and cough.

***Mentha arvensis*** L. (Lamiaceae) [RM 40].

Bangla name: Pudina.

Marma name: Kuruea.

An annual aromatic herb. Upper leaves are sessile or subsessile. Blade margin dentate, serrate, or crenate, lanceolate to linear. Flowers are bisexual or pistillate. Calyx

funnelform to campanulate. Stamens are 4, subequal, divaricate, erect. Nutlets ovoid, dry, smooth or slightly tuberculate, apex rounded, rarely hairy. Commonly found in Home garden.

**Information for usage:** Powder prepared from burned bark is applied to boils three times daily. In addition, sacred texts are read during application. For headache, powder also applied to forehead to relief pain and in general weakness.

***Mesua ferrea*** L. (Clusiaceae) [RM 12].

Bangla name: Nagassar.

Marma name: Sipun.

A large tree. Leaves are oblong-lanceolate, oblong-elliptic, and acuminate. Flowers are white. Fruit are depressed globose. Occasionally found in hilly area.

**Information for usage:** Sap prepared from root mixed with green coconut water is taken one or two teaspoonful thrice daily for two days to cure diarrhea.

***Mikania micrantha*** Kunth (Asteraceae) [RM 59].

Bangla name: Tuphanilata.

Marma name: Woalaban.

An scandent herb, obnoxious weeds. Leaves are opposite, simple, cordate. Flowers in heads of compound corymbs, white. Fruits are cypselas, papus. Commonly found besides the road.

**Information for usage:** Crushed fresh leaves is applied to cuts area to stop bleeding.

***Mimosa pudica*** L. (Mimosaceae) [RM 61].

Bangla name: Lajjabati.

Marma name: Rapainbain, Thrapay.

A prostate, prickly undershrub. Leaves are bipinnate, sensitive. Pinnate are 1-2 pairs. Leaflets are linear oblong. Flowers are pink, in globose heads. Fruits pods, bristle on sutures. Seeds are flat. Commonly found along the roadside.

**Information for usage:** Root is tied in broken leg for the treatment of fracture in hen and paste prepared from root can also be applied to boils.

***Moringa olifera*** Lam. (Moringaceae) [RM 41].

Bangla name: Sazina.

Marma name: Dendalum.

Medium sized tree. Leaves are 2-3 pinnate, compound. Leaflets are elliptic or obovate, round at apex. Flowers are white in axillary panicles. Capsules are 3-valved loculicidal. Seeds winged. Frequently found in Hilly area.

**Information for usage:** Extract prepared from stem through rubbing in is applied to head and whole face twice daily for three days for the treatment of general weakness,

blindness and headache.

***Oroxylum indicum*** L. (Bignoniaceae) [RM 14].

Bangla name: Khona.

Marma name: Krongsamai.

A small tree. Leaves are 2-3 pinnate. Leaflets are ovate – acuminate. Flowers are pinkish- purple, in terminal racemes. Capsules are linear-oblong, woody. Seeds winged. Frequently found in hilly region.

**Information for usage:** Extract prepared from root is mixed with three drops of water from three different ponds and two or three-tea spoonful is taken twice a day for three days for the treatment of impotence.

***Passiflora foetida*** L. (Passifloraceae) [RM 72].

Bangla name: Hurhuna.

Marma name: Powmachi.

Herbaceous or woody perennial vine. Leaves are simple or rarely compound, alternate, entire or dissected, petiolate. Inflorescence axillary, cymose. Fruit a berry. Seeds are arillate, compressed, testa pitted; endosperm oily, abundant, embryo straight. Frequently found in slope of hill.

**Information for usage:** Whole plant is boiled in water and the vapor is applied to the affected area in boils.

***Pavetta indica*** L. (Rubiaceae) [RM 6].

Bangla name: Fhalda .

Marma name: Sherprang.

An erect shrub, variable. Leaves are opposite, simple, elliptic-oblong, glossy green. Flowers are in cymes white, fragrant. Fruits are berries, pea size, succulent, black. Occasionally found in Hilly area.

**Information for usage:** Boil whole plant with water and used to take bath with this warm water twice or three times daily for the treatment of rheumatic pain.

***Phyllanthus emblica*** L. (Euphorbiaceae) [RM 38, RT 99].

Bangla name: Amloki.

Marma name: Pyandhum.

A medium sized tree. Branches are billous. Leaves are simple, linear-oblong. Flowers are greenish-yellow, in axillary clusters. Berries are globose. Frequently found in hilly area.

**Information for usage:** Powder prepared from the dried lily (*Nymphaea nouchali*) flower and gooseberry (*Phyllanthus emblica*) mixed with honey and taken after lunch and dinner for the treatment of abdominal gas. In addition fruit is taken against aversion during fever.

***Pongamia pinnata*** (L.) Pierre. (Fabaceae) [RM 24].

Bangla name: Kelenga.

Marma name: Mauprun.

A moderate-sized tree. Leaves are imparipinnate; leaflets are ovate, entire, acuminate. Flowers are pale pink, in axillary racemes. Pods are obliquely oblong, one seeded. Occasionally found in marginal land.

**Information for usage:** Leaf boils into water and this water is used for bath in the treatment of itches.

***Premna esculenta*** Roxb. (Verbenaceae) [RM 2].

Bangla name:

Marma name: Lamur

They are usually trees. Leaves are opposite, simple, elliptic, aromatic. Flowers are in compound corymbs, whitish yellow. Fruits are drupes, globose, wrinkled when dry. Frequently found in hilly area.

**Information for usage:** Extract prepared from root is taken one or two cupfuls twice daily for two days for treatment over bleeding during delivery.

***Pteris pellucida*** C. Presl (Pteridaceae) [RM 18].

Bangla name: Luciteris.

Marma name: Shrikrabong.

Plants found in terrestrial environment or on rock. Stems are erect or creeping, branched. Leaves monomorphic, petiole straw-colored, green, brownish red to purple black. Rachis is straight. False indusia pale, scarious, covering sori. Sporangia intramarginal, sori usually continuous except at pinna or segment apex and sinuses, paraphyses present. Spores brown. Commonly found in hilly area.

**Information for usage:** Whole plant is boiled into water and is taken as bath until cured and it is to treat big boils in body and over the head of children (Furuncle).

***Rauvolfia serpentina*** (L.) Benth. (Apocynaceae) [RM 49].

Bangla name: Sorpoganda.

Marma name: Kayamusiba.

An erect shrub. Leaves are in whorls, simple lanceolate. Flowers are in corymbose cymes, tubular, white. Fruits berries, globose. Seeds are solitary, ovoid. Rare in marginal land.

**Information for usage:** Extract prepared from leaf is taken two or three tea spoonfuls twice or three times daily until cured to treat diarrhoea.

***Ricinus communis*** L. (Euphorbiaceae) [RM 66].

Bangla name: Verenda.

Marma name: Krachuban.

A shrub. Leaves are palmatifid, 6-10- lobed, peltate, margin serrate, apex acuminate. Flowers are pale yellow, in terminal paniculate racemes. Capsules 3- lobed, softly



echinate. Frequently found in hilly area.

**Information for usage:** Take seven leaves and wormed in fire and applied to anus for the treatment of piles.

**Scoparia dulcis** L. (Scrophulariaceae) [RM 73].

Bangla name: Bondana

Marma name: Oyashipene

An erect herb. Leaves are simple, elliptic, serrate, cuneate at base, acute at apex. Flowers are white, axillary, solitary. Capsules are globose ovoid. Commonly found beside the road.

**Information for usage:** A piece of root tied with a thread round the neck as a necklace as a protection of evil spirit.

**Senna alata** (L.) Roxb. (Caesalpiniaceae) [RM 60, RT 88].

Bangla name: Dad mardan.

Marma name: Puiban.

A soft wooded shrub with thick downy branches. Leaf is rachis long, stout, channeled; leaflets 10-12 pairs, oblong, obtuse, glabrous. Racemes spiciform, stout with yellow flower. Rare in the marginal land.

**Information for usage:** Paste prepared from leaf mixed with salt is applied in the affected area to treat eczema.

**Senna sophera** (L.) Roxb. (Caesalpiniaceae) [RM 62].

Bangla name: Choto kolkasunda.

Marma name: Makahaban.

An erect shrub. Leaves are pinnately compound, leaflets linear lanceolate in pairs. Flowers are in axillary corymbose racemes, yellow. Fruits pods; seeds compressed black. Occasionally found in hilly area.

**Information for usage:** Paste prepared from leaf mixed with sugarcandy is taken one or two tea spoonful twice to three times daily to treat dysuria (Pain during Micturition).

**Spilanthes acmella** (L.)L. (Asteraceae) [RM 52].

Bangla name: Marhatitica.

Marma name: Humdioai.

Small herb. Leaves opposite, simple, ovate-lanceolate, hairy. Flowers in heads, yellow. Fruits cypselas, usually layer ally, compressed. Common in marginal land.

**Information for usage:** A piece of cloth is warmed in boiling plant vapor is applied to affected areas caused by allergy or mildly warmed plant mixed with kerosene oil and massage like balm for allergy.

**Spondias pinnata** (L.f.) Kurz (Anacardiaceae) [RM 39].

Bangla name: Amra.

Marma name: Raisoingsing.

A medium sized tree. Leaves are pinnately compound,

flowers in terminal panicles, bisexual, pinkish green. Fruit is drupes, yellow when ripe. Seeds are stony. Frequently found in hilly area.

**Information for usage:** Leaf is placed under the pillow during sleeping time for sound sleep and against insomnia and night mare.

**Streblus asper** Lour. (Moraceae) [RM 25].

Bangla name: Shaora.

Marma name: Wainghini.

A small tree. Leaves are simple, ovate or obovate, serrate, obtuse to cuneate at base, acute at apex. Flowers are white, in axillary cymes. Drupes are enclosed in fleshy, yellow perianth. Frequently found in marginal land.

**Information for usage:** Extract prepared from root mixed with cold water is taken to treat thirsty (no satisfaction after drinking water).

**Terminalia bellirica** (Gaertn.) Roxb. (Combretaceae) [RM 45].

Bangla name: Bohera.

Marma name: Thaisingthe.

A large tree. Bark bluish-grey, fissured. Leaves are simple, ovate-obovate or broadly elliptic, obtuse or emarginated at apex. Flowers are cream colored, in axillary spikes. Drupes globose, obscurely 5-angled, brown-tomentose. Occasionally found in hilly areas.

**Information for usage:** Dried fruits are chewed to treat sore throat and cough until cured.

**Terminalia chebula** Retz. (Combretaceae) [RM 46].

Bangla name: Haritaki.

Marma name: Ajubang.

An evergreen tree. Leaves are alternate, simple, hairy, elliptic-oblong. Flowers in spikes, dull white. Fruits are drupes, ellipsoid, yellowish green. Seeds are stony, five-angled. Frequently found in hilly area.

**Information for usage:** Dried green fruit is chewed to treat sore throat and cough until cured.

**Vitex peduncularis** Wall. ex Schauer (Verbenaceae) [RM 23].

Bangla name: Horina.

Marma name: Kraktha.

A large tree. Leaves are elliptic, lanceolate or oblanceolate, acuminate. Flowers pinkish or pale yellow. Fruit is ovoid, globose. Occasionally found in the forest area.

**Information for usage:** Extract prepared from root mixed with hot water is taken two or three tea spoonful twice daily until cured. The extract also applied externally in the

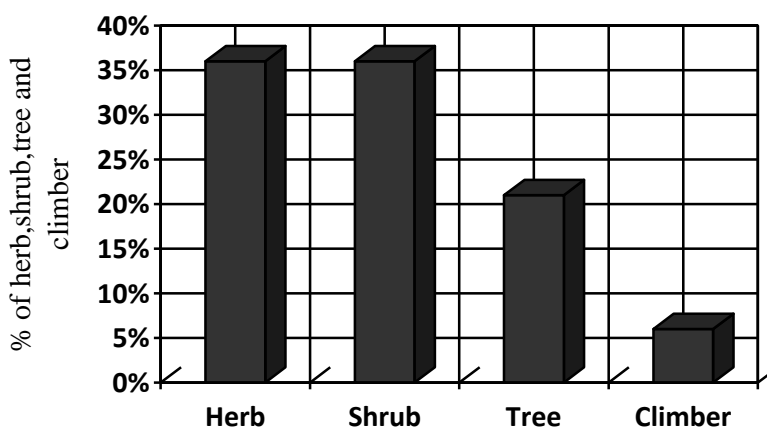


Figure 1. Use of herb, shrub, tree and climber.

affected area for the treatment of abnormality in eyes in cases like paralysis.

***Xylosma longifolium*** Clos (Salicaceae) [RM 68].

Bangla name: Katari.

Marma name: Udha.

Tree, monoecious, dioecious, or polygamous. Leaves are simple, usually alternate, rarely opposite or verticillate. Inflorescences axillary, terminal, or cauliflorous. Fruit is capsular or baccate, rarely a drupe. Seeds are 1 to many. Rare in the hilly area.

**Information for usage:** Extract prepared from leaf is taken one cupful twice daily until cured to treat gastritis.

***Zingiber officinale*** Roscoe (Zingiberaceae) [RM 30].

Bangla name: Ada.

Marma name: Kheyana.

Annual herb. Leaves are alternate, simple, sub-sessile, linear, acuminate at apex. Flowers are in spadices, greenish yellow. Fruits are capsules. Seeds are small, black. Cultivated in marginal land, hilly area.

**Information for usage:** Slice prepared from zinger without skin is burnt into fire and taken twice daily until cured to treat sore throat and cough.

## RESULTS AND DISCUSSION

Identification of the specimens showed that in total 66 species, in 62 genera under the 38 families has been used for the treatment of 40 diseases/illness. Fabaceae in context to the number of species have been used most frequently. Similarly, other important families used for medicines are Euphorbiaceae, Acanthaceae, Verbenaceae

and Asteraceae respectively. The most frequently used species are *Mimosa pudica*, *Justicia adhatoda*, *Leucas aspera* and *Centella asiatica*.

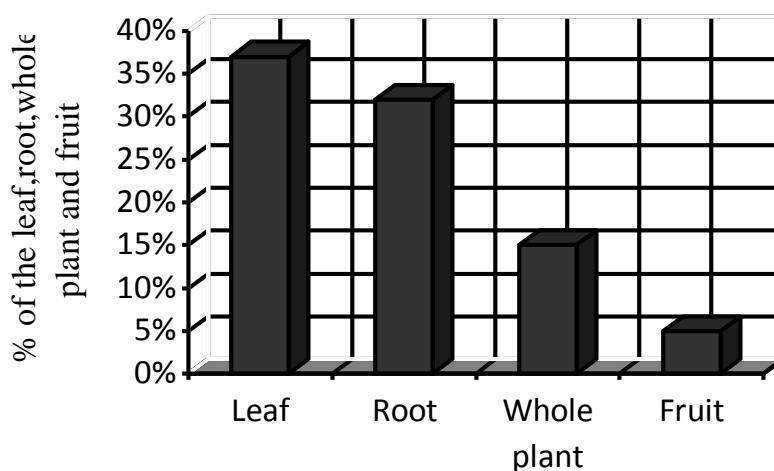
According to life form, the numbers of species that have been used by them are herbs 37%, shrub 36%, tree 21% and climber 6% respectively. Among them herbs and shrubs are mostly used than others (Figure 1).

The most utilized plant parts for the preparation of herbal medicine is leaf, which is, 37% then root 32%, whole plant 15% and fruit 5% respectively (Figure 2). Stems are used in a considerable amount. Flower, bark, bulb, pith, rhizomes, latex are also used occasionally. The most frequent utilization of leaves refers to those that may store high concentration of bioactive compounds. In addition, it is easy to collect, store, transport, and help the species in conserving without destroying the plant. By analyzing the present studied ethnomedicinal data, it is observed that the Marma (indigenous community) are conservative in plant use and they have the knowledge of sustainable use of plants because, they use leaves and stem most frequently for the preparation of herbal medicine which is a non destructive way of use.

The recorded medicinal plants species have been used to treat several diseases/illness of which 13 are used for the treatment of various type of pain, 6 for cough, 4 for diarrhea, 4 for dysentery, 4 for boils, 4 for menstrual problem and so on.

The most frequently preparatory methods of herbal medicine have been extract, paste, tablet/pills, ash, sap etc. Materials prepared as extract or paste is mixed with a variety of foods, spices or even petroleum products. Both external and internal methods of application of herbal medicine have been prescribed. Marma mostly used the external use of herbal medicine.

The dose and duration of application of these medicinal preparations are varied from informant to informant. The



**Figure 2.** Use of the leaf, root, whole plant and fruit.

Marma have taken most of the cases one to three teaspoonfuls extract. A glass or cupful is taken occasionally. Time and duration is also varied most frequently extract have been taken for one to three days. In case of some complicated diseases/illness the duration may be longer. The study provides the following information:

- (i) Same plants are often used for treating a number of different diseases/illness.
- (ii) Same parts of the plant is used for treating different even unrelated, diseases/illness.
- (iii) Different parts of plant have been used for treating different diseases/illness.
- (iv) Different parts of a plant have been used for treating the same diseases/illness.

It is also observed that the utilization of plants and plant products by the Marma indigenous community does not cause any depletion to plant population and habitat. Undoubtedly, they have clear concepts of ecological interdependence, seasonal variations and effective utilization of the forest produce. The establishment of modern medicinal health centers is in progress in many rural areas and that may gradually change the existing pattern of indigenous knowledge system of healthcare. Now a day they are losing their previous glorious heritage of plant use knowledge in a alarming rate because of, industrialization and urbanization, rapid shrinkage and degradation of forests, present generation lost the interest to continue their parental profession because it does not provide them proper financial support for their livelihood, Bangla herbalists and elderly men /women in these areas find it very difficult to get apprentices to meet their several necessities etc. So, it is urgently needed to document their plant use information before disappearing permanently

and this information can be the source for the discovery of new drugs.

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#### REFERENCES

- Alam MK (1992). Ethnomedicobotany of the Marma tribe of Bangladesh. *Econ. Bot.* 46(3):330-35.
- Alam MK (1998). Documentation of ethno biological information. In: Banik, R.L., Alam, M.K., S.J. Pel, & A. Rastogi (eds.), *Applied Ethnobotany. Proceedings of Subregional Training Workshop on Applied Ethnobotany.* BFRI, Chittagong, Bangladesh. pp.28-29.
- Alexiades MN (1996). Protocol for conducting ethnobotanical research in the tropics. In: Alexiades, M.N. & J.W. Sheldon (eds.) *Selected Guidelines for Ethnobotanical Research: A Field Manual.* The New York Botanical Garden, Bronx, New York.
- Anisuzzaman MA, Rahman HMM, Harun-Or-Rashid M, Naderuzzaman ATM, Islam AKMR (2007). An Ethnobotanical Study of Madhupur, Tangail. *J. Appl. Sci. Res.* 3(7):519-530.
- Baker M, Momen SN (2001). Tangailer Upajati Garo Sampraday: Jibon O Sankskriti, In: baker, M. (ed.). *Tangail Jellar Itihash O Oitijjha.* Tangail, Bangladesh. pp.260-267.
- Begum N, Haq MF, Nather K (2000). *Medicinal Plants for the Survival of Rural people.* pp.97-106.
- Chakma S (1992). *Chakma Parichiti.* Bangang Publication, Rangamati, Bangladesh. pp.103.
- Chakma GB (1993). *Bangla Government Parishad of the Hill Tracts in Historical Prospect (In Bangla).* Tribal Cultural Institute, Rangamati, Bangladesh. pp.162.
- Chopra RN, Chhprra IC, Handa KL, Kapur LD (1982). *Indigenous drugs of India.* Academic publishers, Calcutta, India. pp792.
- Cotton CM (1997). *Ethnobotany, Principals and Application.* John Wiley and Sons Ltd, Chichester. pp.424.
- Gain P (2000). *Life and nature at risk.* In: Gain, P. (ed.). *The Chittagong Hill*

- Tracts. Life and nature at risk. Society for Environment and Human Development, Dhaka, Bangladesh.
- Hassan MA, Khan MS (1986). Ethnobotanical records in Bangladesh. Plants use for healing fractured bones. *J. Asiatic Soc. Bangladesh (Sci)* 12:33-39.
- Hassan MA, Huq AM (1993). *Amader Bonoushudi Shampad*. Hasan Book House, Dhaka, Bangladesh, pp.184.
- Hassan MA, Khan MS (1996). Ethnobotanical records in Bangladesh. Plants used for healing cuts and wounds. *Bangladesh J. Plant Tax.* 3(2):4952
- Hutchinson SRH (1909). *The Chittagong Hill Tracts*. Vivek publishing Company, Delhi, India.
- Kadir MH (1990). Bangladesh flora as a potential source of Medicinal plants and its conservation Strategies. pp.73-77. In: Ghani, A (Editor), *Traditional medicine*. Institute of life science, Jahangirnagar University, Savar, Dhaka.
- Khan MS, Huq AM (1975). *Medicinal Plants of Bangladesh*, BARC, Dhaka. pp.2
- Khan MS, Hassan MA, Uddin MJ (2002). Ethnobotanical Survey In Rema Kelanga Wildlife Sanctuary (Habiganj) in Bangladesh. *Bangladesh J. Plant Tax.* 9:51-60.
- Kritikar KR, Basu BD (1993). *Indian Medicinal Plants*. 2<sup>nd</sup> edition 1. Page XXIII, Allahbad, India.
- Lewin TH (1912). *A Fly on the Wheel*. London. pp.241
- Mia MK, Huq AM (1988). A preliminary ethnobotanical survey in the Jaintapur, Tamabil and Jaflong area, Sylhet. *Bull* 3:1-10. Bangladesh National Herbarium, Dhaka.
- Millat-e-Mustafa M, Begeum K, Al-Amin M, Alam SM (2001). Medicinal plant resources of the traditional homegardens in Bangladesh. *Trop. Med. Plant.* 2:1.
- Pasha MK, Uddin SB (2013). *Dictionary of Plant Names of Bangladesh*. Janokalyan Prokashani. Chittagong. Bangladesh. pp.1-434.
- Rahman MA, Uddin SB, Khisha A (1998). A report on some anti- jaundice plants from tribal communities of Hill Tracts districts of Bangladesh. *Biodiver. Newslett. Bang.* 2:4.
- Rahman MA, Khisa A, Uddin SB, Wilcock CC (2000). Indigenous Knowledge of Plant Use in a Hill Tract Tribal Community and Its Role in Sustainable Development. pp.75-78.
- Rahman MA, Uddin SB, Wilcock CC (2003). Indigenous knowledge of herbal Medicine in Bangladesh diarrhea, dysentery, indigestion and stomach pains. *J. Med. Aromat. Plant Sci.* 25:1001-1009.
- Rahman MA, Uddin SB, Wilcock CC (2007). Medicinal Plants used by Chakma tribe in the HillTracts districts of Bangladesh. *Indian J. Trad. Know.* 6(3):508-517.
- Rao NR, Henry NA (1996). The ethnobotany of Eastern Ghats in Andhra Pradesh, India. *Botanical survey of India*. pp.1-2.
- Saigal O (1978). Tripura. Bengal publishing Co., Calcutta, India. pp.213.
- Shelly MR (1992). *The Chittagong Hill Tracts of Bangladesh. The Untold Story*. Centre for Development Research, Bangladesh (CDRB), Dhaka
- Sirajuddin AM (1971). The Rajas of Chittagong Hill Tracts and their relation with the Mughals and the East India Company in the Eighteenth Century. *J. Pak. Hist. Soc.* 19(1):1-52.
- Tanchangya JC (1982). *Tanchangya Upajitir Sankhipto Parichiti* (in Bangla). Tribal Cultural Institute, Rangamati, Bangladesh. pp.126.
- Tripura SL (1994). *Parbattya Chattagramer Prakiiti O Sanskriti* (in Bangla). Tribal Cultural Institute, Rangamati, Bangladesh. pp.234.
- Uddin SB, Rahman MA, Uddin MG, Pasha MK (2008). Ethnobotanical Use of Pteridophytes from Chittagong Hill Tracts of Bangladesh. *Nepal J. Plant Sci.* 2(1):89-93.
- Uddin SB (2010). *Medicinal Plants Database of Bangladesh*. www.mpbd.info.
- Yusuf M, Chowdhury JU, Wahab MA, Begum J (1994). *Medicinal plants Bangladesh*. Premier Enterprise, Chittagong. Preface: III-IV. pp.340.
- Yusuf M, Begum J, Hoque MN, Chowdhury JU (2009). *Medicinal Plants of Bangladesh*. BCSIR, Chittagong. pp.794.

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