

# Ethnobotany of Meghalaya: Medicinal Plants Used by Khasi and Garo Tribes<sup>1</sup>

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Ethnobotany is the study of plants in relation to the inhabitants of an area. Meghalaya, one of the hill states in India, inhabited by aboriginal people, offers unusual opportunity for ethnobotanical studies, as these people largely depend upon the surrounding plants for their existence. In the present paper some medicinal plants commonly used by these people are reported based upon the information gathered from local people in different parts of Meghalaya.

## LOCATION AND CLIMATE

Meghalaya is situated between 25°47'–26°10'N latitude and 89°45'–92°47'E longitude, and has an area of approximately 22,549 km<sup>2</sup>. The region has a tropical monsoonic climate with the summer temperatures reaching as high as 25°C and the mean winter temperatures falling to 9°C with periodic deviation to below the freezing point, marked by the appearance at higher elevations, of ground frost at night and in the morning. The average annual rainfall of the state is 205 cm with the maximum annual average of 1,143 cm being recorded around Cherrapunji and Mawsynram, the world's rainiest spots.

The state is characterized by dense vegetation, which can be divided into tropical, temperate and alpine types. If exploited properly the rich plant resources could furnish a stable source of revenue.

## PEOPLE

Meghalaya is inhabited by 3 distinct tribes—the Khasi, the Jaintia and the Garo, each occupying respective hill districts in the state. It is believed that these tribes belong to the Indo-Chinese linguistic family, and have migrated to northeast India as invaders. Subsequently from this Indo-Chinese linguistic family 2 subfamilies, namely the Mon Khmer and Tibeto-Burman, have evolved. The Khasis and the Jaintias belong to the former subfamily. On the other hand, the Garos, along with the Kacharis, belong to a distinct tribe which subsequently got separated and these people are still primitive among the tribes in Meghalaya. Unfortunately there is little historic material available on the Garos.

The history of the Khasis and the Jaintias can be traced from the early part of 16th century but there is no clear cut record prior to this period. These people, coming from the Indo-China region, were familiar with the uses of plants around them, and they have maintained this familiarity by means of their rich folklore.

## OPPORTUNITIES FOR ETHNOBOTANY

There is considerable opportunity for ethnobotanical studies in Meghalaya. Unlike other parts of the country, this region has not been exposed to recent

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development and "progress." The people here are still primitive and still prefer to live in isolation in remote villages. By nature these people are conservative and are not influenced very easily by others, probably because of their deeply held socio-religious beliefs. As with the *jhumming* system of agriculture they have practised for ages, they have also followed a system of herbal medicine in treating their ailments. Thus, individual tribes (and even subtribes among tribes) have, by trial and error, developed their own way of diagnosis and treatment of disease. As a result of long experience, this practise has become effective, and thus there is a rich accumulation of knowledge of medicinal plants among them. But in cases where the treatment is not effective, they believe that some deity is unhappy with the patient, and he/she should please the deity with various offerings. This belief is especially common among the Garo people in Meghalaya.

It is important to study and record the uses of these plants by different tribes before these primitive people shift over to modern remedies and before some of these interesting medicinal plants are eliminated from the area. Plant destruction is taking place in large scale in Meghalaya, as demonstrated by the fact that it is very difficult to locate a single patch of virgin forest in the state. Various agencies are responsible for this condition, the discussion of which is not however in the purview of the present paper but interested readers are referred to Rao (1979b). It has even come to the attention of the author during discussions with the local people dealing with herbal medicines that some of the interesting medicinal plants, which were quite common some 15–20 yr ago, either have become very rare or have completely disappeared from the area. Special efforts should be made to identify and conserve these species.

#### SURVEY OF LITERATURE AND PRESENT WORK

Studies on ethnobotany in India have received due attention only in the last 1 or 2 decades (Jain, 1963a, 1963b, 1965, 1966; Jain and Tarafder, 1963; Jain et al., 1973; Chakravarty, 1975; Rao, 1977, 1978, 1979a, 1979b). These studies have brought to light numerous medicinal and other useful plants which were formerly either little known or unknown.

But with regard to Meghalaya, little work of this type has been done, though there is considerable scope for such studies. The only existing accounts are those of Rao (1979a); Rao and Shanpru (1978); Joseph and Kharkongor (1978). In a recent communication the author (Rao, 1979a) has brought to light 31 interesting medicinal plants used by the Garo people in Meghalaya. The present communication is one more step in this direction and deals with 34 additional medicinal plants which are used by the Khasi and Garo people of Meghalaya.

The information contained in this paper was gathered mostly from people around Umroi, Cherrapunji and the surrounding villages of Shillong in the Khasi hills and in the Tassek and Dalu areas of the Garo hills. The voucher specimens collected have been preserved in the Herbarium, North-Eastern Hill University, Shillong (NEHU). (The abbreviation is yet to find a place in *Index Herbariorum*.) Although some of the plants recorded here are mentioned by earlier workers (Dastur, 1952; Ahluwalia, 1952; Biswas, 1956; Chopra et al., 1956; Chopra and Chopra, 1968; Jain, 1975), the uses mentioned here and the methods of administration are quite different and have not been described by the above workers.

The present reports, however, need to be checked further by chemical screening, as the information given by local informants may not always be reliable. Often, they do not like to share their knowledge. Sometimes too plants are administered in combination with other plants, and in such cases, it is difficult to identify the particular plant that is effective in curing a particular disease.

#### ENUMERATION OF MEDICINAL PLANTS

In the following enumeration, the species are arranged alphabetically. Local names, where available, are listed immediately after the name of the family. The letters K and G in parentheses indicate Khasi and Garo names respectively. Brief remarks about habitats and uses of the plants as given by local people conclude each section.

*Achyranthus aspera* Linn. Amaranthaceae. *Minamkachi* (G). *Rao* 383.

Herbs in moist, shady places and in hedges.

Uses: The roots are powdered, mixed with crushed snails, and applied to cure leprosy.

*Adenostemma lavenia* (Linn.) Ktz. Compositae. *Soh-byrthit* (K). *Rao* 385.

A weed of cultivation; common along marshy areas.

Uses: The crushed leaves are applied to cuts and wounds; also applied to treat bites of poisonous insects and caterpillars.

*Arisaema jacquemontii* Bl. Araceae. *Jinjok* (G). *Rao* 2942.

In shady places in forests; not common.

Uses: The tuberous part is crushed and the juice is given to treat ringworms; also applied for various skin diseases.

*Astilbe rivularis* Linn. Saxifragaceae. *Pdah* (K). *Rao* 439.

Common in shady places near ravines at higher elevations.

Uses: The leaves are eaten raw to cure toothache; also given for blood purification.

*Begonia josephi* R. Br. Begoniaceae. *Jajew* (K). *Rao* 80.

Frequent in moist, shady places and roadsides near Elephant Falls in Shillong.

Uses: The bulbs are eaten raw in case of stomach pain and indigestion.

*Boerhavia diffusa* Linn. Nyctaginaceae. *Samdelma* (G). *Haridasan* 10154.

A weed of waste places and roadsides, common in plains.

Uses: The leaves are boiled with rice and garlic, and the water is rubbed on the body to cure rheumatic pains; sometimes used as bath water.

*Butea monosperma* (Lamk.) Taub. Papilionaceae. *Haridasan* 279.

Small deciduous trees, often gregarious in lower elevations.

Uses: Powdered seeds, mixed with juice of the rhizome of *Cyperus rotundus* Linn., administered for delirium.

*Cannabis sativa* Linn. Cannabinaceae. *Kynja* (K). *Rao* 179.

Gregarious in fallows and sometimes cultivated.

Uses: The leaves and fruits are used in making different kinds of medicines; the crushed leaves are used for skin diseases.

*Curcuma aromatica* Salisb. Zingiberaceae. *Rao* 377.

Common in forest cleared areas and in secondary forests.

Uses: The powdered rhizome is taken with water to kill the worms of the intestine. Sometimes it is given with other rhizomes of the same family.

*Crossocephalum crepidioides* (Benth.) S. Moore Compositae. *Jali, Sla-Aeroplane* (K). *Rao* 5570.

A weed of cultivation and roadsides, quite common.

Uses: The leaves are crushed and the juice is taken to treat constipation and other stomach disorders.

- Dendrobium moschatum* Wall. Orchidaceae. *Myrthong 1650*.  
Common epiphytes in sacred forests.  
Uses: The leaf juice is used as ear drops for ear pain.
- Desmodium gangeticum* (Linn.) DC. Papilionaceae. *Rao 566*.  
Occasionally in forest clearings.  
Uses: The roots, crushed and mixed with ginger, are administered for dysentery.
- Drymaria cordata* (Linn.) Willd. ex R. & S. Caryophyllaceae. *Bat-Nongrim* (K). *Rao 322*.  
Common weed throughout the state, along roadsides and in cultivated fields.  
Uses: The whole plant is crushed and the juice is applied for burns; also used in preparing other medicines for skin diseases. As reported from Garo hills (Rao, 1979a) the Khasis use this plant for snakebites.
- Elephantopus scaber* Linn. Compositae. *Achaksn* (G). *Kumar 5430*.  
In open places; not common.  
Uses: The roots crushed and given to patients with heart and liver trouble.
- Elsholtzia blanda* Benth. Lamiaceae. *Bat-skain* (K). *Kharkongor 793*.  
Frequent in grasslands at higher elevations.  
Uses: The juice of the leaves is applied for mosquito bites, and also as a mosquito repellent.
- Erythrina arborescens* Roxb. Papilionaceae. *Dieng-song* (K). *Haridasan 10101*.  
Small, gregarious trees, often cultivated.  
Uses: The leaves are made into a paste with ginger and applied for skin diseases of pigs, especially in cases of falling hair.
- Garcinia cowa* Roxb. Clusiaceae. *Rao 2798*.  
Frequent in evergreen forests at lower elevations.  
Uses: The fruit is finely powdered after sun drying and used for dysentery.
- Houttynia cordata* Thunb. Saururaceae. *Jamyr-doh* (K). *Rao 567*.  
Frequent in marshy places.  
Uses: The plant is effective in curing many diseases; the leaves are eaten raw for blood purification; also applied to treat sores and boils.
- Lindera pulcherrima* Benth. Lauraceae. *Sia-sia* (K). *Haridasan 10103*.  
Small trees, often cultivated.  
Uses: The bark is crushed into a paste and applied to wounds of various types; also rubbed on the body to relieve rheumatic pains.
- Mahonia nepalensis* D. Don Berberidaceae. *Dieng-tiang-mat* (K). *Rao 420*.  
Occasionally in secondary forests.  
Uses: The green peel of the bark is scraped and crushed and the juice is diluted with water. Solution is for eye drops for various eye diseases.
- Osbeckia crinita* Benth., *O. glauca* Benth. Melastomaceae. *Soh-thut* (K). *Schizee 462*.  
Common in pine forests of Shillong.  
Uses: The leaves are crushed and applied to treat wounds of various types and against snake bites; also used to stop nose bleeding.
- Pandanus tectorius* Soland. Pandanaceae. *Myrthong 1884*.  
Common near ravines around Cherrapunji.  
Uses: The juice of the leaves is useful for skin diseases, including leprosy. But in the latter case it is given in combination with other plants.
- Parochetus communis* Buch.-Ham. ex D. Don Papilionaceae. *Khia-knoi* (K). *Rao 499*.  
Frequent in grasslands in Upper Shillong.  
Uses: The plant is wrapped in a big leaf and put in hot ashes until it becomes soft and half boiled. Then it is squeezed to extract the juice, which is mixed with water and sugar and is given to babies for stomachache and other stomach disorders.
- Plantago major* Linn. Plantaginaceae. *Riew-kai* (K). *Rao 313*.  
Common throughout Meghalaya.

Uses: The crushed plant is used as an ointment for burns.

*Pouzalzia hirta* Hassk. Urticaceae. *Memynsteh* (K). *Kumar 5411*.

Common in moist, shady places and near water courses.

Uses: The roots are used to prepare hair tonic. The roots are crushed or boiled in water which is then used in the bath to promote good hair growth.

*Rhus semialata* Murray Anacardiaceae. *Soh-ma* (K). *Rao 1085*.

Small trees; gregarious in forest cleared areas.

Uses: The fruits are soaked in water which is drunk for stomachache. Buds are boiled and taken for diarrhoea.

*Rubia cordifolia* Linn. Rubiaceae. *Bad-rahoi* (K). *Rao 752*.

Occasionally in hedges.

Uses: The crushed leaves are applied for ulcers; also the crushed roots for poisonous stings of insects and caterpillars.

*Rubus ellipticus* Sm. Rosaceae. *Soh-shiah* (K). *Rao 155*.

Common throughout Meghalaya, in fallows and in pine forests.

Uses: The fruits and crushed roots are given to cure dysentery.

*Schizandra elongata* Hk. f. & Th. Schizandraceae. *Mesaw* (K). *Deilinia 83*.

Near ravines at Upper Shillong; not common.

Uses: The leaves and fruits are crushed and the juice is given to babies suffering from constipation and stomach disorders.

*Scutellaria discolor* Colebr. Lamiaceae. *Rao 434*; *Kumar 5434*.

A weed of cultivation; common.

Uses: The leaves are boiled and the water turns reddish; this water is given for high fevers. Often it is given in combination with other plants.

*Smilax glabra* Roxb. Smilacaceae. *Rao 347*; *Myrthong 1320*.

Common climbers on other shrubs.

Uses: The juice of the leaves is applied for skin diseases. Sometimes the leaves are dried and the resultant powder, mixed with oil, is applied for skin diseases.

*Spatholobus roxburghii* Benth. Papilionaceae. *Maribata* (G). *Haridasan 2890*.

Occasionally in deciduous forests; not common.

Uses: The bark, used for toothache and gum troubles, is boiled in water which is kept in the mouth for some time to cure toothache and gum pain.

*Valeriana hardwickii* Wall. ex Roxb. Valerianaceae. *Rao 545*.

Occasionally in moist, shady places, but not common.

Uses: The juice of the plant is applied against poisonous stings of insects and scorpions.

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## BOOK REVIEWS

**Weeds.** Walter Conrad Muenscher. 2nd ed. 586 pp. illus. Reprint of the 1955 edition. Comstock Publishing Associates, a division of Cornell University Press, Ithaca, New York, 1980. \$29.50.

The reprint of this "classic handbook of weeds" (to quote the dust jacket) includes a new foreword and three appendices by Peter A. Hype of the L. H. Bailey Hortorium, Cornell University: (I) "Changes in Botanical Nomenclature [since 1955]," (II) "Weeds Mentioned in this Book (Arranged Alphabetically by Scientific Name Followed by Standardized Common Name)," and (III) "Bibliography for Current Nomenclature and Common Names."

**Using Wild and Wayside Plants.** Nelson Coon. Reprint of the 1969 edition. 284 pp. illus. Dover Publications, New York, 1980. \$4.00.

Coon's *Using Wayside Plants* was first published in 1957. This Dover edition, with the title—and, perhaps unfortunately, little else—altered, does not include the 10 photographs in the original. The "Bibliography" has been expanded, including some references published as recently as 1978.