

Use of ethno-medicinal plants by Jaintia Tribe of North East India

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SUMMARY

The "Jaintia tribe" of Cachar district of Assam mainly confined to remote villages and they have migrated from Jowai district of Meghalaya of North East India about 100 years ago. The tribal people have very much knowledge on traditional ethno-medicinal plants and the Jaintia tribe is also no exception to this indigenous system ethno-medicines. An attempt has been made to study plants used by this tribe for controlling and curing various diseases and in the present paper, a total of 45 ethno-medicinal plants, belongs to 34 families are recorded which are used by the tribe for treatment 17 different diseases viz., Arthritis, asthma, cuts and wounds, dysentery, eye diseases, fever, gastric and indigestion, gynaecological problem, hypertension, insects and snake bite, jaundice, rheumatism and rabies, skin diseases, stomachache, toothache, tuberculosis, urinary problem etc. Out of these some established important ethno-medicinal plants can be utilized to a potential revenue earner source for the district and some potential medicinal plants should be screened and scientifically preserved.

Key words : Ethno-medicine, Jaintia tribe, North East Region

North East India popularly known as the land of seven-sisters (Assam, Meghalaya, Manipur, Mizoram, Nagaland, Tripura and Arunachal Pradesh) is predominantly tribal region has a tremendous scope for ethno-medicinal works or study. Some of the tribal medicines have been incorporated in the organized system of medicine. However, much larger number of the folk medicines has remained endemic to certain tribal pockets of North East India. Therefore, ethno-medicinal study in this region may proceed a meaningful way for promotion of traditional herbal medicinal plants for the benefit of mankind at large.

Geographically, Cachar district South Assam or Barak Valley of North East India is surrounded by North Cachar Hills and Khasi and Jaintia in the north, in the south by the state of Mizoram, in the east by the state of Manipur and in the west by Tripura state. The area is on altitude of 26-27m above sea level and this falls under 24.8' and 25.8' N latitude and 92.15' and 93.15' E longitude. Barak, Jiri and Siri are the main river of the district. The soil type is alluvial. Soil texture is sandy, loamy and stilt type depending on their on their silt and sand content. The pH of the soil varies 5.0- 6.5 or around neutral. The climate of the district is very hot with dry cold seasons. The average temperature of the district lies in between 15-35^o C. The average annual rainfall of the district is around 300mm and average atmospheric humidity is 75- 85%.

Jaintia people of Cachar district of South Assam

mainly came from Jowai district of Meghalaya about 100 years ago. Their migration seems to be mainly due to the infertility of soil in jhum field, transport problem, business, transaction etc. At that time, this area was found to be very much favourable for Jhum cultivation and from that time these people have self managed system of folk medicine based on herbal remedies. Since modern medical facilities are yet to reach in many remote parts of district, ethnic people in this area has deep believe in the traditional system of folk medicines for remedies and rely extensively on their own herbal cures.

Study of plants having medicinal value have been carried out from time to time in different parts of India by several workers as Nayar *et al.* (1979), Rawat and Choudhury (1998) and several others. Although in North East India, the study on ethno-medicinal plants and their importance has already been emphasized by several workers (Borthakur, 1976, 1961, 1992) not much work in this aspect has been done in this area.

The people belonging to modern societies are not aware of this knowledge of tribal folk medicine, so it has become imperative to collect information and document the same to study them scientifically. Moreover, due to the available modern facilities the culture of using indigenous knowledge for the treatment of common ailments is also rapidly disappearing. Thus, keeping in view the importance of above facts, the present survey work to enlist the medicinal plants used by the Jaintia tribes of South Assam of North East India has been undertaken. Also emphasis has been given to collect information about the mode of preparation of ethno-medicine and their application.

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MATERIALS AND METHODS

For the study, Jaintia villages of Cachar district were surveyed during 2007-2008. Intensive field visits were made to these tribal villages; so as to gather the detailed information on each and every plant species found useful in herbal medicine. While gathering information and data, it has been mainly collected from 'Medicinemen', 'Kabirajas' and even the local people who have knowledge of ethno-medicinal plants and their uses. Surveys were also in the nearby forest with the help of local people. Thorough observations were made on the spot collection of individual species. As far as possible, sufficient information were collected for plants in regards to vernacular names, plant or plant parts used for the preparation of medicine and application in the diseases.

Routine methods of botanical collection and herbarium techniques were followed as suggested by Jain and Rao (1977). For authentic identification of the collected specimens, *Flora of Assam* (vols. 1-4, Kanjilal *et al.*, 1934-1940 and vol.5, Bor, 1940) and *Flora of British India* (vols. 1-7, Hooker, 1872-1897) were consulted and finally confirmed by consulting experts and Herbarium of Botanical Survey of India, E.C., Shillong. All the specimens collected were deposited in the Herbarium of Cachar College Botany Department, Silchar, Assam.

RESULTS AND DISCUSSION

The study revealed that Cachar district of Assam is rich in various plants with medicinal values. Several interesting observations were made during the course of the survey. Several plants used by the tribe have already been reported to have medicinal values. Again some plants are used for same purpose as used by certain other tribes of N.E. India, which have already been reported by several workers like Rawat and Choudhury (1989), Gogoi and Baishya (1984); Borthakur (1992) and Asolkar *et al.*, (1992).

The medicinal value of *Centella asiatica* is very well known. Rawat and Choudhury (1989) also reported the use of the plant by Apatani and Nishi tribe of Arunachal Pradesh to cure gastric and abdominal pain. From the survey, it was found that the Jaintia tribes of Cachar district also use the plant for curing eye infection, dysentery and stomachache. The Jaintia tribe in the district *Ocimum basilicum* in cough and various skin diseases.

Thus, from the survey and results (Table 1 and 2) it was found that out of 45 plant species, 7 species have multiple applications in diseases and from the survey it has been observed that the Jaintia tribe of the district has very deep understanding about the medicinal uses of various plants. The destruction of natural habitats by overgrazing, new inhabitants and with rapid deforestation

Table 1 : Showing the collected and identified species arranged in diseases, with botanical names, local names/vernacular names (Vern.), families to which they belong and plant parts and its application to diseases and ailments used by the Jaintia tribes of Cachar district of South Assam

Diseases	Botanical names	Local/ Vern. names	Families	Parts used (Application)
Arthritis	<i>Calotropis gigantea</i> (Linn.) Dryand.	Akado	Asclepiadaceae	Leaf, Roots and Bark. (Leaf and bark paste is applied locally in joint pain and arthritis).
Asthma	<i>Dryopteris crysocomma</i> C.Chr.	Saghiya	Dryopteridaceae	Leaf (Paste of leaf is applied locally in sciatica)
	<i>Achyrenthes aspera</i> Linn.	Soh-bythitiblay	Amaranthaceae	Roots and Leaves (Fresh roots and leaves extract is eaten for getting relieve from Asthma and in piles)
Cuts and wounds	<i>Aegle marmelos</i> (Linn.) Correa Trans	Soh-bel	Rutaceae	Leaves (Leaves juice is given to take to cure fever and asthma)
	<i>Ageratum conyzoids</i> Linn	Myngai	Asteraceae	Leaves (Fresh leaves juice is used in cuts wounds)
	<i>Borreria articularis</i> F.N.Williams	Phlangbhoi	Rubiaceae	Leaf (Fresh leaves extract is used to stop bleeding in minor and major cuts and injuries).
	<i>Combretum decandrum</i> Roxb	Jarangsla,	Combretaceae	Leaf (Leaf paste is applied to the body parts under distress).
	<i>Curcuma domestica</i> Valet	Shengtum	Zingiberaceae	Rhizome ((Paste of rhizome is used in skin diseases and also applied in joint injuries and swelling parts).
	<i>Ipomoea maricata</i> Linn	Sarmause	Convolvulaceae	Leaf (Paste of leaf is applied locally in any types of burns)

Table 1 contd.....

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Cuts and wounds	<i>Mikania micrantha</i> Linn	Jermapakistan	Asteraceae	Leaves (The crushed leaves are applied in minor cuts)
	<i>Musa bulbisiana</i> Linn	Ladaukhlo	Musaceae	Roots (Paste of root is used as remedy for cuts)
	<i>Piper beetle</i> Linn	Pathi	Piperaceae	Leaf (Paste of leaf is used in minor cuts and injuries)
Dysentery	<i>Aegle marmelos</i> (Linn.) Correa Trans	Soh-bel	Rutaceae	Fruit (juice and ripen fruits are given to take in dysentery)
	<i>Centella asiatica</i> Linn	Batmania	Apiaceae	Whole plant. (Extract juice is used in chronic dysentery)
	<i>Clerodendron infortunatum</i> Goertn	Loholaw	Verbenaceae	Young leaf (Fresh young leaves juice is given to take in dysentery)
	<i>Holarrhena antidysenterica</i> (Roth.) A.Dc.	Dieng-jamew	Apocynaceae	Leaf and young stem (Extraction of leaves and stem are given to take in dysentery)
	<i>Melastoma malabatricum</i> Linn	Dieng-sohkhing / Dieng-kharungai	Melastomaceae	Leaf and young twigs (Extraction of leaf and young twigs is given to take in dysentery and worm infestation in children)
Eye diseases	<i>Centella asiatica</i> Linn.	Batmania	Apiaceae	Whole plant (Extract juice is used in eye infection)
	<i>Croton joufra</i> Roxb.	Dieng-lamosuh	Euphorbiaceae	Leaf (Leaf extract is used in cataract eye)
	<i>Datura stramonium</i> Linn	Lakutung	Solanaceae	Leaf (Leaf juice is given in earache and eye infection)
Fever	<i>Acorus calamus</i> Linn	Ubet	Araceae	Roots and rhizome (Extract of roots and rhizome is given to take to cure fever and malarial fever)
	<i>Aegle marmelos</i> (Linn.) Correa Trans.	Soh-bel	Rutaceae	Leaves (Leaves juice is given to take to cure fever)
	<i>Alstonia scholaris</i> (Linn.) R.Br.Mem	Dieng-rythen	Apocynaceae	Bark (powder is given to take in malaria)
	<i>Asparagus racemosus</i> Willd.	Batniang sohpert	Lilaceae	Root (extract is given to take in fever)
	<i>Mimosa himalayana</i> Gamble	Stantalikhlo	Mimosaceae	Roots (kept in forehead for the remedy of fever)
	<i>Momordica charantia</i> Linn	Karala	Cucurbitaceae	Fruit (juice with honey is mixed and applied for malaria)
Gastric and indigestion	<i>Oxalis debis</i> H.K.	Tiew-lapongnai-sohdkliw,	Oxalidaceae	Whole plant (Juice is given to take in indigestion and gastric)
	<i>Solanum nigrum</i> Linn.	Samantho/sangang,	Solanaceae.	Fruits and leaves (Fruit and leaf extract is given to take in indigestion and in liver diseases)
Gynaecological Problem	<i>Aspidopterys cordata</i> A. Juss.	Rebensla	Malpighiaceae	Roots (Fresh root extract is given to mother after delivery as tonic)
	<i>Justicia diffusa</i> Willd	Khynsla	Acanthaceae	Leaf (The boiled extract of leaf is given to the mother after delivery)
Hyper tension	<i>Clerodendron infortunatum</i> Goertn	Loholaw	Verbenaceae	Young leaf (young leaf twig paste with bulb of garlic is given to take in controlling high blood pressure).
	<i>Rauwolfia serpentina</i> (Linn.)Benth. Ex. Kurz.	Dieng- larkai	Apocynaceae	Leaf (The leaf juice is given to take to reduce high blood pressure)
Insects and snake bite	<i>Rauwolfia serpentina</i> (Linn.) Benth. Ex. Kurz	Dieng- larkai	Apocynaceae	Roots (Root is used in dog bite and also in insect bite).
Jaundice	<i>Cajanus cajan</i> Linn	Aral sla	Legumiosae	Leaf (Extract of leaf twigs is given to take in jaundice)
	<i>Cascuta reflexa</i> Roxb	Man	Cascutaceae	Whole plant (Extract juice is given to cure in jaundice)

Table 1 contd.....

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Rheumatism and rabies	<i>Momordica charantia</i> Linn	Karala	Cucurbitaceae	Leaves and fruits (Fruit juice with honey is given to drink in rheumatism and leaf extract is also used to prevent rabies)
Skin diseases	<i>Azadirachtai indica</i> . A. Juss.	Neemsla	Meliaceae	Leaves, (Fresh leaves are used in skin diseases and in chicken pox to protect from infection)
	<i>Calotropis gignentia</i> (Linn.) Dryand	Akado	Asclepiadaceae	Leaf, Roots and Bark (Leaf, juice and bark is used in abdominal pain, joint pain and skin diseases)
	<i>Lantana camara</i> Linn.	Dieng-sophangklien	Verbenaceae	Leaf (Paste is used in various skin diseases and also to stop bleeding)
	<i>Lens asculenta</i> Maench	Dal	Papilionaceae	Grain (The half portion of the grain is put on the tip of the Boil leading to its bursting)
Skin disease	<i>Ocimum basilicum</i> Linn	Dieng-tolshi	Lamiaceae	Leaf (Crush leaves paste is used in skin diseases)
	<i>Polygonum molle</i> D.Don	Jaryndew	Polygonaceae	Leaf (Paste of leaves is used in skin diseases and in boil)
Stomachache	<i>Alstoni scholaris</i> (Linn.) R. Br. Mem.	Dieng-rythen	Apocynaceae	Leaves (Leaf extract is given to take in stomachache and boil).
	<i>Centella asiatica</i> Linn	Batmania	Apiaceae	Whole plant (Extract juice is used in stomachache)
	<i>Psidium guava</i> Linn	Sparmsla	Myrtaceae	Young leafy twig (The juice made from young leafy twig is given to take in stomachache)
	<i>Terminalia chebula</i> Retz	Artaki	Combretaceae	Fruit (Fruit juice is given to take in stomachache)
Toothache	<i>Zizophus maurtiana</i> Lamk.	Soh-broi	Rhamnaceae.	Leaf and fruits (Juice mixture of both leaf and fruit is given to take in stomachache)
	<i>Cinnamomum tamala</i> Nees	La-pynriang,	Lauraceae	Leaf (Juice extract is given to relief in toothache)
	<i>Eupatorium odoratum</i> Linn. var. <i>Chromolena odorata</i>	Basmaput	Asteraceae	Leaf (Leaf paste is applied locally in toothache)
	<i>Goniothalamus sesquipeddles</i> . H.K.	Sakamri	Annonaceae	Leaf (Paste of leaf is applied in toothache).
Tuberculosis	<i>Spilentes paniculata</i> Wall ex Dc.	Marsang	Asteraceae	Flowers and leaves (used in toothache and worm infestations)
	<i>Argyreia sercea</i> Daiz	Jarmasquin	Convolvulaceae	Leaves, Uses: Leaf extract is given to take to T.B. patient at the initial stage.
Urinary Problems	<i>Phyllanthus emblica</i> Linn	Samyrlain	Euphorbiaceae	Fruits and young leaves. (Fruits and young leaf juice is given to take in urine problem)

Table 2 : Revealing that the there are some medicinal plants which are having multiple usage. The plants having multiple uses are

Plants	Application in diseases
1. <i>Centella asiatica</i> Linn	Dysentery, eye diseases and stomachache
2. <i>Calotropis gignentia</i> (Linn.) Dryand	Arthritis and skin diseases.
3. <i>Aegle marmelos</i> (Linn.) Correa Trans	Asthma, dysentery and fever.
4. <i>Alstonia scholaris</i> (Linn.) R. Br. Mem.	Fever and stomachache.
5 <i>Rauvolfia serpentina</i> (Linn.) Benth. Ex. Kurz	Hypertension and insects and snake bite.
6. <i>Clerodendron infortunatum</i> Goertn	Dysentery and hypertension.
7. <i>Momordica charantia</i> Linn	Fever, rheumatism and rabies

due to Jhum or shifting cultivation, the plant species are fast disappearing. Information on the utilization of plants in medicine passes on through oral communication from one generation to another. It has also been observed that the younger generation is no more interested to learn the uses of these plants from the older. Therefore, it is important to preserve this indigenous knowledge of our tribal communities. It is also important to conserve and multiply these medicinal plant species before they become endangered and extinct.

Research implementation:

These medicinal plants can be investigated for their active principles and tested for pharmacological and clinical trials on humans for their safe use. These studies may thus bring to light some new sources of drugs of herbal origin and by establishing herbal drug collection

centers in the tribal villages; the economy of tribal people can be improved. This survey will serve as base for any further study in this regards. Hence major steps need to be taken for conservation and multiplication of ethno-medicinal plants of north east India before they become endangered and extinct.

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