

## Ethno-medicinal Survey on Tai-Ahom Community of Assam

C. Dohutia<sup>1\*</sup>, D. Chetia<sup>1</sup> and S. Upadhyaya<sup>2</sup>

<sup>1</sup>*Department of Pharmaceutical Sciences, <sup>2</sup>Department of Life Sciences Dibrugarh University, Dibrugarh 786004, Assam, India*

**KEYWORDS** Ethnic Tribes. Historical Sources. Local Healers. Northeast India. Tai-Ahom. Ethno-traditional Medicine

**ABSTRACT** An ethno-medicinal survey among the Tai-Ahom community of Assam was undertaken to gather knowledge on different medicinal formulations that are prepared and administered by their *bejes/bejinis* (medicine men/women). In this study, treatments mentioned in ancestral manuscripts, their methods of preparation, formulations and their applications in different diseases have been described. Ways of diagnosing the diseases, precautions to be maintained while on treatment, adverse effects, and follow up treatments have also been mentioned. The objective was to search for novel plants having medicinal value and to understand the importance of their traditional medicinal preparations and their relevance in the modern era. Besides providing information about the properties of some uncommon plants the data offers new insight to the usage of some of these medicinal preparations and reinforces the need for safeguarding these methods for further assessment.

### INTRODUCTION

Mankind has been influenced by plants and plant products since time immemorial and ethno-biology was perhaps, the first science that originated with the evolution of the humans on earth (Rawat and Chowdhury 1998). It is quite familiar to find various practices sorted under traditional medicines due to the fact that they do not emerge from a scientific background. Traditional medicines mostly consist of a folk medicine and any form of a remedial method that has been passed down through generations according to the traditions of a community or the ethnic group (Bhasin and Bhasin 2007). The importance of ethno medicine and its practical application among the various ethnic groups to cure diseases and ailments speaks volumes about the traditional knowledge of these people. Such knowledge is transmitted through ancestral manuscripts or passed down the generations simply by word of mouth (Sonowal and Barua 2011). Modern medicine is desperately short of new medicines due to the growing drug resistance and the high cost of a new drug research and development. These aspects mean that scientists and pharmaceutical industries are constantly on the lookout for sources of new drugs and shifting their focus to the traditional medicine. Some of the most important and major drugs

in the field of allopathy like quinine, vinca alkaloids, opiates, heparin etc. have been earlier used as traditional medicines before modern science approved of their usage. Ethno-medicinal surveys can thereby serve as potential records which could provide valuable information regarding the various traditional remedies used against diseases. A number of ethno-medicinal studies pertaining to the different tribes of northeast India have been attempted by other researchers (Kanjilal and Kanjilal 1940; Jain and Borthakur 1980; Medhi 1995; Dutta and Nath 1999; Sharma Thakur 1999; Khanikar 2002; Medhi and Paul 2004; Saikia et al. 2006; Sajem and Gosai 2006; Buragohain and Konwar 2007; Kalita and Bora 2008; Bailung and Puzari 2016). However, extensive information on disease diagnosis, ethno-medicinal formulations and preparations, precautions and follow up treatments of the Tai-Ahom *bejes* is quite rare. The Ahom are a branch of the Tai-Yai or Shan people who settled in the upper Brahmaputra valley of Assam in 1228 A.D. and at present are distributed throughout Assam (Gogoi 1998). Due to the presence of a dense tropical rainforests in the region a myriad of diseases are prevalent in this region. The Tai-Ahoms have been dependent on their traditional system of medicine for centuries and it has proven to be quite effective in treating several diseases. Present communication deals with the ethno-medicinal survey among the Tai-Ahom community of Tinsukia, Dibrugarh and Sivasagar district of Upper Assam.

\*Address for correspondence:  
Telephone: + 91-8011713589  
E-mail: chnadrajit@gmail.com

## MATERIAL AND METHODS

### Study Area

The fieldwork was conducted from the period of August 2013 to May 2014. The study area concentrated on the three districts of upper Assam namely Tinsukia (27.4895p N, 95.3601p E), Dibrugarh (27.4742p N, 94.9181p E) and Sivasagar (26.9844p N, 94.6314p E) where the majority of the people were from the Ahom community. Kakopothar, Borguri in Dihingia gaon and Dhekiajuri villages of Tinsukia, Tamulikhat, Lengrai Tinikunia village of Dibrugarh and Bokota, Nongolamora and Patsaku villages of Sivasagar were surveyed.

### Data Collection

Twenty *bejes* were contacted and information on the prevention and the diagnosis of diseases, its mitigation and cure using the traditional medicine were obtained with the help of questionnaires, oral conversation and personal interaction. The modes of administration, precautions, contradictions and information on the usage of different means of measurement for making the required dosage were duly noted and reported. The *bejes* used their own particular units of measurement to prepare the formulations. The diagnosis of the patient was made by the *bej* based on the visible signs and symptoms of the disease and as per the complaints of the patient. Observance of yellow eyes in case of jaundice, complaints of painful menses of the patient, frequent urination indicating diabetes, arrhythmias indicating a heart condition, high fever followed by shivering as malaria. In most cases the *bej* themselves asked the patients to get a proper diagnosis from a medical examiner prior to any treatment. A renowned allopathic practitioner of Assam associated with a similar research was contacted and his views on the usage of the traditional medicines were recorded. Uncommon plants were collected and processed for herbarium sheet. The data included animal and inorganic material sources along with plants. Plants were identified with the help of a relevant literature (Dutta 2006) and matching with the herbarium specimens of the Dept. of Life Sciences, Dibrugarh University.

## RESULTS AND DISCUSSION

The various plants, animals and other sources used along with their scientific name, family and the specific parts used in the various preparations against the diseases along with the specific formulation and their modes of application have been listed (Table 1). A total of 132 plants, animals and inorganic sources were used in the various preparations. Plants belonging to the Zingiberaceae and Rutaceae families have been mostly used in the formulations. The *bejes* gained the knowledge of the medicinal preparations through their ancient texts and through information passed down the generations. Apart from locally available flora and fauna, substances like fresh cow's milk, honey, soil from the river bed, camphor and clarified butter have also been used to prepare the medicines. Bamboo scrapings mixed with camphor have been reported in the study to heal post skin cancer lesions. In the study, *Z. nitidum* have been used in majority of the formulations along with the other ingredients in treating pneumonia, tonsillitis, gall bladder, tumor and asthma. It has earlier also been found to be an effective antifungal and antiviral agent (Yang and Chen 2008). This species is generally used in curing dental problems and is clinically proven to decrease the incidence of dental plaque and improve gingival health (Wan et al. 2005); the small branches, seeds and stem bark are prescribed in fever, diarrhea and cholera (Kanjilal 1997; Kirtikar et al. 1933; Anonymous 1976). *P. nigrum* is the next frequent species which is found to be present in the traditional preparations. Earlier studies have demonstrated that piperine, obtained from *P. nigrum* inhibits several constitutive and inducible cytochrome P450 (CYP) activities in *in vitro* and *in vivo* studies (Atal et al. 1985; Singh et al. 1986, 1994; Reen and Singh 1981; Reen et al. 1993, 1996; Koul et al. 2000). The use of *piper* species in most of the traditional medicinal formulations is most likely to be because it leads to an enhancement of the drug bioavailability of the other drugs used in the formulation. This can be further substantiated from the data obtained as it is seen that *P. nigrum* has never been used as a single entity for any of the treatments specified. It has always been used in conjunction with other materials. There is a very little report about the pharmacological properties of most of the plants obtained from the data and require fur-

**Table 1: Plants, animals and inorganic resources used by the Tai-Ahom community of Assam**

S.No.	Scientific name		Local name	Part used	Mode of use	Applications
1	<i>Alstonia Scholaris</i> (L) R. Br.	Apocynaceae	<i>Satiana</i>	Leaves	Leaves worn around neck	Jaundice
2	<i>Acacia Farnesiana</i> (L.) Willd.	Mimosaceae (Leguminosae)	<i>Tarua</i>	Stem, bark, leaf, wood	Bark decoction	Malaria
3	<i>Calamus Tenuis</i> Roxb.	Palmae	<i>Bet Gaaz</i>	Shoot	Shoot of	Skin cancer
4	<i>Erythrina Stricta</i> Roxb.	Leguminosae	<i>Modar</i>	Leaves	<i>Bet gaaj</i> ,	
5	<i>Alpinia Allughas</i> Retz.	Zingiberaceae	<i>Tora Pat</i>	Leaves	3 leaves of <i>Modar</i> and shoot of <i>Tora</i> leaves finely ground and mixed together and applied.	
6	<i>Bambusa Balcooa</i> Roxb.	Bambusaceae	<i>Bholuka Banh</i>	Outer layer	Outer layer of bamboo mixed with <i>kaphoor</i> (Camphor). Powdered	Post healing of skin cancer
7	<i>Solanum Indicum</i> Linn.	Solanaceae	<i>Tita Bhekuri</i>	Leaves	Decoction	Unknown stomach ailment
8	<i>Citrus Medica</i> Linn.	Rutaceae	<i>Jora Tenga</i>	Fruit	Mixed with tuber of <i>hatikuhiar</i> and black pepper and finely ground	Paralysis
9	<i>Dracana Angustifolia</i> Roxb.	Agavaceae	<i>Hati Kuhiar</i>	Tuber		
10	<i>Piper Nigrum</i> Linn.	Piperaceae	<i>Jaluk</i>	Fruit		
11	<i>Abroma Augusta</i> Linn.	Sterculiaceae	<i>Ulot Kambal, gorokhiaKorai</i>	Root	Root juice	Uterine tonic
12	<i>Leea Indica</i> (Burm) Merr.L. <i>Sambusina</i> Willd.	Vitaceae	<i>Kukurathen Gia</i>	Leaf	Finely ground to paste. Applied topically over the skin and covered with banana leaf.	Supposedly joins broken bones
13	<i>Cissus Quadrangularis</i> Linn.	Vitaceae	<i>Harjura Lota</i>	Creepers		
14*		<i>Xajor Pitha</i>	cake			
15	<i>Hibiscus Sabdarifolia</i> Linn.	Malvaceae	<i>Tengamora</i>	Tendershoot	Decoction	Diarrhoea or dysentery
16	<i>Thunbergia Coccinea</i> Wall.	Acanthaceae	<i>Nilakantha</i>	Roots	Decoction	High fever and malaria
17	<i>Themeda Villosa</i> Poir.	Poaceae	<i>Birina</i>	Root	Boiled with black pepper and kept in a glass bottle. 1/4 <sup>th</sup> of the preparation is consumed daily.	Cures Pneumonia
18	<i>Zanthozylum Nitidum</i> Wall.	Rutaceae	<i>Tejmui</i>	Root		
19	<i>Clerodendrum Indicum</i> (L) O. Kuntze.	Lamiaceae	<i>Akol-Bih</i>	Root		
20	<i>Asparagus Racemosus</i> Willd.	Liliaceae	<i>Sat Mul</i>	Tuber	Ground together with palm candy (misiri) and consumed	In Gastric disorders and premature ejaculation
21	<i>Scoparia Dulcis</i> Linn.	Scrophulariaceae	<i>Seni Bon</i>	Whole herb	Ground	Anthelmenthic, infection in cows.

Table 1: Contd...

S.No.	Scientific name		Local name	Part used	Mode of use	Applications
22	<i>Kalanchoe Pinnata</i> Pers., Syn. <i>Bryophyllum Pinnatum</i> Kuntze.	Crassulaceae	<i>Dupor Tenga</i>	Fruit	Juice	In kidney stones and scant urination
23	<i>Centella Asiatica</i> (L) Urban	Apiaceae	<i>Manimuni</i>	Creeper	Crushed juice with <i>Singi, Goroi, Sengeli</i> fish.	For treating jaundice in pregnant women and in mothers and their babies
24	<i>Justicia Adhatoda</i> Linn./ <i>Adhatoda Vasica</i> Nees.	Acanthaceae	<i>Boga-Bahok</i>	Root, leaf	Powdered, Leaf juice	Applied on ulcers. Warmed juice is used as massage on lower abdomen after childbirth for uterus contraction
25	<i>Drymaria Cordata</i> Willd. ex.	Caryophyllaceae	<i>Lai Jabori</i>	Leaves	Crushed, put in banana leaves. Vapors inhaled.	Headache
26	<i>Rubus Moluccans</i> Linn.	Rosaceae	<i>Jetuli-Poka</i> <i>Jejeli-Poka</i>	Root, tender shoot, fruit	Root extract, Decoction of shoot	Dysmenorrhea. shoot Decoction is prescribed for cough and pneumonia
27	<i>Mimosa Pudica</i> Linn.	Fabaceae	<i>Nilaji Bon/ Lajuki bon</i>	Leaves	Crushed	Applied to wounds
28	<i>Dillenia Indica</i> Linn.	Dilleniaceae	<i>Ou-Tenga</i>	Fruit	Decoction	Dysentery
29	<i>Spondias Pinnata</i> Kurz.	Anacardiaceae	<i>Amora</i>	Stembark, leaf, fruit	Decoction made till dark color develops along with the barks of <i>Amlakhi, Arjun</i> and <i>Xilikha</i> trees. ½ cup per day.	Diabetes
30	<i>Spilanthes Acmeila</i> Linn.	Asteraceae	<i>Bonoria Malkathi, Suhuni Bon</i>	Inflorescence	Crushed or chewed	In sore mouth and tongue and also in inflammation of the throat.
31	<i>Leucas Aspera</i> Willd.	Lamiaceae	<i>Doron Bon</i>	Roots	Boiled decoction	Cough and sinusitis
32	<i>Citrus Limon</i> (L.) Burm, f.	Rutaceae	<i>Gul Nemu</i>	Seeds	<i>Kori</i> is kept in the juice till it dissolves.	Gall bladder stones
33*	<i>Monetaria Moneta</i> Linn.	Cypraeidae	<i>Kori</i>	Sea snail		

Table 1: Contd...

S.No.	Scientific name		Local name	Part used	Mode of use	Applications
34	<i>Terminalia Arjuna</i> (Roxb.), Wight & Arn.	Combretaceae	Arjun	Bark	Decoction of the bark mixed with clove, pipali (finely ground), ghee and honey and curdled till sticky. ½ teaspoon administered daily	Asthma
35	<i>Gardinia Campanulata</i> Roxb.	Rubiaceae	Bih Moin	Seeds	Seeds of <i>Bih moin</i> mixed with black pepper and powdered. Kept inside the cheek.	Throat cancer
36	<i>Musa Sapientum</i> Linn.	Musaceae	Malbhog Kal Gos	Roots	9 finger length roots of <i>Malbhog</i> banana tree + <i>Jaifal</i> + Ashes of furnace mixed together and inserted into two slices of a <i>malbhog</i> banana and made into a pellet and s swallowed.	Dog bite
37	<i>Myristica Fragrans</i> Houtt.	Myristicaceae	Jaifal	Fruit		
38	<i>Aristolochia Tagala</i> Cham.	Aristolochiaceae	Paan Pipali	Leaflet		
39 <sup>#</sup>			Soukar Dhuli	(Ashes of furnace)		
40	<i>Rubus Moluccanus</i> Linn.	Rubiaceae	Jejeli poka/ Jetuli Poka	Roots		Pneumonia
41	<i>Caesalpinia Bonducella</i> Flem.	Caesalpinia-ceae	Leta Guti	Seeds		
42	<i>Piper Nigrum</i> Linn.	Piperaceae	Jaluk	Fruit		
43	<i>Zanthozylum Nitidum</i> Wall.	Rutaceae	Tejmui	Root	Ground with a pinch of salt. Consumed with warm water	Pneumonia
44	<i>Gardinia Campanulata</i> Roxb.	Rubiaceae	Bihmona	Bark		
45	<i>Trichosanthes Anguina</i> Linn.	Cucurbitaceae	Dhunduli	Bark		
46	<i>Caesalpinia Bonducella</i> Flem.	Caesalpinia-ceae	Leta Guti	Seed		
47	<i>Coffea Bengalensis</i> Roxb.	Rubiaceae	Kothona	Bark		
48 <sup>^</sup>			Ghee	Butterfat	All the ingredients are crushed, mixed together and fried. The ingredients after cooling are made into pellets for consuming.	Heart trouble

Table 1: Contd...

S.No.	Scientific name		Local name	Part used	Mode of use	Applications
49 <sup>^</sup>			<i>Mou</i>	Honey		
50	<i>Terminalia Arjuna</i> (Roxb.), Wight & Arn.		Combretaceae	<i>Arjun</i>	Bark	
51	<i>Centella Asiatica</i> (L) Urban	Apiaceae	<i>Bor Manimuni</i>	Leaf		
52 <sup>+</sup>			<i>Seni</i>	Sugar		
53	<i>Caesalpinia</i> <i>Bonducella</i> Flem.	Caesalpinia ceae	<i>Leta Guti</i>	Seed	All the ingredients are crushed together, warmed and consumed.	Pneumonia
54	<i>Piper Nigrum</i> Linn.	Piperaceae	<i>Jaluk</i>	Fruit		
55	<i>Zanthoxylum Nitidum</i> Wall.	Rutaceae	<i>Tejmui</i>	Root		
56	<i>Gardinia Campanulata</i> Roxb..		Rubiaceae	<i>Bihmona</i>	Bark	
57	<i>Coffea Bengalensis</i> Roxb.	Rubiaceae	<i>Kothona</i>	Bark		
58	<i>Tricosanthes Cucumerina</i> Linn.		Cucurbitaceae	<i>Dhunduli</i>	Bark	
59	<i>Jatropha Curcus</i> Linn.	Euphorbiaceae	<i>Bongali Era</i>	Bark		
60	<i>Lawsonia Innermis</i> Linn.	Lythraceae	<i>Jetuka</i>	Leaf	The leaves of <i>jetuka</i> and 3 heads of the <i>Bunda</i> earthworm (mudless) are boiled together and consumed.	Bleeding piles
61 <sup>+</sup>	<i>Pheretima Posthuma</i>	Oligochaeta	<i>Bunda Kesu</i>	Head		
62	<i>Oroxylum Indicum</i> Vent.	Bignoniaceae	<i>Bhat Ghila</i>	Seed	The seed is burnt and the flesh inside is consumed. Also applied topically.	External piles
63	<i>Cynodon Dactylon</i> (L) Pers.	Poaceae	<i>Dubori Bon</i>	Grass	Crushed and juice consumed till colour of urine turns to normal.	Jaundice
64	<i>Elausine Indica</i> (L) Gaertn.	Poaceae	<i>Bobosa Bon</i>	Grass	1 <i>bobosa bon</i> with 7 leaves of <i>Bor manimuni</i> and rice grains measured on the top of the hand are crushed and mixed together with cold water. 4 doses administered.	Diabetes mellitus
65	<i>Centella Asiatica</i> (L) Urban	Apiaceae	<i>Bor Manimuni</i>	Leaf		
66	<i>Oryza Sativa</i> Linn.	Poaceae	<i>Saol</i>	Grain		
67 <sup>+</sup>	<i>Solenopsis Spp.</i>	Formicidae	<i>Amruli Poruwa</i>	Fireant	7 ants, 4 facing clockwise and 3 facing anti-clockwise, wrapped on a piece of paper	Epilepsy

Table 1: Contd...

S.No.	Scientific name		Local name	Part used	Mode of use	Applications
68	<i>Carissa Carandas</i> Linn.	Apocynaceae	<i>Korja Tenga</i>	Fruit	and tied to hand or lower back.	
69	<i>Azadirachta Indica</i> A.Juss.		<i>Neem</i>	Fruit		Taken directly Dysentery
70	<i>Kyllingia Brevifolia</i> Rottb.	Cyperaceae	<i>Kea Bonor Sesu</i>	Root nodules	All the ingredients are crushed and ground and administered with warm water	Asthma
71	<i>Solanum Melongena</i> Linn.	Solanaceae	<i>Khoruwa Bengena</i>		flower leaflet	
72	<i>Aristolochia Tagala</i> Cham.	Aristolochiaceae	<i>Paan Pipali</i>			
73	<i>Piper Longum</i> Linn.	Piperaceae	<i>Jalukor Pipali</i>	Leaflet		
74	<i>Alstonia Scholaris</i> (L) R Br.	Apocynaceae	<i>Satiana</i>	Bark	All the ingredients are mixed together and crushed. Juice is consumed. Dosage is given according to age	Tuberculosis
75	<i>Caesalpinia Bonducella</i> Flem.	Caesalpiniaceae	seed <i>Leta Guti</i>			
76	<i>Piper Nigrum</i> Linn.	Piperaceae	<i>Jaluk</i>	Fruit		
77	<i>Crataeva Religiosa</i> (Forst) Hook. f & Thoms.	Capparaceae	<i>Barun</i>	Bark		
78	<i>Jatropha Curcas</i> L.	Euphorbiaceae	<i>Bongali Era</i>	Bark		
79	<i>Coffea Bengalensis</i> Roxb.	Rubiaceae	<i>Kothona</i>	Bark	Rubbed and properly ground. Consumed with warm water.	Diarrhoea stops after half an hour.
80	<i>Bambusa Balcooa</i> Roxb.	Poaceae	<i>Bholuka Bah</i>	Bamboo	The fresh warm milk is put in the hollow of the bamboo and consumed.	Dysentery
81 <sup>^</sup>			<i>Goru Gakhir</i>	Fresh warm Milk from Cow		
82 <sup>*</sup>	<i>Rana Tigrina</i>	Dicroglossidae	<i>Sukor Bhekuli</i>	Blood of Frog	Blood of the frog is to be consumed	Goitre
83	<i>Leucas Aspera</i> Willd.	Lamiaceae	<i>Doron Bon</i>	Grass	All the items are finely ground and made into a pellet and administered.	Tonsilitis
84	<i>Ricinus Communis</i> Linn.	Euphorbiaceae	<i>Era/Erena</i>	Bark		
85	<i>Zanthozylum Nitidum</i> Wall.	Rutaceae	<i>Tejmui</i>	Roots		
86 <sup>#</sup>			<i>Pani Tolor Mati</i>	Fresh underwater soil	Applied directly to wound/blister	Besu (Rash)
87 <sup>*</sup>	<i>Sceliphron Laetum</i>	Sphecidae	<i>Kumaroni Bah</i>	Insect nest	Finely powdered	Blister

Table 1: Contd...

S.No.	Scientific name		Local name	Part used	Mode of use	Applications
88*	<i>Sceliphron Laetum</i>	Sphecidae	<i>Kumaroni Bah</i>	Insect nest	Finely powdered	<i>Mukhloga</i> (Stomach ailment) Piles
89	<i>Amorphophallus Campanulatus</i> Roxb.	Araceae	<i>Ul Kosu</i>	Corm	Consumed along with milk	
90*						
91	<i>Heteropanax Fragrans</i> Seem.	Araliaceae	<i>Goru Gakhir Kaseru Pat</i>	Milk Leaf	Mixed together. Made into decoction and consumed.	Pneumonia
92	<i>Zanthozylum Nitidum</i> Wall.	Rutaceae	<i>Tejmui</i>	Leaf	Leaf juice	Kidney stones
93	<i>Kalanchoe Pinnata</i> Pers., Syn. <i>Bryophyllum Pinnatum</i> Kuntze.	Crassulaceae	<i>Dupor Tenga</i>	Leaf	mixed with a little salt in empty stomach	
94*	<i>Atherurus Macrourus</i>	Hystriidae	<i>Ketla Pohu</i>	Intestine	All the ingredients apart from Intestine are boiled together with pepper and a pinch of salt. The residue is filtered. To the filtrate the intestine of porcupine is added.	Pneumonia
95	<i>Argyria Speciosa</i> Sweet.	Convolvulaceae	<i>Tokoria</i>	Tuber		
96	<i>Piper Nigrum</i> Linn.	Piperaceae	<i>Jaluk</i>	Fruit		
97	<i>Zanthozylum Nitidum</i> Wall.	Rutaceae	<i>Tejmui (6finger)</i>	Root		
98	<i>Entada Scandens</i> Benth.	Mimosaceae	<i>Makori Ghila</i>	Seed		
99	<i>Caesalpinia Bonducella</i> Flem.	Caesalpinia ceae	<i>Leta Guti</i>	Seed		
100	<i>Zanthozylum Nitidum</i> Wall.	Rutaceae	<i>Tejmui</i>	Root	Ingredients crushed, boiled with salt. The decoction is consumed. Tumor in gall bladder	
101	<i>Caesalpinia Bonducella</i> Flem.	Caesalpinia ceae	<i>Leta Guti</i>	Seed		
102*	<i>Atherurus Macrourus</i>	Hystriidae	<i>Ketla Pohu</i>	Intestine		
103	<i>Ferula Foetida</i> L.	Apiaceae	<i>Hing</i>	Resin	All ingredients should be mixed and ground finely and applied to the wound	Skin cancer
104	<i>Eclipta Prostrate</i> Roxb.	Asteraceae	<i>Keheraj Bon</i>	Grass		
105	<i>Leucas Aspera</i> Willd.	Lamiaceae	<i>Doron Bon</i>	Grass		
106	<i>Hydrocotyle Rotundifolia</i> Lamk.	Umbelliferae	<i>Xoru Manimuni</i>	Leaf		
107	<i>Piper Nigrum</i> Linn.	Piperaceae	<i>Jaluk</i>	Fruit		



Table 1: Contd...

S.No.	Scientific name		Local name	Part used	Mode of use	Applications
108	<i>Basella Alba</i> L. Var. <i>Rubia</i> (L.)Stew	Basellaceae	<i>Ronga Puroi</i>	leaf	Mixed and applied	Skin rash
109*	<i>Pheretima Posthuma</i>	Oligochaeta	<i>Kesu Mati</i>	Earthworm soil		
110	<i>Punica Granatum</i> Linn.	Lythraceae	<i>Tenga Dalim</i>	bark	Boiled. Decoction is consumed.	Dysentery
111	<i>Terminalia Arjuna</i> (Roxb.), Wight & Arn.	Combretaceae	<i>Arjun</i>	Bark		
112	<i>Asparagus Racemosus</i> Willd.	Liliaceae	<i>Satmul</i>	Tuber	Curdled with a pinch of salt. Juice consumed.	Diabetes
113	<i>Chromolaena Odorata</i> (L.)Voigt.	Asteraceae	<i>Tongloti</i>	Root	Higher ratio of <i>Tongloti</i> mixed with all the other ingredients, boiled and the decoction consumed.	Asthma
114	<i>Zanthoxylum Nitidum</i> Wall.	Rutaceae	<i>Tejmui</i>	Root		
115	<i>Piper Nigrum</i> Linn.		Piperaceae	<i>Jaluk</i>	Fruit	
116	<i>Zingiber Cassumunar</i> Roxb.	Zingiberaceae	<i>Moran Ada</i>	Rhizome		
117	<i>Coffea Bengalensis</i> Roxb.	Rubiaceae	<i>Kothona</i>	Root	All the ingredients crushed and curdled with the addition of a pinch of salt. The boiled juice is administered for 7 consecutive doses.	TB
118	<i>Zanthoxylum Nitidum</i> Wall.	Rutaceae	<i>Tejmui</i>	Root		
119	<i>Gardinia Campanulata</i> Roxb.	Rubiaceae	<i>Bihmoin</i>	Root		
120	<i>Leucas Aspera</i> Willd.	Lamiaceae	<i>Doron Bon</i>	Grass		
121	<i>Scoparia Dulcis</i> L.	Scrophulariaceae	<i>Seni Bon</i>	Grass		
122	<i>Piper Nigrum</i> Linn.		Piperaceae	<i>Jaluk</i>	Fruit	
123	<i>Syzygium Aromaticum</i> (L) Merr & Perr.	Myrtaceae	<i>Laung</i>	Fruit		
124	<i>Elettaria Cardamomum</i> (L) Maton & White	Zingiberaceae	<i>Elaichi</i>	Fruit		
125	<i>Piper Longum</i> L.	Piperaceae	<i>Pipali</i>	Leaflet		
126^			<i>Rohi</i>	Local Drink		
127*	<i>Amphipnous Cuchia</i>	Synbranchidae	<i>Cuchia</i>	fruit		
128	<i>Vernonia Anthelmintica</i> Willd.	Asteraceae	<i>Kaljeera</i>	fruit	All the ingredients are boiled together and filtered. Filtrate consumed	Anthel menthic
129	<i>Punica Granatum</i> Linn.	Punicaceae	<i>Tenga Dalim</i>	Bark		
130	<i>Terminalia Arjuna</i> (Roxb.), Wight & Arn.	Combretaceae	<i>Arjun</i>	Bark		
131	<i>Phoenix Dactylifera</i> Linn.	Arecaceae	<i>Misiri</i>	Palm candy		
132	<i>Swertia Chirata</i> Buch Ham.	Gentianaceae	<i>Chirata</i>	Root		

\*Animal sources # Inorganic sources, ^ Liquids

ther study. For example, *R. moluccans* has been found in two cases to cure pneumonia and dysmenorrhea, *G. campanulata* has been reported in conjunction with other ingredients for the treatment of pneumonia in two cases and used singly for the treatment of throat cancer, *A. tagala* in conjunction with other herbs is reported in the treatment of dog bites and asthma; but very little pharmacological properties of these plants have been reported. Apart from the plants, formulations also consisted of inorganic and animal sources. Scientific validation regarding the usage of these sources has yet not been ascertained. In order for the medicines to work, most of the patients are asked to refrain from consuming alcohol including the traditional rice beer (*Saj*) and the fatty food items such as Duck meat, *Borali* fish (*Wallago attu*), *Puthi* fish (*Punitus stigma*) *Bora* rice (*Oryza sativa*) and highly alkaline or acidic food items. Consumption of fishes like *Cuchia* (*Amphipnous cuchia*) and *Magur* (*Clarias batrachus*) are encouraged. In case of dog bite the victim is asked to stay away from *Urohi* (*Dolichos lablab*) and Water gourd. Consumption of mucilaginous substances like Lady's finger, Colocassia, Elephant apple, Brinjal and underground tubers is prohibited for a person with Pneumonia and Diabetes. The *bej* do not administer their medicines to cancer patients who are on radiation therapy. As a follow up measure they provide a topical powder made from the outer bark of bamboo and camphor to the patient to be applied locally on the affected area. Side effects of the medications have not been observed or reported. According to a well-known allopathic medical practitioner the major problem associated with these formulations is the absence of a certified dosage (personal communication). As such the herbs and the formulations used do not have any harmful effects but due to the absence of a fixed dosage some of the ingredients tend to have an adverse effect. Most of the topical formulations used are completely safe and effective. Evidences are there of broken bones of patients getting completely healed without surgery and complete cure of skin cancers of patients due to the application of traditional formulations.

### CONCLUSION

From the data obtained it was seen that traditional medicine is still being used to treat a

wide variety of ailments in the remote and isolated areas of Assam and especially for the poorer and the lower middle class sections of the society. Despite making headways, the marvels of the modern medicine have not reached many remote and isolated areas the state. The Tai-Ahoms have been using their knowledge of locally available medicinal resources and their ancestral manuscripts to successfully counter a majority of ailments plaguing the people of Assam since ages. The information provided in the paper is limited and there is always a scope to initiate further study among the community living in the far flung areas. The various methods of preparation and the use of traditional medicine along with their claimed success reported in the present study need to be extended for future scientific analysis in the area of core pharmacology and phytochemistry in the hope of unearthing new drug candidates.

### ACKNOWLEDGEMENTS

Assistance of Prof. L.R. Saikia of Department of Life Sciences, Dibrugarh University in the identification of the plants is thankfully appreciated. Assistance of Mr. Phiroz Gogoi, Ms. Kabita Gogoi, Mr. Dipu Konwar and Mr. Lakhyajit Baruah during the survey is acknowledged.

### REFERENCES

- Anonymous 1976. *The Wealth of India, Raw Materials*. Vol. XI: X-Z. New Delhi, India: Council of Scientific and Industrial Research; Assam, India.
- Atal CK, Dubey RK, Singh J 1985. Biochemical basis of enhanced drug bioavailability by piperine: Evidence that piperine is a potent inhibitor of drug metabolism. *J Pharm Exp Ther*, 232(1): 258-262.
- Bailung B, Puzari M 2016. Traditional use of plants by the Ahoms in human health management in upper Assam, India. *J Med Plants Stud*, 4(2): 48-51.
- Bhasin MK, Bhasin Veena 2007. Medical Anthropology: A review. *Ethno-Med*, 1(1): 1-20.
- Buragohain J, Konwar BK 2007. Ethnomedicinal plants used in skin diseases by some Indo-Mongoloid communities of Assam. *Asian J Exp Sci*, 21(2): 281-288.
- Dutta AC 2006. *Dictionary of Economic and Medicinal Plant*. Khelmati, Jorhat. Dutta Publishers.
- Dutta M, Nath SC 1999. Ethno-medico botany of the Tai-Ahoms of Assam, India. *J Econ Taxon Bot*, 23(2): 591-598.
- Gogoi P 1998. An evaluation of original Tai cultural heritage among the Tai Ahom of Assam in the light of their ethno-cultural contacts and exchanges with other ethnic groups in northeast India. *Tai Studies Proceedings*, 299-311.

- Jain SK, Borthakur SK 1980. Ethnobotany of Mikirs of India. *J Econ Taxon Bot*, 34: 264-272.
- Kalita D, Bora RL 2008. Some folk medicines from Lakhimpur district, Assam. *Indian J of Traditional Knowledge*, 7(3): 414-416.
- Kanjilal UN, Kanjilal PC, Das A, De RN 1940. *Flora of Assam*. Volumes 1-5. Assam: Government of Assam Publication.
- Kanjilal UN 1997. *The Flora of Assam*. Volume I (Part I). New Delhi: Omsons Publications.
- Khanikar G 2002. *Sahaj Labhya Bon-Darabar Goon*. Tetelitol, Golaghat, Assam: Khanikar Publication.
- Kirtikar KR, Basu BD 1933. *Indian Medicinal Plants*. Volume I. 2<sup>nd</sup> Edition. New Delhi: Bishen Singh Mahendra Pal Singh Publications.
- Koul S1, Kul JL, Taneja SC, Dhar KL, Jamwal DS 2000. Structure activity relationship of piperine and its synthetic analogues for their inhibitory potentials of rat hepatic microsomal constitutive and inducible cytochrome P450 Activities *Bioorg. Med Chem*, 8: 251-268.
- Medhi BK 1995. Ethnomedicine: A study among the Mishings in a rural context, Gauhati University. *Bulletin of the Dept of Anthropology*, IX: 61-68.
- Medhi BK, Paul B 2004. Health and hygiene of the Nahs of Arunachal Pradesh. *Stud Tribes Tribals*, 2(1): 23-27.
- Rawat MS, Chowdhury S 1998. *Ethno Medico Botany of Arunachal Pradesh (Nishi and Apatani tribes)*. Dehradun: Bishen Singh Mahendra Pal Singh Publishers.
- Reen RK, Jamwal DS, Taneja SC, Koul JL, Dubey RK, Wiebel FJ, Singh J 1993. Impairment of UDP-glucose dehydrogenase and glucuronidation activities in liver and small intestine of rat and guinea sig in vitro by pipeline. *Biochem Pharmacol*, 46(2): 229-238.
- Reen RK, Roesch SF, Kiefer F, Wiebel FJ, Singh 1996. Piperine impairs cytochrome P4501A1 activity by direct interaction with the enzyme with the enzyme and not by down regulation of CYP1A1 gene expression in the rat hepatoma 5L cell line. *Biochem Biophys Res Commun*, 218(2): 562-569.
- Reen RK, Singh J 1991. In vitro and in vivo, inhibition of pulmonary Cyp450 activities by piperine, a major ingredient of Piper sps. *Ind J Exp Biol*, 29: 568-573.
- Sajem AL, Gosai K 2006. Traditional use of medicinal plants by the Jaintia tribes in North Cachar Hills district of Assam, Northeast India. *J Ethnobiol Ethnomed*, 2: 33.
- Sharma Thakur GC 1999. Indigenous health practices and system of cure among the tribes of Assam plains. In: S Sengupta (Ed.): *Health, Healers and Healing: Studies in Medical Anthropology*. Dibrugarh: N. L. Publications, pp. 239-249.
- Saikia AP, Ryakala VK, Sharma P, Goswami P, Bora U 2006. Ethnobotany of medicinal plants used by Assamese people for various skin ailments and cosmetics. *J Ethnopharmacol*, 106(2): 149-157.
- Singh J, Dubey RK, Atal CK 1986. Piperine-mediated inhibition of glucuronidation activity in isolated epithelial cells of the guinea-pig small intestine, evidence that piperine lowers the endogenous UDP-glucuronic acid content. *J Pharm Exp Ther*, 236(2): 488-493.
- Singh J, Reen RK, Wiebel FJ 1994. Piperine, a major ingredient of black and long peppers, protects against AFB1-induced cytotoxicity and micronuclei formation in H4IIEC3 rat hepatoma cells. *Cancer Letters*, 86(2): 195-200.
- Sonowal R, Barua I 2011. Ethnomedical practices among the Tai-Khamyangs of Assam, India. *Ethno Med*, 5(1): 41-50.
- Wan HC, Hu DY, Liu HC 2005. Clinical observation of toothpaste containing Zanthoxylum nitidum extract on dental plaque and gingivitis. *Chinese Journal of Integrated Traditional and Western Medicine*, 25(11): 1024-1026.
- Yang G, Chen D 2008. Alkaloids from the roots of Zanthoxylum nitidum and their antiviral and antifungal effects. *Chem Biodivers*, 5(9): 1718-1722.

---

**Paper received for publication on November 2014**  
**Paper accepted for publication on September 2016**