

Biodiversity of one of the Mishing villages of Assam with an emphasis of the traditional knowledge and use of the wild plants



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ABSTRACT

The Mishing tribe is one of the hordes of the Mongoloid groups of people occupying the hills and valleys of northeastern India. Mishing or Miri tribe inhabiting the districts of Dhemaji, North Lakhimpur, Sonitpur, Tinsukia, Dibrugarh, Sibsagar, Jorhat and Golaghat of Assam, Northeast India. Many of the wild plants are used in the livelihood strategies of the tribal people. The present study highlights the biodiversity of one of the Mishing tribe villages of Assam with an emphasis on the traditional knowledge and use of these wild plants. A total of 31 plant and 19 bird species were recorded in the present study. In our survey, 67 species of butterflies of various families are reported in the village. Two species namely, *Santalum album* L. and *Cycas pectinata* are vulnerable and *Swietenia mahagoni* (L.) is endangered in the IUCN red list. Among the bird species, *Leptoptilos javanicus* is vulnerable in the IUCN red list.

KEYWORDS

Santalum album L | *Cycas pectinata* | *Swietenia mahagoni* (L.) | *Leptoptilos javanicus* | IUCN red list

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Introduction

The Mishing tribe is one of the hordes of the Mongoloid groups of people occupying the hills and valleys of northeastern India. The Mishing tribal community belonged to Mongoloid group – a multitude of people that followed Austro-Asiatic races to India (Singh *et al.*, 1996). Mishing or Miri tribe inhabiting the districts of Dhemaji, North Lakhimpur, Sonitpur, Tinsukia, Dibrugarh, Sibsagar, Jorhat and Golaghat of Assam, Northeast India. Many of the wild plants are used in the livelihood strategies of the tribal people. A good number of wild plants are traditionally used by the Mishing people in their day to day life (Barua *et al.*, 2007). The present study highlights the biodiversity of one of the Mishing tribe villages of Assam with an emphasis of the traditional knowledge and use of these wild plants

Materials and Methods

Study area: The study was conducted in the Baligaon Miri Green village of Sonitpur district of Assam, Northeast India. Sonitpur district is spread over on the northern banks of Brahmaputra, the lifeline of Assam. It falls in the Tropical Rainforest climate region that enjoys both hot and wet climatic condition. Summers are hot and humid with an average temperature of 27 °C.

Survey method: Surveys were carried out at different spots of the village and its vicinity by line transects method (Barhaum *et al.*, 1980). Field notes, photographs and observations of the flora and fauna were taken for all the seasons during the daylight hours. Species were noted along with the time, date and location of capture. The flora and fauna of the village are critically surveyed in different localities for one complete year.

Taxonomic study: Identification of flora and fauna was done with the help of literature. Digital photographs were taken for both flora and fauna identified.

Discussion

A total of 31 plant species belonging to 27 families and 19 bird species belonging to 18 families were recorded in the present study. In our survey, 67 species of butterflies of various families are reported in the campus and out of 6 families 5 different families are present in the study area. Out of 31 plant species, 2 species namely, *Santalum album* L. and *Cycas pectinata* are vulnerable and *Swietenia mahagoni* (L.) is endangered in the IUCN red list. Among the bird species, *Leptoptilos javanicus* is vulnerable in the IUCN red list. Most of the plants have traditional medicinal value and many are used as food in the Mishing communities (listed in table 1). Most of Mishing people cultivated mainly four types of rice: Aijong, Bora, Bao, and Ranjit. Apart from these, they cultivated almost all type of vegetable grown in this geographical region and used to sell in the local market. Leaves of *Clerodendron serratum* (L.) Moon also used in the preparation of Apong which has a significant role in Mishing culture and tradition. The Mishing tribe is one of the hordes of the Mongoloid groups of people occupying the hills and valleys of northeastern India. Mishing or Miri tribe inhabiting the districts of Dhemaji, North Lakhimpur, Sonitpur, Tinsukia, Dibrugarh, Sibsagar, Jorhat and Golaghat of Assam, Northeast India. Many of the wild plants are used in the livelihood strategies of the tribal people. The present study highlights the biodiversity of one of the Mishing tribe villages of Assam with an emphasis on the traditional knowledge and use of these wild plants. A total of 31 plant and 19 bird species were recorded in the present study. In our survey, 67 species of butterflies of various families are reported in the village. Two species namely, *Santalum album* L. and *Cycas pectinata* are vulnerable and *Swietenia mahagoni* (L.) is endangered in the IUCN red list. Among the bird species, *Leptoptilos javanicus* is vulnerable in the IUCN red list.

Observations

S. No.	Scientific name	English name	Family	Plant parts used
1.	<i>Vicia benghalens</i> L.	Purple vetch	Faboideae	
2.	<i>Ficus hispida</i> L.f.	Indian Ivy	Moraceae	
3.	<i>Streblus asper</i> Lour.	Siamese rough bush	Moraceae	Medicinal value
4.	<i>Sarcochlamys pulcherrima</i> Gaud.	Duggal fibre tree	Urticaceae	Edible, Young leaves
5.	<i>Benincasa hispida</i> (Thunb. ex Murray) Cogn.	Wax gourd	Cucurbitaceae	Fruit
6.	<i>Colocasia esculenta</i> (L.) Schott	Cocoyam	Araceae	Tender leaves, tubers (Mishing edible)
7.	<i>Amaranthus caudatus</i> L.	Love-lies-bleeding	Amaranthaceae	Leaves and seeds Edible
8.	<i>Manihot esculenta</i>	Cassava	Euphorbiaceae	Roots edible
9.	<i>Terminalia arjuna</i> (Roxb.)	White murdah	Combretaceae	
10.	<i>Costus speciosus</i>	Elegant Costus, Kusta	Costaceae	Medicinal, ornamental value
11.	<i>Flacourita indica</i> (Burm. f.) Merr.	Governor's Plum	Flacourtiaceae	Medicinal value, Use in snake bite also
12.	<i>Santalum album</i> L. IUCN status: VU	Sandal Wood	Santalaceae	
13.	<i>Tinospora cordifolia</i>	Gulanch, Guduchi	Menispermaceae	Medicinal value
14.	<i>Stemonia tuberosa</i> Lour.		Stemonaceae	Medicinal value
15.	<i>Spilanthes acmella</i> Murr.	Pellitory	Compositae	Medicinal value
16.	<i>Hibiscus cannabinus</i> L.	Kenaf	Malvaceae	Edible
17.	<i>Clerodendron serratum</i> (L.) Moon	Blue glory, Beetle killer	Lamiaceae	Medicinal value
18.	<i>Ananas comosus</i> (L.) Merr.	Pineapple	Bromeliaceae	Fruit
19.	<i>Abelmoschus moschatus</i>	Devil's Cotton	Malvaceae	Medicinal value
20.	<i>Centella asiatica</i> (L.) Urb.	Indian pennywort	Apiaceae	Edible: whole plant, Medicinal value
21.	<i>Artocarpus heterophyllus</i> Lamk.	Jackfruit tree	Moraceae	Edible
22.	<i>Calamus rotang</i> L.	Rattang palm, cane	Arecaceae	
23.	<i>Citrus paradise</i>	Lemon	Rutaceae	Fruit
24.	<i>Tinospora crispa</i>	Patawali, Akar Patawali	Menispermaceae	Medicinal value
25.	<i>Cycas pectinata</i> IUCN status: VU	Sago Palm	Cycadaceae	
26.	<i>Phoebe hainesis</i>	Bonsum	Lauraceae	
27.	<i>Tectona grandis</i>	Teak	Lamiaceae	Timber
28.	<i>Swietenia mahagoni</i> (L.) IUCN status: EN	Mahogany wood	Meliaceae	
29.	<i>Chukrasia tabularis</i> A. Juss.	Bastard cedar	Meliaceae	
30.	<i>Dalbergia sissoo</i>	Indian rosewood	Fabaceae	Medicinal value
31.	<i>Shorea robusta</i>	Sal tree	Dipterocarpaceae	Timber, Medicinal value
32.	<i>Psidium guajava</i> L.	Guava	Myrtaceae	Fruit
33.	<i>Magnifera indica</i> L.	Mango	Anacardiaceae	Fruit

Table 1. Plant species found in Baligaon, Assam

S. No.	Scientific name	Common name/ English name	Family
1.	<i>Phalacrocorax niger</i>	Little Cormorant	Phalacrocoracidae
2.	<i>Acridotheres tristis</i>	Common Myna	Sturnidae
3.	<i>Streptopelia chinensis</i>	Spotted dove	Columbidae
4.	<i>Pycnonotus cafer</i>	Red-vented bulbul	Pycnonotidae
5.	<i>Pteropus vampyrus</i>	Large flying fox	Pteropodidae
6.	<i>Passer domesticus</i>	House sparrow	Passeridae
7.	<i>Aethopyga siparaja</i>	Crimson sunbird	Nectariniidae
8.	<i>Copsychus saularis</i>	Oriental Magpie robin	Muscicapidae
9.	<i>Dendrocygna javanica</i>	lesser whistling duck	Anatidae
10.	<i>Ardea alba</i>	Large Egret	Ardeidae
11.	<i>Amaurionis phoenicrus</i>	The white-breasted waterhen	Rallidae
12.	<i>Corvus splendens</i>	House crow	Corvidae
13.	<i>Leptoptilos javanicus</i> IUCN Status: VU	Lesser Adjutant	Ciconiidae
14.	<i>Vanellus indicus</i>	Redwattled lapwing	Charadriidae
15.	<i>Dicrurus macrocercus</i>	Black Drongo	Dicruridae
16.	<i>Dendrocitta vagabunda</i>	Rufous Treepie	Corvidae
17.	<i>Lanius cristatus</i>	Brown Shrike	Laniidae
18.	<i>Coracias benghalensis</i>	Indian Roller	Coraciidae
19.	<i>Halcyon smyrnensis</i>	White – throated Kingfisher	Alcedinidae

Table 2: Bird species found in Baligaon, Assam

S. No.	Scientific name	Common name	Family
1.	<i>Celaenorrhinus leucocera</i>	Common Spotted Flat	Hesperiidae
2.	<i>Telicota ancilla</i>	Dark Palm Dart	Hesperiidae
3.	<i>Odontoptilum angulate</i>	Chestnut Angle	Hesperiidae
4.	<i>Notocrypta curvifascia</i>	Restricted Demon	Hesperiidae
5.	<i>Spialia galba</i>	Indian Skipper	Hesperiidae
6.	<i>Pseudocoladenia dan</i>	Fulvous Pied Flat	Hesperiidae
7.	<i>Udaspes folus</i>	Grass Demon	Hesperiidae
8.	<i>Telicota colon</i>	Pale Palm Dart	Hesperiidae
9.	<i>Iambrix salsala</i>	Chestnut Bob	Hesperiidae
10.	<i>Taractrocera maevius</i>	Common Grass Dart	Hesperiidae
11.	<i>Sarangesa dasahara</i>	Common Small Flat	Hesperiidae
12.	<i>Common Dartlet</i>	Oriens gola	Hesperiidae
13.	<i>Troides Helena</i>	Common Birdwing	Papilionidae
14.	<i>Papilio Helenus</i>	Red Helen	Papilionidae
15.	<i>Graphium sarpedon</i>	Common Bluebottle	Papilionidae
16.	<i>Papilio iswara</i>	Great Helen	Papilionidae

17.	<i>Papilio polytes</i>	Common Mormon	Papilionidae
18.	<i>Papilio Memnon</i>	Great Mormon	Papilionidae
19.	<i>Papilio demoleus</i>	Lime Butterfly	Papilionidae
20.	<i>Graphium doson</i>	Common Jay	Papilionidae
21.	<i>Graphium Agamemnon</i>	Tailed Jay	Papilionidae
22.	<i>Papilio clytia</i>	Common Mime	Papilionidae
23.	<i>Pachliopta aristolochiae</i>	Common Rose	Papilionidae
24.	<i>Catopsilia Pomona</i>	Common Emigrant	Pieridae
25.	<i>Catopsilia pyranthe</i>	Mottled Emigrant	Pieridae
26.	<i>Eurema sari</i>	Chocolate grass yellow	Pieridae
27.	<i>Pieris brassicae</i>	Large Cabbage White	Pieridae
28.	<i>Eurema brigitta</i>	Small grass Yellow	Pieridae
29.	<i>Pieris canidia</i>	Indian Cabbage White	Pieridae
30.	<i>Cepora nadina</i>	Lesser Gull (Rare)	Pieridae
31.	<i>Cepora Nerissa</i>	Common Gull	Pieridae
32.	<i>Colotis aurora</i>	Plain Orange Tip	Pieridae
33.	<i>Ixias Marianne</i>	White Orange Tip	Pieridae
34.	<i>Hebomoia glaucippe</i>	Great Orange Tip	Pieridae
35.	<i>Colotis etrida</i>	Small orange tip	Pieridae
36.	<i>Delias eucharis</i>	Common Jezebel	Pieridae
37.	<i>Eurema hecabe</i>	Common Grass Yellow	Pieridae
38.	<i>Eurema hecabe</i>	Grass yellow sp.	Pieridae
39.	<i>Junonia iphita</i>	Chocolate Pansy	Nymphalidae
40.	<i>Junonia lemonias</i>	Lemon Pansy	Nymphalidae
41.	<i>Junonia almanac</i>	Peacock Pansy	Nymphalidae
42.	<i>Junonia hierta</i>	Yellow Pansy	Nymphalidae
43.	<i>Junonia atlites</i>	Gray Pansy	Nymphalidae
44.	<i>Phalanta phalantha</i>	Common Leopard	Nymphalidae
45.	<i>Cethosia biblis</i>	Red Lacewing	Nymphalidae
46.	<i>Danaus genutia</i>	Common Tiger	Nymphalidae
47.	<i>Cethosia cyane</i>	Leopard Lacewing	Nymphalidae
48.	<i>Ypthima huebneri</i>	Common Four Ring	Nymphalidae
49.	<i>Orsotriaena medus</i>	Nigger	Nymphalidae
50.	<i>Ypthima baldus</i>	Common Five Ring	Nymphalidae
51.	<i>Ariadne Ariadne</i>	Angled Castor	Nymphalidae
52.	<i>Melanitis leda</i>	Common Evening Brown	Nymphalidae
53.	<i>Mycalesis perseus</i>	Common Bush Brown	Nymphalidae
54.	<i>Neptis hylas</i>	Common Sailer	Nymphalidae
55.	<i>Athyma nefte</i>	Colour Sergeant	Nymphalidae

56.	<i>Athyma perius</i>	Common Sergeant	Nymphalidae
57.	<i>Parantica aglea</i>	Glassy Tiger	Nymphalidae
58.	<i>Moduza procris</i>	Commander	Nymphalidae
59.	<i>Euploea core</i>	Common Indian Crow	Nymphalidae
60.	<i>Tanaecia lepidea</i>	Grey Count	Nymphalidae
61.	<i>Chilades lajus</i>	Lime Blue	Lycaenidae
62.	<i>Jamides celeno</i>	Common Cerulan	Lycaenidae
63.	<i>Castalius rosimon</i>	Common Pierrot	Lycaenidae
64.	<i>Cheritra freja</i>	Common Imperial	Lycaenidae
65.	<i>Loxura atymnus</i>	Yamfly	Lycaenidae
66.	<i>Zizula hylax</i>	Tiny Grass Blue	Lycaenidae
67.	<i>Curetis thetis</i>	Indian Sunbeam	Lycaenidae

Table 3. Butterfly species found in Baligaon, Assam

S. No.	Scientific name	Common name	Family
1.	<i>Argiope aurantia</i>	Yellow garden spider	Araneidae
2.	<i>Eriophora transmarina</i>	Garden Orbweaver	Araneidae
3.	<i>Palystes castaneus</i>	Huntsman spider	Sparassidae
4.	<i>Oxyopes salticus</i>	Lynx spider	Oxyopidae
5.	<i>Nephila clavipes</i>	Golden orb-weaver	Araneidae
6.	<i>Deilephila elpenor</i>	Hawk moth caterpillar	Lepidoptera
7.	<i>Lithobius forficatus</i>	Centepede	Lithobiidae
8.	<i>Calotes versicolor</i>	Oriental garden lizard	Agamidae
9.	<i>Ancistrocerus sp.</i>	Potter wasp	Vespidae

Table 4. Insects found in Baligaon, Assam

S. No.	Scientific name	Common name	Family
1.	<i>Lycodon flavomaculatus</i>	Yellow speckled wolf snake	Colubridae
2.	<i>Lycodon capucinus</i>	Common wolf snake	Colubridae
3.	<i>Coelognathus radiatus</i>	Juvenile Copper headed trinket	Colubridae
4.	<i>Dendrelaphis pictus</i>	Painted bronzeback	Colubridae
5.	<i>Dendrelaphis cyanochloris</i>	Blue bronzeback	Colubridae
6.	<i>Amphiesma stolatum</i>	Striped keelback	Colubridae
7.	<i>Xenochrophis piscator</i>	Checkered Keelback	Colubridae
8.	<i>Naja naja</i>	Spectacled cobra	Elapidae
9.	<i>Boiga quincunciata</i>	Assamese Cat Snake	Colubridae
10.	<i>Trimeresurus albolabris</i>	White lipped pit viper	Viperidae
11.	<i>Gekko gekko</i>	Tokay Gecko	Gekkonidae

Table 5. Reptiles found in Baligaon, Assam

S. No.	Scientific name	Common name	Family
1.	<i>Duttaphrynus melanostictus</i>	Common Asian toad	Bufoidea
2.	<i>Acris crepitans</i>	Cricket frog	Hylidae
3.	<i>Rana leptoglossa</i>	Hylarana leptoglossa	Ranidae
4.	<i>Microhyla ornata</i>	Microhyla ornate	Microhylidae

Table 6. Amphibians found in Baligaon, Assam

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