Chapter 5

ETHNOBOTANY OF THE TIWAS

5.1 FOOD

5.1.1 Cereals

Oryza sativa L. (Poaceae); Mai

It is the most important source of cereals and eaten boiled. Rice cooked in bamboo tubes is considered revered and is said to have better taste and aroma than rice cooked in metalled utensils. Sticky rice is crushed to prepare flakes which are often eaten with red tea.

5.1.2 Famine Food

Artocarpus heterophyllus Lam., syn. A. integra (Thunb.) Merr., A. integrifolia L. (Moraceae); Khanderphang

Unripe fruits are eaten boiled in absence of rice.

Dried powdered seeds boiled in water are substituted for rice during famine (Jaiswal, 2010).

Coix lacryma-jobi L. (Poaceae); Chagong kuru

It is the second most important source of cereals after paddy. Grains are eaten as substitute for rice during famine. Grains are cooked as rice; often grains are crushed to prepare flakes.

Colocasia spp. (Araceae); Thagung

Many species of aroids are eaten as famine food; tubers are baked or boiled.

Dendracalamm hamiltonii Ness et Arn. ex Munro (Bambusaceae); Moi-a

Fresh shoots are boiled and eaten as food under situation of scarcity of rice. Often it is mixed with some quantity of rice grains, cooked and eaten.

Dioscorea alata L. (Dioscoreaceae); Thaholdia

Tubers are eaten cooked or baked during famine or scarcity of rice.

Tubers are cooked and taken as food during famine and scarcity (Mitre, 1997; Singh et al., 1999; Lalramnghinglova, 2002).

Dioscorea pentaphylla L., syn. D. jacquemontii Hk. f. (Dioscoreaceae); Thao

Tubers are eaten baked or boiled during scarcity of rice.

Dioscorea puber Blume, syn. D. anguina roxb. (Dioscoreaceae); Thao

During scarcity of rice, tubers are mixed with some quantity of rice grains, cooked and eaten.
Lasia spinosa (L.) Thw. (Araceae); Chamra
Rhizome is cleaned, pounded into flour, dried and eaten after cooking. Method of cooking is similar with rice.

Manihot esculenta Crantz. (Euphorbiaceae); Salimtha
Tubers are baked or boiled and eaten during scarcity of rice.
Roots are eaten boiled (Singh et al., 1999).

Premna latifolia Roxb. (Verbenaceae); Sushun phura phang
Bark is cleaned, pounded into flour, dried and eaten after cooking. Method of cooking is similar with rice.

Zea mays L. (Poaceae); Khongru
Grains are eaten boiled or baked; sometimes the grains are cooked with some quantity of rice and eaten.

5.1.3 Vegetable

Allium tuberosum Roxb. (Liliaceae); Chorlang
Whole plant is used to flavour curries; it is also eaten as chutney.
Plant is used as vegetable (Joseph & Kharkongor, 1997).

Amaranthus viridis L. (Amaranthaceae); Khutura
Shoots are boiled or fried and eaten.

Amomum subulatum Roxb. (Zingiberaceae); Solompe
Inflorescence are cooked with dried fish and taken in curry; sometimes inflorescences are boiled or baked, mixed with dried fish, chilli and eaten as chutney.

Amphineuron opulentum (Kaulf.) Holttum (Thelypteridaceae); Pisiding, Pisitengkhia
Shoots are fried and eaten; the delicacy is reported to have better taste than Diplazium esculentum.

Antidesma acidum Retz., syn. A. diandrum (Roxb.) Roth. (Euphorbiaceae); Kongrom lai
Leaves are cooked with dried fish and eaten; the dish is said to be sour in taste.
Tender leaves and fruits are eaten as vegetable (Jain & Dam, 1979; Borthakur, 1997).

Araesema tortuosum Schott (Araceae); Ol Mathasaphang, Siama kusu
Petioles are eaten in chutney. Corm is crushed into flour and cooked with dal (Lens esculenta), dried fish and chilli; the delicacy is reported to be hot but refreshing.
**Aralia armata** (G. Don) Seem. (*Araliaceae*); **Mujimlai**
Leaves are minced into small pieces and cooked with rice flour and then eaten in curry. The dish is reported to have characteristic aroma. Karbis of *Amri* Block of the district is reported to have been acquired knowledge of the plant from the Tiwas.

**Arum spp.** (*Araceae*); **Thagong**
Petioles of *Arum* spp. are eaten cooked; tubers are cooked with dried fish and *khar* or alkali solution. The inflorescence called *Mokhora thagung* is often cooked with meat and also with larvae of *eri* silk worms to prepare a revered delicacy. *Khar* is an alkaline solution which is prepared by leaching water through charcoal; the solution is highly alkaline and is used for various purposes including cooking. The preparation process is same as that of the Karbis.

**Basell alba** L. var. *rubra* (L.) Stewart., syn. *B. rubra* L. (*Chenopodiaceae*); **Pumachelathana**
Leaves are cooked with dried fish and alkali solution and eaten in curry or *chutney*.

**Begonia roxburghii** (Miq.) DC. (*Begoniaceae*); **Urlong Phamjuri**
Leaves are cooked with dried fish and alkali solution to prepare curry or *chutney*. Leaves are eaten boiled (Srivastava & *Adi* Community, 2009; Srivastava & *Nyshi* Community, 2010).

**Begonia josephi** Br. (*Begoniaceae*); **Phamjuri**
Petioles are sour in taste; it is cooked with fish or meat and eaten and the delicacy is reported to be refreshing.

**Blechnuun orientale** L. (*Blechnaceae*); **Mairam tengkhia**
Shoots are cooked along with *Antidesma acidum* and eaten in curry.

**Calamus erectus** Roxb. (*Arecaceae*); **Betbaro**
Shoots are baked or boiled in bamboo tubes and eaten in curry or *chutney*.

**Caryota urens** L. (*Arecaceae*); **Chaviphang**
Shoots are cooked in bamboo tubes with dried fish and eaten as *chutney*.

**Cassia sp.** (*Caesalpiniaceae*); **Sasingkai**
Flowers are boiled with alkali and dried fish or fried and eaten; often flowers are dried and preserved for use later.

**Centella asiatica** (L.) Urb., syn. *Hydrocotyle asiatica* L. (*Apiaceae*); **Manimoni**
Leaves are crushed in mortar along with chili and salt and taken as *chutney*; often lemon is added to give sour taste. Leaves are used in herbal recipe prepared during *Bihu* in Assam and also used as vegetable (Lalramnghinglova, 2002; Begum & Gogoi, 2007).
Cissus quadrangularis L., syn. Vitis quadrangularis Wall. (Vitaceae); Harjoraphang
Stem is eaten as chutney; it is said to irritate throat and mouth like aroids, if not properly cooked.

Cissus repens Lamk., syn. Vitis repens W. & A. (Vitaceae); Merai lai
Leaves are cooked with alkali solution and dried fish to prepare a local delicacy having sour taste; leaves are also often cooked with pork or small fishes.

Clerodendrum serratum (L.) Spreng. (Verbenaceae); Khawa baralai
Leaves are cooked with dried fish and eaten as chutney; sometimes leaves are cooked with fish and meat and eaten in curry. Both items are said to have bitter taste.

Clerodendrum serratum (L.) Spreng. (Verbenaceae); Khawa baralai
Leaves are cooked with dried fish and eaten as chutney; sometimes leaves are cooked with fish and meat and eaten in curry. Both items are said to have bitter taste.

Commelina benghalensis L. (Commelinaceae); Khanduri
Shoots are boiled or fried and eaten.

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Shoots are boiled or fried and eaten.

Crassocephalum crepidioides (Benth.) S. Moore (Asteraceae); Preikadol
Shoots are boiled with dried fish and alkali solution and eaten as chutney.

Curanga amara Juss. (Scrophulariaceae); Kharkol
Leaves are cooked with dried fish and alkali solution to prepare curry or sometimes leaves are baked and eaten as chutney.

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Cyathea gigantea (Wall, ex Hk. F.) Holt. (Cyatheaceae); Tengkhia baro
Shoots are cooked with alkali solution and dried fish and eaten in curry.

Dendracalamus hamiltonii Ness et Arn. Ex Munro (Poaceae); Moia
Fresh shoots are eaten fried or prepared into curry. Shoots are often fermented and preserved for consumption later. Fermented bamboo shoots are called Tamlong.

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Diplazium esculentum (Retz.) Sw. syn. Athyrium esculentum (Retz.) Copel. (Athyriaceae); Tengkhia
Leaves are fried or boiled and eaten.
**Drynaria quercifolia** (L.) J. Sim. (Platyceriaceae); *Tulingkrang*
Tender leaves are eaten cooked with dried fish and alkali solution.

**Eryngium foetidum** L. (Apiaceae); *Kangdi bakhor*
Leaves are eaten in salad or in *chutney* with dried fish and chilli.
Leaves are eaten as *chutney* (Joseph & Kharkongor, 1997; Lalramnghinglova, 2002; Begum & Gogoi, 2007; Kar & Borthakur, 2007; Srivastava & Adi Community, 2009; Srivastava & Nyshi Community, 2010).

**Gnetum gnemon** L. (Gnetaceae); *Mikir Samsuri*
Leaves are torn into pieces and cooked with dried fish and alkali solution and eaten in curry. Tiwas do not have a name for this plant and simply referred as *Mikir Samsuri* which literally means Mikirs' vegetable (Karbis were earlier known as Mikirs; *samsuri*: vegetable).
Tender leaves are boiled and eaten (Jain & Borthakur, 1980; Kar & Borthakur, 2007).

**Gymnopetalum cochinchinense** Kurtz. (Cucurbitaceae); *Khaksi*
Fruits are cooked with dried fish and alkali solution and eaten in curry. Often fruits are baked with dried fish to prepare *chutney*.

**Hedychium coronarium** Koen. (Zingiberaceae); *Tadophang*
Inner portion of young stem is cooked and eaten as *chutney* or in curry.

**Helminthostachys zeylanica** (L.) Hook. (Ophioglossaceae); *Tengkhia* (Plate 12c)
Young leaves are cooked with locally prepared alkali solution and dried fish; the delicacy is considered revered among the Tiwas.

**Hibiscus sabdariffa** L. (Malvaceae); *Khanrong*
Leaves and tender fruits are cooked with dried fish and eaten as *chutney* or sometimes eaten in curry.
Leaves and flower buds are used as vegetable; seeds are eaten roasted (Maheshwari et al., 1997; Singh et al., 1999; Begum & Gogoi, 2007).

**Homalomena aromatica** Schott (Araceae); *Mangamari*
Shoots are cooked in bamboo tube with dried fish and alkali solution and eaten as *chutney*.
Leaves are made into chutney and tubers are eaten boiled (Lalramnghinglova, 2002; Kar & Borthakur, 2008).

**Houttuynia cordata** Thunb. (Saururaceae); *Samsakhar*
Leaves are eaten in salad; also leaves are baked and eaten.
Whole plant is used to prepare curry or chutney (Mao, 1993; Arora, 1997; Joseph & Kharkongor, 1997; Lalramnghinglova, 2002; Chakraborty, 2002; Kar & Borthakur, 2007; Begum & Gogoi, 2007; Barua et al., 2007).

**Hoya globulosa** Hk. f. (Asclepiadaceae); Khurcherilai
Leaves are cut into pieces, cooked with alkali solution and eaten in curry.

**Ipomoea aquatica** Forsk. (Convolvulaceae); Kholmo
Shoots are cooked with dried fish and alkali solution to prepare curry or sometimes shoots are eaten fried.

**Lasia spinosa** (L.) Thw., syn. *L. heterophylla* Schott. (Araceae); Chamra phang
Shoots are cooked with alkali solution and dried fish and eaten in curry; if not properly cooked the dish is said to cause irritation of throat and mouth.
Tender shoots are eaten fried; mature tubers are eaten boiled (Arora, 1997; Begum & Gogoi, 2007; Kar & Borthakur, 2008).

**Leea indica** (Burm. f.) Merr. (Leeaceae); Modusa phang
Shoots are cooked with alkali solution and dried fish to prepare curry.

**Leucas plukenetii** (Roth.) Spr., syn. *L. aspera* (Willd.) Spr. (Lamiaceae); Borunphang
Tender leaves are cooked with dried fish and eaten in chutney.

**Murraya koenigii** (L.) Spr. (Rutaceae); Pinjarilai
Tender leaves are cooked with dried fish and eaten in chutney. Leaves are cooked with mutton to prepare a revered delicacy.
Leaves are eaten as chutney or in curry (Begum & Gogoi, 2007; Kar & Borthakur, 2008).

**Musa velutina** Wendl. & Drude (Musaceae); Top
Inflorescence is cooked with or without dried fish in preparation of curry; inflorescence cooked in bamboo tube is claimed to be a revered dish.
Spadix is fried or roasted and eaten (Lalramnghinglova, 2002).

**Mussaenda macrophylla** Wall. (Rubiaceae); Pohomajualai
Leaves are cooked with rice flour and meat in preparation of curry. This is also practiced among the Karbis.
Tender leaves are eaten raw in salad (Arora, 1997).

**Ocimum killiancharicum** Guerke. (Lamiaceae); Khunchalu
Shoots are cooked with dried fish, alkali solution and chili and eaten in chutney.
**Olax acuminata** Wall. ex Benth. (Olacaceae); *Laitiba*
Shoots are cooked in bamboo tube or baked and eaten.
Leaves are eaten boiled (Borthakur, 1997; Rao & Shanpru, 1997; Kar & Borthakur, 2008).

**Oroxylum indicum** (L.) Vent. (Bignoniaceae); *Kirumphang*
Shoots are cooked or baked with dried fish and alkali solution and eaten in *chutney*. The delicacy is bitter in taste but said to be refreshing.
Flowers and fruits are eaten fried or boiled (Lalramnghinglova, 2002; Kar & Borthakur, 2008).

**Paederia foetida** Roxb. (Rubiaceae); *Sunganai*
Shoots are crushed and taken in *chutney*; leaves cooked with meat or fish are reported to be refreshing; paste of leaves with *dal* is used to prepare a local edible item called *pakori*.
Leaves are eaten boiled with chilli and salt (Kar, 2004; Barua *et al.*, 2007; Begum & Gogo, 2007; Kar & Borthakur, 2008).

**Passiflora edulis** Sims. (Passifloraceae); *Belati khumrai*
Fruits are eaten cooked alone or with *dal*.

**Phlogacanthus thyrsiformis** (Hardw.) Mabb. syn. *P. thrysiflorus* (Roxb.) Nees (Acanthaceae); *Chanchelai*
Inflorescence is cooked with dried fish and alkali solution to prepare curry and also eaten in *chutney*; the delicacy is said to be bitter in taste.
Leaves and flowers are cooked with fish and meat (Singh *et al.*, 1999; Kar & Borthakur, 2007; Begum & Gogo, 2007; Jaishwal, 2010).

**Piper thomsonii** Hk. f. (Piperaceae); *Chuiyareng*
Leaves are cooked with rice flour and eaten in curry; the delicacy is often eaten after a hard day’s work or after long journey as the item is claimed to relieve body ache.

**Plectanthes** sp. (Verbenaceae) *Nangol bong-a*
Shoots and flowers are often cooked with dried fish and eaten as *chutney*; the delicacy is said to be bitter in taste.

**Pogostemon pubescens** Benth., syn. *P. parviflorus* Benth. (Lamiaceae); *Soklolai*
Shoots are cooked with alkali solution and dried fish and eaten in *chutney*. When cooked with *pisitengkhia* (*Amphineuron opulentum*), meat and chili is said to be revered delicacy and energy booster.
Leaves are eaten fried or boiled (Kar & Borthakur, 2007).
*Polygonum affine* L. (Polygonaceae); *Phamjari*
Shoots are cooked with dried fish to prepare curry that have sour but refreshing taste.

*Polygonum micropophalum* G. Don (Polygonaceae); *Mudulong, Senailai*
Leaves when cooked with small fishes is said to be a revered delicacy.

*Pothos* sp. (Araceae); *Laichada*
Leaves are cut into small pieces and cooked with dried fish and alkali solution and eaten in curry; the delicacy is said to be slimy.

*Pueraria wallichii* Grah. (Fabaceae); *Krengsa* (Plate 12d)
Roots are crushed into flour and cooked with fowl meat; the delicacy is said to have pungent aroma but regarded as revered and energy booster.

*Rhynchotechum ellipticum* (Wall. ex Dietr.) A. DC. (Gesniriaceae); *Samsuri*
Leaves are cooked with dried fish and alkali solution and eaten in curry.
Leaves are eaten in curry (Jain & Borthakur, 1980; Lalramnghinglova, 2002; Patgiri & Borah, 2007; Srivastava & Nyshi Community, 2010).

*Solanum ferox* L., syn. *S. indicum* L. (Solanaceae); *Khawa guthi*
Fruits are eaten fried or boiled; it is said to have bitter taste and hence, not liked by all.
Leaves and fruits are used in herbal recipe prepared during *Bihu* in Assam (Begum & Gogoi, 2007; Barua et al., 2007; Srivastava & Adi community, 2009).

*Solanum torvum* Sw. (Solanaceae); *Piguripanthai*
Fruits are boiled, mixed with dried fish and chili to prepare *chutney*. Sometimes fruits are cooked to prepare curry.
Fruits are eaten fried or boiled (Mao, 1993; Singh *et al.*, 1999; Lalramnghinglova, 2002; Kar, 2004; Begum & Gogoi, 2007; Kar & Borthakur, 2008; Srivastava & Adi Community, 2009).

*Trevesia palmata* (Roxb.) Vis. (Araliaceae); *Thaidong*
Inflorescences are cooked and eaten in curry or fruits are also boiled, mixed with dried fish and chili and eaten *chutney*.

*Thunbergia grandiflora* Roxb. (Acanthaceae); *Khokaburilai*
Leaves are usually cooked with meat and eaten. But it is taboo for the Karbis.

*Vernonia volkameriaefolia* DC. (Asteraceae); *Sokaralai, Chugari*
Shoots are eaten in salad alone or with garlic, etc.

*Vitis pedata* Vahl. ex Wall. (Vitaceae); *Pumachelatonalai*
Shoots are cooked with dried fish and eaten; when cooked with small fishes is said to be revered delicacy and sour taste but reported to be refreshing.
**Zanthoxylum rhetsa** (Roxb.) DC. (Rutaceae); **Mujimlai**
Leaves are cooked with dried fish and eaten in curry; however, only common and Christian Tiwas consume the plant as it is taboo for priests. It is a common item in local markets like Umsowai (Plate 12e) and Birsingki.

### 5.1.4 Edible Fruits

**Aegle marmelos** Corr. (Rutaceae); **Belguthi**
Ripe fruits are eaten; often unripe fruits are boiled and eaten.

**Artocarpus chama** Buch.-Ham. (Moraceae); **Tramphong**
Ripe fruits are eaten; seeds are roasted or boiled or fried and eaten.

**Artocarpus heterophyllus** Lam., syn. *A. integra* (Thunb.) Merr., *A. integrifolia* L. (Moraceae); **Khanderphang**
Ripe fruits are eaten; it is reported to make the body hot and so often eaten at night.
Seeds are eaten boiled or roasted.

**Artocarpus lacucha** Buch.-Ham. (Moraceae); **Jagurphang, Taghur**
Ripe fruits are eaten, also reported by Singh *et al.* (1988).

**Averrhoa carambola** L. (Oxalidaceae); **Khodoroi**
Unripe fruits are eaten with salt and chili while ripe fruits are eaten alone.

**Baccaurea ramiflora** Lour., syn. *B. sapida* (Roxb.) Muell.-Arg. (Euphorbiaceae); **Kusumguti**
Ripe fruits are eaten; fruits are sold in local markets.

**Calamus latifolius** Roxb. (Arecaceae); **Betkuthi**
Ripe fruits are eaten.

**Castanopsis indica** (Roxb.) DC. (Fagaceae); **Singarphang**
Seeds are eaten raw or fried.

**Dillenia indica** L. (Dilleniaceae); **Oroi**
Fruits are eaten with salt and chilli.

**Ficus sp.** (Euphorbiaceae)
Ripe fruits are eaten; it is said to have sweet taste.

**Ficus religiosa** L. (Moraceae); **Plosphang** (**Hota cheri**)
Ripe fruits are eaten.

**Garcinia cowa** Roxb. (Clusiaceae); **Thekera baro**
Ripe fruits are eaten; it is reported to have mild sour-sweet taste.

**Garcinia lanceaeifolia** Roxb. (Clusiaceae); **Hathigra**
Ripe fruits are eaten; unripe fruits are very sour in taste and so eaten with salt and chilli.
Garcinia pedunculata Roxb. (Clusiaceae); Thekera baro
Ripe fruits are eaten; unripe fruits is said to have very sour taste.

Hiptage benghalensis (L.) Kurz. (Malpighiaceae); Tamhidi
Ripe fruits are eaten; it is reported that the fruits reduce thirst.

Mangifera sylvatica Roxb. (Anacardiaceae); Habenethechu
Fruits are edible; it is smaller than M. indica but said to be sweet in taste.

Morus australis Poir., syn. M. indica Thunb. (Moraceae); Phagali guthi
Ripe fruits are edible.

Passiflora foetida L. (Passifloraceae)
Ripe fruits are eaten; it is said to have foetid smell.

Rhamnus nepalensis Wall. ex Roxb. (Rhamnaceae)
Ripe fruits are eaten; boys tending cattle often enjoy these fruits.

Rubus ellipticus Sm. (Rosaceae); Sagaguthi
Ripe fruits are eaten; children tending cattle often consume the fruits.

Sizygium cumini (L.) Skeels, syn. Eugenia jambolana Lamk. (Myrtaceae); Eugenia jambos (Myrtaceae); Chamuphang
Ripe fruits are eaten; it is sold in local markets and has good demand.

Spondias axillaris Roxb. (Anacardiaceae)
Ripe fruits are eaten; fruits are said to reduce thirst and therefore, often eaten during long journey.

Streplus aper Lour. (Urticaceae)
Ripe fruits are eaten; over eating is reported to cause headache.

Terminalia chebula Retz. (Combretaceae); Silikaphang
Fruits are eaten; unripe fruits is said to have bitter taste while ripe fruits are sweet.

Willughbeia edulis Roxb. (Apocynaceae); Keng-et
Ripe fruits are eaten; fruits are said to reduce thirst.

Zizyphus cenoplia Mill. (Rhamnaceae)
Ripe fruits are eaten; it is said to reduce thirst.

5.1.5 Spices and Condiments

Allium sativum L. (Liliaceae); Rosun
Whole plat is used as spice in all types of delicacies.

Allium tuberosum Roxb. (Liliaceae); Chorlang
Leaves are use as spice; when cooked with meat or fish is a revered delicacy. The aroma is reported to be stronger than Allium sativum.
Calimantha umbrosa (Bieb.) Benth. (Lamiaceae); Ram tulsi
Leaves are often cooked with small fishes to remove the foetid smell of the fish.

Carica papaya L. (Caricaceae); Umrit
Fruits are used for tendering meat and make the dish palatable.

Eryngium foetidum L. (Apiaceae); Pangal nimudu
Leaves are used to flavour salad and fish.

Murraya koenigii (L.) Spr. (Rutaceae); Pinjarilai
Leaves are fried with meat to increase the flavour.

Ocimum killimancharicum Guerke (Lamiaceae); Khunchaluk
Leaves and shoots are used to flavour curries.

Sesamum orientale L., syn. S. indicum L. (Pedaliaceae); Sapling
Seeds are fried and pounded and used to flavor meat, salad and curries.

5.1.6 Beverage Plants
Locally prepared rice beer or Chu is a common soft drink of the Tiwas; it is also used during rituals for offering to deities. Yeast starter are prepared from rice and plants ingredients, knowledge of which have been inherited from past generations. Rice is soaked in water and pounded with leaves of Makcharaphang (Croton joufra Roxb.; Euphorbiaceae) in wooden mortar with pestle. Method of preparation of fermentation cakes is similar with Karbis as described in Chapter 4. Sometimes leaves of Amomum corynestachium (Zingiberaceae) and bark of Jalucksak phang (Acacia pennata Willd.; Mimosaceae) are also used as substitute for C. joufra. Often the beer is distilled in a crude stil; it is claimed that practice of distillation of beer was influenced by the Karbis. The Karbis too initially used only beer, even during rituals. However, it is difficult to state with conformity how Karbis acquired knowledge of distillation.

Tiwas use many other plants which are reported to increase the strength of the beer or alcohol. However, these plants are not used for preparation of beer meant for rituals or household consumption. Such plants are added during the preparation of fermentation cakes itself and include Khanderphang (Artocarpus heterophyllus Lam.; leaves), Umrit (Carica papaya L.; leaves), Khawa haralai (Clerodendrum serratum (L.) Moon; leaves), Musaphathalanephang (Clerodendrum viscosum Vent.; leaves), Pasoplai (Justicia gendarussa Burm.; leaves), Malariadorop (Vernonia sp.; leaves), Mikania micrantha Kunth.; shoots and leaves), Chu-an phang (Moringa oleifera Lam.; leaves), Sanjata (Phlogacanthus thyrsiformis (Hardw.) Mabb.; leaves); Hingrulai (Ricinus
communis L.; leaves), Khosar (Saccharum officinarum L.; leaves), Khawaguthi (Solanum ferox L.; leaves) and Panthai (Solanum melongena L.; leaves).

5.2 ETHNOAETRICAL PLANTS

5.2.1 Ethnomedicine

Acorus calamus L. (Araceae); Potphang
Rhizome and leaves are given to relieve from constipation both by the Tiwas and Karbis; juice of leaves is given for 3-5 days or rhizome is made into beads and tied around waist. Leaves and rhizomes are given in dysentery, fever, rheumatism, headache, cold, bronchitis, cough, malaria, arthritis, painful menses, liver disorders, heart and lung troubles, cuts, paralysis and epilepsy (Megoneitso & Rao, 1983; Nath & Bordoloi, 1989; Mao, 1993; Borthakur, 1993; Kharkongor & Joseph, 1997; Dam & Hajra, 1997; Sharma, 1999; Gogoï & Borthakur, 2001; Bora et al., 2003; Borthakur et al., 2004; Chhetri, 2004; Shareif et al., 2005; Humayun et al., 2006; Hynniewta & Kumar, 2008; Barbhuiya et al., 2009; Sarma & Saikia, 2010).

Ageratum conyzoides L. (Asteraceae)
Paste of leaves is applied on fresh cuts to stop bleeding and to heal wounds. Leaves are given in fresh cuts, leprosy, fever, throat pain, gynaecological problems, sprains, skin diseases, tumours, etc. (Chaudhuri et al., 1975; Hajra, 1997; Kharkongor & Joseph, 1997; Chaudhury & Neogi, 1999; Dam & Hajra, 1997; Kemp, 2003; Jain, 2004; Sharief, 2007; Noumi & Djeumen, 2007; Srivastava & Adi Community, 2009).

Allium sativum L. (Liliaceae); Rosun
Paste of leaves is applied on forehead in case of sleeplessness. Extract of bulb is sprinkled around house to drive away insects, snakes and scorpions (Bora et al., 2003). Leaves are used in acute hepatitis, hysteria, flatulence, asthma and whooping cough and epilepsy (Borthakur et al., 2004; Humayun et al., 2006; Hynniewta & Kumar, 2008; Abbasi et al., 2010).

Aristolochia indica L. (Aristolochiaceae);
Juice of fresh root is given taken twice daily for curing stomach ache. Roots are given in headache, breathing problems, wounds and to repel snakes (Saxena et al., 1997; Vijayan et al., 2007; Purkayastha et al., 2007). Leaves are used in cholera, diarrhoea, fever and insect bites (Yesodharam & Sujana, 2007).

Aristolochia saccata Wall. (Aristolochiaceae); Kromthalodi
Roots, fresh or dried is mixed with water and taken half a glass in empty stomach to cure stomach ailments, particularly dysentery.
Tuber is used in stomach ailments, spleen, urinary troubles and internal haemorrhage (Borthakur, 1976; Kharkongor & Joseph, 1997; Rao, 1997).

*Averrhoa carambola* L. (*Averrhoaceae*); *Khodoroi* (Plate 12f)

Fruits or its juice is given for 3-5 days to cure jaundice; this is commonly practised by rural folk for treating jaundice.

Fruits are used for liver diseases, leucorrhoea, bleeding piles and antiscorbutic (Gogoi & Borthakur, 2001; Jain, 2004; Borthakur *et al*., 2004; Lalfakzuala *et al*., 2007; Purkayastha *et al*., 2007). Roots are mixed with *Eclipta alba* roots and made into paste and applied in bleeding gum (Saikia & Nath, 2003).

*Bulbophyllum* sp. (*Orchidaceae*); *Sigilai*

Pseudobulbs are made into paste along with leaves of *Pyrosia* sp. and given half a glass for three days in dysentery.

*Capsicum frutescens* L. (*Solanaceae*); *Chaluphang*

Leaves and tender fruits are cooked in bamboo tube and given to cure dysentery and stomachache.

*Centella asiatica* (L.) Urb., syn. *Hydrocorytle asiatica* (*Apiaceae*); *Manimoni*

Leaves are crushed and the filtrate is used to cure stomach ailments particularly constipation and gastritis; it is repeated for many days.

Whole plant is used in treatment of various ailments such as dysentery, cholera, stomachache, fever, asthma, eye problems, fracture, leprosy, etc., and also as tonic (Rao & Neogi, 1980; Rao & Jamir, 1982; Tarafder, 1984; Saxena *et al*., 1997; Sharma, 1999; Bora, 1999; Gogoi & Borthakur, 2001; Chakraborty, 2002; Udayan *et al*., 2005; Jain, 2004; Shareif *et al*., 2005; Lalfakzuala *et al*., 2007; Kharkongor & Joseph, 1997; Borthakur *et al*., 2004; Hynniewta & Kumar, 2008; Sajem & Gosai, 2010).

*Cissus quadrangularis* L., syn. *Vitis quadrangularis* Wall. (*Vitaceae*); *Harjoraphang*

Paste of leaves and stem is applied to cure wounds. Paste of stem is applied uniformly on fracture and bandaged with bamboo pieces; the paste is regularly replaced with fresh stem paste till it is properly healed.

*Curranga amara* Juss. (*Scrophulariaceae*); *Kharkol*

Whole plant is eaten raw or juice of the plant is given in stomach ache and fever; treatment is continued till recovery.

*Derris elliptica* Benth. (*Fabaceae*); *Pissiphang*

Leaves are used in contact therapy as antidote against witchcraft. Roots are pounded and the juice is used to cure *khur* (ringworm); on application infected skin comes out as flakes therefore, removing the pathogen.
Elephantopus scaber L. (Asteraceae); Meraichudi prair

Roots are pounded and paste is given for kalika (pain below the navel); it is applied twice daily for three days.

Decoction of the plant is given to boys and girls- who are in love under the spell of black magic- to separate them (Megoneitso & Rao, 1983). The plant is used in gynaecological problems, abdominal pain and to increase memory (Tarafder, 1984; Chaudhury & Neogi, 1999; Behara et al., 2006).

Floccopa scandens Lour. (Commelinaceae); Khugilai

Shoots are boiled and juice is given to pregnant woman as energy supplement to enable smooth delivery.

Heptapleurum venulosum Seem., syn. Schefflera venulosa Ham. (Araliaceae); Magrikristan

Small pieces of twigs are tied around the neck of children; this is said to prevent influence of evil spirit.

Impatiens balsamina L. (Balsaminaceae); Chondoko

Leaves are grinded along with leaves of Hibiscus sabdariffa and paste is applied locally to cure infections between fingers and toes locally called phinjujava.

Ixora acuminata Roxb. (Rubiaceae); Khum khajong

Roots are boiled in bamboo tube and the juice is applied on wounds; it is reported to stimulate flesh formation.

Paste of underground parts is applied on wounds; root decoction is galactagogue (Jain, 1997). Infusion of tender twigs is given in fever (Nath & Bordoloi, 1989).

Lasia spinosa (L.) Thw. (Araceae); Chamaphang

In occult practice, garland of roots is worn around neck to cure jaundice.

Phlogacanthus thyrsiformis (Hardw.) Mabb., syn. P. thyrsiflorus (Acanthaceae); Changelaso

Leaves or inflorescence is boiled and the juice is given to cure stomachache and dysentery; it is continued for three consecutive days.

Whole plant given for aliments such as fever, skin diseases and abdominal tumour (Lalramnghinglova & Jha, 1997; Kharkongor & Joseph, 1997; Rao, 1997; Dolui et al., 2004; Khumbongmayum et al., 2005; Jaiswal, 2010).

Piper nigrum L. (Piperaceae); Asumjaluk

Fruits are used in occult treatment to relieve toothache.

Fruits are used for placental disorder, stomachache and hepatitis (Lalramnghinglova & Jha, 1997; Borthakur et al., 2004).
*Polygonum microcephalum* D. Don. (Polygonaceae); *Mudulong*

Leaves are eaten raw or its juice is given as antidote against poisoning.

*Psidium guajava* L. (Myrtaceae); *Mujiramlai*

To cure stomach ache, shoots are eaten raw or its juice is given twice daily till recovery. Leaves and bark are good remedy for stomachache, dysentery, diarrhoea, fever, toothache, headache and cholera (Rao & Jamir, 1982; Borthakur, 1993; Islam, 2000; Gogoi & Borthakur, 2001; Bhardwaj & Gakhar, 2005; Purkayastha et al., 2007). Ripe fruit is used after roasting to cure cough and cold (Jadhav, 2006).

*Pueraria wallichii* Grah. (Fabaceae); *Krengsa*

Root is eaten raw or roots are made into flour, mixed with water and given twice daily to cure stomachache; it is repeated till the illness is cured.

*Rauvolfia serpentina* (L.) Benth. ex Kurz (Apocynaceae); *Chayalasha*

Root is used to cure various stomach ailments; it is eaten raw or the juice is taken half a glass twice daily till recovery. Root is also used as antidote against snake bite. Root is used to treat intestinal disorders, fever, malaria, rheumatism, intestinal worms in children, snake bite and insanity (Kumar et al., 1980; Jain et al., 1997; Saxena et al., 1997; Rao & Shanpru, 1997; Kharkongor & Joseph, 1997; Yesodharam & Sujana, 2007). Leaf juice is taken as soup in high blood pressure (Barbhuiya et al., 2009).

*Saccharum officinarum* L. (Poaceae); *Khosar*

Juice is given to cure jaundice; during summer juice is taken to cool the bowels. Juice of culms preserved for 8-10 years is given in hepatitis (Borthakur et al., 2004).

*Shorea robusta* Gaertn. (Dipterocarpaceae); *Salphang*

Paste of roots is applied locally to heal wounds.

*Spilanthes clava* DC., syn. *S. acmella* L. (Asteraceae); *Asum thongra*

Inflorescence is placed on the infected teeth to relieve tooth ache. Paste of shoots or inflorescence is applied on skin to cure ringworm.

*Vernonia* sp. (Asteraceae); *Khandiko jimlai*

Leaves are cooked with cock or hen meat and given to pregnant mother as energy supplement for smooth delivery of the baby.

*Wrightia tinctoria* Br. (Apocynaceae); *Phursia lokoja*

Paste of bark is mixed with water and the juice is given in stomachache; it is continued for 3-5 days.

*Zanthoxylum armatum* DC., syn. *X. alatum* Roxb. (Rutaceae); *Charaibiri*

Roots are grinded and the juice is given twice daily in cough and fever.
Fruits and seeds are given for stomachache and indigestion, cholera, indigestion, toothache, madness, pneumonia, typhoid and gout (Rao & Jamir, 1982; Nath & Bordoloi, 1989; Barua et al., 2007; Abbasi et al., 2010). Leaves are used to ward off fowl lice (Lalfakzuala et al., 2007); bark is applied against pox (Kumar et al., 1980).

5.2.2 Ethnoveterinary

*Cannabis sativa* L. (Cannabinaceae); *Bhang*
Leaves are grinded and made into pills. One pill is given once daily for three days to goat, pigs, cow and buffalo to cure dysentery. It is also reported to be anthelmintic.

*Cuscuta reflexa* Roxb. (Cuscutaceae); *Mahadeo akhuni*
*Mahadeo akhuni* literally means hair of lord Shiva. Stem is grinded and rice grains are soaked in the juice for 6-12 hours. Soaked grains are then fed to poultry once a week for one month as a precaution against epidemic disease.

*Dillenia pentagyna* Roxb. (Dilleniaceae); *Marai phanglai*
Stem bark is grinded and applied on wounds to kill maggots.

*Kaempferia galanga* L. (Zingiberaceae); *Mothapongra* (Plate 13a)
Rhizomes are crushed and given to pigs once a week for one month to as a precaution against epidemic disease.

*Lygodium japonicum* (Thunb.) Sw. (Schizaeaceae); *Tengkhia thip*
Whole plant is crushed and the paste or juice is given to pigs for common ailments.

*Prunus domestica* L., syn. *P. communis* Hud. (Rosaceae); *Sopho*
Paste of leaves is applied to cure wounds and also claimed to kill maggots.

5.3 Ethnoichthyotoxic Plants

*Albizia mimosifolia* (Mimosaceae); *Susi pisi*
Stem bark is crushed and mixed with water to stupefy fishes.

*Catunaregam nutans* (DC.) Tiruv., syn. *Randia dumenturum* Lamk. (Rubiaceae); *Pisiguthiphang, Monso guthi*
Fruits are crushed and immersed in water to stupefy fishes particularly in stagnant water bodies.

*Derris elliptica* Benth. (Fabaceae); *Pisiphang*
Roots are pounded and immersed in water to stupefy fishes.

*Mimosa himalayana* Gamble, syn. *M. rubicaulis* Lamk. (Mimosaceae) (Plate 13b)
Bark of stem is crushed and used for stupefying fishes in streams.
*Polygonum hydropiper* L. (Polygonaceae); *Naraibishi*

Whole plant is crushed and then immersed in water to stupefy fishes. This is commonly practiced among the plain Tiwas as hills Tiwas use other plants for fishing. Informants have revealed that, Tiwas have acquired knowledge of ichthyotoxic plants from the Karbis.

**5.4 SOCIO-RELIGIOUS PRACTICES**

Like the Karbis, the Tiwas use many plants in rituals the use of which has been inherited from their predecessors. The Tiwas also observe many taboos relating to food and social life. Locally referred as *Kriamu*, violation of taboos will annoy the deity concerned and cause harm to individual or the whole family, it is believed. Tiwas, particularly *Chela* (priests) practice strict taboos while leniency is permitted for general Tiwas.

**5.4.1 Sacred Plants**

*Amphineuron opulentum* (Kaulf.) Holtttum (Thelypteridaceae); *Pisitengkhia*

Fronds are used in occult treatment to cure stomach ailments locally referred as *Kalika*.

*Calamus latifolius* Roxb. (Arecaceae); *Betbaro*

The plant is used during a community ritual called *Mawur*.

*Callicarpa arborea* Roxb. (Verbenaceae); *Khumarphang*

Twigs are used during the rituals dedicated to *Lokhi*, the deity of crops. Twigs of the plant are also used during preparation of *Maiphur* or traditional portable granary. The plant is considered one of the most sacred plants by the Tiwas.

*Canarium strictum* Roxb. (Burseraceae); *Tuphiphang*

Exudates of bark are burnt during rituals; the smoke and fragrance is considered revered and is said to be parallel to modern incense sticks.

*Castanopsis indica* (Roxb.) DC. (Fagaceae); *Singiri*

Twigs of the plant are used in the ritual *Chunai raja*.

*Cyathea gigantae* (Wall. ex Hk. f.) Holt. (Cyatheaceae); *Tengkhia baro*

Leaves are used during the *Wanchoa* festival to mark the end of tenure of *Banthaijingya* or bachelor’s cooperative group at the *Samadi* or Bachalor’s Dormitory.

Plant is used in ritual of *Nishi* community (Srivastava and Adi Community, 2010).

*Dendrcalamus hamiltonii* Ness et Arn. Ex Munro (Poaeeae); *Waphang*

Stem and leaves are used in almost all rituals.
**Inula cappa (D. Don) DC (Asteraceae); Khumaradis**
The plant is used in the household ritual called Chokorbura. A garland from leaves of the plant is made and tied around the neck of the goat to be sacrificed. Karbis also propitiate this deity of the Tiwas for eradication of stomach ailments particularly diarrhoea and dysentery.

**Lagenaria siceraria (Molina) Standl., syn. L. vulgaris Ser. (Cucurbitaceae); Klongso**
Gourd shells are used during rituals for storing and offering holy beer to deities. The same is used during traditional marriage for carrying Chu (rice beer) to be offered to the would-be father-in-law.

**Musa paradisiaca L., syn. M. sapientum L. (Musaceae); Thelulai**
Leaves are used in rituals as plates for offerings to deities.

**Thysanolaena maxima (Roxb.) O.K. (Poaceae); Palonthilai**
The plant is used during the religious festival Monsokara, a ritual of purification of soul of deceased person who met with unnatural death.

**Phrynium pubinerve Blume (Marantaceae); Laikran**
Leaves are used in Monsokara.

**Ricinus communis L. (Euphorbiaceae); Laimelur, Henrulai**
Leaves are used in occult treatment by medicineman to cure paralysis of legs.

**Schima wallichii (DC.) Kothrals (Theaceae); Maguriphang**
Use is similar with Ricinus communis.

### 5.4.2 Taboos

**Alstonia scholaris (L.) Br. (Apocynaceae); Charonphang**
This plant is considered taboo in construction of house; the Tiwas however, use the plant for making traditional craft called tran, container used for storing beer and water.

**Areca catechu L. (Arecaceae)**
Rongkhoi clan among the Tiwas do not consume young fruits before completion of Koiluri puja.

**Artocarpus chama Buch.-Ham. (Moraceae)**
The plant is a taboo for all Tiwas to use the wood for chair or other sitting furniture as it is believed to bring misfortune to the family.

**Basell alba L. var. rubra (L.) Stew., syn. B. rubra L. (Chenopodiaceae); Chitu**
Consumption is a taboo for all Tiwas; the same is true for the Karbis also.

**Benincasa hispida (Thunb.) Cogn. (Cucurbitaceae); Kuraipholo**
Priests observe taboo on consumption of the fruits. Further, for *Muni wali* subclan, it is taboo to cultivate the plant even for commercial purpose, let alone eating. Violation of this rule is said to be attacked by leopard, it is believed. *Muniwali* and *Kholal* sub-clans do not even take the plant at home. Karbis also have the same belief about the plant.

*Callicarpa arborea* Roxb. (Verbenaceae); *Khumar phang*

This plant is not used for house construction for the belief that the plant produces noise which usually frightens the occupants; Tiwas consider it as influenced by evil spirits.

*Castanopsis indica* (Roxb.) DC. (Fagaceae); *Singiri*

The plant is highly forbidden for *Malang* sub-clan; it is considered taboo even to use the plant for fuel.

*Dendrocalamus hamiltonii* Ness et Arn. ex Munro (Poaceae); *Waphang*

Making granary from bamboo mats is a taboo for all Tiwas.

*Emperata cylindrica* (L.) Beauv.; Poaceae; *Khablang*

Tiwas belonging to *Amniwali* clan do not cut this grass for thatching before completion of the ritual *Langhon* puja which is dedicated to the well being of the people. Animals and fowls are sacrificed on the occasion; it is reported that in the past the ritual is associated human sacrifice but this needs further confirmation.

*Ficus* spp. (Moraceae); *Porphang*

All species of this plant is considered taboo and never used in construction of house.

*Gmelina arborea* Roxb. (Verbenaceae); *Gamariphang*

For *Ladur* subclan, using the wood even for fuel is a taboo.

*Lagenaria siceraria* (Molina) Standl., syn. *L. vulgaris* Ser. (Cucurbitaceae); *Damlao*

It refers to a variety of gourd with small fruits. Tiwas as well as the Karbis observe taboo on this variety of gourd.

*Musa velutina* Wendl. & Drude. (Musaceae); *Top*

Consumption of inflorescence is considered taboo among priests. Usually inflorescences of all banana species are not consumed by priests.

*Musa paradisiaca* L., syn. *M. sapientum* L. (Musaceae); *Top*

Inflorescence is not consumed by priests, though it is eaten by general people.

*Stereospermum colais* (Dillw.) Mabberley, syn. *S. personatum* (Hassk.) Chatt. (Bignoniaceae)

This plant is considered taboo by Tiwas and the Karbis as well; it is believed that the tree is often attacked by lightning and such incident is considered an omen of evil.

*Zanthoxylum rhetsa* (Roxb.) DC. (Rutaceae); *Mejiglenlai*

Consumption is a taboo for priests though there is no restriction for general Tiwas.
5.5. MATERIAL LIFE
5.5.1 Housing materials and tools

*Bambusa affinis* Munro (Poaceae); *Pijolithi*

Stem is used in roofing; it is compact and said to be durable.

*Bambusa* sp. (Poaceae); *Wathi*

Almost all species of bamboo are used in construction of house. Stem particularly that of *B. balcoa* Roxb. and *B. tulda* Roxb. are preferred over others for post; other species of bamboo are used for wall and roofing; stem is split and used as cordage for tying purposes.

*Cassia fistula* L. (Caesalpiniaceae); *Honaruphang*

Stem is used as post; it is said to be very durable.

*Dendrocalamus hamiltonii* Nees et Arn. ex Munro (Poaceae); *Waphang*

Stem is used for post, roof and wall; stem is split and used as cordage in construction of houses and also for other purposes.

*Dipteris wallichii* (R. Br.) Moore (Dipteridaceae); *Ruthup tengkhia* (Plate 13c)

Leaves are used for thatching roof in houses other than the main house.

*Emperata cylindrica* L. (Poaceae); *Khaplang*

The grass is used as thatching material; a properly thatched house is reported to last for about five or more years.

*Gmelina arborea* Roxb. (Verbenaceae); *Gamariphang*

Stem is used as post in construction of house, which is said to be durable.

*Narenga benghalensis* (Balanfa) Bor (Poaceae); *Khaphangbaro* (Plate 13d)

Leaves are used for thatching roof of all types of houses.

*Stereospermum chelonoides* DC. (Bignoniaceae); *Pulariphang*

Stem is used as post in construction of house.

*Shorea robusta* Gaertn. (Dipterocarpaceae); *Salphang*

Stem is used as post but the plant is said to be restricted in distribution.

*Terminalia myriocarpa* Heurck. & Muell.-Arg. (Combretaceae); *Singliphang*

Stem is highly revered for post; the wood is compact and resistant to termites and soil microbes and hence, very durable.

*Toona ciliata* Roem., syn. *Cedera toona* Roxb. ex Roem. (Meliaceae); *Phambaphang*

Stem is used for post in construction of house.
Craft is the pristine hobby of Tiwas. Crafts of different types are prepared from bamboo, cane and wood. One of the most remarkable crafts among Tiwas is the *trang*, a bamboo container for serving rice beer. The wall of the container is coated with latex of *Kajiphang* (*Ficus benjamina* L.). The coating makes the container impermeable to beer and water. Serving beer with such container is mandatory during community festivals and also considered as an asset in a family (Plate 13e).

**Bambusa spp. (Poaceae); Wathi**
Bamboo particularly *B. nutans* is commonly used for making crafts; stem is split, seasoned and used for making mats, baskets, hand fan, etc.

**Calamus spp. (Arecales); Bet**
Many species of the *Calamus* are used for making crafts such as chairs and tables; stem is split, seasoned and used for tying bamboo and wooden crafts.

**Cyathea gigantae** (Wall. ex Hk. f.) Holt. (Cyatheaceae); **Tengkhia baro**
The plant is made as motif on bamboo crafts like *kip* (hand fan), *am* (mat).

**Dendrocalamus hamiltonii** Nees et Arn. ex Munro (Poaceae); **Waphang**
It is an essential source of materials for making crafts in the hills where the plants are easily available. Culms are used for making cups for drinking water and beer. Stem is split, seasoned and used for making mats, baskets, etc. Inner soft part of culm is used for making plates (Plate 13f).

**Gmelina arborea** Roxb. (Verbenaceae); **Gamariphang**
Most wooden crafts are made from wood of this plant; the wood is moderately hard and takes up good polish and, therefore, can be worked out with even crude tools.

**Holarrhena antidysenterica** Wall. (Apocynaceae); **Pursalusaphang**
Use and preference is similar with *G. arborea*.

**Mussaenda glabra** Vahl. (Rubiaceae); **Hada**
Adhesive prepared from roots is used for coating walls of *tran*, a bamboo container used for storing beer and water.

**Terminalia chebula** Retz. (Combretaceae); **Silikaphang**
Bark is used for making *kusuri*, a container of specific volume and height used for storing paddy of specific quantity (Plate 14a).
5.5.3 Textiles and Dresses

Tiwa women are expert weavers and weave clothes for both men and women. Expertise of weaving is considered as a qualification for becoming bride. Garments are weaved on looms locally referred as Matihai; the loom has warp directly placed on the ground (Plate 5b). Khulphang (Gossypium herbaceum L.) and eri silk are the main sources of yams or fibres for looms. Traditional costumes are adorned with beautiful motifs and designs of flora and fauna and other objects. Flora and fauna that are often depicted on costumes include Orao (Dillenia indica L.), Hadi (elephant), Kilalongai (Entada pursaetha DC.), Keching arveng (Ganghi bug), Khangrimo (crab), Makhri (monkey), Thelulai (Musa sapientum L.), Kong-a (rhino), Tanhai (stag), Tukhura (drongo), Mera (peacock) and Tengkhtia (Diplazium esculentum).

Leaves of Pohomajualai (Mussaenda macrophylla Wall.) are made into paste and rubbed on weaving implements to reduce friction.

5.5.4 Dyes

_Baccaurea ramiflora_ Lour., syn. _B. sapida_ (Roxb.) Muell.-Arg. (Euphorbiaceae);

_Kusumlai_

Leaves are used as mordant during dyeing of yams with _laha_ (Coccus lacca Kerr.); the leaves is said to help in proper fixing of dye on yams.

_Breynia sp._ (Euphorbiaceae)

Black dye is extracted from leaves. Leaves are boiled in bamboo tubes along with bamboo splits for a few hours. The bamboo splits are then taken out and immersed in mud for about three days after which the materials become black. The coloured bamboo splits are used for making crafts such as mat, hand fan, etc.

_Eclipta prostata_ L., syn. _E. alba_ (L.) Hassk. (Asteraceae); _Kreshphang_

Leaves are grinded and the juice is used as blue dye for colouring garments and yams. It is reported that in the past the dye was used as a substitute for ink. The dye is mixed with juice of flowers of _Hibiscus rosa-chinensis_ and used as hair dye.

Leaf juice is used as ink, dye hairs (Sarma & Saikia, 2010).

_Garcinia cowa_ Roxb. (Clusiaceae); _Thembor guthi_

Skin of fruits is boiled with lac during dyeing of yams; addition of the fruit is reported to prevent colour from fading.

_Impatiens balsamina_ L. (Balsaminaceae); _Chondoko_
Red dye is extracted from leaves. Leaves are grinded and the paste is applied on nails and palms; it produces red colour similar to nail polish. The colour is reported to last for more than one week.

*Morinda angustifolia* Roxb. (Rubiaceae); *Haichuphang*

Roots are used as source of yellow dye for colouring garments or yams. Roots are cut into pieces and boiled in water along with yams till colour of desired intensity is produced.

*Shorea robusta* Gaertn. (Dipterocarpaceae); *Salphang*

Shoots are used to extract red dye. Shoots are boiled with bamboo splits for a few hours. The bamboo splits become red which is used for making hand fans and other items.

5.5.5 Ethnocosmetics and Ethnodetergents

*Caesalpinia bonduc* (L.) Roxb (Caesalpiniaceae); *Khoborguthi*

Pericarp is pounded and used as detergent for washing clothes.

*Dendrocalamus hamiltonii* Ness *et* Arn. *ex* Munro (Poaceae); *Waphang*

Alkali solution prepared from charcoal of bamboo is used as hair wash. It is reported to clean dirt very effectively. The alkali solution is also used as detergent for cleaning clothes.

*Pandanus fascicularis* Lam., syn. *P. odoratissimus* L.f. (Pandanaceae); *Khum kheja*

Inflorescence is fragrant and therefore, often kept in *chaphakho* (wardrobe) to make clothes fragrant.

5.6 MISCILLANEOUS

*Artocarpus heterophyllus* Lam., syn. *A. integra* (Thunb.) Merr., *A. integrifolia* L. (Moraceae); *Khanderlai*

Leaves are fed to goat particularly during rainy days when it becomes difficult for the animal to graze outside.

*Careya arborea* Roxb. (Barringtoniaceae); *Kharilai*

Leaves are given to goat as fodder; leaves are also used for wrappers in making *biri*.

*Entada pursaetha* DC., syn. *E. phaseoloides* (L.) Merr. (Mimosaceae)

Fruits are used as striker in sports.

*Ficus religiosa* L. (Moraceae); *Porphanglai*

Leaves are given to goat as fodder.

*Lagerstroemia Flos-Reginae* Retx. (Lythraceae); *Chehar*

Leaves are used as wrappers in making *biri*.
Leaves are given to goat as fodder and also used as plates.

5.7 Preparation of Khar- Alkali Solution

Tiwas are acclaimed for their expertise in preparation of *khar*- an alkali solution- from ash/charcoal of plants; even Karbis who are also regular consumer of alkali solution, recognize their feat. *Khar* is usually prepared from ash/charcoal of *Dendrocalamus hamiltonii*. After burning plant debris for jhum, fresh ash/charcoal of the bamboo is collected, placed in bamboo basket and carried home and then stored. During preparation, some quantity of ash is kept in a conical bamboo or cane sieve and water is poured from above; the filtrate is collected and used as for cooking and also as detergents for washing garments. They are considered among the best who can prepare revered *khar*-based delicacies.

5.8 Wanchoa- the festival of bachelors’ group

*Wanchoa* is one of the important festivals of the Tiwas. This festival is celebrated to mark the end of tenure of bachelor’s cooperative group locally referred as *Banthaijingya* and institution of a new one. Bachelors’ dormitory or institution is still vibrant among the Tiwas; this practice touches upon the religion, culture and traditional institution of the Tiwas. It is binding on each and boys to attend bachelors’ dormitory in a life time and participate in the *wanchoa* festival.

*Banthaijingya* is instituted with the selection of *Changdoloi* (bachelors’ head) who leads the cooperative group. He is assisted by his deputies namely, *Changmiji, Hurma, Khuramul* and *Khurasah*. They have a well established traditional bachelor’s dormitory with raised platform called *Samadi* (Plate 7b). The tenure for a bachelor’s group as sanctioned by the *Pisai* (village headman/chief) is five years. Boys attend the *Samadi* and take part in various activities such as discussions, culture and traditions, crafts, agriculture, etc. *Samadi*, therefore, is not only a living house for boys but a centre of learning where participants acquire informal knowledge. During the tenure the boys take on *jhum* and wet cultivation and create a fund for themselves and, hence, can also be called a village-level cooperative group. In between the boys also spare time to help their parents in agricultural and other household activities.

It is interesting to observe that the *Changdoiloi* who has to lead the bachelors’ group- is selected when he is about five years old. He will be honoured with some quantity of salt and a few *mamla* (dried fish). Being a child, his father or brothers has to
participate in the social works of the bachelor group. The logic of selecting an underage Changdoloi is, the latter along with Changmiji and Hurma, had to lead two bachelors’ group before retiring and by that time he (Changmiji) will attain adulthood and can think of a settled life. On completion of five years, Wanchoa is celebrated to mark completion of one bachelors’ group without which the tenure of a bachelor’s group remains incomplete. It is mandatory for all participants to take part in wanchoa dance. If any member of the group marries before completion of the tenure, he has to come and participate in the festival else he will still be considered a bachelor. It is reported that, if any person deliberately evades the festival for long, he will be castigated by the village chief and is accompanied by a fine in cash and kinds. Under inevitable circumstances, the tenure of bachelors’ group can be extended by a year but further prolongation of wanchoa will invite a penalty from the village chief, an act least desired by any Tiwa man.

Wanchoa is purely the hobby of bachelors and, therefore, the Changdoloi, Changmiji, Hurma, Khuramul and Khurasah had to take active part for smooth sailing of the festival; the Pisai (village headman/chief) is only an advisor for the festival. The office of the Changdoloi, Changmiji and Hurma is valid for two consecutive bachelors’ group, which if completed in time will be ten years. The festival will be hosted by the Changdoloi; the Pisai will remain as supervisor and also as advisor to Changdoloi and his deputies. Bachelors from other villages but belonging to the same clan will also participate in the wanchoa. The festival last for three days starting Sunday; the message is communicated to each and every house of the village and also to other villages. Among other things, the boys arrange large quantity of common salt in advance and stored in a specially built platform, by the road side.

On Sunday- the first day of festival- a ritual is performed to invoke a local deity by sacrificing two red fowls (one each male and female). Twigs of Khummelang (Callicarpa arborea Roxb.; family Verbenaceae) and the whole exercise is performed on the portico, infront of the Samadi. After this ritual, for the whole day people of the village take rest and refrain from agricultural activities.

On Monday, four pigs and three male fowls is sacrificed on the main post of the Samadi to invoke the local deities Saribhai Kuru Lambha Raja, the supreme deity of the occasion, Saribaina, Mathine and Barakhondeo. After this ritual, a new bachelor group will be organized with the same dignitaries, Changdoloi, Sangmiji and Hurma (if the outgoing batch is first for the dignitaries) or different set of office bearers as mentioned earlier.
Tuesday is a rest day as the host prepares to welcome their fellow bachelors from other villages.

Wednesday marks the final day of wanchoa festival which last for the whole day. In the morning all participants put on their traditional attires in the Changmiji or Munsip's residence. Often mothers help their children in putting up dresses. The participants take the blessings of elder women, who rub their faces with mustard oil (Brassica campestris) before the participants proceed towards the lawn of the Changdoloi, where the wanchoa dance will be performed. Bachelors carry crafts and many crops such as pineapple, cucumber, maize, brinjal, etc., which according to belief adds glamour, and make merry and dance to the rhythm of folk songs. Others play on traditional musical instruments such as drums and flutes; all these make the occasion a grand celebration.

The greatest attraction, among others things during wanchoa, is the traditional craft Chenthor and Sirki. It is actually a model of the Indian spinning machine Jotor. Bachelors carry the craft on their shoulders, rotate the wheels of the craft sing and dance (Plate 14b); on rotating the craft produces an audible sound which adds charms and humour on the occasion. Another attraction of the festival is mass pounding of rice grains. Wooden mortars are placed in the lawn in a single row and pre-soaked rice in placed in all the mortars. As participants move along they pound the rice grains with wooden pestle (Plate 14c); pounded rice are taken out and winnowed with bamboo crafts by girls (Plate 14d). After completion all participants wait and throw the pestle at the same time. While some participants pound rice others play on traditional musical instruments like drums and flute (Plate 14e) and sing and dance.

According to the version of elders, the singing and dancing, and playing of traditional crafts is an act of courtship for their life partner. If a boy impresses a girl, he will be invited to her house and talk about marriage. It is further reported that, in the past boys in groups used to visit all houses and sing and dance and play on music to impress young girls. Boys used to carry combs and try to arrange the hairs of girls; if the latter is impressed she will allow the boy to comb her hair which finally ends in marriage.

In the evening, after the dance, all boys gather and make edible items from the rice flour produced as part of wanchoa dance, and then retire for the day. Left over salt is distributed equally among houses of the village.

Thursday is the day for departure for boys coming from other villages; after observing necessary formalities they depart bring the curtain down to the three day and once in five a year wanchoa festival!
Role of Takra during Wanchoa: The wanchoa ensure fun and entertainment to the audience provided by the participants. Some persons volunteer to act as Takra or entertainers and perform many magnificent and unnatural acts that keep people focused to the events (Plate 14f). They are part and parcel of the festival as they can veto any step of the event if they found it to be violating any rules; a wanchoa without them is not considered legitimate. Their magnificent and agile acts make the festival lively and thus help participants forget of the gruelling activities of the festival. It has been reported that a witch performs divination on the volunteers and influence them to behave as abnormal persons during the period of the festival. At the end of wanchoa these persons are brought back to normal state of mind by a ritual called sokora. Further, if the ritual is not properly performed the Takra are said not to return to normal state of mind for the whole life.