Trends in ethnodomestication of some wild plants in Meghalaya, Northeast India

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Received 17 January 2005; revised 17 July 2005

Tribals in Meghalaya not only cultivate variety of crops but also domesticate quite a lot of wild plant species in their courtyard, orchards, kitchen garden, flower garden and sedentary agricultural fields. Present study has explored as many as 62 wild plant species under 59 genera belonging to 44 families domesticated by Khasis, Garos and Jaintias of Meghalaya.

Keywords: Ethnodomestication, Ethnobotany, Ethnomedicine, Folk medicine, Khasi tribe, Garo tribe, Jaintia tribe, Medicinal plants, Meghalaya


Meghalaya, one of the seven states in Northeast India lies between latitude 25° 1'-26° 5'N and longitude 85° 45'-92° 52'E at an altitude ranging from 500-2089 m. The temperature ranges from 2° C (during winter) to maximum 26° C (during summer). It has rich floral diversity under the influence of monsoonic sub-tropical and temperate climate. Three distinct ethnic aboriginal tribes, viz. Khasis, Garos and Jaintias who are mostly confined to their respective districts, inhabit Meghalaya. These tribes have distinct ways of life, dialects, beliefs, traditions, cultural heritage and rich plant lore that offer tremendous scope for ethnobotanical studies. Majority of the population depends on agriculture in Meghalaya for their livelihood. Shifting or Jhum cultivation, popularly known as Slash and Burn cultivation is commonly practiced throughout Meghalaya. Besides shifting cultivation, tribals in Meghalaya maintain good kitchen garden, orchards, flower garden, courtyards, bio-hedges, and sedentary terrace garden. In such gardens, indigenous people have the trends of domesticating some wild herbs, shrubs, climbers and trees.

Methodology

The ethnobotanical exploration was conducted in Khasi, Garo and Jaintia hills of Meghalaya at regular bimonthly intervals during 1992-1993, each visit lasting for 2-3 days. The information regarding the domestication and utility of wild plants were collected by personal observation and interview with local senior men and women. Unidentified plants, with local plant names were identified with the help of Botanical Survey of India, Eastern Circle Shillong.

Results

A total number of 62 plant species belonging to 59 genera under 44 families were found to be ethnically domesticated in Khasi, Garo and Jaintia hills of Meghalaya for different utilitarian purposes in day to day life of tribals (Figs 1-8). In the following enumeration, the plant species are arranged alphabetically with botanical name, family, local names in Khasi (K), Garo (G) and Jaintia (J), habit, habitat and their utility.

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Allium hookeri Thwaites; (Liliaceae); Ja-uat (K).
Cultivated as cash crop in kitchen as well as
sedentary gardens in Mawphlang, and Lailyngkot.
Bulbs are marketed as spice and condiment.

Allium tuberosum Rottlb.ex. Spreng. ; (Liliaceae);
Jyllang (K). Cultivated in both kitchen and
sedentary gardens in Shillong, Mawphlang and
Lyngkerdem. Leaves are marketed as green
vegetable.

Asparagus racemosus Willd.; (Liliaceae); Soh-phen-
klaw (K); Planted as ornamental plant in
Mawiong and Mawpat. Tender shoots are eaten as
vegetable.

Asplenium nidus L.; (Asplenioidae); Tyrkhang-skum-
sim (K). Commonly cultivated as an ornamental
potherb in flower gardens in the urban areas of
Khasi hills. The phyllotaxy is very attractive.

Averrhoa carambola L.; (Averrhoaceae); Amrenga
(G); Dieng- soh- treng (K). Cultivated in
courtyard and kitchen gardens in Balphakram,
Nongpoh and Jorabat. Fruits are eaten, heavily
marketed and are used in treating jaundice.

Azadiracta indica A. Juss.;(Meliaceae); Dieng-slah-
kthang (K). Commonly planted in courtyards in
Jarain, Jorabat and Umtru. Leaves are used as
medicine in malarial fever; young leaves are eaten as
vegetable.

Baccaurea sapida (Roxb.) Muell-Arg.; (Euphor-
biaceae); Soh-ramdieng (K). Cultivated in
courtyards and kitchen gardens in Shillong and
Mawkyrwat. Fruits are eaten and sold in market.

Bambusa pallida Munro; (Poaceae); Siej Shken (K).
The bamboo is domesticated in kitchen gardens
and sedentary fields in Umroi and Umtru. Culms
are used for making huts, mats, baskets, etc.

Bambusa tulda Roxb.; (Poaceae); Skhong (J); Wati
(G). One or two tufts of the bamboo are grown in
Tura, Jowai and Jarain near houses. Culms are
mostly used in making huts, tender shoots are
pickled.

Castanea sativa Mill.; (Fagaceae); Soh-ot- phareng
(K). Cultivated in Shillong belt in kitchen gardens
and orchards. Seeds are eaten raw and also sold in
market.

Chenopodium album L.; (Chenopodiaceae); Jaut-
pudar-saw (K). Cultivated in the sedentary fields,
kitchen gardens in Shillong and its adjoining
regions along with other vegetables. Young
shoots are considered to be excellent vegetable
and often sold in the market.

Chimonobambusa khasiana (Munro) Nakai; (Poaceae);
Sieg-Kdait (K). Planted in the boundary of settled
gardens in Mawklot, Mawpat and Mawkyrwat of
the Khasi hills. Culms are locally used for
constructing walls of houses and for making
arrows.

Cinnamomum tamala Nees; (Lauraceae); Dieng-
latyrpat (K); Teji-bol (G). One or two trees are
cultivated in the courtyard of houses in Phulbari,
Nongpoh and Mairang, but wild pure stands are
maintained by Khasis in Pynurslah and Nongjri
areas. Bark and leaves are used as condiments.
Leaves are marketed.

Citrus latipes (Swingle) Tanaka; (Rutaceae); Soh-
kyumphor (K); Dieng –soh-bah (J). Planted in
kitchen gardens and orchards in Shillong and
Jowai. It is endemic to this province. Fruits are
eaten and sold in the market.

Clerodendrum colebrookianum Walp.; (Verbenaceae);
Dieng-jalem-kynthei (K). Cultivated in kitchen
gardens in Shillong. Leaf extract is used in
controlling hypertension.

Coix lacryma-jobi L. var. mayuen Stapf. ex Hook.f.;
(Poaceae); Soh-riew (K). Cultivated as field crop
in Umsning and Umroi. Grains are eaten by
boiling.

Corylopsis himalayana Griff.; (Hamamelidaceae);
Dieng –piur (K). Planted as ornamental plant in
some places of Shillong. The leafless flowering
stage is very attractive.

Dendrocalamus hamiltonii Munro; (Poaceae); Siej-
bah; Siej –iong (K). Planted in the corner of
sedentary gardens or orchards in Shillong,
Mawkyrwat and Umden. Matured culms are used
in making huts, baskets and mats. Young shoots
are fermented for making vegetable and pickle.

Digitaria cruciata (Nees)A. Comus var. esculenta
Bor.; ( Poaceae); Raishan (K). Domesticated as a
field crop in Mairang areas. Grains cooked with
rice are eaten, but mostly utilized in brewing local
wine.
Fig. 1 *Elaeagnus conferta* Roxb.
Fig. 2 *Mentha arvensis* L.
Fig. 3 *Morus australis* Poir.

Fig. 4 *N. cordifolia* (L.) Presl
Fig. 5 *Prunus cerasoides* D. Don
Fig. 6 *Pyrus pashia* D. Don

Fig. 7 *Rhododendron arboreum* Sm.
Fig. 8 *Thysanolaena maxima* (Roxb.) Ktze.
**Dioscorea bulbifera** L.; (Dioscoreaceae); Phanshyneh (K). Planted in the sedentary gardens in Shillong, Umran, and Usning. The tubers are cooked and eaten as vegetable, and also sold in the market.

**Docynia indica** (Wall.) Decne.; (Rosaceae); Sohphoh-khasi (K). Cultivated mostly in the courtyard of houses and hedges for fruits in Shillong, Jowai and Jarain. Fruits are eaten and sold in the market for pounded chutney.

**Elaeagnus conferta** Roxb.; (Elaeagnaceae); Sohshang (K); Dieng-snlangi (J); Chkokhua (G). Cultivated in courtyard and orchards or in corner of sedentary gardens in Shillong, Jowai and Nartiang. Fruits are eaten and sold in the market.

**Eryngium foetidum** L.; (Apiaceae). Donia-khlaw (K). Planted in the kitchen gardens in the rural areas of Shillong and Umran for aromatic leaves. Leaves are used as condiments and for making chutney.

**Erythrina arborescens** Roxb.; (Fabaceae); Dieng-song (K). Commonly planted as livepost in the hedgerows throughout Shillong.

**Euodia trichotoma** (Lour.) Planch.; (Rutaceae); Dieng-sngiat (K); Dieng-subu-klong (J). Cultivated for rearing Eri-silkworms in Shillong-Jowai belt.

**Ficus auriculata** Lour.; (Moraceae); Dieng-sohshied (K); The-bol (G). Common throughout Meghalaya but also planted in the kitchen gardens in Shillong. Fruits are eaten; leaves are used for making dishes.

**Flemingia vestita** Benth.; (Fabaceae); Soh-phlang (K). Cultivated as a field crop in Mawphlang, Mawkyrwat and Mairang for its tuberous roots, which are eaten raw by local people and also sold in the market.

**Houttunyia cordata** Thunb.; (Saururaceae); Jamyrdoh (K). Cultivated in kitchen gardens mostly in Shillong. Leaves are eaten raw and sold in the market.

**Leucoceptrum canum** Sm.; (Lamiaceae); Tiew-toti-tip (K); Dieng-lachhi (J). Planted as livepost of hedges in Shillong and Mawphlang.

**Ligustrum robustum** (Roxb.) Bl.; (Oleaceae); Dieng-soh-paiet (K); Dieng-shiek-kha (J); Marakhartjathong (G). Planted as live post of hedges in Shillong, Lyngkerdem and Mawphlang.

**Litsea cubeba** (Lour.) Pers.; (Lauraceae); Dieng-si-ing (K); Zeng-jir (G). Planted in the courtyard of houses or in the hedges in Shillong and Mawiong. Dry fruits with candy sugar are used in treating chronic bronchitis and asthma.

**Manihot esculenta** Crantz.; (Euphorbiaceae); Phansoh (K). Cultivated for edible tubers as a source of carbohydrate in Nongpoh, Umroi and Umran.

**Mentha arvensis** L.; (Lamiaceae); Pudina (K). Domesticated in Shillong in wet places of kitchen gardens. Leaves are eaten raw and also sold in the market.

**Meyna laxiflora** Robyns.; (Rubiaceae); Thitchkeng (G); Soh-mon (K); Dieng-soh-matan (J). Planted in the hedges mostly in Tura, Shillong and Jowai for fruits. Brownish fruits are eaten and sold in the market. Ripe fruits are often used in brewing local wine.

**Moringa oleifera** Lamk.;(Moringaceae); Dieng-jhursacina (K). Cultivated in kitchen gardens in Nongpoh, Umroi and Mawiong. Fruits are used as vegetable and sold in the market.

**Morus australis** Poir.; (Moraceae); Soh-lyngdkhur (K). Planted near houses for fruits and also as monoculture for rearing Eri-silkworms in Shillong. Ripe fruits are eaten and sold in market.

**Murraya koenigii** Spreng.; (Rutaceae); Sam-khatsi (G). One or two plants are cultivated in the courtyard and kitchen gardens in Tura. Leaves are used as condiment.

**Myrica esculenta** Buch.-Ham.ex D. Don; (Myricaceae); Soh-phi (K). Planted mostly in kitchen gardens and orchards in Shillong, Mawphlang and Mawkyrwat. Sour or semi-sweet fruits are eaten and sold in the market.

**Nasturtium officinale** Br.; (Brassicaceae); Ayrr-sohum (K). Cultivated in wet places of kitchen gardens in Shillong and Pynurslah. The plant is used as vegetable being eaten raw or cooked.
Nephrolepis cordifolia (L.) Presl; (Oleandroideae); Tyrkhang (K). Commonly cultivated as ornamental fern in Shillong. The tubers are eaten.

Passiflora edulis Sims.; (Passifloraceae); Soh-brap (K). Grown in the courtyard and orchards in Shillong. Ripe fruits are eaten and marketed.

Perilla ocimoides L.; (Lamiaceae); Nei-lieh (K); Arim (G). Extensively cultivated throughout Shillong and Jowai in jhum cultivation. The local people eat seeds paste with Flemingia vestita tubers.

Phrynium placentarium (Lour.) Merr.; (Marantaceae); Lah-met (K). Planted as ornamental plant in Shillong, while in Pynurslah is properly protected as forest undergrowth. Leaves are extensively used for packing edible stuffs in the market.

Phyllostachys mannii Gamble; (Poaceae); Seij-naka (K). Cultivated in Shillong as bio-hedge. Culms are used in making fishing rods. Young shoots are eaten as vegetable.

Prunus cerasoides D.Don; (Rosaceae); Dieng-iongkrem (K); Diengtyrkhum (J). Planted mostly in the hedges in Shillong and Jowai.

Prunus nepaulensis (Ser.) Steud.; (Rosaceae); Soh-iong (K,J). Cultivated near houses and in sedentary gardens for fruits in Shillong, Jowai and Mawphlang. Fruits are eaten, marketed and largely used in brewing alcoholic drink.

Pyrus pashia D.Don; (Rosaceae); Soh-shur (K). Cultivated in hedges and courtyard in Shillong and adjoining regions for different uses. Woods are used in making tools handle; fruits are eaten and marketed.

Rhaphidophora decurvisa (Roxb.) Schott.; (Araceae); Slah-padong (K). Planted as ornamental plant in Shillong and Lailyngkot; sold by rural people as pot shrub.

Rhododendron arboreum Sm.; (Ericaceae); Dieng-tiew-thuin (K). Planted as ornamental plant in Shillong. Flowers are used as medicine for cough and bronchitis.

Rhus javanica L.; (Anacardaceae); Soh-ma (K); Dieng-sa-am (J); Khitma (G). One or two plants are planted in courtyard and hedges in Shillong and Mawkyarwat. Fruits are eaten and used as medicine for dysentery and colic pain.

Sarcandra glabra (Thumb.) Nakai; (Chloranthaceae); Tiew-krimas (K); Jakhi (J). Planted in Shillong, Cherrapunji and Mawsynram as religious ornamental plant. Cuttings with persistent red fruits are used for decoration during Christmas.

Solanum kurjii Br.; (Solanaceae); Soh-ngang rit (K); Khim-kha(G). Cultivated mostly in the kitchen gardens in Shillong, Mawiong and Nongstoin. Bitter berries are eaten and sold in the market.

Spiraea cantoniensis Lour.; (Rosaceae); Tiew-torsu-nilieh (K). Planted as a bio-hedge in Shillong and Jowai.

Symplocos cochincheninesis (Lour.) S. Moore ssp.laurina (Retz.) Nooteboom; (Symlocaceae); Dieng-japei (K). Planted in the courtyard as ornamental plant in Shillong.

Syzygium jambos (l.) Alst.; (Myrtaceae); Soh-Kuduk (K). One or two trees are planted in courtyard and hedges in Shillong and Mawkrywat. Fruits are eaten and sold in the market.

Thysanolaena maxima (Roxb.)O.Ktze.; (Poaceae); Synsar (K); Simu (G). Usually grown in the corner of kitchen gardens in Shillong, Tura and Jowai. Panicles are used for making brooms.

Xanthoxylum acanthopodium DC.; (Rutaceae); Jaiur (K); Dieng-ja-iaur (J). Planted in the hedge and kitchen gardens in Shillong and Jowai. Young leaves and fruits are eaten. Fruits are frequently sold in the market and used as medicine for rheumatism.

Yucca gloriosa L.; (Agavaceae); Dieng-la-tari (K). Cultivated in the courtyard in Shillong and Mawphlang for its evergreen ensiform leaves and creamy white, large, erect inflorescence.

Discussion
The present ethnobotanical study has revealed the domestication of 62 species of wild plants by Khasis, Garos and Jaintias at different places of Khasi, Garo and Jaintia hills of Meghalaya. These plants are domesticated for medicine, fruits, vegetables, live
post, bio-hedges, wood for basket, huts, mats, bow and arrows, agro-tool handle, spices & condiments, walking stick, decorative and religious purpose, etc. Such domestication can be considered as a measure of low cost conservation of economically important plants in a greater extent. These are to be subjected for germplasm study, pharmaceutical analysis minimizing the pressure of exploitation in the natural habitat.

Acknowledgement

Author is highly grateful to elderly people of the Khashi, Garo & Jaintia tribes of Meghalaya for providing the information on ethnodomestication of some wild plants. Thanks are also due to R Shanpru, Senior Scientific officer of Botanical Survey of India Eastern Circle Shillong, for his kind assistance during identification of the specimens.

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