

OBSERVATIONS ON SOME ECONOMIC PLANTS OF MIZORAM

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ABSTRACT

A note on the bamboos particularly flowers of *Bambusa tulda* which threatens a famine next year, and other 59 species of flowering plants of economic importance are dealt. About a dozen genera having interesting distribution are discussed. *Mantisia* with 3 species seems confined to this State. *Drosera peltata* Smith an insectivorous plant and *Monotropa uniflora* L. a root parasite also occur here.

Mizoram lies approximately between 22°-24.5°N and 92.5°-93°E. It is shaped like an inverted triangle; it protrudes into and is bounded on west by Bangladesh and east by Burma, only its northern boundary is formed by Assam and Manipur. Its territory consists mostly of hilly areas approximately 1000 m and attaining over 2,500 m in Blue mountain in the southern part. Flora of this State, therefore, is interesting and the vegetation passes from Tropical to Temperate through sub-tropical types in some patches.

The present paper gives a brief account of 59 economically important plants observed by the authors.

The State has remained largely unexplored and only few botanical studies have been undertaken (Gage 1901, Fischer 1938).

The botanical and phytogeographical significance of this region will be evident from the fact that a number of interesting genera endemic to areas shown against each viz. *Butea*-India and Burma, *Antistrophe*-South India and Khasia, *Hemiphragma*-Eastern Himalayas, Khasia and Burma, *Trisepalum*-Burma, *Phlogacanthus*-Himalaya, Assam and Burma, *Asystasiella*-Khasia, find their

place in the forests of this State. Rolla Rao *et al.* (1961) have listed a few useful trees belonging to Indo-Malayan genera. Some of these also occur in the forests of Mizoram. *Michelia* is a well represented genus which produces excellent timber for light furnitures, and is used as a first class wood for a number of purposes. This genus is represented by *M. champaca* Linn. which is widely distributed in India. *Dipterocarpus* a giant of the Malayan tropics represented by *D. turbinatus* Gaertn. f. occurs in Eastern and Western India and Malayasia. Its wood is used for sleepers and manufacture of hard boards. *Cedrella* a genus of the tropics yielding a very good timber represented by *C. toona* is found in western and eastern India, Burma and Malaysia. The genus *Carallia* is widely distributed on either side of the equator of which *C. brachiata* (Lour.) Merrill produces a very handsome wood but is not so common in use. *Phoebe* another large tropical genus represented by *P. attenuata* Nees, endemic in eastern India, produces a valuable timber. *Artocarpus lakoocha* Roxb. another timber yielding species occurs in western India, Burma and Malaysia. Jarett (1959, 1960) however, opines that *A. lakoocha* occurs only in eastern and western India and Malesian species hitherto known as *A. lakoocha* is *A. dadah* Miq.

Among examples of other interesting plants species of *Mantisia* viz. *M. saltatoria*

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Sims. "the dancing girl", *M. spathulata* and *M. wengeri*, appear confined to this state, now introduced and naturalised in Shillong, may be mentioned. *Drosera peltata* an insectivorous plant and *Monotropa uniflora* a root parasite are also reported. Temperate climate of the Blue mountain is congenial for several species of *Rhododendron*. This area and southern part, particularly along Burma border, is very rich in species of Orchids, which apart from botanical interest have aesthetic value as well. Some of these, surely, can be economically exploited.

The forests in the State are rich in several other useful plants, the most common are various species of Bamboos viz. *Bambusa tulda*, *Dendrocalamus longispathus*, *Melocanna bambusoides* and many others. A note on these and flowering of bamboos which has become a very vital problem in relation to rodent population is also given.

The bamboos, of which Fischer (1938) mentions about a dozen species, play a very important role in the economy of the State. Mature culms of the various species apart from providing important building materials, almost wholly support the cottage industries and are used for making furnitures, baskets, handbags and numerous other types of decorative pieces. Young shoots of almost all types of bamboos are used as vegetables.

"Mautak" (Mizo) or "Mulli" (Ass.) appears to be the most dominant species in the local forests. Botanically it is *Melocanna bambusoides* Trin. Bor (1940) mentioned it from Surma Valley which is now in Bangladesh. *Bambusa tulda* Roxb. locally called "Rawthing" or "Hill jati" seems to be the next common species. The name "Rawthing" seems to be applied to another bamboo *Oxytenanthera parvifolia* also. Authors' collections of Rawthing is *Bambusa tulda* and is discussed in this paper. In addition to this "Rawnal"-*Dendrocalamus longispathus* Kurz, "Rawthla" *Neohouzeaua dulloo* A. Camus and a few others are found local-

ly abundant in various parts of Mizoram. Shukla and Jain (1976) state distribution of "Mautak" in Assam, Manipur, Meghalaya and Mizoram while "Rawthing" occurs in Assam, Meghalaya and Mizoram. But large scale flowering of bamboos' especially of these 2 species take place in Mizoram only which is also described as "The land where bamboos flower".

In the present cycle, flowering of bamboos has started from 1975 and is expected to reach the climax in 1977. This phenomenon, is cyclic after about 50 years and according to local belief leads to an acute famine. Records also confirm that the big famine or "Thing-tam" as called locally, of 1881-82; and 1928 are related to bamboo flowering. We find *Bambusa tulda* is flowering currently and this species should have flowered at the time of earlier famines, although it is second in dominance. "Mautak" also flowered in 1960 and has caused a famine to some extent.

Consequent to the flowering, huge quantity of fruit formation takes place which finally fall on the ground. This attracts rodents in large number which gradually invade paddy fields and finally stored grains. Perhaps this increases their fertility rate and multiply vigorously. After about an year the rats start dying in large numbers in all places; its causes are not known but it could be due to some toxic substance in the fruits. The bamboo fruits also provide famine food to human beings.

In spite of this a huge quantity of fruits are left over to germinate and complete the life cycle. It seems, the reproduction in bamboos, in this State is sexual. Our rhizome specimen supports this view.

The Rats population had already started increasing in August 1976. The problem is being actively studied under a joint programme of Delhi University, North-Eastern Hill University, Indian Council of Agricultural Researches and Rodent's Control programme of this State.

A few other economically important plants (as medicines or otherwise) are also enumerated below. For each species name of the family and local name of the plant, are given. At the end of the enumeration, diseases have been alphabetically classified and digits against these correspond to the serial number of the species dealt in this paper. New uses (with asterisk mark) obtained from local source are mentioned:

1. *Abelmoschus esculentus* (L.) Moench. (Malvaceae), *Bawrhsaibe*. 2. *Adhatoda vasica* Nees (Acanthaceae), *Kawldai*, *Leaves medicinally used. 3. *Aegle marmelos* Corr. (Rutaceae), *Belihei*, *Used medicinally. 4. *Ageratum conyzoides* Linn. (Asteraceae), *Vailenholo*, *Used medicinally. 5. *Albizia lebbek* Benth. (Mimosaceae), *Thingri*. 6. *Alstonia scholaris* R. Br. (Apocynaceae), *Thuamriat*. 7. *Ananas comosus* (L.) Merril (Bromeliaceae), *Lakhuithei*. 8. *Artocarpus heterophyllus* Lamk. (Moraceae), *Lamkhuang*. 9. *Asparagus racemosus* Willd. (Liliaceae), *Ackebawik*, *Tuberous roots used as medicine. 10. *Bambusa tulda* Roxb. (Poaceae), *Rawthing*. 11. *Bauhinia variegata* Linn. (Caesalpiniaceae), *Vaufavang*. 12. *Bombax insigne* Wall. (Bombacaceae). 13. *Borassus flabellifer* Linn. (Arecaceae), *Siallu*. 14. *Cannabis sativa* Linn. (Cannabaceae), *Ganja*. 15. *Carica papaya* Linn. (Passifloraceae), *Thingfanghma*. 16. *Cephalostachyum capitatum* Munro (Poaceae), *Rawnal*. 17. *Cinnamomum zeylanicum* Breyn. (Lauraceae), *Thakthing*. 18. *Clerodendrum viscosum* Vent. (Verbenaceae), *Phuihnamchhia*. 19. *Coix lacryma-jobi* Linn. (Poaceae), *Pingpih*. 20. *Costus speciosus* Linn. (Costaceae), *Sumbal*. 21. *Cynodon dactylon* (L.) Pers. (Poaceae). 22. *Dactyloctenium aegyptium* (L.) P. Beauv. (Poaceae). 23. *Dipterocarpus turbinatus* Gaertn. f. (Dipterocarpaceae), *Lawngthing*. 24. *Eleusine indica* (L.) Gaertn. (Poaceae). 25. *Emblica officinalis* Gaertn. (Euphorbiaceae), *Sunhlu*.

26. *Ficus bengalensis* Linn. (Moraceae), *Hmaung*, *Leaf bud used in diarrhoea, dysentery. Latex applied on cracked and inflamed soles and toothache. 27. *F. glomerata* Roxb. (Moraceae), *Chhohe*. 28. *Fragaria indica* Ander. (Rosaceae) *Choakathi*. 29. *Gmelina arborea* Roxb. (Verbenaceae), *Thlanvawang*. 30. *Gossypium herbaceum* Linn. (Malvaceae), *La*. 31. *Hollarrhena antidysenterica* (L.) Wall. ex DC. (Apocynaceae), *Thlengpa*. 32. *Imperata cylindrica* (L.) P. Beauv. (Poaceae). 33. *Lochnera rosea* (L.) Reichb. (Apocynaceae), *Kumiluang*. 34. *Mallotus philippinensis* Muell.-Arg. (Euphorbiaceae), *Thingkhei*. 35. *Mangifera indica* Linn. (Anacardiaceae), *Theihai*. 36. *Mesua ferrea* Linn. (Clusiaceae), *Herhse*. 37. *Melocanna bambusoides* Trin. (Poaceae), *Mautak*. 38. *Michelia champaca* Linn. (Magnoliaceae), *Ngiau*. *Bark, roots and flowers have medicinal properties. 39. *Mimosa pudica* Linn. (Mimosaceae), *Hlonuar*. 40. *Momordica charantia* Linn. (Cucurbitaceae), *Changkha*. 41. *M. dioica* Roxb. (Cucurbitaceae), *Maitamtawik*. 42. *Musa paradisiaca* Linn. (Musaceae) "Balhla"-Fruits, *Tumbu*. *Plant ash-acidity, heart-burn, colic, intestinal worms, ulcer. 43. *Myrica farouhariana* Wall. (Myricaceae) *Keiang*. 44. *Oroxylum indicum* (L.) Vent. (Bignoniaceae), *Dakuna*. 45. *Oxalis corniculata* Linn. (Oxalidaceae), *Siakthur*. 46. *Pogonatherum crinitum* (Thunb.) Kunth (Poaceae). 47. *Psidium guajava* Linn. (Myrtaceae), *Kawlthei*. 48. *Randia dumetorum* Lamk. (Rubiaceae), *Sazukthai* or *Sakhithei*. 49. *Rauwolfia serpentina* (L.) Benth. ex Kurz (Apocynaceae). 50. *Ricinus communis* Linn. (Euphorbiaceae), *Mutih*. 51. *Saccharum arundinaceum* Retz. (Poaceae), *Rairung*. 52. *Salmalia malabarica* (DC.) Schott. & Engl. (Bombacaceae), *Pang*. 53. *Swertia chirayita* (Roxb.) Karst. (Gentianaceae), *Drug obtained from the dried

plant is tonic, febrifuge and anthelmintic. Plant medicinal.

54. *Tabernaemontana coronaria* R. Br. (Apocynaceae), *Par-Arsi*. 55. *Tectona grandis* Linn. f. (Verbenaceae), *Tlawr*. 56. *Thysanolaena maxima* (Roxb.) O. Ktze (Poaceae), *Hmumphiah*. 57. *Tinospora cordifolia* Miers. (Menispermaceae), *Theisawnthlung*. *Used in fever, rheumatism, urinary diseases, syphilis, skin diseases, piles, bronchitis, impotency, jaundice, liver disorders, gonorrhoea, cough, diarrhoea and chronic dysentery.

58. *Vernonia cinerea* Less (Asteraceae).

59. *Zingiber officinale* Rosc. (Zingiberaceae), *Sawhthing*.

Classification by uses

Species dealt above are here classified on the basis of uses. Numbers against uses refer to serial number of species in this paper.

Medicinal Uses:

Anaemia-42. Antiseptic-2. Appetizer-14, 45. Asthma-3, 43, 50, 53.

Beri-beri-15. Biliousness-27, 45. Bite-snake-49. Blood disease-9, 19. Blood pressure, high-49. Boils, bruises, wounds, ulcers-6, 11, 18, 20, 23, 26, 29, 30, 36, 39, 42, 50, 52, 54.

Catarrh-1, 3, 13, 29, 35, 43, 52. Cancer-33. Chest troubles-2, 42. Child birth (After)-6, 22. Cough, cold, hiccup-13, 25, 29, 30, 32, 35, 36, 37, 57, 58, 59. Convulsions, epilepsy-21, 29.

Eye troubles-42, 43, 58.

Fevers-1, 3, 18, 19, 24, 26, 29, 31, 45, 46, 49, 51, 53, 57, 58, 59.

Gastric:

Diarrhoea, dysentery, dyspepsia-2, 3, 4, 6, 9, 14, 15, 17, 19, 25, 26, 27, 30, 31, 35, 36, 37, 38, 42, 44, 45, 48, 49, 50, 52, 53, 57, 58.

Flatulence-4, 17, 44, 58.

Haemorrhages-25, 37.

Insanity-49. Insecticide-2.

Jaundice-25.

Kidney disorder-9, 38, 39, 50.

Laxative-30. Leprosy, leprous sore-4, 11, 25, 31. Leucorrhoea-1, 26, 35. Liver complaints-6, 15, 24, 57.

Menstrual complaints-6, 17, 18, 19, 27, 35. Mouth sores-27.

Narcotics-14.

Pains:

Colic-4, 31, 42; Ear-6; Head-17, 21, 30, 43, 55, 56; Kidney region-22; Rheumatism-17, 26, 38, 43, 44, 50, 57, 59; Sciatica-50; Stomach-16; Tooth-17, 26, 50, 54, 55, 59; Piles-5, 21, 27, 30, 31, 32, 35, 36, 39, 43, 58, 59.

Sedative-14, 49. Sexual weakness-1. Skin diseases-4, 6, 11, 13, 14, 15, 16, 18, 23, 34, 35, 36, 46, 50, 52, 53, 54, 57, 58. Small pox (Prevention)-19, 27. Spleen disorder-15, 31.

Tetanus-10. Tonic (General and nerve)-14, 18, 20, 25, 31, 32, 36, 37, 49, 53, 55, 59.

Urinary complaints-1, 5, 19, 21, 51, 57. Uterine disorders-30, 52.

Venereal diseases-1, 11, 13, 14, 38, 42, 52. Vomiting-17, 25, 36, 48. Vomiting blood-52.

Wormicide-7, 15, 16, 18, 34, 50, 52, 58.

Other Uses:

Brooms-56. Dyes-8, 34, 44. Edible-1, 3, 7, 8, 11, 13, 15, 19, 28, 35, 40, 41, 42, 43, 47. Fabric-30. Fish poison-43, 48. Oil & resin-5, 23, 36, 50, 55. Tanning-25, 44. Thatching-19, 51. Timber-5, 6, 8, 12, 29, 35, 38, 52, 55. Varnish-36.

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REFERENCES

- BOR, N. L. Flora of Assam, Vol. 5. Calcutta. 1940.
CHATTERJEE, D. Studies on the Endemic flora of India & Burma *J. Roy. Asiat. Soc. Beng.* 5(1): 19-67. 1939.
CHOPRA, R. N. ET AL. Glossary of Indian medicinal plants. C.S.I.R. New Delhi. 1956.
DAS, (SMT.) D., U. SHUKLA AND S. K. JAIN. On the occurrence of some medicinal grasses in Eastern India. *J. Res. Ind. Med.* 1976.

- FISCHER, C. E. C. The flora of Lushai Hills. *Rec. bot. Surv. India* 12(2): 75-161. 1938.
- KANJILAL, U. N. ET AL. Flora of Assam, Vols. 1-4. Calcutta. 1934-40.
- RAO, ROLLA S., B. M. WADHWA AND M. Y. ANSARI. Comparative studies on the distribution of useful trees of tropical evergreen forests in the Western & Eastern parts of India. *Indian Forester* 87(4): 220-241. 1961.
- AND G. PANIGRAHI. Distribution of vegetational types and their dominant species in Eastern India. *J. Indian bot. Soc.* 40:274-285. 1961.