

ETHNOBOTANY OF SOME FIBRE YIELDING PLANTS OF HIMALAYAN ENVIRONMENT OF DARJEELING

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ABSTRACT

From the biodiversity point of view Darjeeling Himalaya is very rich. Being a component of the biodiversity hot spots of the Eastern Himalaya, it is a virtual conservatory of a vast gene pool. Darjeeling can also boast of a rich cultural diversity, since it is described as a "Babel of tribes and nations". The diversity of both these types makes it an ideal ground for ethnobotanic studies. During the brief course of the present study 32 species of fibre yielding plants have been found which the local people use. These fibre yielding plants used by the local peoples are mostly unknown and commercially unexploited. Of the 32 species of fibre yielding plants maximum (10 species) belonged to family *Urticaceae* followed by *Malvaceae* (4 species) and *Sterculiaceae* and *Thymelaeaceae* (3 species), which are unreported from this area in the past. Further studies into the technology and economy of this fibre may lead towards the goal of producing a cheap and eco-friendly natural fibre.

Key words: *Biodiversity, Ethnobotanical uses, Darjeeling Himalaya.*

INTRODUCTION

Darjeeling, the northernmost district of West Bengal, lies between 87°59" and 88°53" E and 26°31" and 27°13" N. Darjeeling is full of natural resources, a good variable soil and climatic conditions, considerable amount of forest products and production of good quality tea (11). The district of Darjeeling have been divided into three main ecological zones of which the present study mainly confines itself to the temperate and tropical.

Geologically, Darjeeling hill is a component of the young Himalaya. The Himalaya in this region is relatively young, much folded and faulted. The rocks are mainly, Darjeeling gneiss and Dahlings. Being a part of Himalaya lying in the tectonic zone, the formation of these hills is unstable (9). The climate of this region show an extremely high rainfall, high humidity and some snow fall at its higher reaches during the winter (8). This type of climate condition is conducive for the growth of different forest types. The forests are mainly of three types viz. the tropical, Temperate and Alpine. The native population of Darjeeling hills is exceedingly heterogeneous. The majority of the people are of mongolian origin belonging chiefly to various Nepalese castes, but also includes a large number of Lepchas, Bhutias and Tibetans. The castes of Nepalese race are chiefly represented by Chhetri, Bahun, Mangar, Newar, Gurung, Tamang, Rai, Limbu etc. In addition Kami, Damai & Sarki forms the lowest rungs of the Nepalese caste

heirarchy. These three castes along with the Chhetris and Bahuns represent the Aryan stock and the rest are of Mongolian origin (5).

Ethnobotanical studies have been carried out previously in Darjeeling (1). The present studies was undertaken from September '96 to May '97. The present paper enumerates 32 species of wild plants which are used for making ropes, papers, cordage twiner, rough wearing, natural fabrics, fishing lines, nets etc. The objective of this study is to find out the ethnobotanical uses of the mentioned plants in the forms of fibres. This ethnic wisdom would ultimately help in developing an alternative to polyethylene and nylon fibres, which are under fire in the recent times due to their contributory roles in environmental pollution. Ethnobotany is the study of useful plants prior to their commercial exploitation and eventual domestication (10).

The plants described here are associated with the economy of the tribal people and there is still ample room for ethnobotanical studies in this part of the country which may eventually lead to economic benefit to the country and the tribals as well. Considering the fact that traditional knowledge forms the basis for development of new product. The cultural diversity being more endangered than biodiversity, it is an urgent necessity to record as quickly as possible all information about plants and animals and the role of tribals in conserving them (6).

MATERIALS AND METHODS

Extensive survey was conducted in the hill areas of the Darjeeling Gorkha Hill Council from September, 1996 to May, 1997. The survey was done at Chunchhatti, Tindharia, Mirik, /Darjeeling Sadar, Dhotre, Sukiapokhari and Meghma i. e. the places having different altitudinal variations. (between 440 meters to 2744 meters) amsl.). Local tribals, agriculturist and laborers were subjected to the primary questionnaire. Identification of the species was done on the basis of the established flora (3, 4). Local names were ascertained from the local tribals and the foresters at Darjeeling. The collected specimens were deposited in the herbarium of "Panchavati Greentech Research Society, Darjeeling".

Plant species are enumerated alphabetically with family names in parenthesis followed by local names in Gorkha/Nepali (within single inverted commas) voucher number, life form of the plants, altitude of the places of collection and the native uses.

Abbreviation used: GESP = Greentech Environment study programme; LN.=Local name (in Gorkha/Nepali); M. = Meter above mean sea level (Altitude); NSER = Nature study and Ethnobotanical Research.

1. *Abroma augusta* L. (Sterculiaceae) Ln. 'Sanu Kapasi'. NEER. 1031, Shrub, 5000M. Bark fibre used for rope making and cordage.
2. *Abutilon indicum* G. Don. (Malvaceae) Ln. 'Atibala' GESP. 551, Shrub, 800M. Stem fibre is used in cordage and rug making.

3. *Bauhinia vahlii* W & A. (Caesalpiniaceae) Ln. 'Bhorla' NEER. 1146, Liana, 440M. Fibre from the stem is used for making cordage for kutch house roofing & other common household uses in rural areas.
4. *Boehmeria macrophylla* Don. (Urticaceae) Ln. 'Kamlé' GESP. 447. Shrub, 900M. Stem bark yield good fibre for rope making and household works.
5. *Boehmeria malbarica* Wedd. (Urticaceae). Ln. 'Thulo kamle' GESP. 568, Shrub, 1463M. Stem bark is used for making fishing nets and cordage for other common household works.
6. *Boehmeria platyphylla* Don. (Urticaceae). Ln. 'Kamle' GESP. 524. Shrub, 1667M. Stem bark yields fibres making.
7. *Boehmeria polystachya* Wedd. (Urticaceae). Ln. 'Phusre kamle' GESP. 406, Shrub, 1830M. Bark fibre used for making cordage for common household use.
8. *Calotropis gigantea* Blume. (Asclepiadaceae). Ln. 'Ank' GESP 438, Small shrub, 600M. Stem bark yields a strong fibre used as threads.
9. *Cannabis sativa* Lin. (Cannabaceae). Ln. 'Bhang'/'Ganja' GESP 407, Shrub, 1500M. Stem fibre is good source of hemp fibre used for various purpose.
10. *Cissampelos pareira* Lin. (Menispermaceae). Ln. 'Batulpatey' GESP. 450 Climber, 650M. Whole plant used as twiner for common household works.
11. *Cissus repanda* Vahl. (Vitaceae). Ln. 'Pani lahara' GESP. 495, Liana, 460M. Splitted stem fibre used as twiner for fencing and common household works.
12. *Daphne cannabina* Wall. (Thymelaeaceae). Ln. 'Lokoto' NEER 081, Shrub, 2440M. Stem bark yields strong fibre used for rope making, coarse cloth and as raw material for hand made papers of various uses.
13. *Daphne involucrate* Wall. (Thymelaeaceae). Ln. 'Syano lokoto' NEER. 1045, Shrub, 1524M. Stem bark fibre is used for making ropes and raw material for hand made papers.
14. *Debregeasia velutina* Gaud. (Urticaceae). Ln. 'Tushare' GESP, 437, Shrub, 1738M. Stem bark yields fibre used for common household use in rural areas.
15. *Edgeworthia garderi* Meissn. (Thymelaeaceae). Ln. 'Argayli' NEER. 1013, Large shrub, 2134M. Stem bark yields strong fibre used for rope making and a good source of hand made paper of various use.
16. *Ficus nemoralis* Wall. (Moraceae). Ln. 'Dudhilo' GESP 576, Tree, 2287M. Stem bark fibre used for making cordage for common purpose.
17. *Girardiana diversifolia* Decn. (Urticaceae). Ln. 'Bhangre sisno' GESP 583, shrub, 2134M. Stem yields strong fibre used for making ropes and cordage.
18. *Holboelia latifolia* Wall. (Lardizabalaceae). Ln. 'Gulfa' GESP. 483, Climber, 2744M. Whole stem is used as twiner for common purpose.
19. *Kydia calycina* Roxb. (Malvaceae). Ln. 'Kubinday' NEER, 1027, Tree, 1220M. Bark yields fibre used as cordage and cattle tether.
20. *Laportea crehulata* Gaud. (Urticaceae). Ln. 'Morangey' GESP. 472, Shrub 600M. A strong fibre is obtained sometime used for rope making.
21. *Marsdenia tenacissima* W & A. (Asclepiadaceae). Ln. 'Bahuni lahara' NEER. 1128. Climber, 760M. Silky stem fibre used for making bow string, fishing lines and other use.
22. *Moutia puya* Wedd. (Urticaceae). Ln. 'Pua' GESP. 499, Shrub, 550M. Fibre obtained from stem bark is used in minor household works.
23. *Naravalia zeylanica* Dc. (Ranunculaceae). Ln. 'Rasagagri' GESP. 560, Climbing Shrub, 550M. Stem can be twisted into ropes for common household works as tying fencing of kitchen garden etc.

24. *Oreocnide frutescens* (Blume) Miq. (Urticaceae). Ln. 'Kerme' NEER 1063, Tree, 1372M. Bark yields fibre used for fishing nets and cordage for common purpose.
25. *Oreocnide integrifolia* (Gaud.) Miq. (Urticaceae). Ln. 'Lepe' GESP 465, Tree, 976M. A strong bark fibre is obtained used for netting and weaving.
26. *Sida rhombifolia* Lin. (Malvaceae). Ln. 'Khareto' GESP. 529, Shrub, 450M. Bark fibre. used for making cordage or rope for common household works. Stem after extraction of fibre used for making brooming device or broomstick.
27. *Stephania glabra* Miers. (menispermaceae). Ln. 'Tambarkey' GESP. 490, Climber, 1500M. Stem fibre used for making fishing lines and cordage for common purpose.
28. *Sterculia indica* Roxb. (Sterculiaceae). Ln. 'Chewripate' GESP 571, Tree, 1830M. Bark fibre used for making ropes.
29. *Sterculia villosa* Roxb. (Sterculiaceae). Ln. 'Odal' GESP. 528, Tree, 450M. Bark fibre used for making ropes for various purpose.
30. *Thunbergia grandiflora* Roxb. (Acanthaceae). Ln. 'Kanese lahara' NEER 1029, Climber 1067M. The climber as a whole used as cordage, twiner for various purpose.
31. *Trema politoria* (Planch) Bl. (Ulmaceae). Ln. 'Kuwait' GESP. 596, Tree, 450M. Bark fibre is used in cordage for common use.
32. *Urena lobata* Lin. (Malvaceae). Ln. 'Kuro' GESP/ 408, Shrub, 1015M. Bark fibre used in cordage for common use.

Thus, Darjeeling Himalaya represents a botanically unexplored flora having a high percentage of endemic vegetation (7). The gene-pool in this part of the Himalaya is very rich for it being a part of the biodiversity hot-spots of the world. Rapid urbanisation and other anthropogenic activities are gradually destroying the vegetation some of which are lost before any study could be done on them (2). Many useful traditional information is fast ending. Hence, there is an urgent need to record all ethnobiological information to conserve the biodiversity of eco-friendly fibre yielding plants of Darjeeling Himalaya.

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