

# ETHNOBOTANY OF DARJEELING HIMALAYA, INDIA\*

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## Abstract

Ethnobotanical use of plants is a part of the culture and civilisation of Darjeeling Himalaya. There are as many as 18 tribal communities who practice ethnobotany.

Information data have been collected through extensive travel, meetings and discussions with the native tribes as well as through actual recording of usage. A herbarium of ethnobotanical plants has been set up in Kalimpong and a museum of ethnobotanical arts and crafts is being planned.

Ethnobotanical information is of great interest to pharmacological study while ethno-art and crafts display indigenous technology. Ethnobotany in this region can be developed into an instrument of socio-economic transformation of the poorer section of the people. Necessary measures are suggested.

## 1. Introduction

The Darjeeling Himalaya with a geographical area of 3,149 sq km and enjoying tropical, temperate and subalpine climate has a great biodiversity in its flora and contains many ethnobotanical information. Ethnobotanical study of about 6,000 species of plants found in the region has only recently begun. Contacts have been made with 18 tribes in the region. They are the Lepchas, Bhutias, Sherpas, Yolmos, Drukpas, Tamangs, Gurungs, Mangars, Rais, Limboos, Newars, Oraons, Mechs, Santals, Totos, Thamis, Kagatays and Tibetans. All them harbour considerable ethnobotanical information of scientific and developmental importance.

Countless plant species are used traditionally in many different manners and it has also been observed that the same plant species is also used for more than one purpose in different localities. The onslaught of modern way of easy life on the old tradition and access to alternative means has pushed the practice of ethnobotany to far flung rural villages where facilities of modern life are wanting. Meanwhile, it is quite certain that several valuable ethnobotanical informations have been lost with the passage of time as there still lacks an organised attempt to document them and there are still no archives. Except for the plants used on occasions of festivals, worship, marriage and death rituals, those used as medicine and food need phytochemical analysis in order to ascertain their worth for wider use and benefit. It appears only a very small fraction of the available ethnobotanical wisdom has been recorded.

## 2. Materials and Methods

Visits were made to marketplaces ("haats" in local speech) to see and record the plants brought for sale by the villagers. Visits were also made to some of the rural homes to see

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\* not refereed

the most indigenous ethnotechnology. Interview with herbalists and the patients who had been treated by them were done and the actual usage of plants recorded. Plants were identified and deposited at Kalimpong College Herbarium for further study.

### 3. Results

Yonzon *et al.* (1985a, b; 1984a, b) have already reported 118 ethnomedicinal plants, 46 wild edible plants and 47 poisonous plants from Darjeeling Himalaya from their study on the natural resources of the region. The present paper deals with additional new cases and aspects, which have not been reported so far.

*Caradmine hirsuta* Linn. (Cruciferae). “Simrayo” (N)\*. Taken as any other vegetable for jaundice, heart disease, low blood pressure and gout.

*Capsicum frutescens* Linn. (Solanaceae). “Dalley Khorsani” (N). Fruits used as spice and taken for gastric ailment.

*Daphne cannabina* Hook. F. (Thymeliaceae). “Argeli” or “Kagatay” (N). A high quality insect-resistant paper is prepared from the bark of aerial parts through the traditional method. A remarkable feature is the eco-friendly method followed in manufacturing the paper, no chemicals being used. The paper locally called the “Paharay Kagach” is the most traditional paper of the folk. The plant coppices well and so a continued supply of the bark is ensured. The plant grows abundantly in the temperate Himalaya.

*Dicentra scandens* (D. Don) Walpers (Fumariaceae). “Makuri Jhar” (N). The leaves of this climbing plant are used in cardiac ailment.

*Elsholtzia blanda* Linn. (Lamiaceae). “Chhinik” (S), “Lenza” (N). The powdery seeds of this plant swell up and become sticky and mucilaginous when boiled; eaten as the “dal” (pulse soup), it is an important item in Indian food. The discovery of this new substitute for the pulse was made only a few years ago. The Sherpas of Darjeeling eat this as pulse extensively. The seeds of this plant are extremely light. About 250 grams of seeds of this plant provide the same amount of cooked “dal” as 1 kg of pulse seeds.

*Emblica officinalis* Gaertn. (Euphorbiaceae). “Amala” (N). The fruit is eaten raw in indigestion and also improves the gums. A fine traditional pickle is prepared with the fruits.

*Equisetum diffusum* D. Don (Equisetaceae). “Kurkuray Jhar” (N). The young shoots are crushed into a paste and this is applied directly for removal of skin warts or protuberances. Recently the juice extract has also been found to act as an effective biological pesticide.

*Gynocardia odorata* R.Br. (Flacourtiaceae). “Gantay” (N). Oil from seeds used in leprosy and skin diseases. Fruits juice extract used as fish poison and also as a pesticide.

*Mahonia nepalensis* DC. (Berberidaceae). “Chutro” or “Kesari” (N). The ripe yellow berries are crushed in water and the filtrate taken orally in case of dysentery and urinary trouble.

*Oroxylum indicum* Vent. (Bignoniaceae). “Totala” (N). The bark juice is taken in diabetes.

*Ophiopogon intermedius* D. Don (Liliaceae). “Nakima” (N). The young inflorescence of the stemless plant with a cluster of leaves makes a fine curry.

*Rhododendron arboreum* Smith (Ericaceae). “Rato Gurans” (N). Juice extract of young leaves is used to poison fishes. Flowers taken orally in case of blood dysentery and throat infections. A good quality wine is extracted from the flowers by a fermentation method.

*Solanum khasianum* Clarke (Solanaceae). “Rambhenri kanra” (N). Smoke of seeds is applied to aching teeth.

*Strobilanthes petiolaris* Nees (Acanthaceae). “Sharpa Aushadhi Jhar” (N). The aerial leaves and stems made into a paste with water and applied to the point of snakebite and kept bandaged for several hours, cures snake bite.

*Thysanolaena maxima* (Roxb.) O. Kuntze (Gramineae). “Kuchcho” (N). Root decoction in water is used for causing abortion and treatment of boils, mumps and abscesses. The plant has multifarious uses. It is ideal for preventing soil erosion over hill slopes by the plant’s root system, the mature terminal inflorescences make the famous “broomstick”, while the leaves are a good fodder for the cattle.

*Tagetes patula* Linn. (Compositae). “Saipatri Phul” (N). A decoction of flowers in water is taken in case of fever and pneumonia. Grown commonly as a most favourite ornamental, the flowers find wide uses during festivals and ceremonies.

*Urtica dioica* Linn. (Urticaceae). “Gharia Sishnu” (N). A delicious nettle soup is obtained from the young inflorescences boiled in water to which a little salt is added for taste. Often, a little flour is added to the consistency of thick soup.

*Zanthoxylum armatum* DC. (Rutaceae). “Balay Timur” (N). The red fruits are eaten in the form of pickle in indigestion.

\* (N)= Nepali, (S)=Sherpa.

#### 4. Discussion

The above examples are just the tip of an iceberg. An estimated 20% of rural people and 5% of the urban population still use traditional plant medicines for healing their diseases. Of the 118 plants species studied, their organic usage stands as follows:

whole	10 species
young shoots	12 species
stems	24 species
leaves	21 species
roots	22 species
flowers	8 species
fruits only	21 species.

Investigation on the biochemical, pharmaceutical and pharmacological aspects of the above plants will help adjudge their potential as prospective economic crop for the farmers. The traditional agricultural system, which involves much overturning of the soil system through ploughing and digging is not promotive in checking the erosion of the valuable top soil. The traditional crops such as rice, maize, millet and wheat are also economically not viable. Hence, there is an urgent need to replace these staple crops by environment-friendly high value cash crops such as the medicinal plants.

Every plant needs to be regularly used so that it may not lose its importance and also may not get wiped out for being considered unimportant. The culture of ethnobotany can survive on the regular practice of the traditional use of these medicinal plants.

The concept of ethno-agriculture and ethnofood is a part of ancient cultural heritage of the people. Ethnofood, which is found in several varieties all over the region, serves as an alternative to any modern food and is conveniently useful during times of famine or when it is difficult to buy modern food from the market. On the other hand, the following are the merits of ethno-agriculture:

- the farming being purely organic, no chemical fertilisers are used to increase soil fertility;
- there is a deep-rooted tradition to preserve sacred grooves of trees or other groups of plants;

- traditional food habit is still being sustained in large measure in the backward areas (in the modern sense of development);
- since agriculture is the only occupation and source of income and the people remaining content with this, such a situation leads to conservation of biodiversity
- people is generally not ambitious for more money and power gains.

#### 4.1. Conservation - need of the hour

The establishment of genebanks at different phytogeographical ranges is the dire need of the hour. Yonzon (1993) reported that 29 species of plants and 16 species of animals have become rare and endangered from Darjeeling hill region alone. Lack of environmental education, improper and often mismanagement of resources leading to unrestricted deforestation, failure to provide alternative resources and non-enforcement of environmental laws seem to be the chief reasons for this disaster. Ethnobotany is not only of cultural, scientific and academic interest but is also greatly of economic interest. The following approaches are emphasized for the development of ethnobotany:

- organizing village level workshops, training camps and awareness campaigns
- demonstration and use of traditional plant products
- providing financial assistance to promote ethnobotanical projects
- establishing ethnobotanical gardens, museums and even institutes
- setting up local, national and global networks for sale and purchase of ethnobotanical products
- introducing ethnobotany as a full-fledged discipline in educational institutions, and
- enacting laws for conservation of rare and important plants of ethnobotanical importance.

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#### 6. References

- Yonzon, G.S. *et al.*, 1984(a). Medicinal Plants of Darjeeling District. J. Econ. Tax. Bot. 5: 605-616.
- Yonzon, G.S. *et al.*, 1984(b). Poisonous Plants of Darjeeling District. J. Him. Res. Dev.: 31-34.
- Yonzon, G.S. *et al.*, 1985(a). Wild Edible Plants of Darjeeling District. Journ. Beng. Nat. Hist. Soc. (New Series), 3(1): 76-83.
- Yonzon, G.S. *et al.*, 1985(b). Ethnomedicinal Plants of Darjeeling-Sikkim Himalayas. Special Issue of 5<sup>th</sup> Int. Soc. Hort. Sci. Symp.: 193-202.
- Yonzon, G.S. and Chatterjee, S.K., 1986. Cultivation of Medicinal Plants in Darjeeling District: its future potentialities. Acta Hort. No. 188.

- Yonzon, G.S., 1993. Rare varieties of Flora and Fauna in the Hills of Darjeeling. *Paryavaran*: 1 (1): 20-23.
- Yonzon, G.S. *et al.*, 1996. Contribution to the Ethnobotany of Darjeeling District, India. In: *Ethnobiology in Human Welfare*, edited by S.K. Jain, Deep Publication, New Delhi, pp. 388-389.