Introduction

The district Darjeeling lie between 26º 27’ and 27º 13’N latitude and 87º 59’ and 88º 53’ E latitude and is one of the major part of the eastern Himalayas. The total area covered by this district is 3254.7 sq km, of which 2417 sq km area is occupied by the hills with an altitudinal variation between 130 m (at Sukana) to 3670 m (at Phalut). The region harbours a wide range of floristic diversity (Plate 1a). Amongst the diverse floristic elements, many plants are of religious, socio-cultural and medicinal values1-4.

Many systems of herbal medicine are in practice in Darjeeling Himalayas including Bhutias system, Nepali system and Lepcha system. But, Lepcha system of herbal medicine is predominant for long time4-5. Deeply seated in its antiquity but very thinly documented, the Nepali system of herbal survives today in the region as Jaributy or simply as Pahaday Dabai. Hence, the Jaributy system has to bring up the several disjointed systems together to get proper status6-8.

The existence of traditional knowledge on medicinal plants and their uses are more common among the spiritual healers locally known as Jhakri, Bijuwa, Boongthing, Baidang and Phedangma. However, many research workers have documented many medicinal plants but very little work on the traditional uses of medicinal plants by these healers had been attempted. Thus, with the point of view to document the ethnomedicinal plants used by Jhankri, Bijuwa and Phedangma, the present work was undertaken3, 5, 6, 9-18.

Materials and Methods

For the present survey intensive field work has been done among Nepali tribal communities and for this present study fifteen different villages and tea gardens were selected. These areas were visited regularly for observations, development of understanding and relations with the local people, so that they feel free to divulge their long protected traditional knowledge. Herbal practitioners from these regions like Jhankri, Bijuwa and Phedangma were interviewed regularly and the plants of interest were recognized with their help and also with the help of other village folks (mainly of elderly people). Voucher specimens were properly collected, processed and mounted on the herbarium sheets19. The specimens were identified using available literature and matching the specimens with the specimens at herbarium in Sikkim Himalayan Circle (BSHC), Gangtok. Some published and unpublished literature were also consulted for relevant information. The enumeration of the collected specimens

Abstract

Biodiversity of eastern Himalayas including Sikkim and Darjeeling is well known. Many ethnic groups reside in this beautiful Himalayan region. Although the modern medicinal facilities are available in the urban areas of Darjeeling yet local population of far flung places still prefers to use traditional plant resources. An ethnobotanical study was conducted among the traditional practitioners: Jhankri, Bijuwa and Phedangma. Mostly they rely on locally available plant materials to cure many diseases and disorders. In this paper a total of 41 species of plants as used by traditional practitioners of this area are listed alphabetically by botanical names, followed by family (in parenthesis) and medicinal uses.

Keywords: Ethnomedicinal plants, Jaributy, Jhankri, Bijuwa, Phedangma, Darjeeling Himalaya.

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Studies on ethnomedicinal plants used by traditional practitioners, Jhankri, Bijuwa and Phedangma in Darjeeling Himalaya

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Results

Species enumeration
Rhizome is taken orally against food poisoning often called *harital* in local language. Dried rhizome is taken orally in small quantities against bodyache.

Young leaves and shoots are taken orally against fever, headache and bodyache.

The paste is prepared from the rhizome and pseudobulb which is applied externally for curing bone fracture and dislocation. Bandage is applied on the affected part and is retained for 3-5 weeks but dressing has to be changed in-between, at regular intervals of 5-7 days. Pseudobulbs are crushed to prepare paste which is used externally to cure boil.

Shoots are consumed in case of mouth ulcer. Leaves are crushed and applied externally on forehead during dizziness and headache.

Crushed root extract is given orally in case of diabetes and tuberculosis. Paste prepared from roots is applied externally in case of bone fracture and joint dislocation.

Rhizome is taken orally to get relief from bodyache. Rhizome is taken orally by women against irregular menstrual cycle.

7. *Belamcanda chinensis* (Linn.)DC. (Iridaceae); Nep–Tarware Phool; Loc: Sungma, Pokhria Bong, Maneybhanjyang, Singee, Takdah, Tung, Dhajay.
Paste is prepared from the rhizome powder along with lime in 1:1 ratio and is applied on the fractured bones. Bandage is applied for 4-5 weeks but older paste is removed and new paste is applied at regular intervals of 4-5 days.

8. *Berberis angulosa* Wall. (Berberidaceae)–Nep: Chutro; Loc: Maneybhanjyang, Lebong (Plate 1c).
Rhitmes are cut into small pieces and administered orally as antidote to food poisoning (*harital*). It is inhaled through nose in case of sinuses.

Leaves and young shoots are taken orally in case of tonsillitis.

Roots are crushed and wrapped in cotton cloth which produces pungent smell. This is inhaled through nose in case of sinuses.

Paste is prepared from roots and is applied externally against boil.

Juice of stem is orally taken in juvenile diabetes.

Paste is prepared from rhizome powder along with lime in 1:1 ratio and is applied on the fractured bones. Bandage is applied for 4-5 weeks but older paste is removed and new paste is applied at regular intervals of 4-5 days.

Rhitmes are cut into small pieces and administered orally as antidote to food poisoning (*harital*). It is
also very effective against acute stomach pain and loss of appetite.

15. **Cynodon dactylon** (Linn.) Pers. (Poaceae)—Nep: Dobo; Loc: Nagri, Singee, Dhajay, Mirik, Achalal.

   Juice is prepared from the freshly collected root, which is administered orally in case of liver cirrhosis.

16. **Dactylorhiza hatagirea** (D.Don) Soo (Orchidaceae)—Nep: Panch Amle; Loc: Sukhia*, Sonada*.

   Roots are crushed and paste is prepared which is used externally on cuts and injuries. Roots are given orally against bodyache.

17. **Datura stramonium** Linn. (Solanaceae)—Nep: Dhaturo; Loc: Sungma, Chamong, Nagri.

   Seeds are given orally against rabies. Seeds are given orally against nervousness, nausea and hysteria.

18. **Dioscorea pentaphylla** Linn. (Dioscoriaceae)—Nep: Rani Bhyagur; Loc: Sungma, Singee, Mirik, Takthah, Nagri, Dhajay.

   Boiled rhizome is very fibrous thus used as anthelmintic and wormifuge especially against tapeworm.


   Whole plants are crushed and wrapped in broad green leaves of other plants and it is roasted in fire for few minutes. This produces pungent smell, which is inhaled strongly in case of sinuses. Same preparation is given in case of tonsillitis.

20. **Elsholtzia fruticosa** (D. Don) Rehder (Lamiaceae)—Loc: Sungma, Sukhia Pokhri, Maneybhanjyang (Plate 1d).

21. **Eupatorium adenophorum** Linn. (Asteraceae)—Nep: Kali Jhar, Banmarra; Status: Abundant.

   Young leaves and shoots are given orally against dysentery.

22. **Ficus clavata** Wall. (Moraceae)—Nep: Lute Khaneu; Loc: Chamong, Sungma, Tung, Sonada.

   Stem is debarked and latex is freshly collected which is applied externally on boils.

23. **Girardinia palmata** (Forsk) Gaud. (Urticaceae)—Nep: Bhangre Sishnu; Loc: Somada, Sungma, Pokhriabong, Dhajay, Nagri.

   Young shoots and inflorescence are consumed in case of hypertension.


   Whole plant is crushed and given orally to infants suffering from diarrhoea.

25. **Heracleum wallichii** DC. (Apiaceae)—Nep: Chimphing; Loc: Tung, Pokhria Bong, Sukhia, Mirik (Plate 1e).

   Seeds are given orally in fever. Seeds are crushed and paste is prepared with table salt and given orally in case of bodyache.

26. **Hibiscus rosa-sinensis** Linn.
**27. Kaempferia rotunda Linn.**
(Malvaceae)—Nep: *Jawa Kusum*; Loc: Dhajay, Mirik, Tung, Pokhriabong, Achalal, Chamong. Young unopened flowers are given orally against tonsillitis. Leaves and flowers are crushed and juice is prepared which is used against dandruff and hair problems.

**28. Macropanax undulatum Seem.**
(Araliaceae)—Nep: *Chenday*; Loc: Sungma, Nagri, Chamong. Bark is administered against diabetes.

**29. Mahonia acanthifolia D. Don**
(Berberidaceae)—Nep: *Chutro*, *Keshari*; Loc: Lebong, Chamong, Sukhia. Stem is cut into thin slices which are boiled and juice is given orally against blood dysentery, diarrhoea and jaundice.

**30. Mentha piperita Linn.**
(Lamiaceae)—Nep: *Pudhina*; Loc: Tung, Sonada, Sungma, Nagri, Dhajay, Achalal. Whole plant is made into paste and taken in case of bodyache.

**31. Nardostachys jatamansi DC.**
(Valerianaceae)—Nep: *Jatamansi*; Loc: Sukhia*, Sonada*. (*= Collected from the market). Fruit is taken orally in case of tonsillitis.

**32. Picrorhiza scrophulariaeflora Pennell**
(Scrrophulariaceae)—Nep: *Kutki*; Loc: Sukhia Pokhri*, Sonada*. (*=Collected from the market) (Plate 1f). Rhizome is taken in cold and fever; also used against snake bite.

**33. Rhododendron arboreum Smith**
(Ericaceae)—Nep: *Lali Gurans*; Loc: Sukhia Pokhri, Maneybhanjyang, Tung, Sonada. Flower is given orally to a person whose throat is struck with fish bone.

**34. Rubia cordifolia Linn.**
(Rubiaceae)—Nep: *Majeto*; Loc: Maneybhanjyang, Sonada, Tung, Sungma, Pokhria Bong. Paste is prepared from the crushed root which is applied externally over forehead during headache.

**35. Rubus ellipticus Smith**
(Rosaceae)—Nep: *Aselu*; Loc: Sungma, Pokhria Bong. Roots are administrated orally for abortion (Plate 1g).

**36. Smilax aspericaulis Wall.**

**37. Tupistra aurantiaca Wall.**
(Liliaceae)—Nep: *Nakima*; Loc: Sungma, Nagri, Mirik. Small pieces of root stock are given orally in case of food poisoning.

**38. Thysanolaena latifolia (Roxb. ex Hornem) Honda**
(Poaceae)—Nep: *Amliso*; Lep: *Pushok-Tim*, *Pachyvor*; Loc: Pokhria Bong, Sukhia Pokhri, Sungma, Achalal, Chamong. Young shoots and inflorescence are given orally after properly cooked in case of hyper tension.

**Discussion**

The 41 plant species enumerated in present study belong to 26 families and 41 genera. These compiled species are a small portion of the flora of this region, if compared with the flora of Darjeeling20, 21. However, in this work, 41 new uses of the herbs to treat various diseases and disorders are recorded for the first time. Recently, enumeration of 281 species of medicinal plants from Darjeeling regions were also done, out of which, 164 species were newly reported one17. Species like *A. heterophyllum*, *N. jatamansi* and *P. scrophulariaeflora* have a great trade value in medicinal plants markets. *U. dioica, M. piperita, H. wallichii, M. undulatum, C. longa* and *A. racemosa* are consumed directly as food and vegetables,
condiments and spices. Besides, species like *A. nilagirica* and *T. latifolia* have great socio religious values.

During the survey it was also learned that the traditional knowledge regarding ethnomedicine is declining as there is no proper documentation. The knowledge is passed down from generation to generation only by means of verbal communication. The traditional practitioners believed that knowing these medicinal plants by many other common people may reduce the effectiveness of the systems and thus they keep it secret among themselves.

**Conclusion**

Even though the people of Darjeeling region are well aware of modern system of medicine yet there are some places where traditional medicine is of prime importance. This may be true due to the fact that the tough hill terrain and other natural barriers forced them to depend on traditional medicine. However, in case of ethnomicinal field further detailed investigations are needed. The study of ethnomenclature should be encouraged as to prepare basic data for economically important medicinal plants so that large scale cultivation techniques can be developed for the welfare of these tribes. Therefore, it is highly recommended to prepare data in case of ethnomicinally important plant and carry out further studies including phytochemical and pharmacological analysis.

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