

# A Contribution to the Ethnomedicinal Flora of Haldwani Forest Division, Nainital (Uttarakhand)

<sup>1</sup>Zaheer Anwar Ali,  
Sarfraz Ahmad, Wasiuddin  
and Latafat Ali Khan

Survey of Medicinal Plants Unit,  
Regional Research Institute of Unani  
Medicine (CCRUM),  
Post Box 70, Aligarh – 202001 (U.P.)

## Abstract

The results of an ethnobotanical survey conducted during March 2003 in the Haldwani Forest Division, Nainital of Kumaon region, Uttarakhand are presented in this report. Ethno-medicinal uses of 25 plant species belonging to 21 different families of angiosperms have been described. For each plant species are given the correct botanical and prevalent local names, part used, claimed medicinal use(s) and mode of administration. Majority of these uses have not been, hitherto, described. Investigations to their pharmacological action and chemical constituents are re-stressed in an effort to discover new drugs of plant origin to treat specific diseases and conditions so far incurable in modern medicine.

**Keywords:** Ethnobotanical survey, Folk medicine, Haldwani, Nainital, Kumaon.

## Introduction

The Kumaon region of Uttarakhand has rich cultural heritage and floristic diversity. In spite of increasing healthcare facilities, tribal and other rural populations of the area have retained their reliance on herbal healing. From different parts of Nainital district of this region, a wealth of information on folk medicines of many cultural and ethnic groups has been documented (Ali et al., 2008, 2013a, 2013b, 2013c; Anonymous, 2001, 2008, Bisht et al., 1993; Gupta, 1960; Pant and Pandey, 1998; Singh, 1993, 2003; Singh et al., 1987; Singh and Maheshwari, 1990, 1993, 1994). A review of literature revealed that except the work of Agnihotri et al. (2003, 2012) no comprehensive scientific record of folk medicines from the Haldwani Forest Division of Nainital had previously been reported. Hence, this communication presents some useful ethnomedicinal information obtained during an ethnobotanical survey conducted in this forest tract.

Haldwani forest division is extended up to 64 Km in the form of a long strip in southern part of Nainital district and lying between 29° 01' 05" - 29° 17' 00" N latitude and 79° 32' 40" - 80° 10' 00" E longitude in the foothills hills of Himalayas. It is surrounded by Nainital and Pithoragarh Forest Divisions in the north, Tarai East Forest Division in the south, town of Tanakpur in the east, Ramnagar Forest Division and town of Haldwani in the west. There are five forest ranges viz. Chakata, Nandhour, Danda, Jaulasal (N) and Sarda. The forest here at many places is still in its natural form and has rich economically important species including medicinal plants. The division is inhabited by

\* Author for correspondence

various indigenous communities (namely: Boxas, Raisikh, Tharus, Vangujjars, etc.). Traditional knowledge on phyto remedies is still intact with these people.

## Methodology

Information on folk medicinal uses of plants was gathered through interviews with reliable medicine men and other knowledgeable village elders during the fieldwork carried out in March 2003. Data on the common name of the plant or the crude drug, medicinal use(s), the part used, other ingredients added (if any), method of drug preparation, mode of administration, dosage and duration of treatment were recorded for each claim. Botanical specimens of all the plants along with relevant field information were collected. These were later identified with the help of pertinent floras (Gupta, 1968; Hooker, 1872-1897; Osmaston, 1927) and nomenclature was updated according to a recent work on flowering plants of Uttarakhand (Uniyal et al., 2007). Voucher specimens were prepared and deposited in the Herbarium of Survey of Medicinal Plants Unit, Regional Research Institute of Unani Medicine, Aligarh (U.P.), India.

## Observations

In the following enumeration plants are listed in an alphabetic order by their botanical names. Each entry provides the following information: plant scientific name together with respective family (in parentheses), local name of the plant, locality, voucher specimen number, claimed medicinal use(s) and mode of administration. As far as possible, the probable dosage and duration of these crude drugs are also given.

*Achyranthes aspera* L. (Amaranthaceae), 'Ultashaji', Chorgalian (SMPA6895). In cases of scorpion sting, leaf juice is given orally and also applied locally for instant relief from the painful and burning sensation. Root decoction is given for cough and fever.

*Ageratum conyzoides* L. (Asteraceae), 'Bhupania', Chorgalian (SMPA6813). Fresh leaves are crushed and squeezed to obtain the juice. It is applied on cut and wounds to check the bleeding.

*Alangium salviifolium* (L.f.) Wang. (Cornaceae), 'Barna', Tanakpur (SMPA6930). Stem bark powder in the dose of 10g is given with milk once at bedtime for 21 days to treat spermatorrhoea.

*Artemisia nilagirica* (C.B. Clarke) Pamp. (Asteraceae), 'Pati', Chorgalian (SMPA6814). Root paste is mixed with fodder and given to cattle for treating turgid stomach due to gastric troubles.

*Bombax ceiba* L. (Bombacaceae), 'Semal', Tanakpur (SMPAA6846). The tap root of the young plant is cut into small pieces, dried and ground to make a fine powder. About 20g of this powder are given with milk two times a day for one month in general weakness.

*Butea monosperma* (Lam.) Taub. (Fabaceae), 'Dhak', Nandhour (SMPA6819). Flowers are boiled in water. The liquid is strained and administered orally for anuria in cases of cattle.

*Cassia fistula* L. (Caesalpiniaceae), 'Amaltas'/'Karangal', Chorgalian (SMPA6899). Fruit pulp mixed with fodder is given to cattle in chronic constipation (locally known as 'band').

*Cissampelos pariera* L. (Menispermaceae), 'Butlanti', Jaulasal (SMPA6920). Aqueous decoction of the root is given twice daily for jaundice while root paste is used for burning micturition.

*Cuscuta reflexa* Roxb. (Cuscutaceae), 'Agasbel', Dugari (SMPA6917). Paste of the plant is applied locally for abdominal swelling.

*Dendrobium crepidatum* Lindl. (Orchidaceae), 'Hadjoran', Chorgalian (SMPA6901). For treating bone fracture, plant paste is plastered around the limb after setting the bones right.

*Ehretia laevis* Roxb. (Boraginaceae), 'Chamror', Nandhour (SMPA6817). Fresh stem bark is chewed for relieving cough.

*Ficus benghalensis* L. (Moraceae), 'Burai', Jaulasal (SMPA6928). The latex obtained from the leaf is applied on cut. Dried receptacles are ground to make a fine powder and given to induce conception.

*Helicteres isora* L. (Sterculiaceae), 'Pata', Jaulasal (SMPA6855). Powder of the fruit is given to children for worm infestation.

*Holarrhena pubescens* (Buch.-Ham.) Wall. ex G. Don (Apocynaceae), 'Kokar', Chhini (SMPA6844). Stem bark decoction is administered orally for mastitis in cases of cows and buffaloes.

*Litsea glutinosa* (Lour.) Robins. (Lauraceae), 'Meda', Durga Pipal (SMPA6837). Inner stem bark is ground to make a fine paste and applied locally as an anti-inflammatory agent.

*Mallotus philippensis* (Lam.) Muell.-Arg. (Euphorbiaceae), 'Rohini', Nandhour (SMPA6812). An ointment is prepared by mixing the red powder, obtained from the dried fruits, in mustard oil and applied externally to treat ulcer. This powder is also given orally to cattle for worm infestation.

*Melia azedarach* L. (Meliaceae), 'Bakain', Chakata (SMPA6848). Kernel paste (10g) is given two times a day to relieve piles.

*Mimosa pudica* L. (Mimosaceae), 'Chhuimui', Chorgalian (SMPA6915). In cases of cows and buffaloes, leaf paste is applied on prolapsed uterus and inserted inside.

*Piper longum* L. (Piperaceae), 'Pipli', Jaulasal (SMPA6870). About 2g of the powder of fruit are given with honey twice a day for 5 days for cough.

*Pterocarpus marsupium* Roxb. (Fabaceae), 'Bijasal', Jaulasal (SMPA6865). Stem bark decoction is given for body ache. The powder of gum-resin (gram size) mixed with mother's milk is given to infants suffering from pneumonia. The gum-resin is also applied to fresh cuts.

*Pueraria tuberosa* (Roxb. ex Willd.) DC. (Fabaceae), 'Hathibel', Jaulasal (SMPA6929). Root powder is used as galactagogue.

*Saccharum spontanium* L. (Poaceae), 'Kans', Chorgalian (SMPA6920). Root of the plant, 'hadjoran' (whole plant of *Dendrobium crepidatum*), stem bark of 'khair' (*Acacia catechu* (L. f.) Willd.), root of 'ultashaji' (*Achyranthes aspera*) are taken in equal quantities and crushed. About 20g of this preparation mixed with 'gur' (solidified sugarcane juice) are given two times a day for 5 days for treating diarrhoea.

*Semecarpus anacardium* L.f. (Anacardiaceae), 'Bhilwa', Nandhour (SMPA6823). A mucilaginous matter, oozing out on burning of dried fruits, is applied locally for cracks of heel and soles.

*Solanum nigrum* L. (Solanaceae), 'Geewian', Jaulasal (SMPA6852). About 25 ml of the fresh leaf juice are given twice daily for 21 days to treat jaundice.

*Tinospora glabra* (Burm. f.) Merr. (Menispermaceae), 'Gurja', Jaulasal (SMPA6851). Juice of stem-bits is given as refrigerant.

## Results and Discussion

This paper provides a report on ethnomedicinal uses of some important local plants employed by the inhabitants of Haldwani forest division. Altogether, 25 species, represented by 21 families of angiosperms have been documented to treat about 26 different diseases and conditions of humans and cattle. The reported medicinal plants frequently used by the natives are mostly forest species and readily available. This ethnobotanical knowledge exists as oral among the indigenous societies. The data were collected from highly

reputed traditional healers who have long been using these plants in health care. A comparison with the available literature (Anonymous, 1948-1976, 2001; Chopra et al., 1956; Jain, 1991; Kirtikar and Basu, 1935; Nadkarni, 1954; Watt, 1889-1892) revealed that majority of these claims are new or imperfectly known. However, many phytotherapeutic applications coincide with those of other parts of Nainital district (Ali et al., 2008; 2013a, 2013b, 2013c; Anonymous, 2008, Bisht et al., 1993; Gupta, 1960; Pant and Pandey, 1998; Singh, 1993, 2003; Singh et al., 1987; Singh and Maheshwari, 1990, 1993, 1994). All such medicinal uses suggested by these informants seem to be reliable and deserve further scientific investigations.

It was emphatically noted during the current survey that knowledge of the medicinal plants is usually limited only to a few traditional healers who repose deep faith in the healing properties of herbal drugs while the younger generation has a poor phytotherapeutic knowledge. These traditional medicine men now represent a disappearing tradition which is not being passed on to the next generation. In this situation this traditional knowledge is in danger of being lost. It is, therefore, desirable to intensify ethnobotanical research work in other unexplored and under explored areas of the region before this traditional knowledge is lost permanently with the ever dwindling number of folk medicine men and cultural changes among the tribal communities as a result of modernization. Through such observations, based on properly designed field surveys, many more reliable folk medicinal uses of plants may be revealed which may yield useful leads needed in search of new plant-based pharmaceuticals.

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