Traditional phytomedicinal knowledge of *Bhotias* of Dharchula in Pithoragarh

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*Bhotias* of Dharchula sub-division in Kumaon, Uttaranchal in North India have been living in isolation for centuries. They have had strong bond with the nature. They have traditionally been dependent on nature for healthcare, as they did not have access to the modern medicinal facilities until about 1960s. No serious attempts were made to document the traditional phytomedicines used by *Bhotias* of Dharchula areas in the past. Present attempt is the ethnomedicinal survey to document the traditional phytomedicines used by them.

**Keywords:** *Bhotias*, Dharchula, Indigenous knowledge, Pithoragarh, Traditional medicine, Tribes

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An ethnic community known as *Bhotia* or *Shauka* inhabits Dharchula area of Kumaon Himalayas in Pithoragarh district, Uttaranchal in North India1. The area comprises of three valleys e.g. Darma, Chaudas and Byas lying between 29° 59′ to 30° 04′ North and 80° 28′ to 80° 57′ East. *Bhotias* are of Mongoloid origin and also inhabit the adjoining areas of Nepal. They have strong Hindu and Tibetan influence and have distinct dialect, culture and traditions. Physical difficulties surrounding their habitations in the midst of the lofty Himalayas were so great that they literally remained isolated for long from the rest of the world. Height and the structure of the mountains had acted as effective barrier to the communication with the outside world. Even now the upper reaches are inaccessible and can be approached only on foot. *Bhotias*, depended on nature for almost everything believe that the mountains surrounding their habitations are to be the storehouse of a number of medicinal, edible and other useful plants. It is possible that these unexplored mountains may still have germplasm of many medicinal plants having great economic potential yearning to be discovered to cure humanity of many dreaded and incurable diseases. After 1962 war, the traditional trade with Tibet got completely disrupted and *Bhotias* were forced to look for other means of living. This was the beginning of the end of traditional way of living. With this the traditional knowledge held by them also began to erode. The loss of traditional knowledge in a culture that is undergoing rapid changes is as irreversible as the loss of plant species2. There has never been any attempt to document the traditional knowledge about the plants found in their surroundings and to scientifically study them. While there are many ethnomedicinal studies of *Bhotias* living in other areas like Johar in Kumaon and Niti and Mana in Garhwal, there are few reports on the phytomedicines used by the *Bhotias* of Dharchula area1, 3, 12-16.

The area is known for its rich biodiversity with varieties of useful plant species, many of which are of medicinal importance that are not only used traditionally but also valued highly in Indian, Tibetan and Chinese systems of medicine. Richard Strachey was the first person to have undertaken scientific survey of the area in around 1846 and subsequently in 1848 with J E Winterbottom. They collected over 2000 species between the years 1846-49. Based on the collections and observations made during botanical expedition to North-eastern Kumaon 2672 flowering plants, 201 ferns and allies, 120 mosses and 50 lichens, i.e. a total 3043 species have been catalogued in Kumaon17-18. Of 800 species of medicinal plants recorded in Nepal, 30% come from the western part
of the country, which is contiguous to Dharchula area.\(^{19}\)

**Methodology**

Twenty-two Bhotia villages in Darma, Vyas and Chaudas valley in Dharchula area were visited. Detailed interactions were made with the local inhabitants and traditional healers and other knowledgeable persons. They were interviewed using a structured and pre-tested questionnaire to obtain information about the wild plants and their myriad uses. Nine localities considered rich in medicinal and other useful plants were surveyed in different seasons for collecting plant specimens; recording their habitat characteristics and distribution pattern. The specimens were identified and authenticated at the herbarium of Forest Research Institute, Dehradun. More than 70 species under traditional medicinal use were documented.

**Enumeration**

**Cirsium wallichii DC., (Asteraceae), Nache kulpu, Mancheu**

*Habitat:* It is very common in cultivated areas, abandoned fields, open slopes, forest clearings and along the roadsides. It is found in the temperate regions at altitudes between 2,300-3,700 m all over Byas, Darma and Chaudas valley.

*Uses:* Root paste is applied externally on the boils for suppuration. Infusion of mixture of *Cirsium wallichii* root and *Pyrus pashia* Buch. & Ham. fruit and leaves in water is poured on the head for cooling at the time of severe headache.

**Coleus forskohlii (Willd.) Briq., (Lamiaceae), Chhyanglang Jari**

*Habitat:* Occurs all over sun exposed arid and semi-arid hill slopes in substantial populations along rivers Kali and Gori in Dharchula areas. It is found in dry open slopes among rocky outcrops, between the crevices and grasslands at altitudes above 1,000-1,800 m.

*Uses:* Dried root is chewed regularly and is considered useful in intestinal ulcers and cancers. Root paste is applied externally on wounds and tumours, also effective in skin diseases. It is very effective for the treatment of cough and throat infections, when taken along with *Potentilla sundaica* O. Kuntze and clove.

**Cordyceps sinensis** (Berk.) Sacc., (Clavicipitaceae), Nabu, Keeda

*Habitat:* It occurs in Alpine meadows at altitudes over 3,658 cm and is found in substantial quantities in Dharchula Himalayas. It is collected extensively for its tremendous value in Tibetan and Chinese medicine.\(^{16}\)

*Uses:* Locals consume *Cordyceps* with liquor. They dip it in local brew or alcohol for some time before taking. It is believed that medicinal properties of *Cordyceps sinensis* are because of the combined effect of the fungus and the dead body of the worm. *Cordyceps* is valued very highly in Tibetan Medicinal System. It is used to increase vitality and in restoring regenerative fluids, especially the fertility of sperms and kidney heat. Tibetan dip *Cordyceps* in alcohol or traditional green tea and drink them for vitality and cure from stomach ailments.

**Fraxinus micrantha Lingelsheim, (Oleaceae), Ango (Figs 1-3)**

*Habitat:* It occurs in rich, moist and shady soils of Oak forests in montane regions of Western Himalayas. It is a common associate of *Quercus semecarpifolia* Rehder. & E.H.Wilson, *Q incana* Bartr., *Q dilatata* Lindl., *Aesculus indica* Wall ex. Camb., etc. It is found scattered in Chaudas valley in Sosa, Rung and Samari villages and in Darma valley in Dharchula Himalayas at altitudes between 1,500-2,700 m.

*Uses:* Local inhabitants use inner bark infusion for the treatment of liver enlargement, jaundice and other liver diseases. In some villages, root of *Rubus foliolosus* D. Don (*Kala Hansyalu*) mixed with inner bark infusion is taken for the treatment of liver ailments. Inner bark is also used as blue dye for hand woven woolen clothes.

**Lilium oxypetalum (D. Don) Baker, (Liliaceae), Sur (Figs 4,5)**

*Habitat:* It is found scattered on open slopes in alpine regions in Byas and Darma valley at altitudes between 3,000- 4,000 m.

*Uses:* Bulbs are eaten and its paste is applied on the swellings in the limbs.

**Parnassia nubicola** Wall. ex Royle, (Saxifragaceae), Nirbisi

*Habitat:* It is a common herb of damp open slopes of alpine regions of Darma and Byas at altitudes between 3,000-3,700 m. It is found in quite good populations in Champu, Chiyalekh near Garbyang in Byas; and Bon in Darma.
Uses: Root paste is applied on the wounds, cuts and insect bites; it works as an antiseptic and antidote for poison.

Polygonum rumicifolium Royle., (Polygonaceae), Khyakjari
Habitat: It is very common on open meadows, grassy slopes and damp places in the alpine regions all over Byas, Chaudas and Darma at altitudes between 3,000-4,000 m. It is found scattered in natural habitat.
Uses: Cleaned and sun dried tubers are given in high fever with convulsions. It has cooling effects. Young leaves are edible and are considered nutritious if taken in moderate quantities.

Potentilla sundaica (Bl.) Kuntz., (Rosaceae), Goli usu (Figs 6,7)
Habitat: Its occurrence is very common on open meadows, grassy slopes and damp places in the temperate regions in Chaudas at altitudes between 2,000-2,700 m.
Uses: In Chaudas, it is considered one of the very effective medicines for soar throat, cough and any problem connected with the throats especially for children. The entire plant is cleaned, dried and pounded along with Coleus forskohlii (Willd.) Briq. (Coleus) and Eugenia caryophyllus (Spreng.) Bullock & Harrison (clove), made into small tablets (goli) to be taken to treat the problems related to throat. The mixture can also be chewed, which is equally effective.

Prinsipia utilis Royle, (Rosaceae), Danthali
Habitat: It is a common shrub found near cultivations and on open sunny aspects throughout temperate regions of Chaudas, Byas and Darma valley at altitudes of 1,200-2,700 m.
Uses: Seed oil is considered poor man’s oil. The oil is useful in high blood pressure and high level of cholesterol. Massage with oil gives relief to those suffering from rheumatism, joint, and body pain due to fatigue.

Silene kumaonensis Williams, (Caryophyllaceae), Khushu (Figs 8-10)
Habitat: It occurs together with herbaceous plants in grasslands, rock cervices and fallow fields. It is quite common in Byas and Darma valley at altitudes between 2,700-4,000 m.
Uses: Roots were used for washing woolen clothes. Dry roots crushed and powdered are used as powder soap. It is considered excellent especially for washing woolen clothes. Powdered root used for washing hairs, is considered excellent for removing dandruffs.

Results and discussion
It is well known that during the process of evolution plants have synthesized compounds whose structured diversity is often beyond the dreams of even the most imaginative organic chemists. Plants are still the main source of medicines to majority of people. Reliance on traditional medicine is not only associated with the traditional belief of its effectiveness but also on harmonious existence of spirit and matter. Many Bhotia traditional healers worship plants and pray them before collecting them acknowledging the spiritual powers of the plant. They believe that plants become more potent when processed both spiritually and materially. The efficacy of the herbal medicines is believed to be enhanced when they are prepared and administered by enchanting mantras.

Naturally occurring substances by following the traditional knowledge about them would give lead for developing new drugs, which can ultimately contribute to improving the treatment of diseases or producing compounds that may be economically beneficial. Such developed new compounds may ultimately improve the quality of life. Out of the species documented, which are used by the Bhotias for various purposes, 10 species appear to have potential for development of new drugs and for developing techniques for ex-situ culturing. There are two reasons for arriving at this conclusion. Firstly, these species are valued very highly because of their effectiveness and potency and, secondly, their uses appear to be confined to Dharchula region. Traditional uses of these species, though valued very highly, have now dwindled considerably. They may have biologically active chemical compounds, which can be expoited as the blue prints for drugs or some other useful products so that these can be produced synthetically. There are definite leads that need to be analysed further.

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