

Ethnobotanical Leaflets 12: 1227-30. 2008.

Ethnomedicinal Orchids of Uttarakhand, Western Himalaya

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Issued 15 December 2008

Abstract

Orchids have been used in the traditional system of medicine since time immemorial. The present communication is an account of 12 species of orchids which are used in traditional medicine in Uttarakhand. The work aims at presentation of this knowledge which would be valuable for the herbal drug industry and may lead to identification of new applications or resources. Given in this paper are the scientific names of the plants, local names and the parts of the plant used in medicinal preparations.

Keywords: Orchids, Ethnomedicine, Western Himalaya, Uttarakhand.

Introduction

Orchids are among the most highly prized ornamental plants. Aside from their ornamental value, orchids are also known for their medicinal usage especially in the traditional systems of medicine. It is believed that the Chinese were the first to cultivate and describe orchids, and they were almost certainly the first to describe orchids for medicinal uses (Bulpitt, 2005). As early as 200 BC the Chinese pharmacopoeia - "*the Sang Nung Pen Tsao Ching*", mentions *Dendrobium* as a source of tonic, astringent, analgesic, anti-inflammatory substances (Singh et al. 2007). Reinikka reports a Chinese legend that Shênning described *Bletilla striata* and a *Dendrobium* species in his *Materia Medica* of the 28th century BC. The ancient Greeks were the first to take note of these strange plants. One of the earliest nomenclatures used by Theophrastus (372—286 BC) for orchids was the "Orchis" a generic name, which stands for "the testicles" in greek (Theophrastus 1644). These testicle-like things are basically the pair of underground tubers of many European terrestrial orchids. In his *Enquiry into Plants*, Theophrastus reported that the orchids had medicinal properties. As the Greeks believed in the *Doctrine of Signatures* such plants were considered good for human vitality. Later, the name was adopted by Dioscorides (1st century AD) in his *Materia Medica* where descriptions of two orchids were given along with several species of medicinal plants. In the Indian Vedic scriptures there is a mention of the plants under the name *Vanda*. The word "Banda" is also used by the pro-dravidian aborigines for epiphytes in the Chotanagpur Plateau of India. The same name has been adapted as a generic name in one of the most beautiful groups of orchids. Many orchids play a significant role in traditional systems of medicine because they are rich in alkaloids, flavonoids, glycosides and phytochemical contents. In India the medicinal properties of orchids have been used since Vedic period. "Ashtawarga" is a group of 8 drugs in Ayurvedic system

which are used for preparation of tonics, such as 'Chyavanparas', which consists of 4 orchid species, viz *Malaxis muscifera* (Lindl.) Kuntze, *Malaxis acuminata* D. Don, *Habenaria intermedia* D. Don and *Habenaria edgeworthii* Hook. f. Around 40 other orchid species are being used in indigenous medicine systems (Singh et al. 2007). The state Uttarakhand, having 237 species of orchids (Jalal et al., 2008), ranks fifth among the Indian states in terms of orchid species richness. Orchids are distributed throughout the state ranging from foot hills to the alpine region but their diversity and abundance is comparatively higher in the riverine area and moist pockets of the forest (Jalal, 2005).

Study Area

Uttarakhand lies between 28° 53' 24" to 31° 27' 50" N latitudes and 77° 34' 27" to 81° 02' 22" E longitudes. The state is surrounded by Tibet (China) in the north, Himachal Pradesh in the west and the north-west, Upper Gangetic plains of Uttar Pradesh in the south and Nepal in the east. It occupies an area of 53,483 km², which accounts for about 1.62 per cent of the total area of the country, of which 64.79% is under forest cover (FSI, 2005). The altitude ranges from 300m to 7817masl. The climate of Uttarakhand varies from subtropical to alpine. It is relatively warmer and humid compared to rest of the Western Himalaya.

Material and Methods

The present ethnobotanical study was a part of AICOPTAX (All India coordinated research project on orchids) project, sponsored by Ministry of Environment and Forests, as a part of which, the state of Uttarakhand was surveyed from 2002-2006 in different areas in different seasons. A simple questionnaire was prepared to collect information. During our survey we interviewed the local people and local vadya of the study area to know about the medicinal uses of orchids. The orchid specimens were also collected. For each species encountered, field notes were taken along with the voucher specimen, which was processed for preparation of herbarium sheets following standard techniques (Jain and Rao, 1977).

Results and Discussion

This state in the Western Himalaya has already been declared as an 'Herbal state of India' because of its rich medicinal plant wealth. The varied climate, topographic features and vegetation types of the Uttarakhand supports a number of orchids which are medicinally important along with the eight drugs of the astawargha group, Jeewak (*Malaxis muscifera*), Rishbhak (*Malaxis acuminata*), Ridhi (*Habenaria intermedia*) and Virdhi (*Habenaria edgeworthii*). In modern time orchids of Himalayan region are only known for its fascinating and long lasting flowers and little attention has been paid to its life saving medicinal properties. Now when we are imparting the various herbal values of Himalayan flora, this is also the right time to know the medicinal value of the orchids. A list of 12 orchid species of medicinal value has been enumerated from the state of Uttarakhand (Table 1).

Conclusion

Being a store house of several medicinal plants, Uttarakhand has been projected as 'Herbal state' of India. The state harbors a lot of medicinal plants some of which have immense medicinal value. But still there are many other groups of plants which need attention for their potential medicinal value. Due to depletion of wild populations of many plants, including orchids, people have been using other substitutes, the efficacy of which may be less than the original species. This depletion of the wild population of these valuable plants may also be due to unscrupulous collection of these species from the wild. Hence, there is a need for both in-situ and in-vitro cultivation and propagation of these medicinal orchids. Recently species recovery programmes (Rawat, 2005) have been suggested for rare and endangered plants in the state. Similar initiative can be undertaken for orchids with germplasm collections and maintenance. These germplasm collections can be used later for in-vitro propagation. Maikhuri et al., (2003) and Singh et al. (2005) have suggested that marketing of medicinal plants can also be useful in

conservation.

Being an important group of plants of high exotic as well as aesthetic value, orchids need immediate protection as their populations are dwindling. Many of known brand have started using the substitute for the original ayurvedic plants one such example is that of *Eulophia dabia*, which is so rare now a days that it has been substituted by *Satyrium nepalense*. Therefore, more knowledge is needed regarding the spread of orchids to determine better the localities to be protected in the future. The latest studies of orchids have shown that the exploration of wild orchid species is needed in order to give additional data in the future.

Acknowledgments

The authors are thankful to the Director, Wildlife Institute of India, Dehradun for encouragement and facilities for conducting this study. The Ministry of Environment and Forest, Government of India is acknowledged for financial support of this study.

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Table 1. List of medicinal orchids and their local uses.

No.	Species	Habit	Local name	Altitudinal range (m)	Used
1.	<i>Acampe carinata</i> (Griff.) Panigrahi.	Epiphyte	Rasna	500-1200	Used in acute rheumatism, sciatica, neuralgia, beneficial

					in secondary syphilis and uterine diseases
2.	<u><i>Dactylorhiza hatagirea</i> (D.Don) Soo</u>	Terrestrial	Hathajari, Hathpanja	3000-4500	Tubers used in tonic and aphrodisiac
3.	<u><i>Epipactis helleborine</i> (L.) Crantz</u>	Terrestrial	-	1500-2600	Roots of this plant are medicinal which cure insanity
4.	<u><i>Eulophia dabia</i> (D.Don) Hochr.</u> -	Terrestrial	Salep misri, Salam misiri	500-2000	Tubers used in stomach tonic, aphrodisiac and blood purifier during heart problem
5.	<u><i>Habenaria edgeworthii</i> Hook. f. ex Collett.</u>	Terrestrial	Vridhi	1500-2800	As an ingredient of Ashtavarga in Chyavanprash, blood purifier and rejuvenator
6.	<u><i>Habenaria intermedia</i> D.Don</u>	Terrestrial	Ridhi	1500-2800	Tubers are used as general tonic. It is an ingredient of Chyavanprash.
7.	<u><i>Malaxis acuminata</i> D.Don</u>	Terrestrial	Rishbhak	800-1600	Used as a tonic and to cure tuberculosis and enhance sperm production. It is also ingredient of Asthawargha.
8.	<u><i>Malaxis cylindrostachya</i> (Lindl.) O.Ktze.</u>	Terrestrial	-	2200-3500	Pseudobulb preparation is considered as tonic
9.	<u><i>Malaxis muscifera</i> (Lindl.) O.Ktze.</u>	Terrestrial	Jeevak	1800-3600	It is also an ingredient of Asthawargha and used as rejuvenating agent.
10.	<u><i>Pholidota articulata</i> Lindl.</u> -	Epiphyte or lithophyte	Harjojan	1000-1600	Whole plant used in traditional medicines such as in bone fractures.
11.	<u><i>Rhynchostylis retusa</i> (L.) Bl.</u>	Epiphyte	Banda, Rasna	500-1200	Leaves of these plants are used to cure rheumatic disease
12.	<u><i>Satyrium nepalense</i> D.Don</u>	Terrestrial	Salam misiri	1500-3000	The dried tubers are used in tonic and also in malaria and dysentery