



## **Orchids of Shimla Hills: A Mini Review**

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### **Authors' contributions**

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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## **ABSTRACT**

Presently, review study was intended to explore the medicinal importance of some of the orchid species inhabiting Shimla hills. The family orchidaceae is one of the highly evolved, and diversifies group of monocot angiosperms that encase numerous medicinally important of orchids species. The family is known for amazing ornamental hybrids. The orchids possess varied colourful and beautifullly flowers. This paper is written to review the medicinal importance and use of different species of orchids for the treatment of various diseases. Since ancient times, orchids are used in traditional medicinal system such as Yunani, Homeopathy, Ayurveda and Siddha. The present review communicates about some of the medicinally importance orchids of Shimla hills.

**Keywords:** Orchids; Shimla hills; medicinal importance; monocot; angiosperm.

## **1. INTRODUCTION**

The Shimla hills, located at an elevation of 31.61° N 77.10° E, are found in the southwest region of the Himalayas [1]. This region is a luxuriant reservoir of medicinal and other

economically important plants [2]. The vast range of topography, altitude, and climate makes Shimla a home to a wide variety of flora [3,4]. The hills of Shimla are enriched with floral diversity, described by the works of Sir Henry Collett in *Flora Simlensis* [2]. Shimla and the

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adjacent hills of the north-western Himalayas are quite rich in orchid flora; up to 62 species are reported from this geographical zone [5,6]. Collett [1] has reported 38 species of orchids enclosed in 18 genera growing in Shimla and adjoining hills. Orchids are undoubtedly great ornamental elite due to their marvellous flowers of exquisite beauty. Owing to their beauty, today the orchids figure among cut flowers that are used in multi-million dollars trade world over [7,8]. Many of these herbs are used in traditional medicine, also in today's therapeutic practices [9]. The family, well known for several highly regarded native hybrids, includes nearly 800-1000 genera and 25,000-35,000 species distributed throughout the world [10]. In this communication, some medicinally important species of orchids thriving in Shimla hills including *Malaxis acuminata*, *Habenaria intermedia* and *Cypripedium cordigerum* etc. are being highlighted.

## 2. ORCHID SPECIES AND MEDICINAL USE

The chemical components of orchids are alkaloids, flavonoids, bibenzyl, phenanthrenes, and terpenoids. These are found in roots, leaves, flowers, and complete plant [11]. Over the centuries, various health promoting benefits, including diuretic, antirheumatic, antitumor, antimicrobial, anticonvulsant, relaxant, neuroprotective and antiviral activities [11]. Table 1 Fig. 1 (A-E) shows orchid species with their medicinal uses.

Theophrastus first used the Latin word "orchis" to refer to a particular group of plants and the roots of these plants that were used in the traditional pharmacopoeias of Greece and neighbouring Asia Minor as an antidepressant and stimulant. A particular European genus, and the name of the whole family is also derived from orchidaceae.

**Table 1. Shows orchid species with their botanical and common name and medicinal uses**

Botanical Name	Common Name	Medicinal and Other Uses
<i>Malaxis acuminata</i>	Jeevak	Aphrodisiac, febrifuge and tonic. treats fever, tuberculosis, burning sensations, and general debility [12].
<i>Malaxis muscifera</i>	Rishabaka	Bleeding disorders, dysentery ( <a href="https://www.easyayurveda.com/2021/12/13/rishabaka-malaxis-muscifera/#therapeutic_uses">https://www.easyayurveda.com/2021/12/13/rishabaka-malaxis-muscifera/#therapeutic_uses</a> )
<i>Habenaria intermedia</i>	Ridhi	Tubers are used in medicines in Indian system of medicine, as a health tonic, ashtavarga group (which is a combination of eight revitalizing herbs), and in preparation of ayurvedic tonic 'Chyawanprash'. Tender leaves and tubers are edible and used as vegetables [13,14].
<i>Habenaria edgeworthii</i>	Vridhi	Haematologic [15]
<i>Cypripedium cordigerum</i>	showy lady's slipper	Mental disorders ( <a href="https://hillpost.in/2021/04/heart-shaped-lip-cypripedium-a-threatened-terrestrial-orchid-in-the-himalaya/115564/">https://hillpost.in/2021/04/heart-shaped-lip-cypripedium-a-threatened-terrestrial-orchid-in-the-himalaya/115564/</a> )
<i>Epipactis helleborine</i>	Broad leaved helleborine	Used as aphrodisiac and used to cure fever, blood purification [16]
<i>Satyrium nepalense</i>	Salam misri	antioxidant, antimicrobial, and biological activity antioxidant, antimicrobial, and biological activity antioxidant, antimicrobial, and biological activity Antioxidant, antimicrobial [17]
<i>Zeuxine strateumatica</i>	soldier orchid	The plant is used as a salep. Tubers and pseudobulbs used as a restorer. Used in folk medicine [18,13,14].
<i>Goodyera repens</i>	-	Plant paste externally applied in syphilis, extract is taken as a blood purifier [19].



**Fig. 1. A. *Malaxis acuminata* (<https://en.wikipedia.org/wiki/Malaxis>); B. *Habenaria intermedia* (<http://www.flowersofindia.net/catalog/slides/Intermediate%20Habenaria.html>); C. *Cypripedium reginae* (<https://www.orchidweb.com/orchids/other-orchids/species/cypripedium-reginae>); D. *Zeuxine strateumatica* (<https://www.pinterest.fr/pin/24769866687027248/>); E. *Platanthera edgeworthii* (<http://www.orchidspecies.com/platedgeworthii.htm>)**

Collett [1] described thirtyeight species of orchids in eighteen genera from Shimla and surrounding hills. Shimla and the adjacent hills of the north-western Himalayas are very rich in orchid flora up to 62 species are reported from here and include 6 that are endemic [5,6].

### 3. CONCLUSION

Orchids are famous for their beautiful unique flowers and very little is known about their herbal uses. However, several compounds are isolated from almost all parts of these herbs. Compounds have been isolated and tested in animal models, but in clinical trials with orchid plant parts have not been a regular practice.

According to the World Health Organization (WHO), in all 80% population globally depends on herbal formulations. Due to the numerous side effects of allopathic drugs, herbal medicines

can be popularized. The present generation can be alerted and motivated to use herbal products. More research on medicinal plants for human well-being can be promoted and carried out.

Further research is still needed to fully recommend orchids for therapeutic purposes. So far negligible efforts are made to cultivate medicinal orchids on commercial scale. Many therapeutic species of orchids are now threatened and can be saved with human support only.

### CONSENT

It is not applicable.

### ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Collett H. Flora Simlensis: A Handbook of the Flowering Plants of Simla and the Neighbourhood. Thacker, Spink and Co. Calcutta and Shimla; 1902.
2. Atkinson ET. Economic Botany of the Himalayan Region. Cosmo Publications, New Delhi; 1882.
3. Balokhra JM. The wonderland Himachal Pradesh. H.G. Publications, New Delhi; 1995.
4. Chauhan NS. Medicinal and Aromatic Plants of Himachal Pradesh. Indus Publ. Co., New Delhi; 1999.
5. Deva S, Naithani HB. The Orchid Flora of North-West Himalayas. Print and Media Associates. New Delhi. Flowers of India; 1986.
6. Vij SP, Toor IS, Shekhar N. Observation on the orchidaceous flora of Shimla and adjacent hills in the N.W. Himalayas (Ecology and distribution). Research Bulletin (Science) Punjab University. 1982; 33:163-75.
7. De LC, Pathak P. Value addition in orchids. J. Orchid Soc. India. 2015;29:31-37.
8. Kaur Saranjeet. *In vitro* regeneration of shoots from nodal explants of *Dendrobium chrysotoxum* Lindl. J. Horti. Res. 2017;25(1):27-34.
9. Kaur Saranjeet. *In vitro* Propagation of *m* (Lindl.) Reichb. F, a Medicinally important threatened orchid. Plant Tissue Cult. and Biotech. 2021;31(2):153-160.
10. Gogoi K, Borah RL, Sharma GC, Yonzone R. Present status of orchid species diversity resources and distribution in Dibrugarh district of Assam of North-East India. Int. J. Modern Bot. 2012;2:19-33.
11. Gutiérrez RMP. Orchids: A review of uses in traditional medicine, its phytochemistry and pharmacology. Journal of Medicinal Plants Research. 2010;4(8):592-638.
12. Khare CP. Indian Medicinal Plants: An Illustrated Dictionary. Springer Science and Business Media, LLC; 2007.
13. Bulpitt CJ, Li Y, Bulpitt PF, Wang J. The use of orchids in Chinese medicine J. R. Soc. Med. 2007;100(12):558-563.
14. Vij SP. Orchid genetic diversity in India: Conservation and Commercialization. In: Proceedings of the 5<sup>th</sup> Asia Pacific Orchid Conference and Show, Fukuoka, Japan. 1995;20-39.
15. Lawler LJ. Ethnobotany of the orchidaceae - A manual. In: Arditti, J. (ed.). Orchid Biology, Reviews and Perspectives. 3rd edn. 1984;27-149.
16. Sharma P, Samant SS, Tewari LM, Rana MS. Diversity, distribution and conservation of orchids in nargu wildlife sanctuary, northwest Himalaya. J. Orchid Soc. India. 2015;29:15-21.
17. Mishra AP, Saklani S, Salchi B, Parcha V, Sharifi-Rad M, Milella L, Iriti M, Sharifi-Rad J, Srivastav M. *Satyrium nepalense*, a high-altitude medicinal orchid of Indian - Himalayan region: chemical profile and biological activities of tuber extracts. Cell Mol. Bio. 2018;64(8):35-43.
18. Bulpitt CJ. The uses and misuses of orchids in medicine. Q. J. Med. 2005;98:625-631.
19. Badola HK, Pal M. Endangered Medicinal plant in Himachal Pradesh. Curr. Sci. 2002;83:797-798.

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