

## An updated checklist of orchids in the Indian Himalayan State of Jammu and Kashmir

Chesfeeda Akhter<sup>1</sup>, Anzar A. Khuroo<sup>1\*</sup>, G. H. Dar<sup>1</sup>, Z. S. Khan<sup>2</sup>, Akhtar, H. Malik<sup>1</sup>

<sup>1</sup>Centre for Biodiversity and Taxonomy, Department of Botany, University of Kashmir, Srinagar – 190 006, Jammu & Kashmir, India

<sup>2</sup>Department of Botany, Government College Baramulla - 193101, Jammu & Kashmir, India

\*E-mail: anzarak@gmail.com

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### Abstract

The orchids in the Indian Himalayan State of Jammu & Kashmir have been little investigated taxonomically. As a result of this, the species richness of orchids reported from the State has been numerically variable and taxonomically confusing. To fill this knowledge gap, the present paper provides an updated checklist of the orchids in this Himalayan State. The checklist records 47 orchid species from the State based on the field collections over the last one decade, and supplemented with previous herbarium records and perusal of the taxonomic literature of over the last half a century. Each orchid species recorded has been provided with its updated nomenclature, habit, diagnostic characters, global and local distribution, altitudinal range and flowering period in this biodiversity-rich Indian Himalayan State.

**Key words:** Biodiversity, conservation, floristic diversity, taxonomy

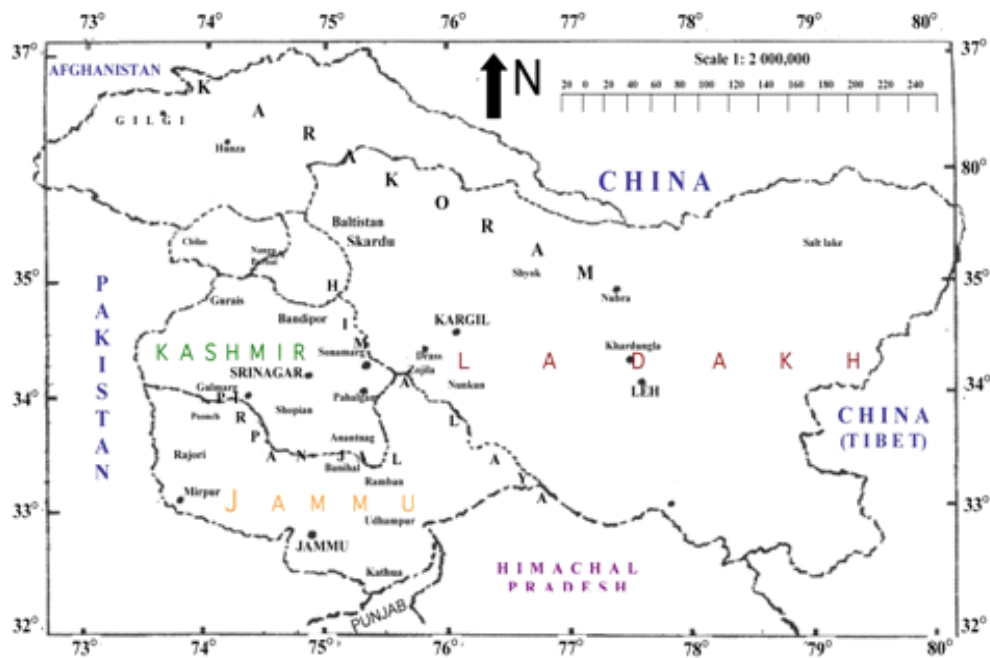
### INTRODUCTION

Orchids (i.e. members of Orchidaceae) represent one of the most species-rich groups of plants. They are herbaceous plants with diverse growth habits, ranging from typical terrestrial to lianas and even saprophytes, but majority of them grow as epiphytes. Orchids show a worldwide distribution but reach their maximum diversity in the tropical climates. A strikingly higher diversity of orchids is largely ascribed to their unique floral morphology and co-evolutionary adaptations that have led to a rapid pace of adaptive radiations in this group (Chase *et al* 2003). Consequently, an accurate estimate of the world orchid diversity has eluded the taxonomists because new orchid species are continuously being described (Dressler 2005).

Worldover, presently ca. 24,500 species are reported in Orchidaceae (Dressler 2006). In India, the family is represented by c. 177 genera with 1195 species (Singh *et al* 2001), of which 400 species are endemics (Misra 2007). From the Jammu and Kashmir State, over the last one century, a number of workers while carrying out general floristic studies from different localities of the region have reported the occurrence of orchids (Duthie 1906; Coventry 1923, Blatter 1928; Stewart, 1972; Sharma & Kachroo 1981; Polunin & Stainon 1984; Singh & Kachroo 1976; Dhar & Kachroo 1983; Kachroo *et al* 1977; Naqshi *et al* 1989; Kapur & Sarin 1990; Singh & Kachroo 1994; Sharma & Jamwal 1998; Swami & Gupta 1998; Murti 2001; Dickore & Nusser 2008). However, the number of orchid species reported by these workers in the region varies considerably (ranging from 30-50 species). The orchid flora of this region came to know with the publication of the work of Duthie (1906) which deals with illustrated description of 173 species of orchids of North Western Himalaya. Stewart (1972) reported 48 species from the whole of Northwestern Pakistan and Kashmir out of which 38 were mentions from this region. Given this confusing situation, the present paper provides an updated checklist of orchids in this Himalayan State with an updated nomenclature along with basionym and/or synonyms, local distribution, altitudinal range, and flowering phenology of orchid species in the State.

## STUDY AREA

The Jammu and Kashmir State, being located in the northwestern extremity of India, represents a mosaic of biogeographic zones, such as Western Himalaya, Northwestern Himalaya and Trans Himalaya (Figure 1). The State with an area of about 2, 22, 236 km<sup>2</sup> contributes the largest percentage area (41.65 %) of Indian Himalayan Region (Nandy *et al* 2006). As result of the prevalence of wide range of physiographic and bioclimatic conditions, the State supports a rich and diverse flora, including orchids. The orchid species occur from subtropical Jammu through temperate Kashmir to the cold-arid desert of Ladakh. Despite being one of the most interesting floristic elements, orchids have been little investigated taxonomically in the State.



**Figure 1.** Location map of Jammu and Kashmir State, showing three provinces of Jammu, Kashmir, Ladakh.

## MATERIAL AND METHODS

The present work is mainly based on the collection of orchid specimens during the floristic surveys in the region over the last one decade, supplemented with the perusal of relevant systematic literature, and previous herbarium specimens deposited in Kashmir University Herbarium (KASH). Recent nomenclature changes were incorporated by using the specialized online web resources. The orchid genera currently known from Jammu and Kashmir are circumscribed according to the Chase *et al* (2003).

## RESULTS

At the present stage of investigation, the Orchidaceae is represented by 47 species belonging to 23 genera in the Kashmir Himalaya. A taxonomic synopsis of all the orchid species is given below. Each species has been provided with presently valid scientific name, author citation, basionym and synonyms (if any), habit, flowering period, geographic distribution including local distribution and altitude in meters. Currently valid scientific names have been bold-faced, and synonyms italicized.

## ENUMERATION

- Androcorys pugioniformis*** (Lindley *ex* Hooker f.) K.Y. Lang, *Guihaia* 16(2): 105. 1996.  
*Herminium pugioniforme* Lindley *ex* Hooker f.  
 Terrestrial; flowers minute, green.  
 India, China; Kashmir (Lidder valley, Khillanmarg, Gulmarg); 3700 – 4600 m; July – August
- Calanthe plantaginea*** Lindley, *Gen. Sp. Orchid. Pl.* 252. 1833.  
*Alismorkis lindleyana* (Lindley) Kuntze  
 Terrestrial; flowers violet-white, spur long and very slender.  
 Pakistan, India, Nepal and Bhutan; Jammu (Poonch); 1500 – 1800 m; February – April.
- Calanthe tricarinata*** Lindley, *Gen. Sp. Orchid. Pl.* 252. 1833.  
*Calanthe pantlingii* Schlechter  
 Terrestrial; sepals and petals green with white edges, lip orange red.  
 Pakistan, India, Nepal, Myanmar and China; Jammu (Rattan Pir, Poonch, Dhoona); 1800 – 2700 m; July – August.
- Cephalanthera longifolia*** (Linnaeus) Fritsch, *Oesterr. Bot. Z.* 38:81. 1888.  
*C. ensifolia* Richter; *C. acuminata* Wallich *ex* Lindley; *C. xyphophyllum* (Linnaeus) Reichenbach f.;  
*Serapias longifolia* (Linnaeus) Hudson; *S. helleborine* var. *longifolia* Linnaeus; *S. ensifolia* Murray  
 Terrestrial; flowers white, spur absent, lip white with yellow spots.  
 Europe, northern Africa, temperate Asia; Kashmir (Erin nallah, Baltal, Pahalgam, Aru, Badwun, Gulmarg, Baramulla); 1500 – 2800 m; May – July.
- Corallorhiza trifida*** Chatelain, *Specim. Inaug. Corallorh.* 8. 1760.  
*Corallorhiza innata* R. Brown; *C. jacquemontii* Decaisne; *C. corallorhiza* (Linnaeus) Karsten;  
*Ophrys corallorhiza* Linnaeus  
 Saprophyte, leafless erect herb with a flattened reddish-brown succulent rhizome.  
 North America, temperate Eurasia, Pakistan, India and Nepal; Kashmir (Aliabad), Jammu (Poonch); 3500 m; June – July.
- Cypripedium cordigerum*** D. Don, *Prodr. Fl. Nepal.* 37. 1825.  
 Terrestrial; flowers greenish to pale- yellow, lip white with purple spots.  
 Pakistan, India, Nepal, Bhutan, China; Jammu (Poonch), Kashmir (Tosh-a-Maidan, Pahalgam, Sonamarg, Gulmarg, Khillanmarg, Ferozpur nallah); 2400 – 3700 m; June – July.
- Dactylorhiza hatagirea*** (D. Don) Soó (in *Ann. Univ. Scient. Budapest, Sect. Biol.* 3:341. 1960, *comb. illegit.*) *Nom. Nov, Gen. Dactylorhiza.* 4 (1962).  
*Orchis hatagirea* D. Don; *O. latifolia* auct. non Linnaeus ; *O. graggeriana* Soó  
 Terrestrial; grows in marshy open places and coniferous forests; flowers pink or purple.  
 Pakistan, India, Nepal, Bhutan and China; Jammu (Poonch), Kashmir (Aru, Pahalgam, Chandanwari), Ladakh (Kargil, Zojila, Nubra, Drass); 2100 – 3400 m; May – July.
- Dactylorhiza kafiriana*** Renz in *Rech. f., Fl. Iran.* 126:125, t.54. 1978.  
*Dactylorhiza umbrosa* auct. non Nevski  
 Terrestrial; flowers pale-purple.  
 Ladakh; June-July.
- Dactylorhiza viridis*** (Linnaeus) R. M. Bateman, Pridgeon & M. W. Chase, *Lindleyana* 12: 129. 1997.  
*Coeloglossum bracteatum* (Muehlenbeck *ex* Willdenow) Parlatore; *C. viride* (Linnaeus) Hartman; *C. bracteatum* var. *kaschmiricum* Soo; *C. kaschmirianum* Schlechter; *Habenaria*

*viridis* (Linnaeus) R. Brown; *Orchis viridis* Linnaeus; *Platanthera viridis* (Linnaeus) Lindley; *Satyrium viridi* Linnaeus

Terrestrial; flowers greenish-red, lip pale-brown, spur short, blunt.

Europe, Central Asia, Pakistan, India, Bhutan, China; Kashmir (Naigund), Ladakh; 3700 – 4000 m; July – August.

***Diphylax griffithii*** (Hooker f.) Kraenzl., *Orchid. Gen. Sp.* 1:599. 1901.

*Habenaria griffithii* Hooker f.; *H. decipiens* Hooker f.; *Orchidea herminoides* Griffith; *Cheirostylis griffithii* auct. non. Lindley

Terrestrial; flowers greenish or whitish; spur very short.

Pakistan and India; Jammu (Poonch, Nawal Nadi), Kashmir (Pirni near Baramulla); 700 – 2200 m; April – May.

***Epipactis helleborine*** (Linnaeus) Crantz, *Stirp. Austri.* 2: 467. 57. 1769.

*E. latifolia* (Linnaeus) Allioni; *E. latifolia* var. *thomsonii* Hooker f.; *E. helleborine* var. *thomsonii* (Hooker f.) Stewart; *E. atrorubens* auct. non Schultes; *E. macrostachya* Lindley ex Wallich; *E. consimilis* D. Don; *Helleborine macrostachya* (Lindley) Soó; *Serapias helleborine* Linnaeus; *S. helleborine* var. *latifolia* Linnaeus; *S. latifolia* (Linnaeus) Huds

Terrestrial; flowers green, flushed more or less with red-violet or yellowish-green.

Europe, Northern Africa, Japan, Afghanistan, Pakistan, India, Bhutan and Myanmar; Jammu (Poonch, Talab Tilo), Kashmir (Gurez, Pahalgam, Sonamarg, Gulmarg); Ladakh; 2100 – 3400 m; July – August.

***Epipactis persica*** (Soó) Haussknecht ex Nannfeldt, *Bot. Not.* 1946. 11. 1946.

*Helleborine persica* Soó

Terrestrial; leaves in middle of the stem elliptic or ovate-lanceolate; flowers green.

Iran, Afghanistan, Pakistan and India; July-August.

***Epipactis royleana*** Lindley, *Gen. Sp. Orchid. Pl.* 461. 1840.

*E. gigantean* Dougl. ex Hooker; *Cephalanthera royleana* (Regel) Boissier; *Helleborine royleana* (Lindley) Soó

Terrestrial; commonly found in marshy places near springs and rivers; flowers green-veined red and a reddish-yellow lip.

Afghanistan, Pakistan, India, Nepal, Bhutan, and China; Kashmir (Budwun, Tragbol, Pahalgam, Pirpanjal, Gulmarg, Tangmarg, Dachigam, Yusmarg, Kangan), Ladakh; 1500 – 3700 m; July – August.

***Epipactis veratrifolia*** Boissier ex Hohenacker, *Diagn. Pl. orient.*, ser. 1, 13: 11. 1854. (1853)

*E. consimilis* Wallich ex Hooker f.; *E. somaliensis* Rolfe; *E. wallichii* Schltr; *Helleborine veratrifolia* (Boissier & Hohenacker) Bornmüller; *H. consimilis* Wallich ex Hooker f.

Terrestrial; leaves lanceolate or acuminate; flowers orange-green.

Afghanistan, Pakistan, India, Nepal, Myanmar and China; Jammu (Talab Tilo, Udhowala, Gajansu, Surajkund, Patnitop), Ladakh; 2500 m; May – July.

***Epipogium aphyllum*** Swartz, *Summa Veg. Scand.* 32. 1814.

*E. gmelini* Richard; *Limodorum epipogium* (Linnaeus) Swartz; *Orchis aphylla* Schmidt; *Satyrium epipogium* (Linnaeus) Swartz

Saprophyte; leafless herb; flowers yellow-pink.

Temperate Europe and Asia; Kashmir (Gulmarg, Sonamarg, Nafran nallah, Pahalgam, Lidderwat); 2400 – 2900 m; July – September.

***Epipogium roseum*** (D. Don) Lindley, *J. Linn. Soc.*, Bot 1: 177. 1857.

*E. tuberosum* Duthie; *Limodorum roseum* D. Don  
Terrestrial; leafless saprophytic herb; flowers brownish-yellow.  
Pakistan and India; Kashmir (Lidder valley, Chandanwari, Sonamarg, Baltal, Gulmarg); 1800 – 2800 m; July – September.

***Eulophia dabia*** (D. Don) Hochreutiner, Bull. New York Bot. Gard. 6:270. 1910.  
*Bletia dabia* D. Don; *Eulophia compestris* Wallich ex Lindley; *E. ramentacea* Lindley; *E. hormusjii* Duthie; *Limodorum dabia* Buch.-Hamilton ex D. Don; *L. dubium* Buch.-Hamilton ex Lindley; *L. ramentaceum* Roxburgh  
Terrestrial; leaves 2 which appear much after flowering; flowers pale-pink.  
Pakistan, India, Nepal, Myanmar and China; Jammu (Batah beyond Simbal, Gajansu); March – April.

***Eulophia graminea*** Lindley, Gen. Sp. Orchid. Pl. 182. 1833.  
*Eulophia decipiens* Kurz; *E. ucbbii* Malhotra & Balodi  
Terrestrial; flowers purplish-brown.  
India, Sri Lanka, Myanmar, Thailand, Malaysia, Philippines, Taiwan; Jammu (Domel); upto 1200 m; March – May.

***Eulophia herbacea*** Lindley, Gen. Sp. Orchid. Pl. 182. 1833.  
Terrestrial; flowers white, purple-yellow, lip white, spur very short.  
India and Nepal; Kashmir; 1300 – 2000 m; June – July.

***Gastrodia falconeri*** Jones & Clements, Orchadian 12: 350. 1998.  
*Gamoplexis orobanchoides* Falconer; *Gastrodia orobanchoides* (Falc.) Hook. f., nom. illeg.  
Terrestrial, leafless saprophytic herb; flowers reddish-brown.  
Pakistan and India; Kashmir (Nilnag); 2100 – 2400 m; July – August.

***Goodyera repens*** (Linnaeus) R. Brown, Hort. Kew. ed. 2, 5:198. 1813.  
*Satyrium repens* Linnaeus  
Terrestrial; leaves dark-green with whitish green spots; flowers fragrant, white flushed with brownish-pink.  
Pakistan, India, Myanmar, Bhutan, China, Japan, Europe and North America; Kashmir (Ferozpur nallah, Gulmarg, Nagbal, Frasnag, Pahalgam, Aru), Ladakh; 2400-3400 m; July-August.

***Gymnadenia orchidis*** Lindley, Gen. Sp. Orchid. Pl. 278. 1835.  
*Gymnadenia cylendrotachya* Lindley ex Wallich; *G. himalayica* Schltr.; *Habenaria orchidis* (Lindley) Hooker f.; *Peristylus orchidis* (Lindley) Kranzling; *Orchis habenaroides* King & Pantling; *O. cylindrostachya* (Lindley) Kranzling; *Platanthera orchidis* Lindley ex Wallich  
Terrestrial; occurs in alpine pastures; leafy perennial herb; flowers pink, sweet-scented.  
Pakistan, India, Bhutan and China; Kashmir (Tilail, Sarsangar, Tragbal, Sonamarg, Chatpansal nallah, Pahalgam); 3400 – 4000 m; July – August.

***Habenaria aitchisonii*** Reichenbach f. ex Aitchison & Hemsl., Trans. Linn. Soc. Bot. Ser. 2, 3:113. 1886.  
*Harbenaria brachyphylla* Aitchison  
Terrestrial; flowers pale-green, fragrant.  
Pakistan, India and Nepal; Jammu (Poonch, Tauli pir), Kashmir; 1800 – 2400 m; July – August.

***Habenaria commelinifolia*** (Roxburgh) Wallich ex Lindley, Gen. Sp. Orchid. Pl. 325. 1835.  
*Orchis commelinifolia* Roxburgh

Terrestrial; flowers white.

India and Nepal; Jammu (Domel); upto 1300 m; September – October.

***Habenaria digitata*** Lindley, Gen. Sp. Orchid. Pl. 307. 1835.

*H. graveolens* Duthie; *Bontea punduana* Lindley ex Wallich

Terrestrial; flowers green and during night have a strong and penetrating odour.

Pakistan and India; Jammu (Suketar), Kashmir; upto 1600 m; July – August.

***Habenaria furcifera*** Lindley, Gen. Sp. Orchid. Pl. 319. 1835.

*Habenaria hamigera* Griffith; *H. ovalifolia* Wight; *H. tenuicornis* Wallich ex Hooker f.

Terrestrial; leaves elliptic; flowers green.

Pakistan, India and Bhutan; Jammu (Poonch), Kashmir; 900 – 1800 m; July – August.

***Habenaria intermedia*** D. Don, Prodr. Fl. Nepal. 24. 1825.

Terrestrial; flowers white or greenish- white.

Pakistan and India; Jammu (Poonch), Kashmir; 1500 – 2100 m; July – August.

***Habenaria marginata*** Colebrook, Exotic Fl. 2 (17): pl. 136. 1882.

*Habenaria fusifera* Hooker f.; *H. flavescens* Hooker f; *H. auranticea* Rolfe. ex Downie

Terrestrial; flowers greenish-yellow to orange.

Pakistan, India, Nepal, Bhutan, Myanmar; Jammu (Nandni, Domel, Poonch), Kashmir; 1000 – 3000m; August – September.

***Habenaria pectinata*** D. Don, Prodr. Fl. Nepal. 24. 1825.

*Habenaria ensifolia* Lindley; *Orchis pectinata* Smith

Terrestrial: flowers greenish-white.

Pakistan, India, China; Jammu (Bhairon Ghatty); 1400 – 3500 m; August – September.

***Habenaria plantaginea*** (Lindley) Lindley, Gen. Sp. Orchid. Pl. 323. 1835.

*Gymnadenia plantaginea* Lindley

Terrestrial; flowers white.

Jammu (Nandni, Suketar); September – October.

***Habenaria stenopetala*** Lindley, Gen. Sp. Orchid. Pl. 319. 1835.

Terrestrial: flowers pale green, lip reddish brown, and as long as the petals.

Pakistan, India, China; Kashmir; 1400 – 3500 m; August – October.

***Herminium lanceum*** (Thunberg ex Swartz) Vuijk, Blumea 11(1): 228. 1961.

*Herminium angustifolium* (Lindl.) Bentham; *Ophrys lancea* Thunberg ex Swartz; *Aceras*

*angustifolia* Lindley; *Plananthera angustifolia* (Lindl.) Reichb.f.; *Spiranthes lancea*

(Thunberg ex Swartz) Baker

Terrestrial: tuberous herb, flowers green, small.

India, Bhutan, China, Japan, Taiwan, Java, Timor; Jammu (Poonch, Rattanpir); 1200 – 3500 m  
July – September.

***Herminium macrophyllum*** (D. Don) Dandy, J. Bot. 70: 328. 1932.

*Herminium congestum* Lindley; *Neottia macrophylla* D. Don

Terrestrial: flowers green, drooping, very small.

India, Nepal; Kashmir (Sonamarg, Gund); 2400 – 3000 m; July – August.

***Herminium monorchis*** (Linnaeus) R. Brown, Hort. Kew. (W.T. Aiton), ed. 2. 5: 191. 1813.

*Ophrys monorchis* Linnaeus

Terrestrial; flowers yellowish-green.

Pakistan, India, China, Korea, Japan; Kashmir (Tulail, Sonamarg, Badwan), Ladakh (Nubra valley); 2700 – 4300 m; July – August.

***Liparis rostrata*** Reichenbach f., *Linnaea* 41: 44. 1876.

*Liparis diodon* Reichenbach f.

Terrestrial; flowers large, yellowish-green.

Pakistan, India; Kashmir; 1500 – 2500 m; July – August.

***Malaxis cylindrostachya*** (Lindley) Kuntze, *Revis. Gen. Pl.* 2: 673. 1891.

*Microstylis chindrostachya* (Lindley) Reichenbach f.; *Dienia cylindrostachya* Wallich

Terrestrial or epiphytic; flowers pale yellow-green.

India, Bhutan, China; Kashmir (Budwun); 1800 – 3600 m; July – August.

***Malaxis muscifera*** (Lindley) Kuntze, *Revis. Gen. Pl.* 2: 673. 1891.

*Dienia muscifera* Lindley; *Microstylis muscifera* (Lindley) Ridley

Terrestrial or epiphytic; flowers yellowish-green.

Pakistan, India, Bhutan, China; Jammu (Poonch), Kashmir (Aru, Pahalgam, Sonamarg, Gulmarg, Ladakh); 2100 – 3700 m; July – August.

***Neottia inayatii*** (Duthie) Schlechter, *Bot. Jahrb. Syst.* 45: 387. 1911.

*Neottia kashmeriana* Duthie; *Listera kashmiriana* Duthie; *L. inayatii* Duthie

Terrestrial; leafless, flowers yellowish-brown.

Endemic in Kashmir (Baisarran above Pahalgam, Frasnag, Sonamarg, Lidder valley); 2400 – 2700 m; July – August.

***Neottia listeroides*** Lindley, *Gen. Sp. Orchid. Pl.* 458. 1840. (prev. in *Ill. Bot. Himal. Mts.* 368, 1839 as *nom. nud.*)

*Neottia lindleyana* Decaisne; *Listera lindleyana* (Decaisne) King & Pantling

Terrestrial; saprophytic, flowers dull, yellowish-green.

Pakistan, India, Myanmar, China; Kashmir (Aru, Lidderwat, Pahalgam, Sonamarg, Frasnag, Gulmarg, Khillanmarg, Dachigam); 1500 – 3000 m; July – August.

***Neottia ovata*** (Linnaeus) Bluff & Fingerhuth, *Comp. Fl. German.* (ed. 2) 2: 435. 1838.

*Listera ovate* (Linnaeus) R. Brown; *Ophrys ovata* Linnaeus

Terrestrial; flowers greenish; spur absent.

North America, Europe, Asia; Kashmir (Gurez valley, Sind valley, Pahalgam); 2100 – 2400 m; June – July.

***Nervilia gammieana*** (Hooker f.) Pfitzer, *Nat. Pflanzenfam.* 2(6): 56, 106, pl. 44. 1888.

*Pogonia gammieana* Hooker f.

Terrestrial; flowers pink-purple, leaves plaited.

Pakistan, India; Jammu (Nawal nadi, Poonch); 500 – 3000 m; May – July.

***Oreorchis foliosa*** (Lindley) Lindley, *J. Proc. Linn. Soc., Bot.* 3: 27. 1859.

*Corallorhiza foliosa* Lindley

Terrestrial; tuberous herb, flowers deep red, single leaf.

India, Pakistan, Bhutan; Jammu (Poonch); 2700 – 3500 m. July – September.

***Platanthera edgeworthii*** (Hooker f. *ex* Collett) Gupta, *Fl. Nainital.* 349. 1968.

*Platanthera acuminata* Lindley; *Habenaria acuminata* Rao; *H. edgeworthii* Hooker f. *ex* Collett

Terrestrial; occurs in grassy pastures; flowers yellowish-green, lip yellow.

Pakistan, India and Nepal; Jammu (Poonch, Kud, Batote), Kashmir; 1500-3000 m; July-August.

*Platanthera latilabris* Lindley, Gen. Sp. Orchid. Pl. 289. 1835.

*Habenaria latilabris* (Lindley) Hooker f.; *Pecteilis latilabris* (Lindley) Mitra

Terrestrial; flowers green.

Pakistan, India, Nepal and Bhutan; Jammu (Poonch, Rattanpir, Batote), Kashmir; 1500 – 2100 m July – August.

*Satyrium nepalense* D.Don, Prodr. Fl. Nepal. 26. 1825.

*Gymnadenia camtschatica* *Sensu* Arora & Malhotra

Terrestrial; flowers pink, fragrant.

Pakistan, India, Nepal, Bhutan, China; Jammu (Poonch, Surajkund), Kashmir; 1200 – 2400 m; July – October.

*Spiranthes sinensis* (Persoon) Ames, Orchid. 2: 53. 1908.

*Neottia sinensis* Persoon; *Ophrys lancea* (Thunberg) Backer; *S. australis* (R. Brown)

Lindley; *S. sinensis* var. *amoena* (Bieberstein) Ames; *Neottia australis* R. Brown; *N.*

*amoena* Bieberstein

Terrestrial; flowers small, pink or white.

Afghanistan, Pakistan, India, Nepal, China, Java, Japan, Australia, New Zealand, North America Europe; Jammu (Kachora, Bakshinagar), Kashmir (Srinagar, Harwan, Pahalgam, Aru, Kulgam, Aish-muqam, Behama, Doderhama, Ganderbal); 1800 – 3100 m; May – September.

*Zeuxine strateumatica* (Linnaeus) Schlechter, Bot. Jahrb. Syst. 45(3): 394, in obs. 1911

*Orchis strateumatica* Linnaeus; *Ptrygodium sulcatum* Roxburgh; *Zeuxine sulcata*

(Roxburgh) Lindley; *Adonostylis strateumatica* (Linnaeus) Ames

Terrestrial; flowers white or pale-pink.

Iran, Pakistan, India, Nepal, Myanmar, China, Japan; Jammu (Batah, Choe, Marh, Poonch); above 1000 m; March – April.

## DISCUSSION AND CONCLUSIONS

Based on the present study, the Orchidaceae is represented by 47 species belonging to 24 genera in the Jammu & Kashmir State of India. Out of the total, 39 are terrestrial, 6 saprophytes and only 2 are epiphytes. The maximum numbers of species (09 species) are in the genus *Habenaria*; while as 14 genera are mono-specific. Although most of orchid species show a wide range of distribution but are of rare occurrence. It is interesting to note that there is only 2 species of epiphytic orchids, which, probably, is quite different from other parts of the Himalayas. Based on our field observations over the last one decade, it seems that habitat loss due to increasing anthropogenic activities in the higher alpine might be the main cause of their rarity in this Himalayan State.

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