

Orchids of Panchase Forest, Central Nepal: A Checklist

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Abstract

The checklist of orchids distributed in Panchase forest, Central Nepal is updated, with 52 genera, 142 species and a natural hybrid. Notes on the altitudinal range, habit, habitat, phenology and distribution are given.

Keywords: Hotspot, Mid-hill of Nepal, Orchidaceae, Orchid checklist, Orchids of Nepal

Introduction

Orchidaceae in Nepal is one of the largest plant families with about 506 species (Bhandari et al., 2015; Bhandari et al., 2016b; Subedi et al., 2017; Bhandari et al., 2019a; Bhandari et al., 2019b; Raskoti & Ale, 2019a; Raskoti & Ale, 2019b; Bhandari et al., 2020) distributed in range of habitats from tropical low land to high Himalaya (Acharya et al., 2011; Rokaya et al., 2013; Rajbhandari & Rai, 2017; Shrestha et al., 2018). Central Nepal is considered the high species-rich region for orchids with peaks at about 1600 m corresponding to 16°C mean annual temperature (Acharya et al., 2011). Panchase forest, lying at the mid-hill of central Nepal, with annual mean temperature about 17°C (Dixit et al., 2015), is being a centre of scientific research since early 2000, as several novel orchid species and new findings are reported from the forest (Bajracharya et al., 2003; Subedi et al., 2011; Raskoti & Ale, 2013; Raskoti & Jin, 2013; Bhandari et al., 2015; Raskoti & Kurzweil, 2015; Raskoti, 2015; Bhandari et al., 2020). This research was, therefore, carried out to contribute to the orchid conservation in Panchase by preparing an updated orchid checklist within the altitudinal range of 900-2500 m asl (meter above sea level). Incorporating the previous findings, this paper attempt to give comprehensive information's on orchid of Panchase, with updated nomenclature, habit, habitat, phenology, the elevation range and other relevant information.

Materials and Methods

Study area

The Panchase forest is located in the mid-hills of Central Nepal connecting the three districts; Kaski, Parbat and Syangja within the elevation range of 900 to 2500 m asl (Figure 1). The forest is characterized by the presence of different terraces of terrain with a range of habitat including forest, rangeland, shrub land, wetland and agriculture. The climate in the lower elevation is subtropical while it is moist temperate in the higher elevation above 2000 m. Hill Sal forest, *Schima-Castanopsis* forest dominate the lower subtropical belt, while *Daphniphyllum* forest, Alder forest, Oak- Laurel forest and Oak-*Rhododendron* forest dominate the upper temperate belt. Apart from its natural beauty, Panchase is famous for its religious value. Each year, hundreds

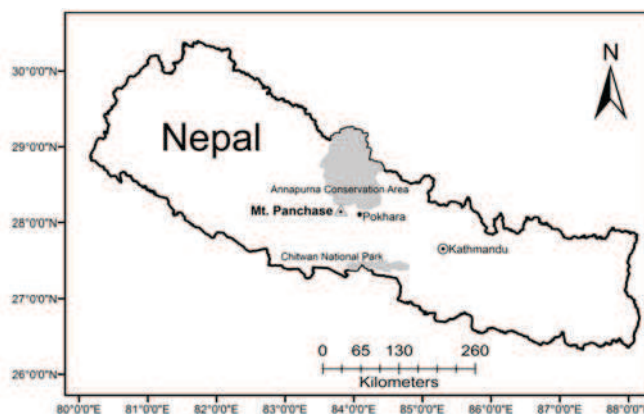


Figure 1: Location of Panchase in Nepal

of Hindus and Buddhist pilgrimages climb to Panchase to visit the holy sites; the Sidha-baba mandir and Panchase tal.

Home to about 718 vascular plant species (Subedi et al., 2007; Mikage, 2008; Bhandari, 2015; Bhandari et al., 2015; Bhandari & Shrestha, 2016; Bhandari et al., 2016-18; Thakur & Rajbhandary, 2018; Bhandari et al., 2020), Panchase forest is often considered as a hotspot of plant diversity in Central Nepal (World Wide Fund For Nature [WWF], 2013). Panchase also provides shelter to a number of endangered wildlife species including the Himalayan Black Bear (*Ursus thibetanus*), the common leopard (*Panthera pardus*), 152 species of birds, and 8 species of bats (Aryal & Dhungel, 2009; Malla et al., 2013; Baral, 2018). Owing to the biological uniqueness of the forest, Panchase is regarded as the biological corridor between southern plain Tarai and northern Himalaya; within a broad conservation regime, the landscape is popularly known as Chitwan-Annapurna Landscape (CHAL) (WWF, 2013).

Data collection

The present checklist is based on the published literature (Subedi et al., 2007; Raskoti, 2015), herbarium consultation and field visits. A bi-monthly field trip was organized for specimens collection between 2017 and 2018. At the meantime, the ecological parameters, for example, forest type, host tree, phenology, and altitudinal range were also recorded. The National Herbarium and Plant Laboratories (KATH) and Tribhuvan University Central Herbarium (TUCH) were visited for identifying the collected samples and cross-checking the vouchers collected from the study site. Information on herbarium specimens housed outside Nepal was obtained through Flora of Nepal webpage (<http://www.floraofnepal.org/>). Nomenclature and author citation of plant species followed the International Plant Name Index (<https://www.ipni.org/>), 'The Plant List' (<http://theplantlist.org/>) and TROPICOS (<http://tropicos.org/>). The species number for the genera and the broad distribution of the species followed Govaerts et al., (2019) and Chen et al., (2009), while

the geographical regions are adopted from Watson et al., (2011), Rajbhandari & Rai (2017), Shrestha et al., (2018), Raskoti & Ale (2019a), Raskoti & Ale (2019b) and Bhandari et al., (2020) were followed for Nepal's distribution.

Results and Discussion

The present study reported 142 wild orchid species and a natural variety, within 52 genera from Panchase forest. *Bulbophyllum* (20 species), *Dendrobium* (15 species), *Pinalia* (8 species), *Oberonia* (7 species), *Coelogyne* (6 species), *Cymbidium* (6 species), *Gastrochilus* (5 species), *Liparis* (5 species), *Calanthe* (4 species), *Goodyera* (4 species), *Herminium* (4 species), *Odontochilus* (4 species), *Pholidota* (4 species), *Zeuxine* (4 species) and *Otochilus* (3 species), were the abundant genera, while, the remaining genera have either two or single species. Three Orchids (*Gastrochilus nepalensis* Raskoti, *Odontochilus nandae* Raskoti & H.Kurzweil, and *Pinalia pokharensis* (Bajrach., Subedi & K.K.Shrestha) Schuit., Y.P.Ng & H.A.Pedersen) are reported to be endemic to Panchase forest (Bajracharya et al., 2003; Raskoti & Kurzweil, 2015; Raskoti, 2015). *Oberonia nepalensis* L.R.Shakya & R.P.Chaudhary, endemic to central Nepal (Shakya & Chaudhary, 1999), was also found in good population in the subtropical (900 to 1500 m asl) Panchase forest. Of the total reported species, nine are Himalayan endemic, two distributed in South Asia (Nepal and India), and 118 species shows East and South Asian affinities, while the remaining 10 species shows the broad distribution. *Panisea panchaseensis* Subedi, named after the type locality Panchase forest (Subedi et al., 2011), was, later reported from Dolakha, Nepal (Bhandari et al., 2016) and Assam, India (Odyuo et al., 2016).

Majority of the orchid species prefers forest to rangeland and shrubland. A large number of the species favours epiphytic habitat (113 species), while 40 species prefer terrestrial habitat. Eight of the epiphytic species (*Bulbophyllum caudatum*, *B. hirtum*, *B. leopardinum*, *B. reptans*, *Coelogyne fuscescens*, *Dendrobium eriiflorum*, *Pholidota pallida*, *Porpax muscicola*) were occasional

lithophyte, preferring the rock crevices. Interestingly, a terrestrial orchid, *Satyrium nepalense* var. *nepalense*, was observed in epiphytic habitat in the lower branches of *Daphniphyllum himalayense*, *Quercus semecarpifolia*, *Symplocos ramosissima*, and *Viburnum erubescens* as an occasional climber; however, the substratum was rich with mosses and litter. The epiphytic species tend to grow in damp forest, mostly in the lower tree trunk and branches rich with mosses. *Cymbidium aloifolium* and *C. manii* were observed growing in the open canopy, showing the high light demand. Few epiphytes like *Gastrochilus distichus*, *Oberonia falcata*, *Vandopsis undulata* were sometimes observed in *Berberis* bushes. The terrestrial species were often growing in the forest floor, forest edges, and grassy slope. The *Odontochilus* species, *Goodyera* species, *Liparis petiolata*, *Tainia minor* prefers to grow in the *Daphniphyllum* forest, floor rich with litter and mosses. Similarly, *Nervilia* species and *Zeuxine* species dominate the floor of *Schima-Castanopsis* forest within 900 to 1100 m asl. While, the species like *Herminium lanceum*, *Peristylis aristatus*, *Platanthera biermanniana*, *Satyrium nepalense* var. *nepalense*, *Spiranthes australis*, *S. flexuosa* prefers the grassy slope, forest edges and along the walking trail.

Schima wallichii, *Castanopsis indica*, *Diospyrus lancifolia* were the major host in the lower elevation, while *Bombax ceiba*, *Engelhardia spicata*, *Myrica esculenta*, *Macaranga pustulata* were the occasional host. In the temperate belt, *Daphniphyllum himalayense*, *Rhododendron arboreum*, *Quercus* species, *Lindera pulcheriima*, *Neolitsea pallens*, *Lyonia ovalifolia* were the major host. *Pyrularia edulis*, *Viburnum erubescens*, *Rhus* species served as rare host for the epiphytic species in the temperate belt. Some orchids were host-specific, for example, *Goodyera recurva* prefers *Viburnum erubescens* and *Neolitsea pallens*; *Panisea panchaseensis* prefers laurels and oaks, and *Taeniophyllum scaberulum* prefers *Daphniphyllum himalayense* and *Ilex excelsa*.

The peak flowering season for orchids in Panchase was observed between July to August, which can be

linked with the rate of precipitation and temperature (Rokaya et al., 2013). More than 60% of orchids bloom in this period. The incoming spring brings the *Coelogyne* species to bloom, making the whole environment whitish. While, during August, the forest turns colourful (Subedi et al., 2007) with the blooming of different species of *Cymbidium*, *Bulbophyllum*, *Goodyera* and *Panisea*. Therefore, March-April and July-September could be the best season for the orchid enthusiast to visit Panchase.

Checklist

This checklist includes 142 wild species and a natural hybrid orchid species growing in Panchase forest, Central Nepal.

Acampe Lindl. (7/2/1 species)

Acampe rigida (Buch.-Ham. ex Sm.) P.F.Hunt; *Aerides rigida* Buch.-Ham. ex Sm.

Epiphytic on tree trunks or major branches (*Castanopsis indica*, *Schima wallichii*, *Diospyrus lancifolia*) between 900-1700 m. Fl. Aug-Oct. Ghatichida, Kaski, 900 m, 18 August 2015, P. Bhandari P1408 (KATH). [CE Nepal, E Himalaya, Assam-Burma, S Asia, E Asia, SE Asia and Africa].

Aerides Lour. (28/2/2 species)

***Aerides multiflora** Roxb.

Epiphytic on *Shorea robusta* within 1000-1500 m. Fl. May-Jun. [WCE Nepal, E Himalaya, S Asia and SE Asia].

Aerides odorata Lour.; *Aerides cornuta* Roxb.

Epiphytic on tree trunks or major branches (*Castanopsis indica*, *Schima wallichii*) between 900-1500 m. Fl. Jun-Jul. Ghatichida, NW Pokhara, Kaski, 900-1000 m, 28 June 2018, P. Bhandari & B. Ojha P1637 (KATH). [WCE Nepal, E Himalaya, Assam-Burma, E Asia and SE Asia].

Agrostophyllum Blume (139/2/2 species)

Agrostophyllum callosum Rchb.f.

Epiphytic on lower branches (*Quercus* species, *Rhododendron arboreum*, *Daphniphyllum himalayense*, *Ilex fragilis*, *Lyonia ovalifolia*, *Myrica esculenta*, *Schima wallichii*) between 1700-2300 m. Fl. Jun-Jul. Panchase forest, Kaski, 2200 m, 10 August 2014, P. Bhandari & A. Bhandari P774 (TUCH). [CE Nepal, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Ania Lindl. (6/1/1 species)

Ania penangiana (Hook.f.) Summerh.

Terrestrial on the floor of *Schima-Castanopsis* forest between 1000-1100 m. Fl. Mar-Apr. Between Ghatichida to Damdame, Panchase forest, Kaski, 1045 m, 17 March 2018, P. Bhandari P1505, KATH030392. [C Nepal, E Himalaya, E Asia and SE Asia].

Anthogonium Lindl. (1/1/1 species)

Anthogonium gracile Lindl.

Terrestrial on grassy slopes, in rock crevices between 1300-1800 m. Fl. Aug-Sep. Panchase forest, Kaski, 1800 m, 07 September 2014, P. Bhandari & S. Budhamagar P800 (KATH & TUCH). [CE Nepal, E Himalaya, Tibetan Plateau, Assam-Burma, S Asia, E Asia and SE Asia].

Apostasia Blume (8/1/1 species)**Apostasia wallichii** R.Br.

Terrestrial on *Schima-Castanopsis* forest between 900-1000 m. Fl. May-Jun. Between Damdame to Ghatichida, Panchase forest, Kaski, 900-1000 m, 28 June 2018, P. Bhandari & B. Ojha P1632 (KATH). [C Nepal, Assam-Burma, S Asia, E Asia, SE Asia and Australasia].

Bulbophyllum Thouars (ca. 1900/36/20 species)**Bulbophyllum affine** Wall. ex Lindl.

Epiphytic on tree trunks (*Schima wallichii*, *Castanopsis indica*) between 1100-1500 m. Fl. Jun-Jul. Panchase forest, Kaski, 1100-1500 m, 27 June 2018, P. Bhandari P1657 (KATH). [CE Nepal, E Himalaya, E Asia and SE Asia].

Bulbophyllum bisetum Lindl.

Epiphytic on tree trunks (*Daphniphyllum himalayense*) between 1900-2100 m. Fl. Sep. Panchase forest, Kaski, 1950 m, 22 September 2017, P. Bhandari P1696 (KATH). [CE Nepal, E Himalaya and SE Asia].

Bulbophyllum careyanum (Hook.) Spreng.; *Anisopetalum careyanum* Hook.

Epiphytic on tree trunks and branches (*Schima wallichii*, *Castanopsis* species, *Diospyrus lancifolia*, *Myrsine capitellata*) between 900-1700 m. Fl. Sep-Nov. Thulakhet, NW Pokhara, Kaski, 1000 m, 10 October 2014, P. Bhandari P1495 (KATH). [CE Nepal, E Himalaya, Assam-Burma and SE Asia].

***Bulbophyllum caudatum** Lindl.

Epiphytic or Lithophytic. Fl. Jun-Jul. [CE Nepal, E Himalaya and Tibetan Plateau].

Bulbophyllum cylindraceum Wall. ex Lindl.

Epiphytic on tree trunks (*Daphniphyllum himalayense*) at 1700 m. Fl. Oct-Nov. Panchase forest, Kaski, 1700 m, 10 November 1999, A. Subedi 347 (TUCH!). [CE Nepal, E Himalaya and E Asia].

***Bulbophyllum hirtum** (Sm.) Lindl. ex Wall.

Stelis hirta Sm.

Epiphytic or Lithophytic. Fl. Jan-Feb. [Nepal, W Himalaya, E Himalaya, Assam-Burma, E Asia and SE Asia].

Bulbophyllum leopardinum (Wall.) Lindl. ex Wall.; *Dendrobium leopardinum* Wall.

Epiphytic on tree trunks (*Daphniphyllum himalayense*, *Rhododendron arboreum*, *Schima wallichii*, *Alnus nepalensis*, *Engelhardia spicata*, *Ilex fragilis*, *Lyonia ovalifolia*, *Myrica esculenta*) or lithophytic between 1500-2000 m. Fl. Jun-Jul. Panchase forest, Kaski, 1900 m, 05 October 2014, P. Bhandari P1567 (TUCH). [CE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, E Asia and SE Asia].

***Bulbophyllum moniliforme** C.S.P.Parish & Rchb.f.

Epiphytic on tree trunks. Fl. Oct. [C Nepal, Assam-Burma and SE Asia].

Bulbophyllum muscicola Rchb.f.

Epiphytic on tree trunks and lower branches (*Quercus semecarpifolia*, *Rhododendron arboreum*, *Lyonia ovalifolia*, *Quercus lamellosa*) between 2300-2500 m. Fl. Sep. Panchase danda, Kaski, 2500 m, 09 September 2014, P. Bhandari & S. Budhamagar P827 (TUCH). [C Nepal, W Himalaya, E Himalaya and Assam-Burma].

Bulbophyllum odoratissimum (Sm.) Lindl.; *Stelis odoratissima* Sm.

Epiphytic on tree trunks and lower branches (*Schima wallichii*, *Castanopsis indica*) between 1400-1700 m. Fl. Jun-Jul. Panchase forest, Kaski, 1400-1700 m, 06 June 2017, P. Bhandari & A. Bhandari P1664 (KATH). [C Nepal, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

***Bulbophyllum polyrhizum** Lindl.

Epiphytic on tree trunks. Fl. Apr. [CE Nepal, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia].

Bulbophyllum purpureofuscum J.J.Verm., Schuit. & de Vogel; *Sunipia cirrhata* (Lindl.) P.F.Hunt

Epiphytic on tree trunks and lower branches (*Daphniphyllum himalayense*, *Quercus lamellosa*, *Rhus succedanea*) between 1900-2300 m. Fl. Dec-Jan. Panchase forest, Kaski, 1900-2300 m, 08 January 2015, P. Bhandari P1692 (KATH). [C Nepal, E Himalaya, Assam-Burma and E Asia].

Bulbophyllum reptans (Lindl.) Lindl.; *Tribrachia reptans* Lindl.

Epiphytic on tree trunks (*Schima wallichii*, *Castanopsis indica*, *Daphniphyllum himalayense*, *Rhododendron arboreum*, *Quercus semecarpifolia*, *Lyonia ovalifolia*, *Ilex fragilis*, *Rhus succedanea*) or lithophytic between 1300-2500 m. Fl. Mar-Jun. Panchase forest, Kaski, 1600 m, 20 March 2015, P. Bhandari, S. Budhamagar & A. Bhandari P1276 (KATH & TUCH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Bulbophyllum retusiusculum Rchb.f.

Epiphytic on tree trunks and lower branches (*Quercus semecarpifolia*, *Rhododendron arboreum*, *Ilex fragilis*, *Lindera pulcherrima*) between 2300-2500 m. Fl. Jul-Aug. Panchase forest, Kaski, 2500 m, 10 July 2000, A. Subedi 430 (TUCH!). [CE Nepal, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Bulbophyllum roseopictum J.J.Verm., Schuit. & de Vogel; *Sunipia bicolor* Lindl.

Epiphytic on tree trunks and lower branches (*Daphniphyllum himalayense*, *Quercus semecarpifolia*, *Viburnum erubescens*) between 2000-2500 m. Fl. Nov-Dec. Panchase forest, Kaski, 1500-2100 m, 08 January 2015, P. Bhandari & Y.N. Paudel P1691 (KATH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, S Asia, E Asia and SE Asia].

Bulbophyllum secundum Hook.f.

Epiphytic on tree trunks (*Schima wallichii*) between 900-

1000 m. Fl. Jun-Jul. Ghatichida, Panchase forest, Kaski, 900 m, 28 June 2018, P. Bhandari & B. Ojha P1634 (KATH). [C Nepal, E Himalaya, Assam-Burma, E Asia and SE Asia].

Bulbophyllum striatum (Griff.) Rchb.f.; *Dendrobium striatum* Griff.

Epiphytic on tree trunks at 2000 m. Fl. Jan-Feb. Panchase forest, Kaski, 2000 m, 11 January 2002, A. Subedi, R.P. Chaudhary & L.R. Shakya 1035 (TUCH!). [C Nepal, E Himalaya, E Asia and SE Asia].

***Bulbophyllum umbellatum** Lindl.

Epiphytic on tree trunks. Fl. Mar-Jun. [Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Bulbophyllum viridiflorum (Hook.f.) Schltr.; *Cirrhopetalum viridiflorum* Hook.f.

Epiphytic on tree trunks (*Daphniphyllum himalayense*) between 2000-2200 m. Fl. Sep-Oct. Panchase forest, Kaski, 2100 m, 05 October 2014, P. Bhandari & A. Bhandari P1235 (KATH). [CE Nepal, E Himalaya, S Asia and E Asia].

Bulbophyllum wallichii (Lindl.) Rchb.f.; *Cirrhopetalum wallichii* Lindl.

Epiphytic on tree trunks (*Daphniphyllum himalayense*) between 2000-2100 m. Fl. Mar-Apr. Panchase forest, Kaski, 2000 m, 22 March 2015, P. Bhandari, S. Budhamagar & A. Bhandari P1496 (TUCH). [WCE Nepal, W Himalaya, E Himalaya, Assam-Burma, E Asia and SE Asia].

Calanthe R.Br. (ca. 150/16/4 species)

Calanthe mannii Hook.f.

Terrestrial on Oak forest floor at 2300 m. Fl. May-Jun. Panchase forest, Kaski, 2300 m, 27 June 2018, P. Bhandari P1646 (KATH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Calanthe plantaginea Lindl.

Terrestrial on *Rhododendron*-Oak forest floor between 2400-2500 m. Fl. Mar-Apr. Panchase forest, Kaski, 2450 m, 22 March 2015, P. Bhandari & S. Budhamagar P1547 (TUCH). [WC Nepal, W Himalaya, E Himalaya, Tibetan Plateau and E Asia].

Calanthe puberula Lindl.; *Alismorkis puberula* (Lindl.) Kuntze

Terrestrial on *Rhododendron*-Oak forest floor between 1900-2500 m. Fl. Jul-Aug. Panchase forest, Kaski, 1900 m, 16 August 2017, P. Bhandari, K. Shrestha, G. Thapamagar & D. Pathak 1008P (KATH). [CE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, E Asia and SE Asia].

Calanthe tricarinata Lindl.

Terrestrial on Oak forest floor at 2300 m. Fl. May-Jun. Panchase forest, Kaski, 2300 m, 17 April 2018, P. Bhandari P1607 (KATH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau and E Asia].

Cheirostylis Blume (55/1/1 species)

Cheirostylis griffithii Lindl.

Saprophytic growing on the floor of *Schima-Castanopsis* forest between 900-2000 m. Fl. Sep. Panchase forest, Kaski,

900 m, 17 March 2018, P. Bhandari P1702 (KATH). [C Nepal, W Himalaya, E Himalaya, Assam-Burma, S Asia, E Asia and SE Asia].

Chiloschista Lindl. (20/3/1 species)

Chiloschista usneoides (D.Don) Lindl.; *Epidendrum usneoides* D.Don

Epiphytic on tree trunks (*Castanopsis indica*) at 900-1900 m. Fl. May-Jun. Thulakhet, Bhadaure Tamage VDC, Kaski, 900 m, 04 May 2015, P. Bhandari P1356 (TUCH). [C Nepal, W Himalaya and E Himalaya].

Cleisostoma Blume (99/4/1 species)

***Cleisostoma filiforme** (Lindl.) Garay; *Sarcanthus filiformis* Lindl.

Epiphytic on tree trunks and branches within 1000-1200 m. Fl. Aug-Sep. [CE Nepal, E Himalaya, Assam-Burma, E Asia and SE Asia].

Coelogyne Lindl. (ca. 200/11/6 species)

***Coelogyne corymbosa** Lindl.

Epiphytic on tree trunks (*Rhododendron* forest) within 1600-2300 m. Fl. Mar-Apr. [CE Nepal, E Himalaya, Tibetan Plateau, Assam-Burma, S Asia and E Asia].

Coelogyne cristata Lindl.

Epiphytic on tree trunks and major branches (*Schima wallichii*, *Daphniphyllum himalayense*, *Rhododendron arboreum*, *Alnus nepalensis*, *Ilex fragilis*) between 1600-2300 m. Fl. Mar-Apr. Panchase forest, Kaski, 2000 m, 21 March 2015, P. Bhandari, S. Budhamagar & A. Bhandari P1289 (KATH & TUCH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau and S Asia].

***Coelogyne flaccida** Lindl.

Epiphytic on tree trunks near streams and water bodies. Fl. Mar-Apr. [C Nepal, E Himalaya, Assam-Burma, E Asia and SE Asia].

Coelogyne fuscescens Lindl.; *Coelogyne fuscescens* var. *viridiflorum* Pradhan

Epiphytic on tree trunks and lower branches (*Schima wallichii*, *Castanopsis* species, *Daphniphyllum himalayense*, *Rhododendron arboreum*, *Alnus nepalensis*, *Engelhardia spicata*, *Ilex fragilis*, *Lyonia ovalifolia*, *Myrica esculenta*, *Prunus cerasoides*) or lithophytic between 1100-2100 m. Fl. Dec-Feb. Panchase forest, Kaski, 1940 m, 09 January 2015, P. Bhandari & Y.P. Paudel P1256 (TUCH). [CE Nepal, E Himalaya, Assam-Burma, E Asia and SE Asia].

Coelogyne nitida (Wall. ex D.Don) Lindl.; *Cymbidium nitidum* Wall. ex D.Don

Epiphytic on tree trunks and lower branches (*Schima wallichii*, *Castanopsis indica*, *Daphniphyllum himalayense*, Oaks, Laurels) between 1600-2500 m. Fl. May-Jul. Panchase forest, Kaski, 1950 m, 02 June 2014, P. Bhandari & S. Budhamagar P417 (TUCH). [WCE Nepal, E Himalaya, Assam-Burma, E Asia and SE Asia].

Coelogyne prolifera Lindl.; *Coelogyne flavida* Hook.f. ex Lindl.

Epiphytic on tree trunks and branches (*Schima wallichii*,

Castanopsis indica, *Diospyrus lancifolia*, *Ficus neerifolia*, *Daphniphyllum himalayense*, *Lyonia ovalifolia*, *Engelhardia spicata*) between 900-1900 m. Fl. May-Jun. Panchase forest, Kaski, 1510 m, 04 June 2014, P. Bhandari, S. Budhamagar & R. Chhetri P509 (TUCH & KATH). [CE Nepal, E Himalaya, Assam-Burma, E Asia and SE Asia].

Crepidium Tausch (280/2/1 species)

Crepidium acuminatum (D.Don) Szlach.; *Malaxis acuminata* D.Don

Terrestrial on *Daphniphyllum* forest between 1400-1900 m. Fl. Jun-Jul. Panchase forest, Kaski, 1400 m, 11 September 2014, P. Bhandari & S. Budhamagar P873 (KATH & TUCH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia, SE Asia and Australasia].

Cryptochilus Wall. (8/2/1 species)

Cryptochilus luteus Lindl.

Epiphytic on tree trunks and branches (*Daphniphyllum himalayense*, *Quercus semecarpifolia*, *Lyonia ovalifolia*) between 1900-2500 m. Fl. Jun-Aug. Panchase forest, Kaski, 2200 m, 10 August 2014, P. Bhandari & A. Bhandari P773 (KATH & TUCH). [WCE Nepal, W Himalaya, E Himalaya, Assam-Burma, E Asia SE Asia].

Cymbidium Sw. (55/9/6 species)

Cymbidium aloifolium (L.) Sw.; *Epidendrum aloifolium* L.

Epiphytic on tree trunks and branches (*Castanopsis indica*, *Schima wallichii*) or lithophytic to 1200 m. Fl. Jun-Jul. Thulakhet to Harpan, Panchase, Kaski, 1200 m, 27 June 2018, P. Bhandari P1637 (KATH). [WCE Nepal, W Himalaya, E Himalaya, Assam-Burma, S Asia, E Asia and SE Asia].

Cymbidium elegans Lindl.; *Cymbidium longifolium* D.Don
Epiphytic on tree trunks and branches (*Daphniphyllum himalayense*, Oak, *Lindera pulcherrima*) between 2000-2500 m. Fl. Oct-Jan. Panchase forest, Kaski, 2260 m, 05 October 2014, P. Bhandari & A. Bhandari P1220 (TUCH). [CE Nepal, E Himalaya, Tibetan Plateau, Assam-Burma and E Asia].

Cymbidium erythraeum Lindl.

Epiphytic on tree trunks and branches (*Daphniphyllum himalayense*, *Quercus semecarpifolia*) between 2200-2300 m. Fl. Oct-Nov. Panchase forest, Kaski, 2260 m, 05 October 2014, P. Bhandari & A. Bhandari P1219 (TUCH). [CE Nepal, E Himalaya, Tibetan Plateau, Assam-Burma, S Asia, E Asia and SE Asia].

Cymbidium × gammieanum King & Pantl.; *Cyperorchis gammieana* (King & Pantl) Schltr.

Epiphytic on tree trunks and branches (*Daphniphyllum himalayense*, Oak) at 2200 m. Fl. Oct-Nov. Panchase forest, Kaski, 2200 m, 09 November 2002, A. Subedi, R.P. Chaudhary & L.R. Shakya 1023 (TUCH!). [CE Nepal and E Himalaya].

Cymbidium lancifolium Hook.

Terrestrial on *Schima-Castanopsis* forest floor between 1800-1900 m. Fl. Sep-Oct. Panchase forest, Kaski, 1900 m,

15 July 2002, A. Subedi, R.P. Chaudhary & L.R. Shakya 94 (TUCH!). [C Nepal, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Cymbidium mannii Reichenb.; *Cymbidium bicolor* Lindl. var. *obtusum* Du Puy & P.J.Cribb

Epiphytic on tree trunks and branches (*Castanopsis indica*) or lithophytic between 1000-1300 m. Fl. Mar-May. Harpan village, Kaski, 1300 m, 23 March 2015, P. Bhandari & S. Budhamagar P1548 (TUCH). [WCE Nepal, Assam-Burma, S Asia and SE Asia].

Dendrobium Sw. (ca. 1100/26/15 species)

Dendrobium amoenum Wall. ex Lindl.; *Callista amoena* (Wall. ex Lindl.) Kuntze

Epiphytic on tree trunks and branches (*Schima wallichii*, *Daphniphyllum himalayense*, *Alnus nepalensis*) between 1500-1800 m. Fl. May-Jun. Panchase forest, Kaski, 1700 m, 04 June 2014, P. Bhandari & S. Budhamagar P507 (TUCH). [CE Nepal, W Himalaya, E Himalaya, Assam-Burma and S Asia].

Dendrobium amplum Lindl.; *Epigeneium amplum* (Lindl.) Summerh.

Epiphytic on tree trunks and branches (*Daphniphyllum himalayense*) between 1800-1900 m. Fl. Aug-Oct. Panchase forest, Kaski, 1890 m, 06 October 2014, P. Bhandari P1239 (TUCH). [CE Nepal, E Himalaya, Tibetan Plateau, E Asia and SE Asia].

***Dendrobium aphyllum** (Roxb.) C.E.C.Fisch.; *Limodorum aphyllum* Roxb.

Epiphytic on tree trunks (*Castanopsis* forest) up to 1400 m. Fl. May-Jun. [CE Nepal, E Himalaya, Assam-Burma, S Asia, SE Asia and Australasia].

Dendrobium chryseum Rolfe

Epiphytic on tree trunks and branches (*Schima wallichii*, *Castanopsis indica*) between 1100-1200 m. Fl. Aug-Sep. Ghaticida to Makwanpur, Panchase forest, Kaski, 1100 m, 15 September 2017, P. Bhandari, K. Shrestha, A. Bhandari, & M. Paudel, P1698 (KATH). [C Nepal, W Himalaya, E Himalaya, Assam-Burma, E Asia and SE Asia].

***Dendrobium crepidatum** Lindl. & Paxton

Epiphytic on tree trunks (*Castanopsis* forest) up to 1400 m. Fl. Apr. [C Nepal, W Himalaya, E Himalaya, Assam-Burma, E Asia and SE Asia].

***Dendrobium densiflorum** Wall.

Epiphytic on tree trunks on *Castanopsis* forest. Fl. Apr-May. [CE Nepal, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Dendrobium denudans D.Don

Epiphytic on tree trunks and branches (*Schima wallichii*) between 1500-1600 m. Fl. Aug-Sep. Panchase forest, Kaski, 1500 m, 10 September 2014, P. Bhandari & A. Bhandari P853 (TUCH). [WCE Nepal, W Himalaya and E Himalaya].

Dendrobium eriiflorum Griff.

Epiphytic on tree trunks and branches (*Schima wallichii*, *Castanopsis indica*, *Rhododendron arboreum*, *Alnus*

nepalensis, *Albizia* species) or lithophytic between 900-1900 m. Fl. Sep-Oct. Panchase forest, Kaski, 1900 m, 05 October 2014, P. Bhandari P1549 (TUCH). [WCE Nepal, E Himalaya, Assam-Burma, S Asia and SE Asia].

Dendrobium heterocarpum Wall. ex Lindl.

Epiphytic on tree trunks and branches (*Schima wallichii*, *Castanopsis indica*, *Lyonia ovalifolia*) between 1300-1600 m. Fl. Mar-Apr. Panchase forest, Kaski, 1600 m, 20 March 2015, P. Bhandari, S. Budhamagar & A. Bhandari P1283 (KATH & TUCH). [WCE Nepal, W Himalaya, E Himalaya, Assam-Burma, S Asia, E Asia and SE Asia].

Dendrobium longicornu Lindl.

Epiphytic on tree trunks and branches (*Daphniphyllum himalayense*, *Ilex* species, Laurel, *Eurya cerasifolia*, *Quercus lamellosa*) between 1800-2500 m. Fl. Oct-Nov. Panchase forest, Kaski, 1800 m, 04 October 2014, P. Bhandari & A. Bhandari P1211 (TUCH). [CE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

***Dendrobium moniliforme** (L.) Sw.; *Epidendrum moniliforme* L., *Dendrobium candidum* Wall ex Lindl.

Epiphytic on Oak and *Rhododendron* forest. Fl. May-Jun. [CE Nepal, W Himalaya, E Himalaya, Assam-Burma, E Asia and SE Asia].

***Dendrobium moschatum** (Buch.-Ham.) Sw.

Epiphytic on tree trunks (*Castanopsis* forest) up to 1400 m. Fl. Jun-Jul. [CE Nepal, W Himalaya, E Himalaya, Assam-Burma, E Asia and SE Asia].

***Dendrobium polyanthum** Wall. ex Lindl.; *Dendrobium primulinum* Lindl.

Epiphytic on tree trunks (*Castanopsis* forest) up to 1400 m. Fl. Apr. [WC Nepal, W Himalaya, Assam-Burma, E Asia and SE Asia].

Dendrobium porphyrochilum Lindl.

Epiphytic on tree trunks (*Daphniphyllum himalayense*, *Lindera pulcherrima*, *Rhododendron arboreum*, *Lyonia ovalifolia*, *Quercus semecarpifolia*, *Symplocos ramosissima*) between 2300-2500 m. Fl. Jun-Jul. Panchase forest, Kaski, 2500 m, 07 June 2014, P. Bhandari, R. Chhetri & S. Budhamagar P599 (KATH & TUCH). [CE Nepal, E Himalaya, Assam-Burma, E Asia and SE Asia].

***Dendrobium transparens** Wall. ex Lindl.

Epiphytic on tree trunks (*Castanopsis* forest) up to 1400 m. Fl. May-Jun. [WCE Nepal, W Himalaya, E Himalaya, Assam-Burma, E Asia and SE Asia].

Dienia Lindl. (6/4/2 species)

Dienia ophrydis (J.Koenig) Seidenf.; *Epidendrum ophrydis* J.Koenig, *Malaxis ophrydis* (J.Koenig) Ormerod

Terrestrial on *Schima-Castanopsis* forest floor between 900-1500 m. Fl. Jun-Jul. Ghatichida, Panchase forest, Kaski, 900 m, 28 June 2018, P. Bhandari & B. Ojha P1663 (KATH). [CE Nepal, W Himalaya, E Himalaya, Assam-Burma, S Asia, E Asia, SE Asia and Australasia].

Eria Lindl. (ca. 54/3/1 species)

Eria coronaria (Lindl.) Rchb.f.; *Coelogyne coronaria* Lindl.

Epiphytic on tree trunks and branches (*Daphniphyllum himalayense*, *Quercus lamellosa*, *Schima wallichii*) between 1500-2300 m. Fl. Nov-Dec. Panchase forest, 7500 ft., 1954, J.D.A. Stainton 9331 (BM, E n.v.). Panchase forest, Kaski, 1800 m, 14 December 2015, P. Bhandari & K. Shrestha P1693 (KATH). [CE Nepal, E Himalaya, Tibetan Plateau, E Asia and SE Asia].

Galeola Lour. (10/1/1 species)

Galeola lindleyana (Hook.f. & Thomson) Rchb.f.; *Cyrtosia lindleyana* Hook.f. & J.W.Thomson

Saprophytic growing *Daphniphyllum* forest floor at 1950 m. Fl. Jun-Jul. Panchase forest, Kaski, 1950 m, 27 June 2018, P. Bhandari P1656 (KATH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, E Asia and SE Asia].

Gastrochilus D.Don (ca. 66/7/5 species)

Gastrochilus affinis (King & Pantl.) Schltr.; *Saccolabium affine* King & Pantl.

Epiphytic on lower branches (*Quercus semecarpifolia*, *Rhododendron arboreum*, *Lindera pulcherrima*) above 2400 m. Fl. May-Jun. Panchase forest, Kaski, 2490 m, 07 June 2014, P. Bhandari, S. Budhamagar & R. Chhetri P600 (KATH). [CE Nepal, E Himalaya and E Asia].

Gastrochilus calceolaris (Buch.-Ham. ex Sm.) D.Don; *Aerides calceolaris* Buch.-Ham. ex Sm, *Gastrochilus calceolaris* var. *biflora* L.R.Shakya & M.R.Shrestha

Epiphytic on tree trunks and branches (*Daphniphyllum himalayense*, *Castanopsis indica*, *Schima wallichii*, *Rhus succadaena*) between 1100-2000 m. Fl. Mar-Apr. Panchase forest, Kaski, 1940 m, 21 March 2015, P. Bhandari, S. Budhamagar & A. Bhandari P1288 (KATH & TUCH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Gastrochilus distichus (Lindl.) Kuntze; *Saccolabium distichum* Lindl.

Epiphytic on tree trunks and branches (*Daphniphyllum himalayense*, *Neolitsea pallens*, *Quercus semecarpifolia*, *Rhododendron arboreum*, *Berberis* species) between 1800-2500 m. Fl. Jan-Feb. Panchase forest, Kaski, 2500 m, 09 January 2015, P. Bhandari & Y.P. Paudel P1264 (TUCH). [CE Nepal, W Himalaya, E Himalaya, Tibetan Plateau and E Asia].

Gastrochilus nepalensis Raskoti

Epiphytic on tree branches at about 2350 m. Fl. Mar. Above Deurali on the way to Kande, Kaski, 2350 m, 22 March 2007, BB Raskoti 00745 (KATH!). **Endemic to Panchase.** Type: Central Nepal, Kaski, above Deurali on the way to Kande, 2350 m, 22 March 2007, BB Raskoti 00745 (holotype: KATH!).

Gastrochilus pseudodistichus (King & Pantl.) Schltr.; *Saccolabium pseudodistichum* King & Pantl.

Epiphytic on tree trunks (*Daphniphyllum himalayense*, *Berberis* bushes) between 1800-2500 m. Fl. Sep-Oct. Panchase forest, Kaski, 2020 m, 05 October 2014, P. Bhandari & A. Bhandari P1217 (TUCH). [C Nepal, E Himalaya, E Asia and SE Asia].

Goodyera R.Br. (ca. 100/10/4 species)

Goodyera foliosa (Lindl.) Benth. ex C.B. Clarke; *Georchis foliosa* Lindl.

Terrestrial on *Daphniphyllum* and Oak forest floor between 2000-2200 m. Fl. Sep-Oct. Panchase forest, Kaski, 2100 m, 05 October 2014, P. Bhandari & A. Bhandari P1233 (TUCH). [CE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Goodyera procera (Ker Gawl.) Hook.; *Neottia procera* Ker Gawl.

Terrestrial on grassy slopes, roadsides, forest edges (*Schima-Castanopsis* forest) between 900-1300 m. Fl. May-Jun. Panchase forest, Kaski, 900-1200 m, P. Bhandari P1449 (KATH). [WC Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, S Asia, E Asia and SE Asia].

Goodyera recurva Lindl.

Epiphytic on tree trunks of *Neolitsea pallens*, *Viburnum erubescens* between 2300-2500 m. Fl. Sep-Oct. Panchase forest, Kaski, 2300-2450 m, 11 September 2017, P. Bhandari & A. Bhandari P1610 (KATH). [C Nepal, E Himalaya and E Asia].

Goodyera viridiflora (Blume) Lindl. ex D. Dietr.; *Neottia viridiflora* Blume

Terrestrial on the forest floor (*Schima-Castanopsis*, *Daphniphyllum* forest) between 1300-2000 m. Fl. Jul-Aug. Panchase forest, Kaski, 1300-2000 m, 17 August 2017, P. Bhandari and G. Thapamagar 1010P (KATH). [CE Nepal, W Himalaya, E Himalaya, E Asia, SE Asia and Australasia].

Habenaria Willd. (ca. 891/18/1 species)

Habenaria intermedia D. Don

Terrestrial on grassy slopes between 2000-2300 m. Fl. Jul-Aug. Bhanjyang, Panchase, Kaski, 2000 m, 18 August 2015, P. Bhandari 1448 (KATH). [WC Nepal, W Himalaya and Tibetan Plateau].

Hemipilia Lindl. (12/1/1 species)

Hemipilia cordifolia Lindl.

Terrestrial on temperate grassy slopes at 2100 m. Fl. Jul-Aug. Bhanjyang, Panchase, Kaski, 2100 m, 27 July 2002, A. Subedi 960 (TUCH!). [WC Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma and E Asia].

Herminium L. (50/24/4 species)

Herminium lanceum (Thunb. ex Sw.) Vuijk; *Ophrys lancea* Thunb. ex Sw.

Terrestrial on grassy slopes and forest floor (*Daphniphyllum* forest) between 1800-2000 m. Fl. Jul-Aug. Sidhane, Bhadaure Tamage VDC, Kaski, 1820 m, 09 August 2014, P. Bhandari & A. Bhandari P735 (TUCH). [WCE Nepal, W Himalaya, E Himalaya, Assam-Burma, Assam-Burma, E Asia and SE Asia].

***Herminium latilabre** (Lindl.) X.H. Jin, Schuit, Raskoti & L.Q. Huang; *Platanthera latilabris* Lindl.

Terrestrial on grassy slopes between 1700-2100 m. Fl. Jul. [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau and E Asia].

Herminium mackinsonii Duthie

Epiphytic on tree trunk of *Quercus semecarpifolia*, *Ilex fragilis* between 2300-2500 m. Fl. Jul-Aug. Panchase danda, Kaski, 2500 m, 17 August 2015, P. Bhandari & S. Budhamagar P1452 (TUCH & KATH). [WCE Nepal, W Himalaya and E Himalaya].

Herminium souliei (Finet) Rolfe; *Herminium angustifolium* var. *souliei* Finet

Terrestrial on grassy slopes at 2400 m. Fl. Jul-Aug. Panchase forest, Kaski, 2400 m, 12 July 2008, B. Raskoti 515 (KATH). [WCE Nepal, Tibetan Plateau and E Asia].

Liparis Rich. (ca. 436/18/5 species)

Liparis bootanensis Griff.

Epiphytic on tree trunks of *Quercus semecarpifolia* at 1600-2200 m. Fl. Aug-Sep. Panchase forest, Kaski, 02 August 2002, A. Subedi, R.P. Chaudhary & L.R. Shakya, 972 (TUCH!). [CE Nepal, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Liparis nervosa (Thunb.) Lindl.; *Ophrys nervosa* Thunb.

Terrestrial on the floor of *Schima-Castanopsis* forest at 1300 m. Fl. Jun-Jul. Panchase forest, Kaski, 1300 m, 27 June 2018, P. Bhandari P1660 (KATH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, S Asia, E Asia, SE Asia; widespread in Old and New World tropics].

Liparis petiolata (D. Don) P.F. Hunt & Summerh.; *Acianthus petiolatus* D. Don

Terrestrial on the forest floor (*Oak-Rhododendron* forest) between 2300-2500 m. Fl. Jul-Sep. Panchase forest, Kaski, 2410 m, 10 August 2014, P. Bhandari & A. Bhandari P765 (TUCH & KATH). [C Nepal, E Himalaya, Tibetan Plateau, E Asia and SE Asia].

Liparis resupinata Ridl.

Epiphytic on tree trunks (*Alnus nepalensis*, *Macaranga pustulata*, *Daphniphyllum himalayense*, *Lyonia ovalifolia*, *Rhododendron arboreum*) between 1500-2100 m. Fl. Oct-Jan. Bhadaure Deurali, Panchase, Kaski, 1850 m, 08 January 2015, P. Bhandari & Y.P. Paudel P1250 (KATH & TUCH). [CE Nepal, W Himalaya, E Himalaya, Tibetan Plateau and E Asia].

***Liparis viridiflora** (Blume) Lindl.

Epiphytic on Oak. Fl. Nov-Dec. [CE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, S Asia, E Asia, SE Asia and Australasia].

Luisia Gaudich. (ca. 44/2/1 species)

Luisia tristis (G. Forst.) Hook. f.; *Epidendrum triste* G. Forst

Epiphytic on tree trunks (*Schima wallichii*, *Castanopsis indica*, *Ficus religiosa*, *Bombax ceiba*) between 900-1200 m. Fl. Apr-May. Thulakhet, Panchase, Kaski, 1200 m, 27 June 2018, P. Bhandari P1641 (KATH). [WCE Nepal, W Himalaya, E Himalaya and S Asia].

Mycaranthes Blume (37/1/1 species)

Mycaranthes floribunda (D. Don) S.C. Chen & J.J. Wood.; *Dendrobium floribundum* D. Don

Epiphytic on tree trunks and upper branches (*Schima*

wallichii, *Castanopsis indica*, *Lyonia ovalifolia*, *Diospyrus lancifolia*) between 900-1500 m. Fl. Apr-May. Between Ghatichida to Damdame, Panchase, Kaski, 900-1000 m, 06 May 2018, P. Bhandari P1623 (KATH). [CE Nepal, E Himalaya, Assam-Burma, E Asia and SE Asia].

Neottia Guett. (72/8/1 species)

Neottia longicaulis (King & Pantl.) Szlach.; *Listera longicaulis* King & Pantl.

Terrestrial on Oak-*Rhododendron* forest floor between 2400-2500 m. Fl. Jun-Jul. Panchase forest, Kaski, 2400-2500 m, 27 June 2018, P. Bhandari P1711, KATH030407. [WC Nepal, E Himalaya and Tibetan Plateau].

Nervilia Comm. ex Gaudich. (75/6/2 species)

Nervilia crociformis (Zoll. & Moritz) Seidenf.; *Bolborchis crociformis* Zoll. & Moritz

Terrestrial on *Schima-Castanopsis* forest floor between 900-1000 m. Fl. Apr-May. Ghatichida, Panchase forest, Kaski, 900-1000 m, 28 June 2018, P. Bhandari & B. Ojha P1635 (KATH). [E Nepal, W Himalaya, E Himalaya, E Asia, SE Asia, Africa and Australasia].

Nervilia macroglossa (Hook.f.) Schltr.; *Pogonia macroglossa* Hook.f.

Terrestrial on *Schima-Castanopsis* forest floor at 1300 m. fl. Apr-May. Panchase forest, Kaski, 1300 m, 27 June 2018, P. Bhandari P1659 (KATH). [E Nepal, E Himalaya, Assam-Burma and SE Asia].

Oberonia Lindl. (ca. 306/18/7 species)

***Oberonia acaulis** Lindl.; *Oberonia myriantha* Lindl.

Epiphytic on tree branches within 1400-1800 m. Fl. Sep-Oct. [CE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Oberonia ensiformis (Sm.) Lindl.; *Malaxis ensiformis* Sm.

Epiphytic on tree trunks (*Schima wallichii*, *Castanopsis indica*) between 1400-1800 m. Fl. Sep-Oct. Panchase forest, Kaski, 1400-1800 m, P. Bhandari 1495 (KATH). [CE Nepal, W Himalaya, E Himalaya, S Asia, E Asia and SE Asia].

Oberonia falcata King & Pantl.

Epiphytic on tree trunks, branches and shrubs (*Daphniphyllum himalayense*, *Quercus lamellosa*, *Rhododendron arboreum*, *Berberis* species) between 1700-2300 m. Fl. Jul-Sep. Sidhane, Bhadaure Tamage VDC, Kaski, 1820 m, 09 August 2014, P. Bhandari & A. Bhandari P736 (KATH & TUCH). [CE Nepal, E Himalaya, E Asia and SE Asia].

Oberonia nepalensis L.R.Shakya & R.P.Chaudhary

Epiphytic on tree trunks (*Schima wallichii*, *Castanopsis indica*, *Ficus lacor*, *Albizia* species) between 900-1500 m. Fl. Mar-Apr. Panchase forest, Kaski, 1460 m, 22 March 2015, P. Bhandari & S. Budhamagar P1329 (KATH & TUCH).

Endemic to Central Nepal. *Type:* Kaski, Pokhara (around Annapurna Conservation Zone), ca. 1100 m, L.R. Shakya, R.L. Singh & R.P. Chaudhary 27 (holotype: KATH!; isotype: TUCH!).

Oberonia obcordata Lindl.; *Malaxis obcordata* (Lindl.)

Rchb.f.

Epiphytic on tree branches and trunks (*Lyonia ovalifolia*, *Schima wallichii*) between 1300-1600 m. Fl. Mar-Apr. Bhadaure Deurali, Kaski, 1600 m, 20 March 2015, P. Bhandari, S. Budhamagar & A. Bhandari P1272 (KATH & TUCH). [CE Nepal, E Himalaya, Tibetan Plateau, S Asia, E Asia and SE Asia].

Oberonia pachyrachis Rchb.f. ex Hook.f.

Epiphytic on tree trunks (*Schima wallichii*) between 1300-1600 m. Fl. Mar-Apr. Harpan, Kaski, 1360 m, 22 March 2015, P. Bhandari & S. Budhamagar P1332 (KATH & TUCH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Oberonia recurva Lindl.; *Oberonia parvula* King & Pantl.

Epiphytic on tree trunks (*Schima wallichii*) between 1300-1400 m. Fl. Mar-Apr. Harpan, Kaski, 1360 m, 22 March 2015, P. Bhandari & S. Budhamagar P1333 (KATH & TUCH). [C Nepal, E Himalaya and E Asia].

Odontochilus Blume (ca. 55/4/4 species)

Odontochilus crispus (Lindl.) Hook.f.; *Anoectochilus crispus* Lindl.

Terrestrial on *Daphniphyllum* forest floor at 1900 m. Fl. Aug-Sep. Panchase forest, Kaski, 1900 m, 17 August 2017, P. Bhandari, K. Shrestha, G. Thapamagar & D. Pathak 1006P (KATH). [CE Nepal, E Himalaya, Tibetan Plateau and E Asia].

Odontochilus elwesii C.B.Clarke ex Hook.f.

Terrestrial on the forest floor, near streamside (*Daphniphyllum* forest) at 1900 m. Fl. Jul-Aug. Panchase forest, Kaski, 1900 m, 20 July 2018, P. Bhandari P1702, KATH030406. [C Nepal, E Himalaya, Assam-Burma, E Asia and SE Asia].

Odontochilus lanceolatus (Lindl.) Blume; *Anoectochilus lanceolatus* Lindl.

Terrestrial on the forest floor and rock crevices (*Daphniphyllum himalayense*, *Quercus lamellosa*) between 1700-2100 m. Fl. Jul-Aug. Panchase forest, Kaski, 1700 m, 17 August 2017, P. Bhandari, K. Shrestha, G. Thapamagar & D. Pathak P1669 (KATH). [CE Nepal, E Himalaya, Assam-Burma, S Asia, E Asia and SE Asia].

Odontochilus nandae Raskoti & H.Kurzweil

Terrestrial on the forest floor (*Daphniphyllum* forest, Oak-*Rhododendron* forest) between 2100-2400 m. Fl. Jul-Aug. Panchase forest, Kaski, 2100-2400 m, 17 August 2017, P. Bhandari, K. Shrestha, G. Thapamagar & D. Pathak 1009P (KATH). **Endemic to Panchase.** *Type:* Kaski, Panchase, 2400 m, BB Raskoti 119 (holotype: KATH!).

Otochilus Lindl. (5/4/3 species)

***Otochilus albus** Lindl.

Epiphytic on tree trunks and lower branches (*Schima wallichii*, *Castanopsis indica*) between 1000-1700 m. Fl. Oct-Nov. [CE Nepal, E Himalaya, Assam-Burma, E Asia and SE Asia].

Otochilus fuscus Lindl.

Epiphytic on tree trunks and branches (*Daphniphyllum himalayense*) between 1700-1900 m. Fl. Dec-Jan. Bhadaure Deurali, Kaski, 1850 m, 08 January 2015, P. Bhandari & Y.P. Paudel P1252 (TUCH & KATH). [CE Nepal, E Himalaya, Assam-Burma, E Asia and SE Asia].

Otochilus lancilabius Seidenf.

Epiphytic on tree trunks and branches (*Daphniphyllum himalayense*, Oak, *Castanopsis* species, *Schima wallichii*, *Lyonia ovalifolia*, *Rhus succedanea*, *Engelhardia spicata*, *Myrica esculenta*, *Diospyrus lancifolia*) between 900-2400 m. Fl. Dec-Jan. Panchase forest, Kaski, 2350 m, 13 December 1973, D.P. Joshi & M.M. Amatya 73/1171 (KATH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma and SE Asia].

Panisea (Lindl.) Lindl. (13/3/2 species)

Panisea demissa (D. Don) Pfitzer; *Dendrobium demissum* D. Don

Epiphytic on tree trunks and lower branches (*Daphniphyllum himalayense*, *Quercus lamellosa*) between 2100-2300 m. Fl. Sep-Oct. Panchase forest, Kaski, 2260 m, 05 October 2014, P. Bhandari & A. Bhandari P1221 (KATH & TUCH). [CE Nepal, E Himalaya, Assam-Burma, S Asia, E Asia and SE Asia].

Panisea panchaseensis Subedi

Epiphytic on tree trunks and lower branches (Laurels, *Quercus lamellosa*, *Viburnum erubescens*) between 2300-2450 m. Fl. Nov-Dec. Panchase forest, Kaski, 2300-2450 m, 14 December 2015, P. Bhandari & K. Shrestha P1710 m (KATH). [C Nepal and E Himalaya]. **Panchase is the type locality for this species.** *Type:* Kaski, Panchase forest, 2200-2450 m, A. Subedi 1780 (holotype: KATH n.v.).

Papilionanthe Schltr. (10/2/1 species)

Papilionanthe uniflora (Lindl.) Garay; *Mesoclastes uniflora* Lindl.

Epiphytic on tree trunks and branches (*Daphniphyllum himalayense*, *Ilex fragilis*) between 2000-2100 m. Fl. Sep-Oct. Panchase forest, Kaski, 2100 m, 05 October 2014, P. Bhandari & A. Bhandari P1236 (TUCH). [CE Nepal and E Himalaya].

Peristylus Blume (103/11/1 species)

Peristylus aristatus Lindl.

Terrestrial on grassy slopes and *Daphniphyllum* forest between 1600-2100 m. Fl. Aug-Sep. Panchase forest, Kaski, 1900 m, 07 September 2014, P. Bhandari & S. Budhamagar P788 (TUCH). [CE Nepal, E Himalaya and S Asia].

Phalaenopsis Blume (74/3/2 species)

***Phalaenopsis difformis** (Wall. ex Lindl.) Kocyan & Schuit.; *Aerides difformis* Wall. ex Lindl., *Ornithochilus difformis* (Wall. ex Lindl.) Schltr.

Epiphytic on tree trunks between 1500-1700 m. Fl. Jun-Jul. [CE Nepal, W Himalaya, E Himalaya, Assam-Burma, E Asia and SE Asia].

Phalaenopsis taenialis (Lindl.) Christenson & Pradhan;

Aerides taenialis Lindl., *Kingidium taenialis* (Lindl.) P.F. Hunt

Epiphytic on tree trunks and branches (*Ficus neerifolia*, *F. lacor*, *F. glaberrima*) between 1400-1800 m. Fl. Apr-Jul. Bhadaure Deurali, Panchase, Kaski, 1650 m, 05 May 2018, P. Bhandari P1622 (KATH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Pholidota Lindl. (40/5/4 species)

Pholidota articulata Lindl.; *Coelogyne articulata* (Lindl.) Rchb.f.

Epiphytic on tree trunks and branches (*Quercus lamellosa*, *Daphniphyllum himalayense*, *Rhododendron arboreum*, *Alnus nepalensis*, *Engelhardia spicata*, *Ilex fragilis*, *Lindera pulcherrima*, *Schima wallichii*) between 1100-1800 m. Fl. Jul-Aug. Panchase forest, Kaski, 02 August 2014, A. Subedi, 973 (TUCH!). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

***Pholidota imbricata** Hook.

Epiphytic on *Schima-Castanopsis* forest between 1000-1800 m. Fl. Jul-Aug. [CE Nepal, E Himalaya, Assam-Burma, S Asia, E Asia and SE Asia].

Pholidota pallida Lindl.

Epiphytic on tree trunks and branches (*Castanopsis indica*, *Schima wallichii*, *Engelhardia spicata*, *Myrica esculenta*) or lithophytic between 1100-1400 m. Fl. Jun-Jul. Panchase forest, Kaski, 1200-1400 m, 06 June 2017, P. Bhandari & A. Bhandari P1665 (KATH). [WCE Nepal, E Himalaya, Assam-Burma, E Asia and SE Asia].

Pholidota protracta Hook.f.

Epiphytic on tree trunks (*Daphniphyllum himalayense*, *Rhododendron arboreum*, *Ilex* species) between 1900-2100 m. Fl. Sep-Oct. Panchase forest, Kaski, 2020 m, 05 October 2014, P. Bhandari & A. Bhandari P1218 (TUCH & KATH). [CE Nepal, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].

Phreatia Lindl. (ca. 219/1/1 species)

Phreatia elegans Lindl.; *Thelasis elegans* (Lindl.) Blume

Epiphytic on tree trunks and branches (*Daphniphyllum himalayense*) between 1600-1700 m. Fl. Aug-Sep. Chapakot VDC, Panchase Protected Forest, Kaski, 1600 m, 09 August 2014, P. Bhandari & A. Bhandari P721 (TUCH & KATH). [C Nepal, E Himalaya, Tibetan Plateau, S Asia and SE Asia].

Pinalia Lindl. (ca. 160/18/8 species)

***Pinalia amica** (Rchb.f.) Kuntze; *Eria amica* Rchb.f.

Epiphytic on *Shorea robusta* forest within 900-1200 m. Fl. Mar-Apr. [C Nepal, W Himalaya, E Himalaya, Assam-Burma, E Asia and SE Asia].

***Pinalia apertiflora** (Summerh.) A.N. Rao; *Eria apertiflora* Summerh.

Epiphytic on *Schima-Castanopsis* and *Daphniphyllum* forest within 1400-1800 m. Fl. Jul-Aug. [WCE Nepal, E Himalaya, Assam-Burma and SE Asia].

Pinalia bipunctata (Lindl.) Kuntze; *Eria bipunctata* Lindl.

- Epiphytic on tree trunks and branches (*Schima wallichii*, *Daphniphyllum himalayense*, *Engelhardia spicata*) between 1400-1800 m. Fl. Sep-Oct. Panchase forest, Kaski, 1500 m, 10 September 2014, P. Bhandari & S. Budhamagar P852 (TUCH & KATH). [C Nepal, W Himalaya, E Himalaya, E Asia and SE Asia].
- ***Pinalia bractescens** (Lindl.) Kuntze; *Eria bractescens* Lindl. Epiphytic on *Schima-Castanopsis* and *Daphniphyllum* forest within 1400-1800 m. Fl. Jul-Aug. [CE Nepal, Assam-Burma and SE Asia].
- Pinalia excavata** (Lindl.) Kuntze; *Eria excavata* Lindl. Epiphytic on tree trunks and branches (*Quercus semecarpifolia*, *Rhododendron arboreum*, *Daphniphyllum himalayense*) within 2300-2500 m. Fl. May-Jun. Panchase forest, Kaski, 2300 m, 02 August 2002, A. Subedi 957 (TUCH!). [C Nepal, E Himalaya and Tibetan Plateau].
- Pinalia graminifolia** (Lindl.) Kuntze; *Eria graminifolia* Lindl. Epiphytic on branches (*Rhododendron arboreum*, *Quercus semecarpifolia*, *Lyonia ovalifolia*, *Daphniphyllum himalayense*) between 2300-2500 m. Fl. Jul-Aug. Panchase forest, Kaski, 2500 m, 10 August 2014, P. Bhandari & A. Bhandari P757 (TUCH & KATH). [CE Nepal, E Himalaya, Tibetan Plateau, Assam-Burma and E Asia].
- Pinalia pokharensis** (Bajrach., Subedi & K.K.Shrestha) Schuit., Y.P.Ng & H.A.Pedersen, *Eria pokharensis* Bajrach., Subedi & K.K.Shrestha Epiphytic on tree trunks (*Daphniphyllum himalayense*, *Lindera pulcherrima*, *Quercus lamellosa*) between 2000-2100 m. Fl. Jun-Jul. Panchase forest, Kaski, 2020 m, 06 June 2017, P. Bhandari & A. Bhandari P1666 (KATH). **Endemic to Central Nepal.** Type: Kaski, Lumle, Pokhara, 900-1000 m, DM Bajracharya & A. Subedi CN220 (holotype: KATH!).
- Pinalia spicata** (D.Don) S.C.Chen & J.J.Wood; *Octomeria spicata* D.Don, *Eria spicata* (D.Don) Hand.-Mazz. Epiphytic on tree trunk and branches (*Schima wallichii*, *Castanopsis indica*, *Daphniphyllum himalayense*, *Bombax ceiba*, *Diospyrus lancifolia*) between 900-2200 m. Fl. Jul-Aug. Panchase forest, Kaski, 1500-2000 m, 14 August 2017, P. Bhandari, A. Bhandari, K. Shrestha, G. Thapamagar & D. Pathak 1001P (KATH). [C Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].
- Platanthera** Rich. (123/13/1 species)
- Platanthera biermanniana** (King & Pantl.) Kraenzl.; *Habenaria biermanniana* King & Pantl. Terrestrial on grassy slopes, edges of Oak forest between 2300-2400 m. Fl. Sep-Oct. Panchase forest, Kaski, 2300-2400 m, 08 October 2017, P. Bhandari, G. Thapamagar & D. Pathak P1704 (KATH). [CE Nepal and E Himalaya].
- Pleione** D.Don (24/5/2 species)
- Pleione humilis** (Sm.) D.Don; *Epidendrum humile* Sm. Epiphytic on tree trunks, lower and middle branches (*Daphniphyllum himalayense*, Oak, *Lyonia ovalifolia*, *Rhododendron arboreum*, Laurel, *Ilex fragilis*, *Symplocos ramosissima*, *Viburnum erubescens*) between 2100-2500 m. Fl. Jan-Mar. Panchase forest, Kaski, 2500 m, 09 January 2015, P. Bhandari & Y.P. Paudel P1257 (TUCH & KATH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia and SE Asia].
- Pleione praecox** (Sm.) D.Don; *Epidendrum praecox* Sm. Epiphytic on tree trunks, lower and middle branches (*Daphniphyllum himalayense*, Oak, *Rhododendron arboreum*, *Lyonia ovalifolia*, Laurel, *Viburnum erubescens*) between 2100-2500 m. Fl. Sep-Nov. Panchase forest, Kaski, 2300 m, November 2002, A. Subedi, R.P. Chaudhary & L.R. Shakya 996 (TUCH!). [CE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, S Asia, E Asia and SE Asia].
- Podochilus** Blume (65/1/1 species)
- Podochilus cultratus** Lindl. Epiphytic on tree trunks and lower branches (*Schima wallichii*, *Castanopsis indica*) between 900-1000 m. Fl. Jul-Aug. Makwanpur to Ghaticida, Panchase forest, Kaski, 900-1000 m, 24 August 2016, P. Bhandari P1613 (KATH). [CE Nepal, E Himalaya, Assam-Burma and SE Asia].
- Porpax** Lindl. (53/4/2 species)
- Porpax elwesii** (Rchb.f.) Rolfe; *Eria elwesii* Rchb.f. Epiphytic on tree trunks and lower branches (*Schima wallichii*, *Castanopsis indica*) between 900-1000 m. Fl. Jun-Jul. Below Damdame, Panchase, Kaski, 900-1000 m, 22 July 2018, P. Bhandari P1630 (KATH). [CE Nepal, E Himalaya, E Asia and SE Asia].
- Porpax muscicola** (Lindl.) Schuit, Y.P.Ng & H.A.Pedersen; *Dendrobium muscicola* Lindl., *Conchidium muscicola* (Lindl.) Rauschert, *Eria muscicola* (Lindl.) Lindl. Epiphytic on tree trunks (*Daphniphyllum himalayense*, *Schima wallichii*, *Lyonia ovalifolia*, *Myrica esculenta*) or lithophytic between 1300-1500 m. Fl. Jul-Aug. Bhadaure Deurali, Kaski, 1500 m, 10 September 2014, P. Bhandari & S. Budhamagar P854 (KATH & TUCH). [CE Nepal, W Himalaya, E Himalaya, Assam-Burma, S Asia, E Asia and SE Asia].
- Rhynchostylis** Blume (5/1/1 species)
- Rhynchostylis retusa** (L.) Blume; *Epidendrum retusum* L. Epiphytic on tree trunks and branches (*Castanopsis indica*, *Ficor lacor*, *Ficus religiosa*, *Diospyrus lancifolia*) between 1000-1800 m. Fl. Jun-Aug. Harpan, Panchase, Kaski, 1340 m, 22 March 2015, P. Bhandari & S. Budhamagar P1334 (TUCH). [WCE Nepal, W Himalaya, E Himalaya, Assam-Burma, S Asia, E Asia and SE Asia].
- Satyrium** Sw. (91/1/1 species)
- Satyrium nepalense** D.Don var. **nepalense** Terrestrial on grassy slopes, sometimes epiphytic (*Daphniphyllum himalayense*, *Quercus semecarpifolia*, *Symplocos ramosissima*, *Viburnum erubescens*) between 2200-2500 m. Fl. Aug-Oct. Panchase forest, Kaski, 2280-2500 m, 09 September 2014, P. Bhandari & S. Budhamagar P752 (TUCH & KATH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, S Asia and E Asia].
- Spiranthes** Rich. (37/2/2 species)

Spiranthes australis (R.Br.) Lindl.; *Neottia australis* R.Br.; *Spiranthes sinensis* var. *amoena* (M.Bieb.) H.Hara

Terrestrial on grassy slopes, edges of *Daphniphyllum* forest between 1800-2200 m. Fl. Aug-Oct. Panchase forest, Kaski, 1800-2200 m, 07 September 2014, P. Bhandari & S. Budhamagar P789 (TUCH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, Assam-Burma, E Asia, SE Asia, N Asia, SW Asia and Australasia].

Spiranthes flexuosa (Sm.) Lindl.; *Neottia flexuosa* Sm.

Terrestrial on grass slopes and *Schima-Castanopsis* forest edges between 1300-1700 m. Fl. Apr-May. Between Damdame to Sidhane, Panchase, Kaski, 1300-1400 m, 06 May 2018, P. Bhandari P1619 (KATH). [C Nepal, SW Asia and Europe].

Taeniophyllum Blume (241/1/1 species)

Taeniophyllum scaberulum Hook.f.

Epiphytic on tree trunks (*Daphniphyllum himalayense*, *Ilex excelsa*) between 1700-2000 m. Fl. Jul-Aug. Panchase forest, Kaski, 1940 m, 21 March 2015, P. Bhandari, A. Bhandari & S. Budhamagar P1286 (KATH). [C Nepal and S Asia (S India)].

Tainia Blume (29/1/1 species)

Tainia minor Hook.f.

Terrestrial on *Daphniphyllum* forest floor between 1900-2100 m. Fl. May-Jun. Panchase forest, Kaski, 1900 m, 02 June 2014, P. Bhandari, S. Budhamagar & C.K. Thakur, P441 (KATH). [CE Nepal, E Himalaya, Tibetan Plateau, Assam-Burma and E Asia].

Thunia Rchb.f. (5/1/1 species)

Thunia alba (Lindl.) Rchb.f.; *Phaius albus* Lindl.

var. **bracteata** (Roxb.) N.Pearce & P.J.Cribb; *Limodorum bracteatum* Roxb.

Epiphytic on tree trunks (*Ficus neerifolia*, *Ficus lacor*, *Eurya acuminata*, *Castanopsis indica*, *Diospyrus lancifolia*, *Schima wallichii*) between 900-1800 m. Fl. Jul-Aug. Tarebhir, Pumdi Bhumdi VDC, Kaski, 1460 m, 08 August 2014, P. Bhandari & A. Bhandari P685 (TUCH). [C Nepal, E Himalaya, SE Asia].

Vanda Jones ex R.Br. (81/7/1 species)

Vanda cristata Wall. ex Lindl.; *Aerides cristata* (Wall. ex Lindl.) Wall. ex Hook.f.

Epiphytic on tree trunks and branches (*Schima wallichii*, *Ficus lacor*, *Prunus cerasoides*, *Daphniphyllum himalayense*, *Alnus nepalensis*, *Albizia* species, *Castanopsis indica*, *Diospyrus lancifolia*, *Engelhardia spicata*, *Ilex excelsa*, *Phoebe* species) between 900-1900 m. Fl. May-Jun. Panchase forest, Kaski, 1510 m, 04 June 2014, P. Bhandari, S. Budhamagar & R. Chhetri P511a (TUCH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau, S Asia, E Asia and SE Asia].

Vandopsis Pfitzer (4/1/1 species)

Vandopsis undulata (Lindl.) J.J.Sm.; *Vanda undulata* Lindl.

Epiphytic on trunks and branches (*Daphniphyllum*

himalayense, *Quercus semecarpifolia*, *Berberis* scrubs) between 1800-2400 m. Fl. Apr-Jun. Bhanjyang to Panchase, Kaski, 2100-2400 m, 06 May 2018, P. Bhandari P1627 (KATH). [WCE Nepal, W Himalaya, E Himalaya, Tibetan Plateau and E Asia].

Zeuxine Lindl. (76/10/4 species)

Zeuxine affinis (Lindl.) Benth. ex Hook.f.; *Monochilus affinis* Lindl.

Terrestrial on *Schima-Castanopsis* forest floor between 900-1100 m. Fl. Mar-Apr. Panchase forest, Kaski, 900-1100 m, 17 March 2018, P. Bhandari P1700 (KATH). [C Nepal, W Himalaya, E Himalaya, Assam-Burma, E Asia and SE Asia].

Zeuxine flava (Wall. ex Lindl.) Trimen; *Monochilus flavus* Wall. ex Lindl.

Terrestrial on *Schima-Castanopsis* forest floor between 900-1100 m. Fl. Feb-Mar. Panchase forest, Kaski, 900 m, 17 March 2018, P. Bhandari P1701 (KATH). [CE Nepal, W Himalaya, E Himalaya, Assam-Burma, E Asia and SE Asia].

Zeuxine longilabris Trimen

Terrestrial on *Schima-Castanopsis* forest floor between 900-1000 m. Fl. Apr-May. Ghatichida, Panchase, Kaski, 900-1000 m, 06 May 2018, P. Bhandari P1618 (KATH). [C Nepal, Assam-Burma and S Asia].

Zeuxine strateumatica (L.) Schltr.; *Orchis strateumatica* L.

Terrestrial on grassy slopes, near water bodies between 900-1000 m. Fl. Feb-Mar. Ghatichida, Panchase, Kaski, 900-1000 m, 14 February 2017, P. Bhandari P1603 (KATH). [WCE Nepal, W Himalaya, E Himalaya, Assam-Burma, S Asia, E Asia, SE Asia, SW Asia, S America and Australasia].

Note: '*' denote the species cited from Subedi et al. (2007).

Format of Checklist

Genus (species number distributed worldwide/Nepal/Panchase)

Species; *Basionym*, *Synonyms*

Habit/Habitat, Ecology (forest types, Host), Altitude.

Endemism (if endemic to Nepal). Flowering month. Representative collection. [Broad distribution]. Type (if endemic to Panchase).

Conclusion

This paper attempted to revise the species status on orchids of Panchase and reported 143 orchid taxa, with three endemic to the forest. Representing, nearly one third orchid species (28%) of Nepal, Panchase can be regarded as a hotspot of orchid diversity in Nepal and the forest should be conserved in the form of 'Panchase Orchid Sanctuary'.

The way forward

Orchid explorations have been frequently carried out in Panchase but the research on the spatial and

temporal distribution of orchid, the ecosystem services, their conservation and threat status in Panchase are lacking. The fulfilment of these gaps could give compelling information on orchids of Panchase and Central Nepal.

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