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**Three New Records of Orchids from Nepal**

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**Summary:** Three orchid species, *Ania penangiana* (Hook. f.) Summerh., *Neottia longicaulis* (King & Pantl.) Szlach., and *Odontochilus elwesii* C. B. Clarke ex Hook. f. (*Orchidaceae*) are newly reported from Nepal. Diagnostic characters, distribution notes, and a photograph are provided for each taxon.

Panchase forest is located in the Mid Hills of central Nepal, at the junction of three districts, Kaski, Parbat and Syangja, covering an altitude range of 900 to 2500 m. The cool and moist environment in the area supports diverse groups of plant species including 92 pteridophytes, five gymnosperms and 608 angiosperms (Bhandari 2015, Bhandari et al. 2016–2018, Thakur and Rajbhandary 2018). Housing at least 125 species of orchids with three endemics to the forest (*Eria pokharensis* Bajrach., Subedi & K. K. Shrestha, *Gastrochilus nepalensis* Raskoti, and *Odontochilus nandae* Raskoti & Kurzweil), Panchase is considered to be the hotspot of orchid diversity in Nepal (Bajracharya et al. 2003, Subedi et al. 2007, Subedi et al. 2011, Bhandari 2015, Bhandari et al. 2015, Raskoti 2015, Raskoti and Kurzweil 2015, Bhandari et al. 2016–2018).

While studying orchid diversity of Panchase forest in 2018, the authors collected three unfamiliar orchid species. After checking relevant literature (Lindley 1830–1840, Turner 1992, Pearce and Cribb 2002, Chen and Wood

2009, Li et al. 2014) and herbarium specimens, these species were identified as *Ania penangiana* (Hook. f.) Summerh., *Neottia longicaulis* (King & Pantl.) Szlach., and *Odontochilus elwesii* C. B. Clarke ex Hook. f. These taxa have not been reported from Nepal before (Hara et al. 1978, Press et al. 2000, Subedi et al. 2007, Rajbhandari and Baral 2010, Rokaya et al. 2013, Bhandari et al. 2016–2018, Rajbhandari and Rai 2017, Shrestha et al. 2018) and treated here as new records for orchid flora of Nepal. The localities of the three species in Panchase are also the western limit of distribution for each taxon.

**1) *Ania penangiana*** (Hook. f.) Summerh. in Bot. Mag. **161**: sub t. 9553 (1939). – *Tainia penangiana* Hook. f., Fl. Brit. India **5**(16): 820 (1890).

*Tainia hookeriana* King & Pantl. in J. Asiat. Soc. Bengal **64**(3): 336 (1896). – *Ascotainia hookeriana* (King & Pantl.) Ridl., Mat. Fl. Malay. Penins. **1**: 116 (1907). – *Ania hookeriana* (King & Pantl.) Tang & F. T. Wang ex Summerh. in Bot. Mag. **161**: t. 9553 (1939).

**Ecology:** It is a terrestrial orchid growing in humus-rich soil between altitudes 1000 to 1100 m under the forest composed of *Schima wallichii*, *Castanopsis indica*, *Diospyros lancifolia*, *Maesa chisia* and *Melastoma malabathricum*.

**Flowering:** March.

17(1–2): 1–4.

- Bhandari P. 2015. Flora of Panchase Protected Forest, Kaski District (Central Nepal). Master's Dissertation. Central Department of Botany, Tribhuvan University, Kirtipur, Kathmandu.
- Bhandari P., Budhamagar S. and Shrestha K. K. 2016–2018. A checklist of flowering plants of Panchase Protected Forest, Kaski district, central Nepal. *J. Nat. Hist. Mus.* **30**: 55–84.
- Bhandari P., Raskoti B. B. and Shrestha K. K. 2015. *Phreatia elegans* Lindley (*Orchidaceae*)—a new record for the flora of Nepal. *Pleione* **9**(2): 365–368.
- Chen S. C. and Wood J. J. 2009. *Tainia* Blume. In: Wu Z. Y., Raven P. H. and Hong D. Y. (eds.), *Flora of China* **25**: 80–285. Science Press, Beijing and Missouri Botanical Garden Press, St. Louis.
- Hara H., Stearn W. T. and Williams L. H. J. 1978. *Orchidaceae*. An Enumeration of the Flowering Plants of Nepal **1**: 30–58. British Museum (Natural History), London.
- Li L., Yan H.-F., Niu M., Tu T.-Y., Li S.-J. and Xing F.-W. 2014. Re-establishment of the genus *Ania* Lindl. (*Orchidaceae*). *PLoS ONE* **9**(7): e103129. doi:10.1371/journal.pone.0103129.
- Lindley J. 1830–1840. The Genera and Species of Orchidaceous Plants. Part 2. *Epidendreae*. Ridgways, London.
- Pearce N. and Cribb P. J. 2002. Orchids of Bhutan (Flora of Bhutan, **3**(3): 47–279). Royal Botanic Garden, Edinburgh & Royal Government of Bhutan.
- Press J. R., Shrestha K. K. and Sutton D. A. 2000. *Orchidaceae*. Annotated Checklist of the Flowering Plants of Nepal, pp. 208–226. The Natural History Museum, London.
- Rajbhandari K. R. and Baral S. R. 2010. *Orchidaceae*. In: Rajbhandari K. R. and Baral S. R., *Catalogue of Nepalese Plants I. Gymnosperms and Monocotyledons*, pp. 43–77. National Herbarium and Plant Laboratories, Godawari.
- Rajbhandari K. R. and Rai S. K. 2017. *Orchidaceae*. In: Rajbhandari K. R. and Rai S. K., *A Handbook of the Flowering Plants of Nepal 1*: 68–157. Department of Plant Resources, Kathmandu.
- Raskoti B. B. 2015. A new species of *Gastrochilus* and new records for the orchids of Nepal. *Phytotaxa* **233**(3): 179–184.
- Raskoti B. B. and Kurzweil H. 2015. *Odontochilus nandae* (*Orchidaceae*; *Cranichidae*; *Goodyerinae*), a new species from Nepal. *Phytotaxa* **233**(3): 293–297.
- Reichenbach H. G. 1857. Orchideae Zollingerianae itineris primi recensentur. *Bonplandia* **5**: 31–58.
- Rokaya M. B., Raskoti B. B., Timsina B. and Münzbergová Z. 2013. An annotated checklist of the orchids of Nepal. *Nord. J. Bot.* **31**: 511–550.
- Shrestha K. K., Bhattarai S. and Bhandari P. 2018. *Orchidaceae*. In: *Handbook of Flowering Plants of Nepal 1*: 92–157. Scientific Publishers, Jodhpur.
- Subedi A., Chaudhary R. P., Vermeulen J. J. and Gravendeel B. 2011. *Panisea panchaseensis*, sp. nov. (*Orchidaceae*) from central Nepal. *Nord. J. Bot.* **29**: 361–365.
- Subedi A., Subedi N. and Chaudhary R. P. 2007. Panchase Forest: an extraordinary place for wild orchids in Nepal. *Pleione* **1**: 23–31.
- Thakur C. and Rajbhandary S. 2018. Fern and fern allies of Panchase Protected Forest, Central Nepal. *J. Pl. Res.* **16**(1): 39–45.
- Turner H. 1992. A revision of the orchid genera *Ania* Lindley, *Hancockia* Rolfe, *Mischobulbum* Schltr. and *Tainia* Blume. *Orchid Monographs* **6**: 43–100.
- Xiang X.-G., Jin W.-T., Li D.-Z., Schuiteman A., Huang W.-C., Li J.-W., Jin X.-H. and Li Z.-Y. 2014. Phylogenetics of tribe *Collabieae* (*Orchidaceae*, *Epidendroideae*) based on four chloroplast genes with morphological appraisal. *PLoS ONE* **9**(1): e87625. doi:10.1371/journal.pone.0087625.

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ネパール新産のラン3種

Panchase forest はネパール中部に位置し、同国ラン科植物の多様性中心となっている。2018年にこの森で調査を行った結果、*Ania penangiana* (Hook. f.) Summerh., *Neottia longicaulis* (King & Pantl.) Szlach., *Odontochilus elwesii* C. B. Clarke ex Hook. f. の3種がネパールで初めて確認された。本稿では各種について、分類学的特徴や分布ノート、標本の証拠写真を付した。なお、このうち *Ania penangiana* は従来 *Tainia penangiana* Hook. f. とし

て知られていたものであるが、形態的特徴と分子系統学的解析の結果、現在では独立属 *Ania* Lindl. の1種として扱われている。

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