

Primula bellidifolia King ex Hook.f. : A New Record for the Flora of Nepal

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Abstract

Primula bellidifolia has been conformed to occur in Nepal.

Keywords: *Primula*, Kanchenjunga conservation area, Flora of Nepal

Introduction

Primula L., one of the largest genera of Primulaceae, includes ca. 500 species mostly indigenous to the North Temperate Zone with its high species diversity in the mountain ranges of East Asia (Hu & Kelso, 1996; Wang et al., 2022). In Nepal the genus is represented by 64 species (Shrestha et al., 2022). During a field visit in September 2023 in Kanchenjunga Conservation Area (KCA), Taplejung District, East Nepal, some specimens of *Primula* was collected. These specimens have been identified as *Primula bellidifolia*, which has oblanceolate to spatulate leaves, blue to purple flowers in a long scape forming a dome shaped capitate head.

Primula bellidifolia is enumerated in An Enumeration of the Flowering Plants of Nepal Vol. 3 (Hara et al., 1982), citing the book 'Living Himalayan Flowers' (Nakao, 1964), probably based on a photograph of the species collected at 4600 m. However, the existence of the herbarium specimen is uncertain. Thus, the species is catalogued as the uncertain species in Nepal (Shrestha et al., 2022).

The Herbarium Catalogue of Royal Botanic Garden, Edinburgh has listed the specimen of *Primula* aff. *bellidifolia* (JDA Stainton 668, E00317414) which was collected at an altitude of 12500ft from Arun valley, Barun Khola, N. of Num, East Nepal. This specimen has been identified as *Primula capitata* Hook.

A herbarium specimen of *Primula bellidifolia* has been collected probably for the first time from

Nepal and has been reported here. In this paper we have given the description, distribution, ecology, phenology and conservation status of this species.

Materials and Methods

The herbarium specimen collected in Kanchenjunga Conservation Area (KCA), Taplejung District, east Nepal, has been studied. The specimen was identified comparing with type specimens, protologues and the specimens housed at National Herbarium and Plant Laboratories (KATH), online herbarium images of Royal Botanic Garden Edinburgh (E) and University of Tokyo (TI).

Results and Discussion

Taxonomic treatment of Primula bellidifolia

Primula bellidifolia King ex Hook.f. Fl. Brit. India 3: 486 (1882)

Perennial, short lived herbs of 10-35 cm tall, resting bud absent. Leaves pubescent, oblanceolate to spatulate, obtuse to sub-rounded apex, shallowly dentate to crenate at the margin, narrowed into a long winged petiole, dull matted with few white farina on the lower surface of leaves and petiole. Scape farinose, glabrous or slightly hairy, 10-35 cm long, bearing 7-15 pendant sessile flowers mauve to blue-purple in a dome shaped capitate inflorescence. Bract 3-4 mm, rounded, purplish black, forming a cap on top of spike. Sepals 4-5 mm, campanulate, usually sparingly farinose, lobed almost to the base, forming oblong-elliptic, rounded or broadly obtuse

at the apex and papillosely ciliate at the margin. Petals mauve to blue-violet with a ring of farina at the throat; tube 5-10 mm long, four time longer than the short obtusely lobed mealy calyx, rather darker than the limb, lobes ovate and conspicuously emarginated. In thrum-eyed flowers stamens 5, inserted in the upper half of the corolla tube, style ca. 2mm long. Capsule 4-6 mm ovoid, much longer than calyx, dehiscent by 5 valves, seeds small 2 x 1 mm.

Distribution: Nepal, E. Himalaya & Tibetan Plateau.

Ecology: Under over hanging rocks and dry ledges of cliffs associated with *Silene*, grasses and sedges.

Altitudinal range: 3900-4500 m.

Phenology: Flowering: June-July. Fruiting: September

Note: *Primula bellidifolia* and *Primula capitata* are different species. But, *Primula bellidifolia* may be confused with *Primula capitata* which has the leaves with firm texture, no articulate hairs and usually white farinose under the leaves (these are *Primula capitata* characters). These are the key characters in which they differ.

Conservation status

Primula bellidifolia was found only in two localities in Kanchenjunga Conservation Area, one at Ghunsa to Cherpuk Kharka (3930m) and another at Lambuchem to Ramdang Kharka (4486m). Only 15-20 individuals were found in each locality. Therefore it may be proposed as a probable endangered species (E) and a rare species in Nepal.

Specimens examined

East Nepal: Koshi Province, Taplejung District, Ghunsa - Cherpuk Kharka, Kanchanjunga Conservation Area (KCA), 27.63896 N & 87.9485 E, 3930 m, 19 September 2023, R. Chhetri, T.K. Thapa. & D. Dawadi 146 (KATH162767). Koshi Province, Taplejung District, Lambuchem - Ramdang Kharka, Kanchanjunga Conservation Area (KCA), 27.7678 N & 88.0004 E, 4486 m, 21 September 2023, R. Chhetri, T. K. Thapa. & D. Dawadi 186 (KATH162762).

Conclusion

Previously only photograph of *Primula bellidifolia* has been available and no herbarium specimen has

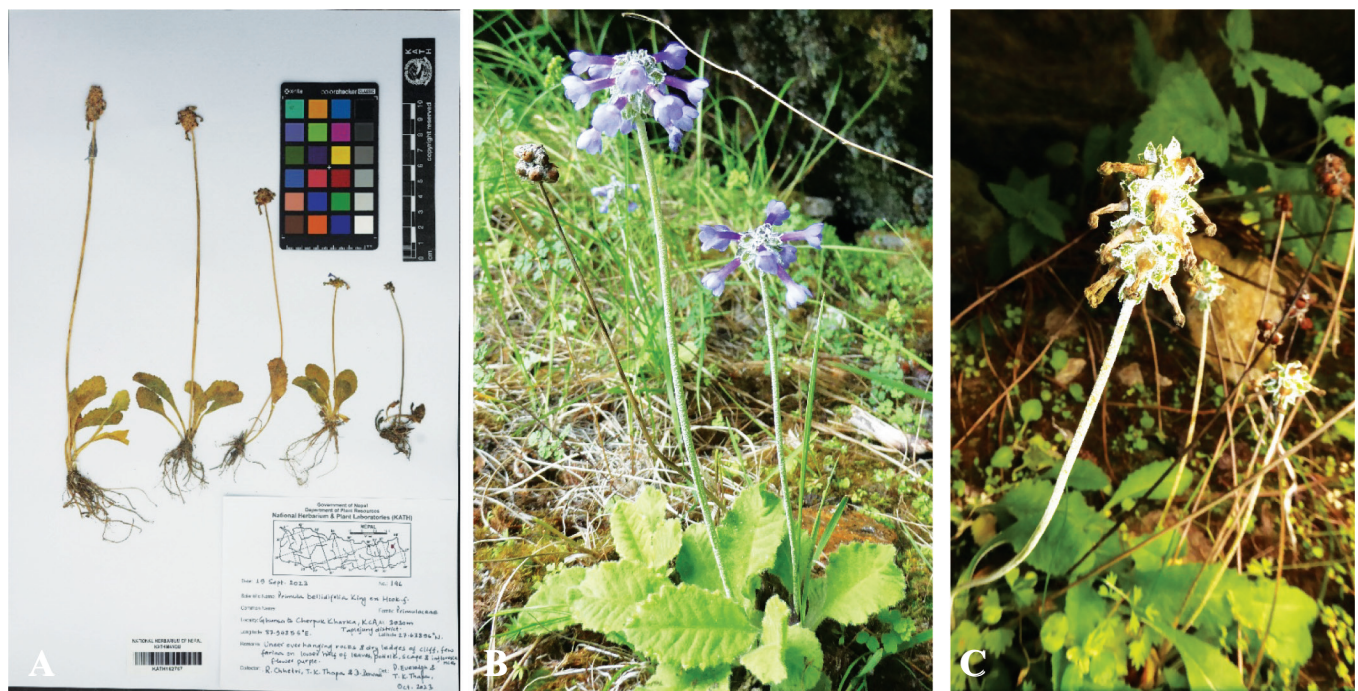


Figure 1: *Primula bellidifolia*, (A) Herbarium Specimen (PC: S. K.C.), (B) Flowering (PC: E. Byers), (C) Fruiting (PC: T. K. Thapa)

been mentioned. Thus, it is validated that *Primula bellidifolia* occurs in Nepal, based on the recent collections from the Eastern Nepal, and herbarium specimens deposited at KATH. Furthermore, the species may be considered as a rare species in Nepal.

Author Contributions

All the authors have contributed equally to bring the manuscript in this form.

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