

explants of *P. grandiflora*. The explants were surface sterilized and inoculated on induction media. After 8 weeks, the regeneration rate of adventitious shoots was 98%, and the induction rate of somatic embryos was 53%. Three months after transplanting rooted plantlets, the survival rate was > 90%.

The successful regeneration of *P. grandiflora* using plant tissue culture opens up possibilities for restoring wild populations, although protection of the three known populations is also required. We plan to model the future trend of these populations to guide conservation efforts, and to use *P. grandiflora* as a germplasm source to study and cultivate new flower varieties for social and economic benefits.

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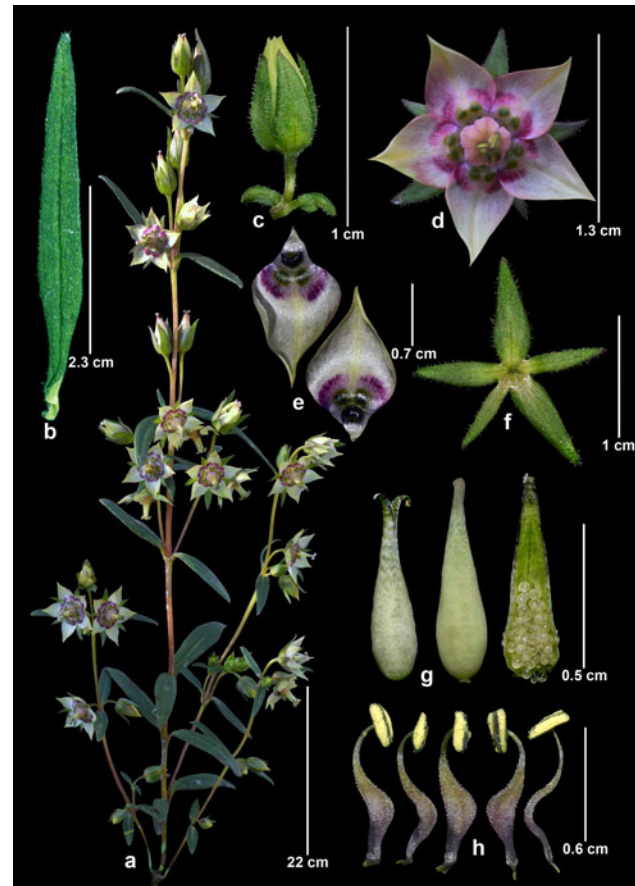
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Rediscovery of *Swertia dilatata* var. *pilosa* after 140 years

In India, the genus *Swertia* L. of the family Gentianaceae is represented by 36 species and 10 varieties, distributed mainly in temperate and alpine Himalayan regions but with a few species in the Western Ghats. The genus is highly valued for its medicinal importance and most of the species are known by the common names *chirayita* or *chiroto*. *Swertia chirayita* is a highly exploited species facing severe threats. With similar morphological appearance in their vegetative state, most of the allied species are also exploited from the wild and are thus threatened. Because of their complex taxonomy, limited data are available on the distribution of allied species, and only eight have been assessed for the IUCN Red List.





Swertia dilatata, which is closely allied to *Swertia purpurascens* and *Swertia paniculata*, is differentiated mainly on the basis of dilated stamen filaments. It was first described by C.B. Clarke from Nepal in 1883 along with a variety, *S. dilatata* var. *pilosa*. The two varieties can be differentiated by the greenish yellow corolla and glabrous leaf and calyx of *S. dilatata* var. *dilatata* and pale to purplish pink corolla and hairy leaf and calyx of *S. dilatata* var. *pilosa*. Variety *dilatata* is common, reported from the eastern Himalayas of India, Nepal, China and Myanmar, but variety *pilosa* has not been recorded since the type collection.



Swertia dilatata var. *pilosa*, showing (a) habit, (b) leaf, (c) flower bud, (d) flower, (e) corolla, (f) calyx, (g) stigma and (h) stamen.

In October 2023, during a field trip to the East Pindar range in Badrinath Forest division of Chamoli district, Uttarakhand, India, we collected a specimen of *Swertia* from the Deval region. We identified it as *S. dilatata* var. *pilosa*, the first record of this variety after 140 years and the first record in India. The specimen has been deposited in the herbarium of HNB Garhwal University, Srinagar (GUH).

We observed that unlike other species of the genus, *S. dilatata* var. *pilosa* is uncommon. We found only a few individuals, growing in semi-shaded localities of evergreen forest of *Cupressus torulosa* D. Don ex Lamb. We currently consider this variety to be Data Deficient but we are working on a full assessment for the IUCN Red List.

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