

Centaurea devasiana – a new species from Prespa, NW Greece

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Received: September 05, 2019 ▷ Accepted: November 10, 2019

Abstract. *Centaurea devasiana* (Asteraceae) is described as a new species of the section *Acrolophus*. It is restricted to a small area on Mt Devas, Prespa National Park, NW Greece, and is most closely related to a group of narrow Balkan endemics of the Prespa–Ohrid region. The species is illustrated, and its morphological characteristics, habitat and conservation issues are described. An identification key to *C. devasiana* and similar local species is also provided.

Key words: *Centaurea* sect. *Acrolophus*, endemic, Mt Devas, plant species, Prespa National Park, taxonomy

Introduction

Centaurea L. is among the largest genera in the plant family of Asteraceae. It is particularly diverse in the Mediterranean, Southeast Europe and Southwest Asia. As traditionally demarkated (incl. 31 species of *Cyanus* Mill.), it comprises at least 519 species (Greuter 2006+) in Europe and the Mediterranean (Euro+Med territory), and about 111 species (incl. *Cyanus*) in Greece (Dimopoulos & al. 2013).

Recently, Wagenitz & al. (2018) provided a synopsis of seven taxa in the critical *Centaurea triniifolia* group, including a number of new taxa occurring in the area around the lakes of Prespa and Ohrid in the Southwest Balkans, where Albania, Greece and North Macedonia border on each other. Situated in the territory of Prespes, a municipality in the Greek region of West Macedonia, Prefecture of Florina, is the Prespa National Park, a nature conservation area known for its richness in rare and range-restricted plant taxa (e.g., Strid & al. 2017; Strid, Bergmeier & Fotiadis, in press). In the Prespa National Park, three purple-flowered species of the *C. triniifolia* group have been found in the past three years: *Centaurea*

galicicae Micevski, *Centaurea triniifolia* Heuff. subsp. *campylacme* (Bornm.) Wagenitz, and the new species *Centaurea devasiana*, which is illustrated and described in this paper.

Taxonomy

***Centaurea devasiana* Bergmeier & Strid, sp. nov.**
(Figs 1, 2)

Holotype: Greece, West Macedonia, Florina Prefecture, Prespes Municipality; Mt Devas, summit area, 40°47'54"N 21°02'21"E, 1360 m a.s.l., 19 July 2017, Bergmeier 17-637 (GOET).

Diagnosis: Similar to *Centaurea galicicae* but differing in the following characters: stems erect; leaves grey-green, tomentose, segments linear to linear-lanceolate; phyllary appendages narrowly triangular, suberect, terminal spinule equal or longer than and exceeding the whitish lateral cilia; achenes with pappus much shorter than its body.

Description (based on the holotype and the paratypes listed below): Herbaceous perennial, slightly woody-based, hemicryptophyte. Stem



Fig. 1. Holotype (sheet 1) of *Centaurea devasiana* Bergmeier et Strid, sp. nov.

erect, branched from below or at mid-height, most branches at angles of 30–50°. Stem and leaves grey-green, tomentose. Basal and lower cauline leaves 4–8 cm long, pinnatisect, with linear to linear-oblongate mostly entire segments 1–1.5 cm long, withered at anthesis; upper leaves and those on branches smaller, 1.5–2.5 cm long, 2–3 per 5 cm branch length, more or less evenly distributed, dissected with short linear segments. Capitula narrowly ovoid, 10–12 mm long; florets pinkish-purple. Phyllary appendages brown, narrowly triangular, suberect, with c. 2 mm long terminal spinule equal or mostly longer than and exceeding the whitish lateral cilia of which there are 5–6(–7) on either side. Achenes puberulent, 2.5–3.0 mm; pappus 1.0–1.3 mm (Fig. 3).

Phenology: Stem growth – May to June, bud stage – June, flowering – end of June to mid-August, fruiting – from mid-July to September.



Fig. 2. *Centaurea devasiana*, habit and flower head. Photos A. Strid, 27 July 2019.

Distribution

Centaurea devasiana is known from a single population in the summit area of Mt Devas, 1250–1370 m above sea level, between the Lesser and the Greater Prespa lakes (Mikri Prespa and Megali Prespa), about 400–500 m above lake level (Fig. 4). It is fairly common and locally gregarious in dry grasslands on the summit plateau around the telecommunications tower and extends in openings of deciduous woodland downwards to c. 1250 m.

Habitat

Centaurea devasiana grows in dry grasslands, on calcareous shallow stony soils with a vegetation cover of 65–90%. The bedrock consists of limestone and dolomitic limestone, which, according to their fos-



Fig. 3. *Centaurea devasiana*, achenes and flower head. Photos B. Siegesmund.

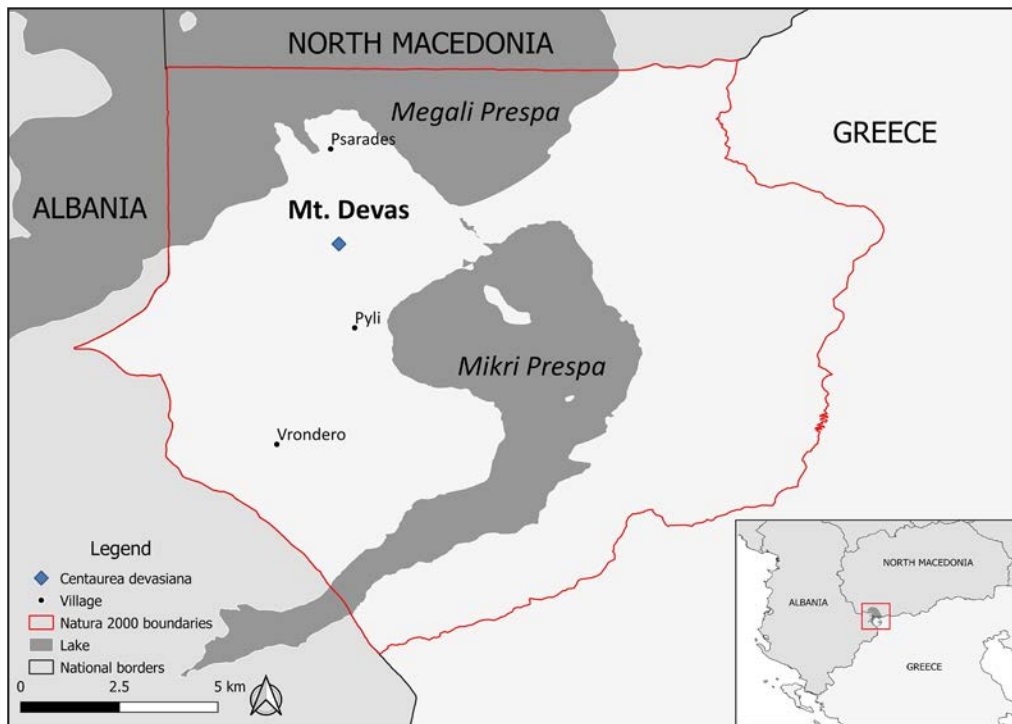


Fig. 4. Location of *Centaurea devasiana*, a local endemic of Mt Devas, Prespa.

sils, are referred to the Middle Triassic to Lower Lias (IGME 1987). The area gently slopes southwestward and forms part of the northwest-southeast directed summit crest of Mt Devas, a narrow stretch of semi-open grasslands squeezed between the densely wooded eastern slopes and the less densely wooded sun-exposed western slopes, both with different types of sub-Mediterranean-subcontinental mixed deciduous oak woodland. Species associated in the grassland with *C. devasiana* include among many others: *Acinos suaveolens* (Sm.) Loudon, *Alkanna pindicola* Hausskn., *Anthemis cretica* subsp. *tenuiloba* (DC.) Grierson, *Asperula aristata* L. f., *Astragalus angustifolius* Lam. subsp. *balcanicus* Brullo et al., *Crupina vulgaris* Cass., *Erodium absinthoides* Willd. subsp. *guicciardii* (Boiss.) Maire & Petitm., *Eryngium amethystinum* L., *Galium oreophilum* Krendl, *Hypericum rumeliacum* Boiss., *Iris attica* Boiss. & Heldr., *Koeleria lobata* (M. Bieb.) Roem. & Schult., *Onobrychis alba* (Waldst. & Kit.) Desv., *Phelypaea boissieri* (Reut.) Stapf, *Pilosella cymosa* (L.) F. W. Schultz & Sch. Bip. subsp. *heldreichiana* (Nägeli & Peter) Gottschl., *Potentilla detommasii* Ten., *Scorzonera mollis* M. Bieb., *Sideritis montana* L., *Stipa holosericea* Trin., *Thesium divaricatum* Mert. & W. D. J. Koch, *Thymus boissieri* Halácsy, *Thymus leucotrichus* Halácsy, and *Xeranthemum inapertum* (L.) Mill.

Taxonomic relations

Centaurea devasiana belongs to a group of closely related species in *Centaurea* sect. *Acrolophus*, here referred to as the *C. triniifolia* group (see Wagenitz & al. 2018). Members of this species group are distinguished from related species in sect. *Acrolophus*, namely from the *Centaurea soskae*, *diffusa* and *grisebachii* groups, also represented in the Prespa area, by their characteristic combination of narrow leaf segments, purple flower colour, middle-sized capitula, puberulent achenes with pappus, and prominently ciliate triangular phyllary appendages. The most similar species, also pinkish-purple flowered narrow endemics of the Prespa region and sympatric with *C. devasiana*, are *Centaurea galicicae* and *Centaurea triniifolia* subsp. *campylacme*, which may be distinguished by using the following key (in which *Centaurea grisebachii* (Nyman) Heldr., another sympatric species of sect. *Acrolophus* but more distantly related, is also included), modified from Wagenitz et al. (2018):

1. Brown central part of phyllary appendage narrowly triangular; terminal spinule of phyllary appendage overtopping and usually longer than lateral cilia 2
- Brown central part of phyllary appendage broadly (almost equilateral) triangular; terminal spinule shorter than lateral cilia 3

2. Pappus as long as or longer than achene body
 *C. galicicae*
 — Pappus much shorter than achene body
 *C. devasiana*
3. Pappus more than half length of the achene body
 *C. triniifolia* subsp. *campylacme*
 — Pappus less than half length of the achene body
 *C. grisebachii*

Equally narrow triangular phyllary appendages and a pappus similarly short as in achenes of *C. devasiana* has *Centaurea tomorosii* Micevski, another related endemic of the Prespa area, but the latter is with whitish or very pale-yellow flowers (Wagenitz & al. 2008). It is remarkable that populations of the three closely related Prespa endemics of the *C. triniifolia* group occur in immediate vicinity, only a few kilometres apart from each other within an area of no more than about 12 km². While spatially close, they appear to be sufficiently isolated from each other and are distinct in their ecological preferences. The newly described *C. devasiana* is a plant of montane xeric calcicolous grasslands, while *C. galicicae* and *C. triniifolia* subsp. *campylacme* are plants of limestone cliffs and rock ledges (Shuka & Tan 2013; Wagenitz & al. 2018; own observations).

Additional specimens (paratypes):

Greece, Prespa, Mt Devas, summit area, 40°47'54"N 21°02'21"E, 1360 m, 10 June 2017, Bergmeier 17-294 (GOET, herb. Bergmeier).

ibid., 40°47'57"N 21°02'21"E, 1360 m, 10 June 2019, Bergmeier 19-308 (GOET, herb. Bergmeier).

ibid., 27 July 2019, Strid 60360 (ATH, B, G, LD, UPA, herb. Strid).

Conservation

The known population of *C. devasiana* is restricted to an area of about 5 ha on the summit of Mt Devas. It grows in a formerly grazed pasture, now abandoned, on dry grassland with scattered shrubs. The grassland does not appear to be prone to rapid succession. This may be due to occasional livestock grazing or to grazing activities of wild animals such as roe deer and wild boar. Even without grazing, more or less sizable patches of rocky grassland with limestone outcrops

would probably remain open and relatively treeless. The summit of Mt Devas was a civil war zone about 70 years ago, and gun pits and defensive walls are still visible. The construction of a radio transmitter built on the highest point must have destroyed part of the small distribution area of *C. devasiana*. It is self-evident that no further construction works are tolerable anywhere on the summit area.

Although without a thorough count, the whole population of *C. devasiana* was estimated at a few thousand plants only. Owing to the small population size, the very small extent of occurrence (and area of occupancy), and taking into consideration its semi-natural open grassland habitat which is not under immediate pressure, the IUCN Red List category of Vulnerable (VU) would be appropriate. As there is no information on the extent of variation in habitat pressure for the researched species at any time in history, as well as on the degree of human interference compared to today, plant population monitoring is vital, especially if, as it is presently attempted, livestock grazing activities on Mt Devas are encouraged.

The entire known area of distribution of *C. devasiana* is fortunately part of the Greek Natura 2000 site "Ethnikos Drymos Prespon" (Prespa National Park, GR1340001) (Fig. 4). Natura 2000 is a network of sites in the European Union, which are home to natural habitats as well as fauna and flora species selected as important for nature and biodiversity conservation. Responsibility for the site management lies with the Management Body of the Prespa National Park. It is supported by the Society for the Protection of Prespa (SPP), an NGO exemplary in its efforts for the protection of the natural environment of the wider Prespa area and for the sustainable economic development of the local communities.

Acknowledgements. The authors are grateful to Marc Appelhans and Brigitte Siegesmund, both from University of Göttingen, for taking specimen photos, and to Fanikos Sakellarakis, SPP, for drawing the map. The financial and logistic support of the Society for the Protection of Prespa is gratefully acknowledged.

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