

## A new species of *Physoptychis* (Brassicaceae) from central Anatolia, Turkey

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A new species of *Physoptychis* Boiss., *Physoptychis purpurascens* Çelik & Akpulat, is described from Turkey. The diagnostic characters and description of the species are given. The new species is restricted to inner Anatolia, south-west of Sivas. Observations on the population are presented, together with the World Conservation Union (IUCN) threat category. © 2007 The Linnean Society of London, *Botanical Journal of the Linnean Society*, 2007, 154, 393–396.

ADDITIONAL KEYWORDS: conservation – Cruciferae – taxonomy.

### INTRODUCTION

In 2004, whilst carrying out fieldwork at Deliilyas, around Sivas, central Anatolia for the project on important plant areas along the Bakü–Tibilisi–Ceyhan pipeline in Turkey, we collected specimens of a crucifer which has proved to be a new species of the genus *Physoptychis* Boiss. *Physoptychis* Boiss. comprises two species in the Caucasus, Iran, northern Iraq, and Turkey (Boissier, 1867; Appel & Al-Shehbaz, 2003). Both species are represented in the Turkish flora (Cullen, 1965). *P. haussknechtii* Bornm. is restricted to Anatolia, around Sivas, and *P. gnapholodes* (DC.) Boiss., although now referable to *P. caspica* (Hablitz) V.V.Botschantz (Czerepanov, 1981), is restricted to eastern Anatolia, around Hakkari.

This study describes and illustrates the new species and presents the World Conservation Union (IUCN) threat category.

The specimen evaluated here was identified by comparing the species with the *Flora of Turkey and the East Aegean Islands* (Cullen, 1965) and *Flora of Iraq* (Townsend & Guest, 1980), as well as checking the herbaria of CUFH, ANK, HUB, ISTE, and GAZI.

Specimens of the new species have been deposited in CUFH, ISTE, B, BM, K, W, and C.

### DESCRIPTION

#### *PHYSOPTYCHIS PURPURASCENS* ÇELİK & AKPULAT, SP. NOV. (FIGS 1, 2)

*Diagnosis:* Affinis *P. haussknechtii* Bornm. sed plantae 10–25 cm (non 1–10 cm), petalis purpureo-roseis (non plavis) differt.

*Type:* [Turkey] B6 Sivas, Deliilyas district, serpentine, chalky steppe and slopes, 1450 m, 39°19'N, 36°47'E, 23.v.2004, Çelik 6232; Akpulat & Dönmez. (holotype: CUFH; isotype: ISTE).

*Description:* Caespitose perennial herb, 15–18 cm, with a slender branching rootstock and numerous lateral sterile rosettes at the densely foliose base, grey with very dense stellate hairs. STEM much branched at base. BASAL LEAVES narrowly spatulate to linear, grey hairy, 25–40 × 3–5 mm, obtuse to subacute; STEM LEAVES narrower, lanceolate to linear. RACEMES densely flowered, to 8 cm long. PEDICELS 3–5 mm; densely grey hairy. SEPALS linear-oblong, 3–5 mm, pale margined, ±grey hairy dense stellate hairs. PETALS purple–pink, 6–7 mm; obovate, emarginate at apex. STAMENS 6, long filaments c. 4 mm, short filaments c. 3 mm, anthers 2.5–3.5 mm; STIGMA capitate; STYLE slender and distinct. SILIQUA conical 20–25 × 10–12 mm, grey with dense stellate hairs; SEEDS suborbicular, compressed, 3–4 mm, smooth. SEPTUM thin and membranous.

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**Figure 1.** *Physoptychis purpurascens* Çelik & Akpulat.

*Phenology:* Fl. 5–7; Fr. 6–8.

*Habitat:* Serpentine, chalky steppe and slopes, 1400–1450 m.

*Distribution and proposed conservation status:* Endemic to Sivas, central Anatolia, of the Irano-Turanian element (Fig. 3). The species is known only from one population at the type locality, and the estimated area of occupancy is less than 10 km<sup>2</sup>. Therefore, it is suggested that this new species should be placed under IUCN threat category 'Critically Endangered' (CR) criterion B2 (IUCN, 2001).

*Ecology:* On serpentine, chalky steppe and slopes with the characteristic plants, such as *Bromus tectorum* L., *Bunium microcarpum* (Boiss.) Freyn ssp. *microcarpum*, *Tragopogon coloratus* C.A. Meyer, *Arnebia densiflora* (Nordm.) Ledeb., *Moltkia coerulea* (Willd.) Lehm., *Nonea stenosolen* Boiss. & Bal., *Onosma molle* DC., *Aethionema arabicum* (L.) Andrzej. ex DC., *Alyssum xanthocarpum* Boiss., *Cochlearia aucheri* Boiss., *Conringia perfoliata* (C.A. Mey.) Busch, *Erysimum repandum* L., *Hesperis bicuspidata* (Willd.) Poir., *Neotchihatchewia isatidea* Boiss., *Saponaria prostrata* Willd. ssp. *prostrata*, *Silene ruscifolia* (Hub. Mor. & Reese.) Hub.-Mor., *Convolvulus assyricus* Griseb.,



Figure 2. *Physoptychis purpurascens* Çelik & Akpulat.

*Euphorbia denticulata* Lam., *Salvia multicaulis* Vahl., *Atrahaxis grandiflora* Willd., *Ziziphora capitata* L., *Polygonum luzuloides* Jaub. & Spach, *Ranunculus arvensis* L., and *Haplophyllum telephoides* Boiss.

#### DISCUSSION

*Physoptychis purpurascens* resembles *P. haussknechtii* and *P. caspica* in Turkey. After obtaining *P. purpurascens* from the collection site (B6, Sivas), the species were compared with each other. After thoroughly studying pertinent specimens and the literature (Boissier, 1867; Appel & Al-Shehbaz, 2003), *P. purpurascens* was found to be related to *P. haussknechtii* and *P. caspica*, but can be distinguished by the characters listed in Table 1. The three species can be distinguished by the following key.

#### REVISED KEY TO *PHYSOPTYCHIS* SPECIES IN TURKEY

1. Siliculate rounded at the apex; inflorescence lax..... *P. caspica*
1. Siliculate conical and acuminate at the apex; inflorescence dense
  2. Stem high 10 cm; petals yellow ..... *P. haussknechtii*
  2. Stem high 15–20 cm; petals purple–pink..... *P. purpurascens*

Table 1. Comparison of the diagnostic characteristics of *Physoptychis purpurascens* with those of *P. haussknechtii* and *P. caspica*

Characteristic	<i>P. purpurascens</i>	<i>P. haussknechtii</i>	<i>P. caspica</i>
Stem height (cm)	10–15	10	8–12
Basal leaves	Narrowly spatulate to linear	Narrowly spatulate to linear	Spatulate-obovate
Inflorescence	Dense	Dense	Lax
Petal colour	Purple–pink	Yellow	Yellow
Petal	6–7 mm, obovate, emarginate at apex, narrower at base	6–7 mm, obovate, emarginate at apex, narrower at base	10–12 mm, obovate, lamina abruptly narrowed to slender
Siliculate	Conical and acuminate at apex	Conical and acuminate at apex	Rounded at apex

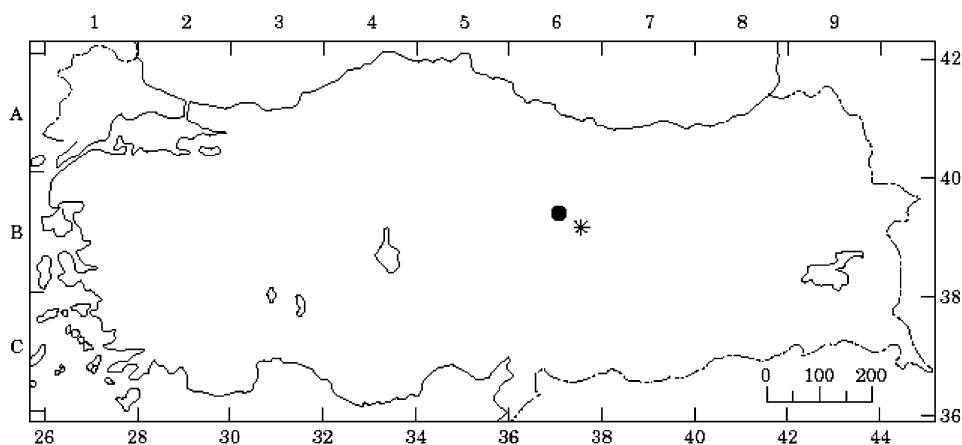


Figure 3. Distribution of *Physoptychis purpurascens* (\*) and *P. haussknechtii* (●) in Turkey.

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