

***PRANGOS ABIETICOLA* (APIACEAE), A NEW SPECIES FROM SOUTH ANATOLIA, TURKEY**

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Prangos abieticola Aytaç & H.Duman (Apiaceae) from southern Anatolia, Turkey is described and illustrated. This new taxon grows on calcareous rocks in open *Abies cilicica* (Antoine & Kotschy) Carrière and *Pinus nigra* J.F.Arnold subsp. *nigra* var. *caramanica* (Loudon) Rehder forest in the middle of the Taurus Mountains (C3 Antalya and Konya Province). It is endemic and closely related to *Prangos heyniae* H.Duman & M.F.Watson and *P. ferulacea* (L.) Lindl. The diagnostic morphological characters of similar taxa are discussed.

Keywords. Anatolia, Apiaceae, new species, *Prangos*, Turkey.

INTRODUCTION

Prangos Lindl. (Apiaceae) has 34 species worldwide (Herrnstadt & Heyn, 1977; Pimenov & Tikhomirov, 1983), with its centre of diversity in the Irano-Turanian phytogeographic region, especially Turkey, Iran and Central Asia. The genus has been revised for the *Flora of Turkey and the East Aegean Islands* (Herrnstadt & Heyn, 1972; Davis *et al.*, 1988) and a further seven taxa have been described in Turkey since then (Duman & Watson, 1999; Duran *et al.*, 2005; Pimenov *et al.*, 2005; Şenol *et al.*, 2011; Menemen, 2012). With the new species described below, there are 20 taxa of *Prangos* in Turkey and 12 of them are endemic. Twelve species belong to the Irano-Turanian element, six to the Mediterranean element and two are widespread (Menemen, 2012).

An interesting specimen of *Prangos* was collected from C3 Antalya (Akseki Province) by the first author in 1997; the plants were old and had mature fruit but lacked basal leaves and flowers for description. The fruit shape was intriguing, particularly the fruit wings which seemed to be of a new species but they were in poor condition. Ten years later, in 2007, this species was collected in the same area by A. Duran and, in 2010, fruiting and vegetative material was collected again in the same area by H. Duman. The species was morphologically close to *Prangos heyniae* H.Duman & M.F.Watson and *P. ferulacea* (L.) Lindl. in the morphology of its fruit and basal leaf segments, and furthermore, the type locality of *P. heyniae* is close to the area where this new species was found.

After checking the literature mentioned above and examining the type and other specimens of *Prangos heyniae* and *P. ferulacea* in GAZI, we decided that the three collections from Antalya represented a new species.

The seed morphology of the new species was examined by scanning electron microscopy (SEM) at GAZI. The SEM photomicrographs were taken with the JEOL JSM 6060 SEM at Gazi University.

Abbreviations of the authors of plant names follow Brummitt & Powell (1992).

SPECIES DESCRIPTION

***Prangos abieticola* Aytaç & H.Duman, sp. nov.**

Prangoti heyniae H.Duman & M.F.Watson sectionis *Intactarum* Kuzmina affinis, sed foliis 4–6-pinnatis (nec 4–5-pinnatis), segmentis ultimis 5–7 mm longis (nec 2–3 mm); bracteolis 5–8 mm longis (nec 3–5 mm); fructibus maturis 20–25 mm longis, oblongis vel ellipsoideis, alis undulatis praeditis (nec 12–20 mm, late ellipsoideis vel globosis, alis rectis praeditis) differt. *Prangoti ferulaceae* (L.) Lindl. affinis, sed caulibus 40–50 cm longis (nec 50–150 cm), pilis brevibus crispis vestitis (nec glabris vel papillosis); foliis basalibus 35–50 cm longis (nec 60–80 cm); fructibus maturis oblongis vel ellipsoideis (nec ellipsoideis vel globosis) differt. – Type: Turkey, C3 Antalya: Akseki–Seydişehir, 38th km, 1600 m, in open forest of *Abies cilicica* and *Pinus nigra*, calcareous rocks, 23 vii 2010, *H. Duman* 10209 (holo GAZI; iso ANK, HUB). **Fig. 1.**

Perennial herb. *Stem* erect, 40–50 cm long, loosely covered with short curly hairs below and above, with a well-developed fibrous collar 5–10 cm long and 1–2 cm in diameter at base. *Basal leaves* oblong to elliptic in outline, 35–50 × 20–35 cm (including 15 cm petiole), petiole with 5–7 cm long sheath, sheaths 40–50 × 10–15 mm, slightly inflated; lamina 4–6-pinnate; ultimate segments linear-oblong, 5–7 × 0.5–0.7 mm, apiculate, sparsely curly hairy; rachis glabrous; lower cauline leaves oblong to elliptic in outline, 25–40 × 15–20 cm (including 5–15 cm petiole), lamina 4–5-pinnate; middle and upper cauline leaves similar to lower leaves; ultimate segments longer than basal. *Branches* opposite, leaves at base of lateral branches similar to cauline leaves, but smaller and 3–4-pinnate. *Flowers* hermaphrodite, central umbels shortly pedunculate, 1–1.5 cm long in fruit or sessile, rays 8–12, 4–10 cm long when ripe; lateral umbels with 2–5 rays at most, sterile. *Bracts* linear-lanceolate, 7–12 mm, usually 5, often caducous; bracteoles linear-lanceolate, 5–8 mm, usually 5, often caducous. *Umbellules* 5–10-flowered, when ripe 3–6. *Pedicels* 5–15 mm, always shorter than mature fruit. *Sepals* obsolete. *Petals* yellow, 1–2 mm, glabrous, with deflexed apex. *Stylopodium* slightly angular-terete longitudinally, with undulate margin, mericarps always well developed. *Mature fruit* compressed dorsally, oblong to ellipsoid, 20–25 × 10–15 mm; wings undulate, about 3 mm wide. *Seeds* brownish, oblong, 12.37 × 3.45 mm with reticulate ornamentation (Fig. 2).



FIG. 1. *Prangos abieticola*: A, type material, showing fibrous collar at root; B, cross section of mericarp.

Additional specimens examined. TURKEY. C3 Konya: Seydişehir-Süleymaniye, 1600 m, in open *Abies cilicica* forest, 20 vi 1997, *Aytaç* 7567 (GAZI); *ibid.*, 17 vii 2007, *A. Duran* 6662 (GAZI).

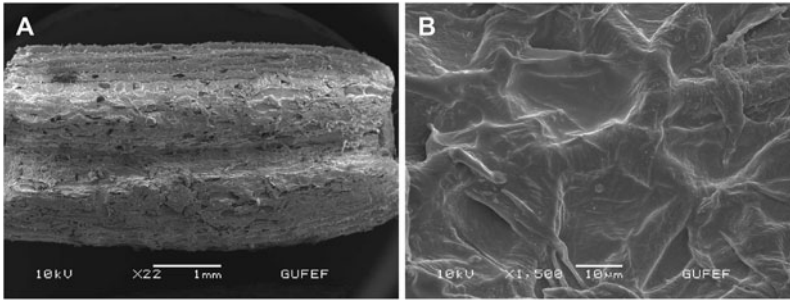


FIG. 2. SEM photomicrographs of *Prangos abieticola* seed: A, general view; B, reticulate ornamentation.

Phenology. Flowering: June–July; fruiting: July–August.

Distribution and ecology. *Prangos abieticola* is endemic in the Middle Taurus Mountains (Seydidşehi-Konya and Akseki-Antalya Province), South Anatolia and is a Mediterranean element (Fig. 3). It grows on calcareous rocks on shady slopes in open forest of *Abies cilicica*, *Pinus nigra* subsp. *nigra* var. *caramanica*, *Juniperus oxycedrus* L. and *Dryopteris* sp., at 1600 m altitude.

Recommended IUCN Threat Category Listing. *Prangos abieticola* is known from three collections gathered in the same area, C3 Antalya: Akseki Province (Fig. 3). The estimated range of the species is less than 10 km². The population is unhealthy due to grazing, with fewer than 250 individuals, and is threatened with extinction in the

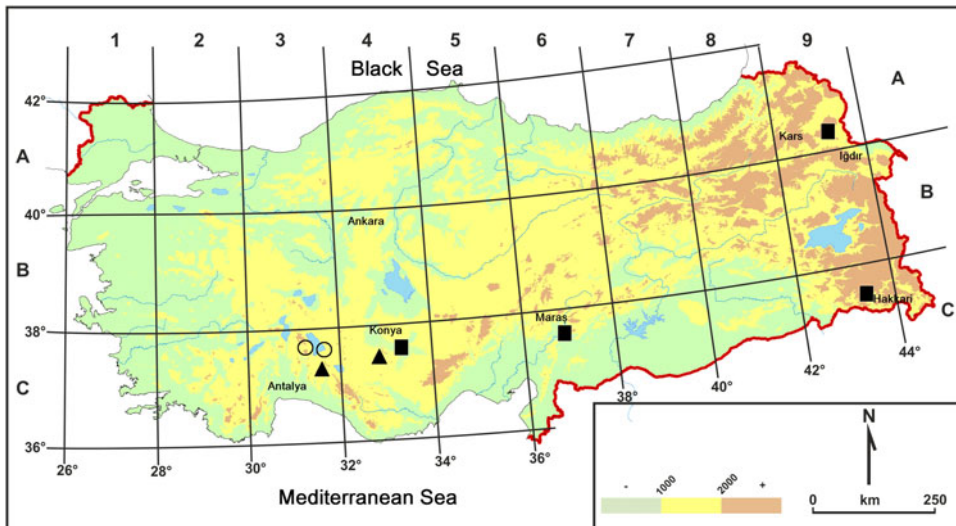


FIG. 3. Distribution map of *Prangos abieticola* (○), *P. heyniae* (▲) and *P. ferulacea* (■).

TABLE 1. Comparison of *Prangos abieticola* with *P. heyniae* and *P. ferulacea*

Characters	<i>P. abieticola</i>	<i>P. heyniae</i>	<i>P. ferulacea</i>
Stems	40–50 cm long, covered with short curly hairs below and above	60–80 cm long, covered with short curly hairs below and above	50–150 cm long, glabrous to papillose
Basal leaves	35–50 cm	15–25 cm	60–80 cm
Ultimate segments	5–7 × 0.5–0.7 mm, sparsely curly hairy	2–3 × 0.6–0.8 mm, sparsely curly hairy	5–35 × 0.5–1.5 mm, glabrous, or rarely scabridulous
Bracts and bracteoles	Linear-lanceolate, often caducous	Narrow-linear, persistent or caducous	Linear to filiform, often caducous
Mature fruits	Oblong to ellipsoid, 20–25 × 10–15 mm, wings undulate	Broadly ellipsoid to globular, 12–20 × 12–15 mm, wing straight	Ellipsoid to globose, 12–25 × 10–15 mm, wing straight to undulate
Stylopodium	Slightly angular-terete longitudinally, with an undulate margin		Embedded in the mericarp

wild. Therefore, we recommend that this species should be considered ‘Critically Endangered’ (CR) (criteria B2ab(i,iii) of IUCN, 2013).

Etymology. This species is named ‘abieticola’ because it grows in *Abies cilicica* forests.

Notes. *Prangos abieticola* is closely related to *P. heyniae* and to *P. ferulacea*. A comparison of *Prangos abieticola* with these species is given in Table 1.

Key to *Prangos abieticola* and its related species

- 1a. Stem and leaf covered with short curly hairs; ultimate leaf segments to 7 mm long
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- 1b. Stem and leaf glabrous to papillose; ultimate leaf segments 5–35 mm long
 _____ **P. ferulacea**
- 2a. Mature fruit wings undulate; ultimate segments 5–7 mm long, basal leaves
 35–50 × 20–35 cm _____ **P. abieticola**
- 2b. Mature fruit wings straight; ultimate segments 2–3 mm long, basal leaves
 15–25 × 8–12 cm _____ **P. heyniae**

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