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# *Bornmuellerantha alshehbaziana* (Orobanchaceae), a New Species from Turkey

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**ABSTRACT.** *Bornmuellerantha alshehbaziana* Dönmez & Mutlu (Orobanchaceae), a hemiparasitic plant from Çiğdem Mountain, Antalya Province, Turkey, is described and illustrated. It is the second species in the previously monospecific *Bornmuellerantha* Rothm. Morphological comparison and distinguishing characters are given. The new species is a smaller plant, has smaller flowers, and is found on high mountain slopes, in comparison to the generitype, *B. aucheri* (Boiss.) Rothm. *Bornmuellerantha alshehbaziana* is also contrasted with species of the related genus *Odontites* Ludw. The IUCN Red List category of Critically Endangered (CR) is proposed for the new species.

**Key words:** *Bornmuellerantha*, IUCN Red List, *Odontites*, Orobanchaceae, Scrophulariaceae, Turkey.

Plants of an undescribed species of *Bornmuellerantha* Rothm. (Orobanchaceae) were collected from the rocky slopes of Çiğdem Mountain, from Antalya Province, Turkey, during ongoing floristic research in that region. The local habitat is unusual for *Bornmuellerantha*, which is known from more humid areas. Although the identification key in the *Flora of Turkey and the East Aegean Islands* (Hedge, 1978) initially led to *Odontites aucheri* Boiss., the newly collected material exhibited characters clearly distinct from those given in the description of that species. After consulting other floristic works (Webb & Camarasa, 1972; Hedge, 1978; Pignatti, 1982), the specimen was tentatively identified as *O. corsicus* (Loisel.) G. Don, although the characters of the new plants did not quite match those of this species either.

Rothmaler (1943) segregated the genus *Bornmuellerantha* from *Odontites* Ludw. (Orobanchaceae). Recent monographic and molecular studies on the Scrophulariaceae s.l. (e.g., Bolliger, 1996; Stevens, 2001; Fischer, 2002; APG, 2003; Albach et al., 2005; Tank et al., 2006) have led to the assignment of both genera diversely from the Scrophulariaceae s. str., Plantaginaceae, and Orobanchaceae. Both *Odontites*

and *Bornmuellerantha* have transferred from the Scrophulariaceae s.l. to the expanded families Orobanchaceae and Plantaginaceae (Olmstead et al., 2001; Wolfe et al., 2005). The APG (2003) and Stevens (2001) incorporated these new findings, and this resulting classification is therefore followed herein.

***Bornmuellerantha alshehbaziana* Dönmez & Mutlu, sp. nov.** TYPE: Turkey. Antalya: Gazipaşa, Kaş pasture, above *Pinus nigra* forest, high mtn. steppe, limestone, 36°28'859"N, 032°25'697"E, 1760 m, 23 Sep. 2006, Ali A. Dönmez 14036 & Birol Mutlu (holotype, HUB; isotypes, E, INU, MO). Figure 1.

Haec species a *Bornmuellerantha aucheri* (Boiss.) Rothm. habitu humiliore, foliis brevioribus angustioribus, calyce brevior ac parum latiore, corolla brevior ad faucem angustiore, capsula aliquantum brevior atque seminibus longioribus angustioribus distinguitur.

Annual, erect plants (2)–4–7(–10) cm tall; stems retrorsely strigose, lower branches arcuate to ascending or horizontal. Cauline leaves 6–10 × 0.5–0.6 mm, linear to narrowly lanceolate, obtuse, antrorsely strigose. Inflorescences 1–3 cm; bracts 4–6 mm, linear-lanceolate, shorter than calyx, widened at base; pedicels 1–2 mm. Calyx 4–6 × 1.5–2 mm, widely campanulate, glandular and eglandular strigose; teeth triangular, acute, villose inside. Corolla 5–6 mm, yellow, pubescent outside especially on lips, 4–5 mm diam.; anthers glabrous, included, 1–1.4 mm. Capsule 5–6.2 × 2.5–3.6 mm, equal or slightly longer than calyx, obovate, truncate or slightly emarginate, pubescent; seeds oblong, 1.5–1.8 × 0.4–0.6 mm.

**Distribution and habitat.** *Bornmuellerantha alshehbaziana* is known from Antalya Province, Turkey, and is considered an endemic Mediterranean element of the flora. It is found in high mountain steppes and dry limestone slopes, from pastures above forests of *Pinus nigra* Arnold.

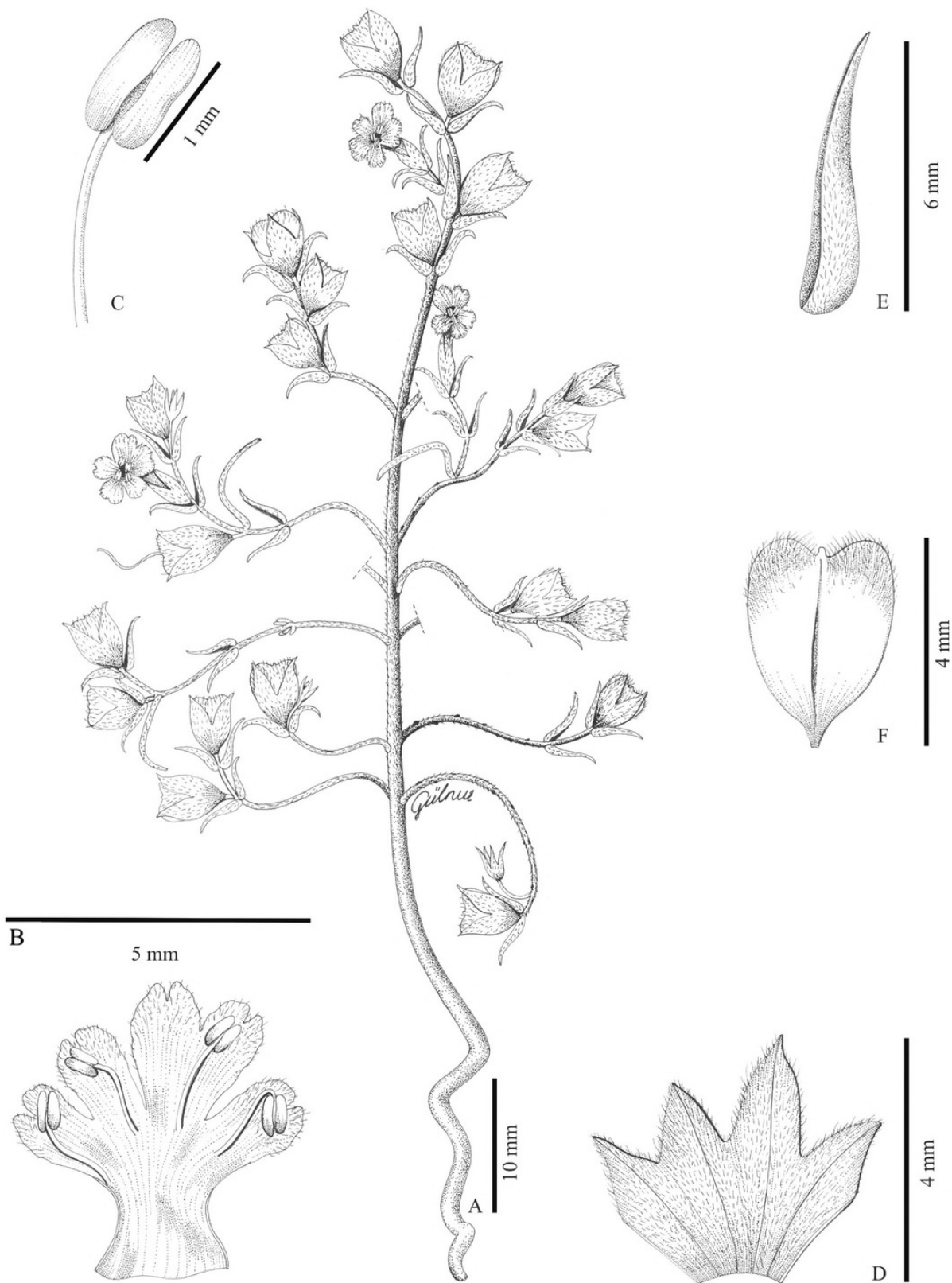


Figure 1. *Bornmuellerantha alshehbaziana* Dönmez & Mutlu. —A. Fertile plant. —B. Dissected corolla. —C. Stamen. —D. Dissected calyx (one of the five teeth removed). —E. Bract. —F. Capsule. Drawn from the holotype A. Dönmez 14036 & B. Mutlu (HUB).

*IUCN Red List category.* *Bornmuellerantha alshehbaziana* is known from two adjacent localities in Antalya Province, Turkey. The population at the type locality consists of approximately 50 individuals, but

the population size at the paratype locality was not estimated. Due to the high endemism in the floristically rich Taurus mountain ranges (Turkey), further botanical expeditions may lead to the



discovery of additional populations for the new species. Based on our field observations in the area, there is no immediate threat for the population of this species. Following IUCN Red List criteria (IUCN, 2001), we assess *B. alshehbaziana* as Critically Endangered (CR B2b[i,v]; D), with an extent of occurrence less than 100 km<sup>2</sup> and population size estimated to number fewer than 50 mature individuals.

**Phenology.** *Bornmuellerantha alshehbaziana* was observed to flower from July through September, with fruits collected in September.

**Etymology.** *Bornmuellerantha alshehbaziana* is named in honor of one of the associate researchers on the project, Ihsan A. Al-Shehbaz (1939–), of the Missouri Botanical Garden.

**Discussion.** Rothmaler (1943) proposed *Bornmuellerantha* as a monospecific segregate genus based on *Odontites aucheri* [= *B. aucheri* (Boiss.) Rothm.]. However, this taxonomic segregation was not accepted by subsequent authors on the family Scrophulariaceae (e.g., Webb & Camarasa, 1972; Hedge, 1978; Pignatti, 1982). A recent monographic study by Bolliger (1996) accepted *Bornmuellerantha* as a genus distinct from *Odontites* based on morphological, palynological, and biogeographical data.

*Bornmuellerantha alshehbaziana* is the second species in the genus, and it differs from the generitype, *B. aucheri*, in both habitat and morphology. The new species usually thrives in dry areas of high mountain slopes, compared to *B. aucheri*, which mostly prefers wet meadows or lower-altitude steppes. *Bornmuellerantha aucheri* also grows in neighboring Iran, and it appears that Turkey is the center of diversity for the genus.

*Bornmuellerantha alshehbaziana* can be distinguished from *B. aucheri* by its smaller plants ([2–]4–7[–10] cm vs. 8–35[–45] cm tall) that have shorter and narrower leaves (6–10 × 0.5–0.6 mm vs. 12–27 × 1–2.6 mm), a shorter and slightly broader calyx (4–6 × 1.5–2 mm vs. 5.5–10 × 1.2–1.5 mm), a shorter corolla (5–6 mm vs. 7.5–10.5 mm) with a narrower throat (4–5 mm vs. 6.2–7.3 mm diam.), slightly smaller capsules (5–6.2 mm vs. 6–9 mm long), and seeds that are longer (1.5–1.8 mm vs. 1.4–1.6 mm) and narrower (0.4–0.6 mm vs. 0.7–0.9 mm) with a larger length:width ratio (3.24:1 vs. 1.88:1).

**Paratype.** TURKEY. **Antalya:** Sugözü village, Akçal Mtn., 2000 m, 7 Sep. 1983, *H. Sümbül* 2393 (HUB).

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