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Centaurea ertugruliana (Asteraceae), a new species from Turkey

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Centaurea ertugruliana Uysal *sp. nova* (Asteraceae) from Turkey is described and illustrated. It occurs only on rocky road sides from Bursa to Balikesir in the western part of the country.

Key words: Asteraceae, *Centaurea*, new species, taxonomy

Centaurea (Asteraceae) is one of the richest genera in the flora of Turkey. Most taxa in the genus are endemic to the country and very localized. A broad redefinition of *Centaurea* was triggered in the last years thanks to the use of molecular methods. The comparison of DNA sequences demonstrated finally that *Centaurea* was a monophyletic group (Garcia-Jacas *et al*. 2000, 2001, Wagenitz & Hellwig 2000). Turkey is the main centre of diversity for *Centaurea* (Wagenitz 1986). Even excluding the species now placed in the genera *Psephellus* and *Rhaponticoides*, the total taxa number of widely accepted species of *Centaurea* in Turkey is 167.

During my Ph.D. project, dealing with sect. *Cheirolepis* of *Centaurea* in Turkey, I collected some specimens belonging to the section *Acrolophus* (*Centaurea)*. The specimens were not referable to any known *Centaurea* species. After comparison of my plants with specimens of *C. yozgatensis* (*O. Tugay 3652 T. Uysal*, KNYA), *C. wiedemanniana* (unknown collector *36349*, E; *Wiedemann 103*, K) I concluded that I had found a new *Centaurea* species.

Centaurea ertugruliana Uysal, *sp. nova* (Figs. 1–3)

Planta perennis. Caules penduli vel decumbentes, 15–50 cm alti, albo-tomentosi. Folia albo-vel griseo tomentosa, basalia et inferiora petiolata, lobata vel pinnatifida, segmentis oblanceolatis. Involucrum oblongum, 12–17 mm longum, 7–10 mm latum, Phyllaria lanceolatae, appendices phyllarum oblongim, 3–4 mm longim, 1–2 mm latim, minute ciliati, cilia 0.2–0.5 mm longa, mucro terminalis ca. 0.5 mm longos. Flores rosaceo-violacei, marginales steriles radiantes, hermaphroditi. Achenia lanceolatae, 3–3.5 mm longa, 1.5–2 mm lata. Pappus albus, persistens externus pluriserialis e setis scabris ab exterioribus brevissimis ad interiores 4–5 mm, internus uniserialis e setis abbreviatis conniventibus 0.5 mm longis.

Type: Turkey. [A2] Bursa: Bursa-Balikesir Karayolu, Bursa'ya 31 km kala, kayalar üzeri, 40°04´N, 28°55´E, 342 m, 4.VII.2004 *T. Uysal 566* (holotype KON).

Etymology: The species is named after Dr. Kuddisi Ertuğrul, a celebrated Turkish botanist.

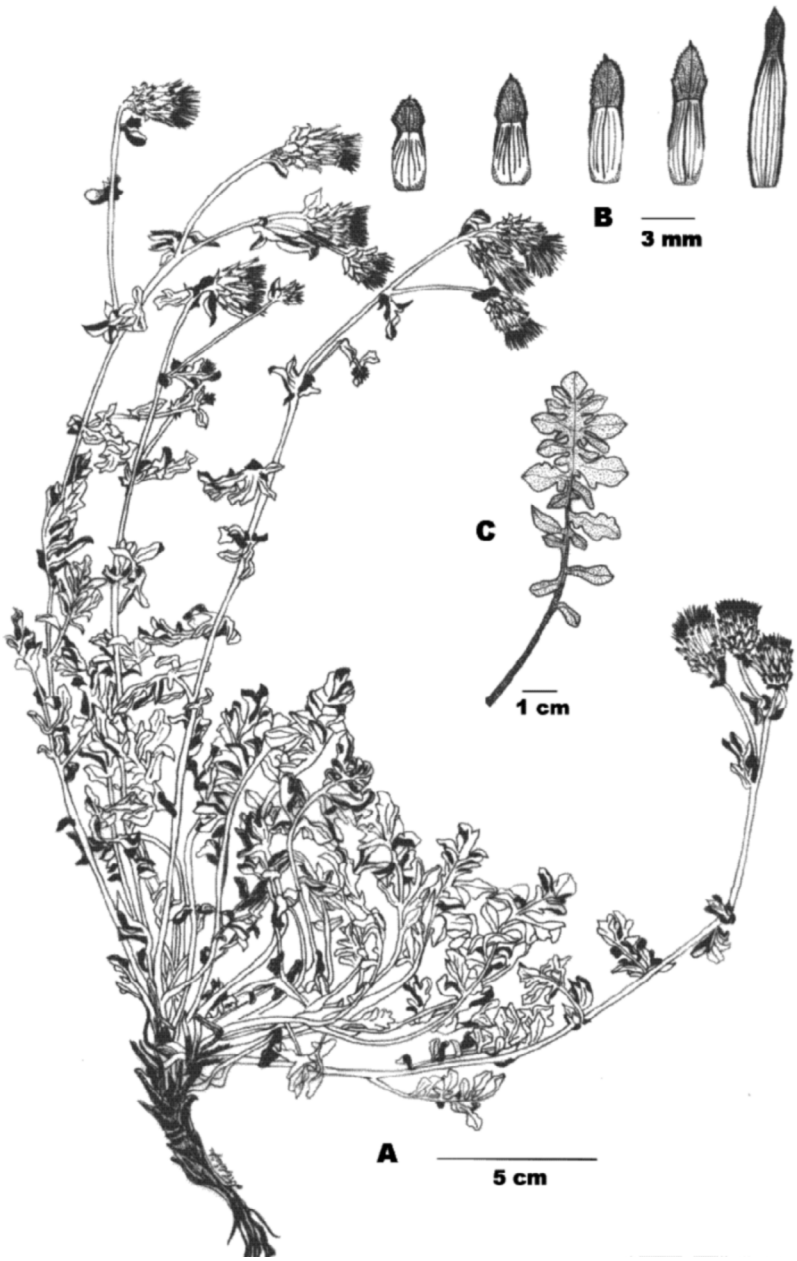

Fig. 1. *Centaurea ertugruliana* (from the holotype). — **A**: Habit. — **B**: Phyllaries. — **C**: Rosette leaves.

Perennial herbs with woody rootstock and rosette leaves. Stems decumbent, not striate, densely whitish tomentose, up to 50 cm, branched above with 4–8 terminal capitula; branches 0.5–3 cm. All leaves densely tomentose; basal leaves 5–12 × 2–3.5 cm, 1 pinnatisect, ultimate segments 5–7 mm broad, margins toothed and as broad as lateral segments or less, median leaves similar to basal leaves, upper leaves with 1–3 lateral lobes at base. Involucre 12–17 × 7–10 mm, ovoid to oblong, not funnel-shaped at fruiting time. Phyllaries pluriseriate, linear-lanceolate, striate, subglabrous. Appendages oblong, decurrent, pale brown; 3–4 × 1–1.5 mm (excluding cilia), cilia membranous, 0.2–0.5 mm, 6–12 on each side, terminal mucro 0.5–1 mm long. Flowers rose-purple, marginal slightly radiant. Achenes cream-coloured, lanceolate,

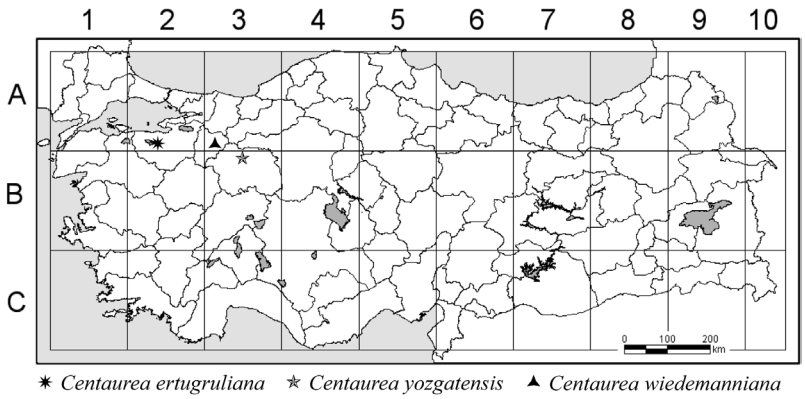

Fig. 2. Distribution map of *Centaurea ertugruliana*, *C. yozgatensis* and *C. wiedemanniana*.

3–3.5 × 1.5–2 mm, subglabrous (sparsely hairy at apex). Pappus double, with scabrid setae, 4–5 mm long, inner ring ca. 0.5 mm long. Flowering in June–July, fruiting in August.

Distribution: This species occurs on stones besides road at 342 m and is endemic to western Turkey (Bursa province), where it seems to be very local. Mediterranean element.

The following key, modified from the *Flora of Turkey* (Davis *et al*. 1988), contains those species thought to be related to *C. ertugruliana*:

Group I

24. Pappus distinct
30. Flowers whitish
30. Flowers pink or purple
31. Capitula always single
32. Involucres ± funnel-shaped at fruiting time, open
33. Lower leaves 2-pinnatisect
33. Terminal spinule 0.5–1 mm ..... 12. *C. wiedemanniana*
33. Terminal spinule 2–2.5 mm ..... 12a. *C. yozgatensis*
33. Lower leaves pinnatisect or lyrate ..... 13. *C. cariensis*
32. Involucres ± closed at fruiting time, not open .... 12b. *C. ertugruliana*
31. Capitula often in small groups (clusters) ..... etc.

Karyology: Mature seeds of *Centaurea ertugruliana* were used for chromosome counts. I found the constant chromosome number of 2n = 18 in all metaphase plates examined (Fig. 3). The same number has been found in *C. calolepis,* a Turkish endemic (Romaschenko *et al*. 2004). Moreover there are similar chromosome numbers reported for two endemic species of Greece, *C. heldreichii* and *C. niederi* (Georgiadis & Phitos 1976, Phitos & Damboldt 1976) of sect. *Acrolophus*.

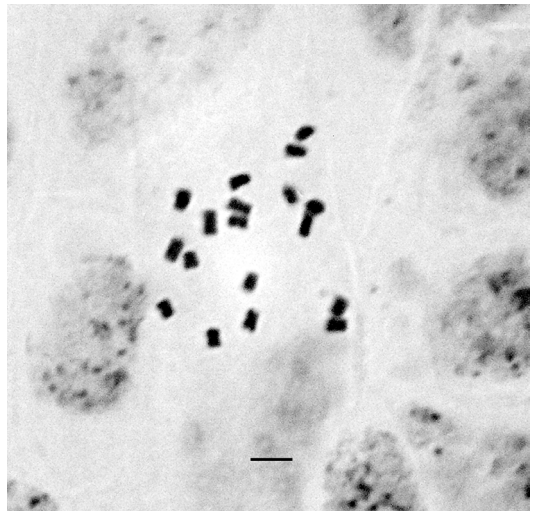

Fig. 3. A chromosome metaphase plate of *Centaurea ertugruliana*, with 2n = 18.

Centaurea ertugruliana is closely related to *C. yozgatensis* but its capitulae do not open like a funnel at fruiting time as they do in *C. yozgatensis*, and the whole plant is densely tomentose *vs*. only basal leaves woolly and stem and stem leaves and upper parts scabrous in *C. yozgatensis*. The appendages in *C. ertugruliana* are larger, oblong (*vs*. narrowly triangular), cream-coloured (*vs*. light brown), 3–4 × 1–1.5 mm (*vs*. 2 × 1 mm) and the cilia membranaceous, 0.2–0.5 mm (*vs*. 1.5 mm), 6–12 (*vs*. 5–6) on each side, terminal one like a mucro, ca. 0.5 mm long (*vs*. not a mucro but long and slender, 2–2.5 mm). Finally, the achenes of *C. ertugruliana* are lanceolate and 3–3.5 × 1.5–2 mm, while in *C. yozgatensis* they are 2–3 × 1–1.5 mm.

Centaurea ertugruliana also resembles *C. wiedemanniana* but differs in having a decumbent stem and 1-pinnatisect basal leaves (not interruptly bipinnatipartite or bipinnatisect). *Centaurea wiedemanniana* also has many slender branches, but *C. ertugruliana* has only 1–3 short branches.

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