

Cirsium handaniae (Asteraceae), a new species from Turkey

Bayram Yıldız¹, Tuncay Dirmenci² & Turan Arabacı^{3,*}

¹ Balıkesir University, Science and Arts Faculty, Biology Department, Balıkesir, Turkey

² Balıkesir University, Necatibey Education Faculty, Department of Biology Education, Balıkesir, Turkey

³ İnönü University, Science and Arts Faculty, Biology Department, Malatya, Turkey (*corresponding author's e-mail: tarabaci@inonu.edu.tr)

Received 7 Jan. 2008, revised version received 20 Mar. 2008, accepted 2 Apr. 2008

Yıldız, B., Dirmenci, T. & Arabacı, T. 2009: *Cirsium handaniae* (Asteraceae), a new species from Turkey. — *Ann. Bot. Fennici* 46: 239–243.

Cirsium handaniae Yıldız, Dirmenci & Arabacı (Asteraceae) is described as a new species from northeastern Anatolia, Turkey. It belongs to the section *Epitrachys* and appears to be close to *C. macrobotrys* and *C. lappaceum s. lato*. Diagnostic characters, as well as a full description and figures are provided. Its morphological characters are discussed and compared with the related species.

Key words: Asteraceae, *Cirsium*, *Epitrachys*, new species, taxonomy

Cirsium is one of the largest genera in Asteraceae, consisting of approximately 250 species, distributed in Europe, North Africa, Siberia, central and southwest Asia, eastern Asia, and North and Central America (Charadze 1963, Davis & Parris 1975, Petrak 1979). According to recent studies, there are 58 species (72 taxa) in Turkey, of which 18 (23 taxa) are endemic, and a further six species are doubtful records or imperfectly known. The species are classified in three sections: sect. *Epitrachys* (41 species), sect. *Cirsium* (16 species) and sect. *Cephalonoplos* (one species) (Davis & Parris 1975, Davis *et al.* 1988, Güner *et al.* 2000, Daşkın *et al.* 2006).

In the course of studying *Cirsium* in Turkey, the authors collected flowering and fruiting material from east and northeast Anatolia in 2006 and 2007. The specimens were named based on relevant literature (Boissier 1875, Som-

mier & Levier 1895, Charadze 1963, Davis & Parris 1975, Petrak 1979, Davis *et al.* 1988, Güner *et al.* 2000). During the identification, the specimens collected by the authors and other *Cirsium* specimens in Turkish herbaria (ANK, AEF, INU, ISTO, ISTE, ISTF, HUB, EGE) were cross-examined. Also, the specimens deposited in E, K, and BM were checked. After thorough studies, we concluded that the specimens collected from Ardahan province, northeast Anatolia represent a hitherto undescribed species belonging to sect. *Epitrachys*.

Cirsium handaniae Yıldız, Dirmenci & Arabacı, *sp. nova* (Figs. 1–2)

Similis C. macrobotryi sed ab haec specie foliis caulinis mediis pinnatipartitis vel pinnatifidis

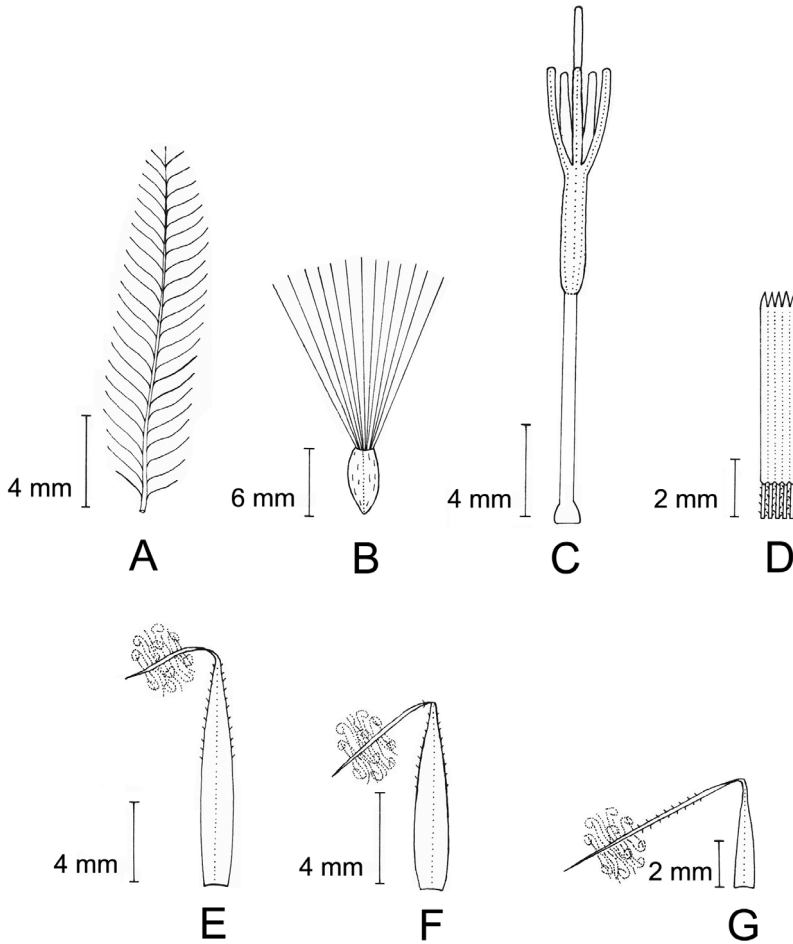


Fig. 1. *Cirsium handaniae* (from B. Yıldız 16731, INU). — **A:** Pappus element. — **B:** Achene. — **C:** Corolla. — **D:** Stamens. — **E:** Inner phyllary. — **F:** Median phyllary. — **G:** Outer phyllary.

(*non pinnatisectis*), capitulis 3–5 in caule (*non 5–12 in apice caulis*), phyllariis 6–8 seriatis (*non 8–12 seriatis*), corolla purpurea et 20–21 mm (*non ochracea et 23–28 mm*), pappo 16–18 mm longo (*non 22–24 mm*) differt. Ab *C. lappa-ceae* haec species caulis singularis (*non e basis ramosus*), foliis caulinis mediis pinnatipartitis vel pinnatifidis (*non pinnatifidis vel pinnatisectis*), phyllariis laxe ordinatus, solum arachnoideus ad apicem (*non imbricatus, arachnoideus ad exteriora*); 6–8 seriatis (*non 7–10 seriatis*), linearis (*non lanceolatis*), corolla 20–21 longo (*non 12–20 mm*) differt.

TYPE: Turkey. A9 Ardahan: Posof, 7 km from Posof to Türközü, 1800 m, 41°32'000"N, 42°47'500"E, 17.VIII.2006, B. Yıldız (16333) & T. Dirmenci (holotype ISTE; isotypes ANK, GAZI, INU).

ETYMOLOGY. The new species was named after Handan

Yıldız, who is the wife of the first author. She has supported the studies of B. Yıldız since 1976.

Perennial. Stem 50–120 cm, erect, upper part curved due to weight of capitula, unbranched, rarely a few branches present at inflorescence, unwinged, striate, white-pannose. Basal leaves to 25 × 6 cm (incl. winged petiole), oblong in outline, pinnatisect to 2/3, spinose-strigose above, setae 0.5–1 mm, more than 5 per 2 mm square, otherwise glabrous; lower surface white-pannose; lateral lobes to 5 pairs, 1.6–3 × 0.6–1 cm, oblong, obtuse, except 5–10 mm apical spine, margins spinulose-ciliate; stem leaves diminishing from base to inflorescence, lower cauline leaves 7–15 × 3–6 cm; median cauline leaves 6–12 × 2–6 cm; upper cauline leaves 4–7 × 1–2 cm, equal to capitula or longer,



Fig. 2. A–C: Inflorescences. — A: *Cirsium handaniae*. — B: *C. lappaceum* subsp. *anatolicum*. — C: *C. macrobotrys*. — D–F: Median cauline leaves. — D: *C. handaniae*. — E: *C. lappaceum* subsp. *anatolicum*. — F: *C. macrobotrys*.

sessile, auriculate, ovate-oblong to oblong-lanceolate in outline, pinnatifid to pinnatipartite, 3–6 lobed, spinose-strigose above, setae 0.5–1 mm, more than 5 per 2 mm square, otherwise glabrous, white-pannose below, lateral and terminal lobes acute to acuminate with apical spine 2–7 mm, spiny between lobes, margins spinulose-ciliate. Involucral leaves 5–8, equal to longer than involucre, 2.5–5 cm, linear to lanceolate. Capitula 3–5, 20–30 × 25–30 mm, ± globose, sessile or pedunculate to 2(–10) cm; phyllaries linear, densely arachnoid only at apex, loosely arranged, 6–8 seriate, outermost phyllaries as long as medians, 13–15 mm, apical spine weak, 1–2 mm, recurved, margins scabrid, inner surface glabrous to lower 1/2, outer surface glabrous to 1/2. Corollas purple, 20–21 mm, lobed to 1/3, filaments hairy at base of anthers, anthers 7–8 mm. Ripe achenes 6–6.5 × ca. 3 mm, slightly compressed, white-variegated, umbo ca. 0.5 mm. Pappus long plumose, 16–18 mm, dirty white. Flowering and fruiting in August and September.

Cirsium handaniae is distributed in Posof

district of northeast Anatolia and it represents the Euro-Siberian element. It grows in deep-soiled steppe, where grasses are dominant. It is known only from the type locality.

Cirsium handaniae belongs to sect. *Epitrichys* and is clearly different from the other species in the section. It is similar to *C. macrobotrys* in having linear and arachnoid apices of median phyllaries. In vegetative characters it resembles *C. lappaceum* subsp. *anatolicum*. The differences among *C. handaniae* and the two other taxa are given in Table 1, and the taxa can be distinguished by the key below.

1. Phyllaries linear, densely arachnoid only at apex, not imbricate 2
1. Phyllaries lanceolate, hairy throughout, imbricate
..... *C. lappaceum*
2. Median cauline leaves pinnatifid to pinnatipartite; capitula remote, 3–5 at stem; phyllaries 6–8 seriate; corollas always purplish, 20–21 mm; pappus 16–18 mm
..... *C. handaniae*
2. Median cauline leaves pinnatisect; capitula 5–12 at stem apex; phyllaries 8–12 seriate; corollas generally ochroleucous, 23–28 mm; pappus 22–24 mm
..... *C. macrobotrys*

Table 1. Morphological differences among *Cirsium handaniae*, *C. macrobotrys* and *C. lappaceum s. lato*.

Characters	<i>C. handaniae</i>	<i>C. macrobotrys</i>	<i>C. lappaceum s. lato</i>
Plant	perennial, stem slender, 50–120 cm, single, curved	biennial, stem robust, 30–200(–300) cm, single, erect	perennial, stout or slender 30–120 cm, usually many stemmed from base and branched at inflorescence, rarely single
Median cauline leaves	auriculate, ovate-oblong to lanceolate in outline, pinnatifid to pinnatifid, lobes with 2–7 mm apical spine	semi-amplexicaule, oblong in outline, pinnatisect, lobes with 3–14 mm apical spine	semi-amplexicaule, pinnatifid to pinnatisect, lobes with 1–24 mm apical spiny
Capitula	loosely arranged, 3–5, ± globose, 20–30 × 25–30 mm, sessile or pedunculate to 2(–10) cm	spicate, (3–)5–12 usually congested at stem apex, 20–35 mm, ± subglobose to ovoid or angulate-ovoid to broadly obovoid	racemose-panicles or racemes, lateral branches 1–7 capitulate, 10–25 mm, ovoid
Median phyllaries	linear, 6–8 seriate, loose, 13–15 mm, arachnoid at apex only, outermost as long as or shorter than median	linear ca. 8–12 seriate, loose, 13–19 mm, arachnoid at apex only, outermost as long as or longer than median	lanceolate, 7–10 seriate, imbricate, 6–13 mm, arachnoid throughout, outermost as long as or shorter than median
Corollas	purple, 20–21 mm	ochroleucous, rarely whitish-pink, 23–28 mm	whitish to purplish pink, 12–20 mm
Achenes	6–6.5 mm	ca. 5.5 mm	4.5–6 mm
Pappus	16–18 mm	22–24 mm	10–17 mm

ADDITIONAL SPECIMENS EXAMINED. — *Cirsium handaniae* (paratype): **Turkey**. A9 Ardahan: Posof, 7 km from Posof to Türközü, 1800 m, 41°32'00"N, 42°47'50"E, 19.IX.2007, *B. Yıldız (16731) & T. Arabacı (INU)*. — *C. macrobotrys*: **Turkey**. A6 Sivas: Şerefiye, between Çamlıkale and Köse Da., 1600–1700 m, *B. Yıldız (4816) & N. Çelik*; A7 Gümüşhane: between Şirvan and Alucra, steppe, 2100 m, *B. Yıldız (16380) & T. Dirmenci*; A8 Erzurum: İspir, Rize road, mountain steppe, 2150 m, *B. Yıldız (16356) & T. Dirmenci*; B7 Sivas: İmranlı, 5 km West of İmranlı, meadows, 1600 m, *B. Yıldız (16237) & T. Dirmenci*; B8 Bayburt: Kop Da., around Aşağıkop village, 1800–2000 m, steppe, *B. Yıldız (16259) & T. Dirmenci*. — *C. lappaceum* subsp. *lappaceum*: **Turkey**. A7 Erzincan: Kelkit road, South of Pöske pass, steppe, 1800–1900 m, *B. Yıldız (16255) & T. Dirmenci*; *ibid.* *B. Yıldız (16245) & T. Dirmenci*; A8 Rize: İkizdere, South of Ovid pass, steppe, 2150 m, *B. Yıldız (16359) & T. Dirmenci*; A9 Kars: Mountains East of Kağızman, 2200 m, *Davis (46696) (K!)*; Ardahan: Between Ardahan and Göle, 20. km, steppe, 2000 m, *B. Yıldız (16312) & T. Dirmenci*; B7 Tunceli: Munzur dağ, above Ovacık, 1600 m, *Davis (31311) & Hedge (K!)*. — *C. lappaceum* subsp. *anatolicum*: **Turkey**. A7 Gümüşhane: between Şirvan and Alucra, steppe, 2100 m, *B. Yıldız (16381) & T. Dirmenci. ibid*; *B. Yıldız (16379) & T. Dirmenci*; A8 Erzurum: İspir, Rize road, South of Ovit pass, steppe, 2150 m, *B. Yıldız (16354) & T. Dirmenci*; A9 Ardahan: Çıldır, North-west of Çıldır lake, alpine meadows, 1900 m, *B. Yıldız (16328) & T. Dirmenci*; C2 Muğla: Girdev Dağı, between Belyayla and Düğer, 1800 m, *Davis (13793) (K!)*; C3 Isparta: Lycanica Mons Anemas, reg. super., 08.1845, *Heldreich* (isolectotypes E! K!); C4 Antalya: Alanya, Geyik Dag, Gözübüyük Yayla, *Davis (14435) (K!)*.

— *C. lappaceum* subsp. *tenuilobum*: **Turkey**. A8 Erzurum: Between İspir and Rize, steppe, 2150 m, *B. Yıldız (16357) & T. Dirmenci*; A9 Kars: Kars to Selim, 1750 m, *Davis (32653) & Hedge (K!)*; Yalnızçam, 1800 m, *Davis (32549) & Hedge (K!)*; Ardahan: East of Ardahan, near Putka Lake, steppe, 1900 m, *B. Yıldız (16314) & T. Dirmenci*.

Acknowledgements

We thank TÜBİTAK for the financial support to our researches (Project No. 106T167), and SYNTHESYS Project (GB-TAF3087) which is financed by European Community Research Infrastructure Action under the FP6 “Structuring the European Research Area” Programme for financial support to our two-months studies in E, K and BM, and the curators of those herbaria, who gave us permission to examine the specimens. Also, our thanks are due to curators of herbaria ANK, GAZI, ISTE, ISTEf and ISTO.

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