

Jurinea micevskii (Asteraceae), a new species from the Republic of Macedonia

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Abstract. *Jurinea micevskii* (Asteraceae) is described and illustrated as a new species endemic to Mt Galičica in the southwestern Republic of Macedonia. It resembles *J. taygetea*, a narrow endemic of Mt Taigetos in the Peloponnese, southern Greece and *J. bocconeii* from Mt Madoníe in north central Sicily. The record of *J. taygetea* for Bulgaria is erroneous.

Key words: Asteraceae, Balkan Peninsula, endemic, *Jurinea micevskii*, Mt Galičica, new species, Republic of Macedonia

Introduction

Jurinea Cass. is a taxonomically complex genus comprising ca. 100 (Strid 1991) to 200 species (Susanna & al. 2006) or even 300 species (Iljin 1962). Most of the taxa occur in the mountains of Central Asia (Tian-Shan, Altai and Pamir). A second centre of diversity is the Caucasus and Asia Minor. The number of taxa gradually decrease eastwards and westwards from these centres. Within the Balkans 18 taxa have been described but less than half are recognised as distinct species (Greuter & Raab-Straube 2008). Most of the Balkan taxa belong to the *J. mollis* aggregate and are distributed mainly in Bulgaria and to a lesser extent, Greece. A few are narrow endemics. *J. mollis* (L.) Rchb. s.l. is distributed in Italy, Austria, Slovakia, Czech Republic, Hungary, eastern and southeastern Europe to western Anatolia.

Of the endemic taxa in the Balkans, two are taxonomically isolated and without close relatives. *J. taygetea* Halácsy is a rare and local endemic restricted to

Mt Taigetos in the Peloponnese, southern Greece. It is related to members of the *J. humilis* aggregate native to the central and west Mediterranean area (Sicily, SW Europe and NW Africa), particularly to *J. bocconeii* (Guss.) Guss. which is a local endemic of Mt Madoníe in north central Sicily. The latter has sometimes been treated as a subspecies of *J. humilis* DC. The other isolated taxon is *J. tzar-ferdinandii* Davidov from E Bulgaria and adjacent Romania. This has affinities with the species belonging to *Jurinea* sect. *Stenocephalae* Benth. & Hook. (*Jurinea* sect. *Linearifoliae* Boiss.), a group characterized by linear leaves and numerous capitula borne in a corymbose inflorescence. Examples are *J. stoechadifolia* (M. Bieb.) DC. and *J. multiflora* (L.) B. Fedtsch. (syn. *J. linearifolia* DC.), distributed from NE Bulgaria to the Crimea and the steppic areas of Ukraine and southern Russia.

It is interesting that literature (Kožuharov 1976) on the distribution of *J. taygetea* in the Balkans implies its existence in Bulgaria and Greece. However, no localities for its distribution in Bulgaria have ever been cited

and no herbarium material is available to document its occurrence there. A recent search by Ana Petrova (Bulgarian Academy of Sciences) also revealed no vouchers in the herbaria of the Bulgarian Academy of Sciences and the University of Sofia (SO, SOA, SOM, abbreviations according to Index Herbariorum, ed. 8) where Kožuharov (1968) had revised the material of *Jurinea* in Bulgaria from several collections. In the account of *Jurinea* for the Mountain Flora of Greece, Strid (1991) had also stated that the report from Bulgaria may be erroneous. As a result *J. taygetea* is not mentioned in the recent Conspectus of the Bulgarian Vascular Flora (Asyov & Petrova 2006).

In 1974 Micevski recorded *J. taygetea* from Mt Galičica in southwest R Macedonia (Micevski 1974). In the recently published Med-Checklist Compositae volume (a critical inventory of vascular plants and their distribution), Greuter & Raab-Straube (2008) included Micevski's record to the other two countries listed in Flora Europaea (Kožuharov 1976), thus – Yugoslavia, Bulgaria and Greece (Yu, Bu, Gr). Mt Galičica is more than 450 km distant from the known occur-

rence of *J. taygetea* on Mt Taigetos and no populations have been noted in-between the two countries, thus this disjunction was considered worthy of investigation. Micevski collected excellent material both in quality and quantity which had been deposited at the Institute of Biology in Skopje (SKO) and this material was ample for detailed study and comparison with the presumably related species *J. taygetea*, *J. bocconei* and *J. polycephala* Form. Our studies reveal that the Mt Galičica plants represent a new species which is here described.

Results

***Jurinea micevskii* Stevanović, Matevski & Kit Tan, sp. nov.** (Figs. 1 & 2)

Species ex affinitate *J. taygetea* et *J. bocconei*. Herba perennis nana; caulis brevissimus, 1–3(–15) cm longus, dense albido-arachnoideo-tomentosus. Folia basalia rosulam formantia, ambitu oblongo-lanceolata, pinnatifida segmentis lateralibus 6–8, margine

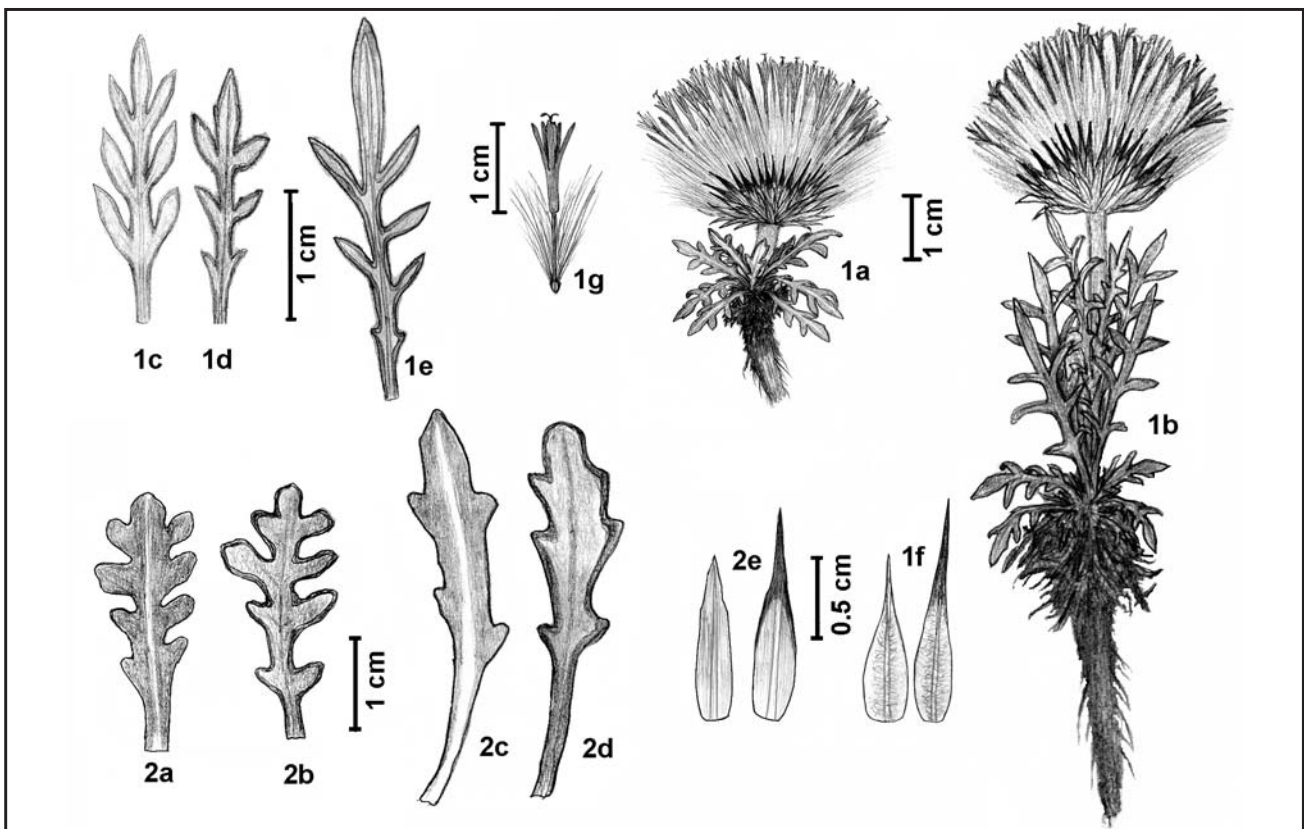


Fig. 1. *Jurinea micevskii*: **1a**, typical specimen; **1b**, long-caulescent specimen; **1c**, basal leaf (adaxial view); **1d**, basal leaf (abaxial view); **1e**, cauline leaf (abaxial view); **1f**, outer (left) and inner (right) phyllaries; **1g**, floret; *J. taygetea*: **2a**, basal leaf (adaxial view); **2b**, basal leaf (abaxial view); **2c**, cauline leaf (adaxial view); **2d**, cauline leaf (abaxial view); **2e**, outer (left) and inner (right) phyllaries.



Fig. 2. *Jurinea micevskii*, sterile rosettes (photo V. Matevski).

revolutis; folia superficiebus ambabus albido-arachnoideo-tomentosa, tomento subtus quam supra densiore; folia caulina pinnatisecta, pauca vel absentia, petiolis quam eis foliorum basaliu aequilongis. Capitula terminalia, singula, subglobosa usque latecampanulata, 25–35 mm diametro. Involucri phylla lanceolata, sparse arachnoideo-tomentosa, phylla exteriora 6–9 × 1–1.3 mm, acuminata, erecta usque apice leviter recurvata, pallide viridia; phylla interiora 9–12 × 1.5–2 mm, acuminata usque aristata, atropurpurea. Flores pallide purpurei usque eburneopurpurei, 20–23 mm longi. Achenia obpyramidalia, longitudinaliter rugosa; pappus 15–20 mm longus.

Jurinea micevskii differt ab *J. taygetea* et *J. bocconei* imprimis phyllis brevioribus et foliorum superficie supra indumento densiore arachnoideo-tomentoso.

Dwarf perennial herb with stout, thickened, blackish-brown rhizome. Stem very short, 1–5 cm, rarely up to 15 cm long, unbranched, densely white arachnoid-tomentose. Basal leaves in condensed rosette, white arachnoid-tomentose, less densely so on upper surface, oblong-oblancheolate in outline, 20–40 × 5–10 mm, pinnatifid with 3–4 pairs of obtuse to acuminate lateral lobes revolute at margin. Cauline leaves absent or

few, glaucous, densely arachnoid-tomentose, lanceolate, pinnatisect with terminal and lateral lobes longer and narrower than in basal leaves. Capitula terminal, solitary (single, small and undeveloped capitula sometimes borne laterally in caulescent plants), subglobose to broadly campanulate, 25–35 mm diam. Phyllaries in several rows, imbricate, sparsely arachnoid-tomentose; the outer lanceolate, 6–9 × 1–1.3 mm, acuminate, erect or slightly recurved at apex, pale green with prominent central nerve; the inner lanceolate, 9–12 × 1.5–2 mm, acuminate to aristate, dark purple at apex and margins. Florets hermaphrodite, tubular with long linear lobes, pale to creamy pink, 20–23 mm long. Achenes obpyramidal, longitudinally ridged, ridges edentulate; pappus silvery-white, 15–20 mm long.

Flowering and fruiting in August.

Type. R Macedonia: Mt Galičica, Magaro peak, rocky calcareous slopes, c. 2160 m, 19 August 1977, K. Micevski (**Holotype** SKO; **Isotypes** BEOU, C).

Eponymy. The species epithet honours Kiril Micevski, the eminent Macedonian academician, a leading figure in botanical science, author and editor of *Flora of Macedonia*. Apparently, no one else had since

recollected the *Jurinea* on Mt Galičica. After this paper went to press, V. Matevski visited the *locus classicus* in early July 2010, and discovered some plants not yet in flower (Figs. 2 & 3).

Affinities. In habit and facies, *J. micevskii* resembles *J. taygetea* as well as the acaulescent or shortly caulescent taxa from the *J. humilis* complex, particularly *J. bocconeii* from Sicily. The west and central Mediterranean members of this group clearly differ from *J. taygetea* and *J. micevskii* by their much longer basal leaves with more numerous leaf segments (up to 10 pairs). However, the taxonomic differences between *J. micevskii* and *J. taygetea* lie in their phyllary morphology (size and shape), indumentum density, size and shape of segments and degree of lobing of basal and cauline leaves. With reference to these characters *J. micevskii* has more similarities to a hypothetical dwarf form of *J. polycephala* Form. (syn. *J. bipinnata* Adamović, *J. arachnoidea* Bunge var. *calvescens* Adamović, *J. arachnoidea* auct. balc., non Bunge), which is a regional endemic of Macedonia, south Serbia and western Bulgaria and considered as part of the *J. mollis* complex. Caulescent

plants of *J. micevskii* with their elongated stems and dense leaves have a striking resemblance to caulescent plants of *J. taygetea*, more so than to *J. polycephala* which has tall stems up to 100 cm long bearing a few linear entire, pinnatisect or bipinnatisect leaves. *J. micevskii* is thus intermediate in character between *J. taygetea* and *J. polycephala* but nevertheless, distinct in itself (see Table 1). It may also be related to *J. cadmea* Boiss. (Danin & Davis 1978), which occurs in west Anatolia and the East Aegean islands of Chios and Samos but we have not been able to study this taxon throughout its geographical range. Based on numerical analysis and molecular data this was recently treated as a distinct taxon (*J. cadmea* Boiss.) by Doğan & al. (2007, 2009). Future molecular studies on *Jurinea* in the Balkans may help to define relationships, particularly in the *J. mollis* complex comprising *J. mollis* s.str., *J. consanguinea*, *J. glyccantha*, *J. polycephala*, *J. subhastata*, etc. The taxonomic position of *J. micevskii* can then be resolved as at the moment its affinities to the alpine montane species (*J. taygetea* and *J. bocconeii*) and the *J. mollis* aggregate are still in doubt.



Fig. 3. *Jurinea micevskii* at *locus classicus* (photo V. Matevski).

Table 1. Morphological differences between *J. micevskii* and related species.

Characters	<i>J. micevskii</i>	<i>J. taygetea</i>	<i>J. bocconeii</i>
Stem	absent or 1–3 (–15) cm	absent or 1–6 cm	absent or 3–15 cm
Stem indumentum	densely white arachnoid-tomentose	densely white arachnoid-tomentose	sparsely white arachnoid-tomentose
Basal leaf indumentum	white arachnoid-tomentose on both surfaces, less dense above	greyish-green almost glabrescent above, densely white arachnoid-tomentose beneath	greyish-green and sparsely lanate above, white arachnoid-tomentose beneath
leaf size and shape	oblong-ob lanceolate, 20–40 × 5–10 mm, pinnatifid with 3–4 pairs of ovate-oblong, obtuse to acuminate lateral lobes	ob lanceolate to spatulate, 10–50 × 3–10 mm, shallowly lobed or pinnatifid with 3–5 pairs of ovate to oblong, obtuse lateral lobes	ob lanceolate-spatulate, 60–80 × 10–15 mm, pinnatifid to pinnatisect with 3–10 pairs of ovate-lanceolate to oblong, obtuse lateral lobes
Cauline leaves	absent or few; petioles as long as in basal leaves	absent, few to several; petioles longer than in basal leaves	absent
size and shape	pinnatifid, terminal and lateral lobes longer and narrower than in basal leaves	entire, shallowly lobed or pinnatifid, terminal and lateral lobes equalling or longer than lobes in basal leaves	
Capitula	solitary, rarely with single small and undeveloped lateral capitula in caulescent plants; 25–35 mm diam.	solitary 12–30 mm diam.	solitary 30–40 mm diam.
Phyllary indumentum	sparsely arachnoid-tomentose	glabrescent	sparsely arachnoid-tomentose
size, shape and colour	outer lanceolate, 6–9 × 1–1.3 mm, acuminate to aristate, erect or slightly recurved, pale green with prominent central nerve; inner phyllaries lanceolate, 9–12 × 1.5–2 mm, broader at base, aristate, deep purple at apex and margins	outer ovate-lanceolate, 12–15 × 2–3.5 mm, stramineous or pale green, erect or recurved at apex; inner phyllaries broadly lanceolate, 15–18 × 1.5–2.5 mm, acuminate, greenish at base, deep purple at apex and upper margins	outer and inner linear-lanceolate, 15–25 × 2–4 mm; outer phyllaries greenish, inner purple at apex
Florets	tubular, pale pink to light purple, 20–23 mm	tubular, pale pink or pinkish-buff, 20–22 mm	tubular, pink, 20–24 mm
Achenes	obpyramidal, longitudinal ridges without minute teeth; pappus silvery-white, 15–20 mm	obpyramidal, longitudinal ridges with minute teeth; pappus silvery-white, up to 22 mm	obpyramidal, longitudinal ridges inconspicuous, with minute teeth; pappus silvery-white, 13–18 mm
Habitat	alpine rocky limestone slopes, screes and meadows, 2150–2160 m	alpine rocky limestone slopes and ridges with some schist, 1800–2400 m	montane rocky limestone slopes and screes, 1200–1600 m
Distribution	R Macedonia: Mt Galičica	S Greece: Mt Taigetos	NC Sicily: Mt Madonie

Distribution (Fig. 4). *Jurinea micevskii* is a strict endemic of Mt Galičica, only known from the type locality which is the Magaro summit close to the highest peak near the border between R Macedonia and Albania. It is geographically isolated and ca. 460 km distant from a presumably related taxon *J. taygetea* which is known only from the western slopes of Mt Taigetos and along the rocky limestone ridge leading to the summit (Halácsy 1912; Tan Kit w/ Iatrou 2001). The taxa belonging to the *J. humilis* complex occur in Sicily (*J. bocconei*), S Spain, S France, Morocco and Algeria (*J. humilis*). *Jurinea polycephala*, a more distant relative, is endemic to R Macedonia, S Serbia, W Bulgaria and perhaps N Greece. Its distribution is imperfectly known as the taxonomic status of the *J. mollis* complex in the Balkans has still not been resolved.

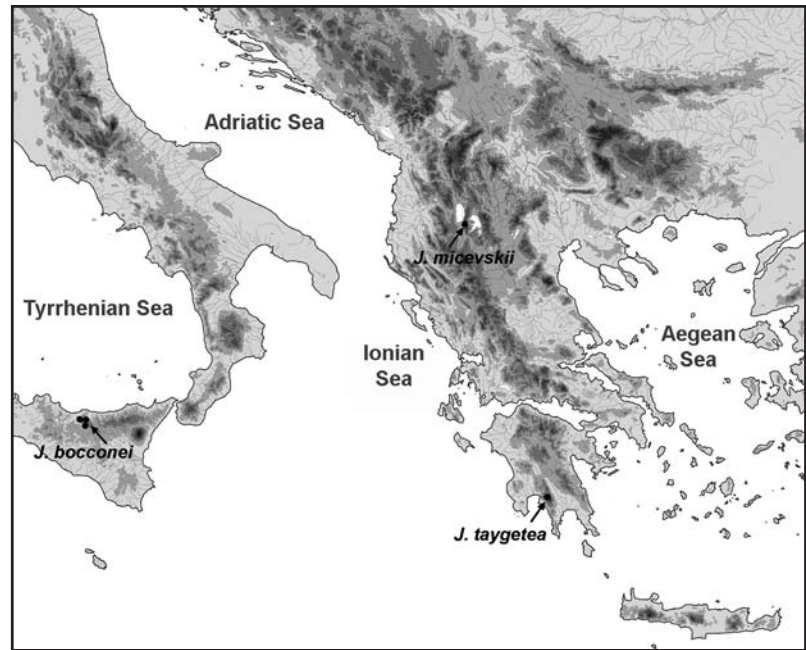


Fig. 4. Distribution of *Jurinea micevskii*, *J. taygetea* and *J. bocconei*.

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