

New *Taraxacum* species from Greece. V

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The paper describes six new species of *Taraxacum* L. from Greece: *T. kalambakae* Sonck, *T. rigidifolium* Sonck, *T. sublimiforme* Sonck, *T. trigonense* Sonck, *T. zagorae* Sonck (of sect. *Vulgaria* or *Ruderalia*), and *T. microcranium* Sonck (of sect. *Erythrosperma*). The species are illustrated in black and white photographs.

Key words: Greece, new species, *Taraxacum*, taxonomy

I had the opportunity, in April 1983 and 1984, and in May 1985, to collect *Taraxaca* in Greece, in the region of Ioannina and Kalambaka. I found there six species, which are described here as new to science.

Taraxacum kalambakae Sonck, sp. nov. (Figs. 1 and 2)

Planta mediocris, 15–20 cm alta. Folia late lanceolata, obscure gramineo-viridia, 4–6-lobata, petiolis angustis, ± pallidis vel levissime violascentibus. Lobi laterales foliorum exteriorum deltoidei, acuti, ± integri. Lobi laterales foliorum interiorum anguste deltoidei, in apicem praelongum sensim attenuati, fere patentes et integri vel non raro in margine superiore et inferiore dentibus tenuibus acutis instructi. Lobus terminalis magnus, sagittatus–hastato-triangularis, marginibus saepe leviter convexus, lobulis basalibus patentibus acutis. Lobus terminalis fol. interiorum etiam in uno latere vel utrimque non raro incisus. Interlobia bene evoluta, interdum ad 10 mm longa, 3–

4 cm lata, nunc integra, nunc dentibus tenuibus vel robustis instructa. Anguli loborum leviter atrimarginati, non plicati. Scapi ± pallidi et glabri. Involucrum parvum, ca. 12 mm longum, 9–10 mm latum, obscure olivaceo- vel cano-viride. Squamae exteriores obscure olivaceo-virides, ca. 10 mm longae, 1.5–2 mm latae, ± reversae, anguste albo-marginatae, non corniculatae. Squamae interiores non corniculatae. Calathium luteum, paulo radians, ligulae marginales subtus stria fusco-violacea notatae. Antherae polliniferae. (Pollinium diametros varians). Stigmata obscura. Achenium ochraceo-stramineum, ad 4.0 mm longum (pyramide inclusa), in parte superiore spinulis conicis acutis sat numerosis praeditum, inferne tuberculatum et striatum, in pyramidem subcylindricam, 0.8–1.0 mm longam subsensim abiens. Rostrum 8 mm longum, pappus lutescenti-albidus 6 mm longus.

Holotype: Greece. Thessalia, Kalambaka, behind the Café Edelweiss, 24.IV.1984 C. E. Sonck s. n. (H).

It is certainly interesting to note that *Taraxacum kalambakae* bears a resemblance to *T. medi-*

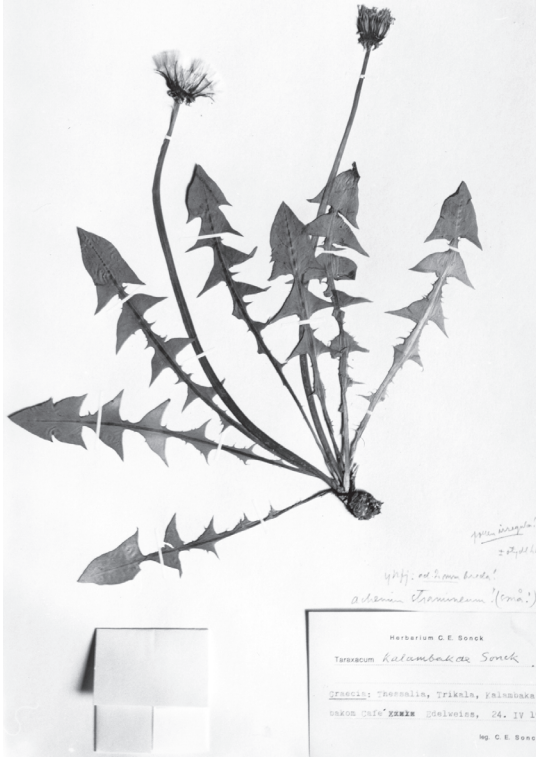


Fig. 1. *Taraxacum kalambakae* Sonck (holotype).

terraneum Soest, which was collected 7.IV.1950 by van Soest (van Soest 1961) in the mediterranean area of Southern France (Castella d'Agay, Esterel, Var.). The interlobia of the latter species are, however, narrower and almost entire, whereas those of *T. kalambakae* are broader and distinctly dentate. Also the achenes are quite different.

***Taraxacum rigidifolium* Sonck, sp. nov.** (Figs. 3 and 4)

Planta mediocris, 15–30 cm alta. Folia rigidula, canescenti-viridia, glabra, immaculata, lanceolata, vulgo ca. 15 cm longa, subacuta–subobtusa, multidentata, paucilobata, petiolis sat longis, angustis, pallidis vel basin versus leviter rubroviolaceis. Lobi laterales 3–4 utrimque, deltoidei, acuti, breviusculi, sat approximati. Lobus terminalis saepe elongatus, 3–5 cm longus, 2 cm latus. Interlobia brevia, ca. 3–4 mm lata. Scapi glabri, pallidi, sat angusti. Involucrum parvum, ca. 10 mm lon-



Fig. 2. *Taraxacum kalambakae* Sonck (holotype). Achenes ($\times 15$). Photo by Tuuli Timonen.

gum, 6–7 mm latum, olivaceo-viride, basi ovato-truncatum. Squamae exteriores retroflexae, canescenti- vel olivaceo-virides, ca. 6–7 mm longae, 1–1.5 mm latae, non-corniculatae, angustissime albomarginatae. Squamae interiores levissime corniculatae. Calathium pallide luteum, paulo radians. Ligulae marginales subtus stria canoviola-cea notatae. Antherae polliniferae (pollinum diam. varians, $2n = 24$). Achenium ochraceo-stramineum, 3 mm longum (pyramide inclusa), 0.8–0.9 mm latum, superne spinulis breviusculis erecto-patentibus sat dense praeditum, inferne striatum vel \pm leve, in pyramiden subcylindricam, 0.3 mm longam subsensim abiens. Rostrum 9 mm longum. Pappus albus 6 mm longus.

Holotype: Greece. Epirus, Ioannina, Flamborari, alt. 1 000 m, 25.V.1985 C. E. Sonck s. n. (H). Paratype: Greece. Epirus, Ioannina, Greveniti, alt. 1 000 m, 25.V.1985 C. E. Sonck s. n. (H).

Taraxacum rigidifolium is a very interesting species according to Håkan Wittzell (pers. comm.), who has worked with DNA-determination of *Taraxaca* in Lund, Sweden. Some specimens of



Fig. 3. *Taraxacum rigidifolium* Sonck (holotype).

T. rigidifolium may have unlobated leaves, while other specimens show 3–4 lobes with well-developed interlobes. All the leaves, however, are grayish-green and more or less rigid. Wittzell (pers. comm.) has found a related species on the slopes of the Pindus Mountains, near Katára.

The specimens with unlobated leaves resemble *Taraxacum maderense* Sahlin & Soest (Sahlin & van Soest 1974). However, that species has bright violet petioles, while those of *T. rigidifolium* are green or, at the most, have only a weak reddish tinge.

Taraxacum sublimiforme Sonck, sp. nov. (Figs. 5 and 6)

Planta mediocris, 15–20 cm alta. Folia lanceolata, gramineo-viridia, ca. 12–15 cm longa, 4–5 cm lata, petiolis brevissimis, angustis vel subangustis, rubro-purpureis. Lobi laterales utrinque 4–5, deltoidei, acuti vel non raro subacuti, vulgo integri, mediocriter longi, patentes vel interdum leviter reversi. Nervus medianus foliorum ± rubro-violaceus et araneosus. Lobus terminalis sagittatus–late triangularis, 4–6 cm longus, 3–4 cm latus, subacutus. Interlobia ± bene evoluta, ca. 4–7 mm lata, integra, non atrimarginata. Anguli lorum non plicati. Scapi pallidi vel leviter colorati, saepe ± araneosi. Involucrum sat parvum, ca. 12–13 mm longum, 10 mm latum, obscure olivaceo-viride. Squamae exteriores ca. 8 mm longae, 2 mm latae, angustissime albomarginatae.



Fig. 4. *Taraxacum rigidifolium* Sonck (holotype). Achenes ($\times 15$). Photo by Tuuli Timonen.

Squamae interiores non corniculatae. Calathium luteum, paulo radians, ligulae marginales subtus stria cano-violacea notatae. Antherae polline carentes. Stigmata virescentia–leviter obscura. Achenium stramineum, 4.2 mm longum (pyramide inclusa) superne parce breviter spinulosum, ceterum ± leve vel striatum, in pyramiden subcylindricam 0.4–0.5 mm longam abiens. Rostrum 8 mm longum, pappus albus 7 mm longus.

Holotype: Greece. Epirus, Ioannina, near the old castle, 26.IV.1983 C. E. Sonck s. n. (H). Topotype: Same locality, 22.IV.1984 C. E. Sonck s. n. (H).

This species bears a certain resemblance to *Taraxacum sublime* Sonck from southern France. They both have rather big terminal lobes with a triangular shape. This lobe is in *T. sublimiforme* a little more subacute, while the terminal lobe in *T. sublime* is triangular with acute corners. The outer bracts of the former species are very narrow (only 2 mm) and almost without a white border, while those of *T. sublime* are 3–4 mm broad, with a distinct border. *Taraxacum sublime* has pollen, whereas *T. sublimiforme* is an apolline species.



Fig. 5. *Taraxacum sublimiforme* Sonck (holotype).

Taraxacum trigonense Sonck, sp. nov. (Figs. 7 and 8)

Planta mediocris, 10–15 cm alta. Folia firmula, sat obscure canescenti-viridia, parce araneosa, petiolis angustis–subangustis, ad basin sordide rubroviolaceis. Lobi laterales 4(–5), vulgo integri, deltoidei, vel praesertim superiores ±falcati, patentes vel recurvati. Lobus terminalis in foliis exterioribus et intermediis sagittatus, integer, acutulus, ca. 1–2 cm longus, in foliis interioribus hastato-triangularis, ad 3–4 cm longus, 2 cm latus. Interlobia bene evoluta, sat longa, 3–5 mm lata, non solum dentata sed etiam lacinulata. Scapi parce araneosi, ±sordide colorati, floriferi foliis breviores. Involucrum sat breve, ca. 10 mm latum, obscure olivaceo-viride. Squamae exteriores longiusculae, anguste lanceolatae, ca. 2.0–2.5 mm latae, sat obscure canescenti-virides, laxe reversae vel recurvae, inconspicue marginatae, omnes leves. Squamae interiores non-corniculatae. Calathium pallide luteum, paulo radians, ca. 2–2.5 cm diametro. Ligulae marginales sat angustae, extus stria



Fig. 6. *Taraxacum sublimiforme* Sonck (holotype). Achenes ($\times 15$). Photo by Tuuli Timonen.

fuscescenti notatae. Ligularum dentes sordide purpurascens. Antherae polliniferae. Stylus et stigmata obscura. Achenium sat pallide ochraceo-stramineum, 3.8 mm longum (pyramide inclusa), superne verrucosum–brevissime spinulosum, inferne usque ad basin striatum, in pyramiden cylindricam, 0.6–0.7 mm longam subsensim abiens. Rostrum 10 mm longum, pappus albidus 6 mm longus.

Holotype: Greece. Epirus, Trigona, on a moist loamy slope on the roadside, 20.IV.1984 C. E. Sonck s. n. (H).

Taraxacum trigonense can be compared to *T. mediterraneum* Soest (van Soest 1954: 530) and *T. mediterraniforme* Soest (van Soest 1961). These species, however, have fairly regular lateral lobes which are deltoid, acute and entire. Their interlobes are entire too, whereas those of *T. trigonense* are usually provided with a pair of pronounced teeth. Moreover, the upper lateral lobes of *T. trigo-*



Fig. 7. *Taraxacum trigonense* Sonck (holotype).

nense are usually more or less falcate, curved downwards, while those of *T. mediterraneum* and *T. mediterraniforme* are regularly triangular.

Taraxacum zagorae Sonck, sp. nov. (Figs. 9 and 10)

Planta mediocris, ca. 20 cm alta. *Folia erecta*, sat obscure gramineo-viridia, 5–6-lobata, petiolis angustis, ad basin \pm rubroviolaceis. *Lobi laterales deltoidei*, acuti, patuli, in margine superiore saepe subulato-dentati vel denticulati, in margine inferiore integri. *Lobus terminalis foliorum interiorum sagittato-hastatus* magnitudine mediocris (ca. 30 mm longus), acutulus, in uno latere vel utrimque non raro incisus, supra incisuram interdum margine rotundato. *Lobus terminalis foliorum*



Fig. 8. *Taraxacum trigonense* Sonck (holotype). Achenes ($\times 15$). Photo by Tuuli Timonen.

exteriorum brevior (ca. 15 mm longus). *Interlobia bene evoluta*, ca. 3–5 mm lata, sat intense atrimarginata, vulgo subulato-dentata. *Scapi pallidi*, leviter araneosi, floriferi foliis aequilongi. *Involucrum parvum*, ca. 18 mm longum, 10 mm latum, obscure olivaceo-viride, basi sat truncata. *Squamae exteriores supra fusco-violaceae*, subtus canovirides, laxe patentes vel \pm recurvae, ad 8–10 mm longae, 2 mm latae, angustissime albomarginatae, non corniculatae. *Squamae interiores omnes leves*. *Calathium pallide luteum*, paulo radians (?). *Ligulae marginales subtus stria fusco-violacea ornatae*. *Antherae polline carentes*. *Stigmata obscura*. *Achenium (immaturum?) pallide luteo-stramineum*, 4.0 mm longum (pyramide inclusa), supra medium 0.7 mm latum, superne tuberculatum–brevissime spinulosum, inferne striatum, in pyramidem subcylindricam 0.5 mm longam subsensim abiens. *Rostrum 6 mm longum*. *Pappus albidus 6 mm longus*.

Holotype: Greece. Magnisia, Volos, Zagorá, 2.V.1984 C. E. Sonck s. n. (H).



Fig. 9. *Taraxacum zagorae* Sonck (holotype).

This apolline species with small and dark capitula is easy to identify due to its clearly black-edged and sharply serrated interlobia.

***Taraxacum submicrocranium* Sonck, sp. nov.** (Fig. 11 and 12)

Planta parva–mediocris, ca. 10–15 cm alta. Folia gramineo-viridia, 3–4-lobata, parce araneosa–subglabra, petiolis angustis ad basin roseo-violascentibus. Lobi laterales breves, deltoidei, patuli, acuti, integri. Lobus terminalis sagittato-hastatus, saepe obtusiusculus, interdum ad 40 mm longus, 20 mm latus, vulgo brevior (ca. 15 mm longus, 10 mm latus) lobulis basalibus acutis vel non raro in uno latere rotundatis. Lobus terminalis etiam non raro in uno latere vel utrimque incisus et supra incisuram interdum margine rotundato. Interlobia saepe ± integra, 2–3 mm lata, su-



Fig. 10. *Taraxacum zagorae* Sonck (holotype). Achenes ($\times 15$). Photo by Tuuli Timonen.

perne brevia, inferne ca. 8–10 mm longa. Anguli loborum non plicati. Scapi pallidi vel leviter colorati, parce araneosi, floriferi foliis aequilongi. Involucrum parvum, sat obscure olivaceo-viride, ca. 12–15 mm longum, 10 mm latum, basi truncatum. Squamae exteriores sat numerosae, breviusculae, retroflexae, acutiusculae, canescenti-virides, 2 mm latae, non corniculatae. Squamae interiores parce leviter corniculatae. Calathium pallide luteum, paulo radians, ligulae marginales subtus stria fusco-violacea ornatae. Antherae polline carentes. Stigmata virescentia–leviter obscura. Achenium stramineum, 4.1 mm longum (pyramide inclusa), ca. 0.7 mm latum, superne dense spinulosum, inferne tuberculatum, basin versus leve, in pyramiden cylindricam 0.9–1.0 mm longam subsensim abiens. Rostrum 10–11 mm longum, pappus albidus vel leviter lutescenti-albidus, 6 mm longus.

Holotype: Greece. Epirus, Ioannina, near the old castle, 26.IV.1983 C. E. Sonck s. n. (H). Paratype: Greece. Epirus, Ioannina, on the Isle of Lake Ioannina, 22.IV.1984 C. E. Sonck s. n. (H).

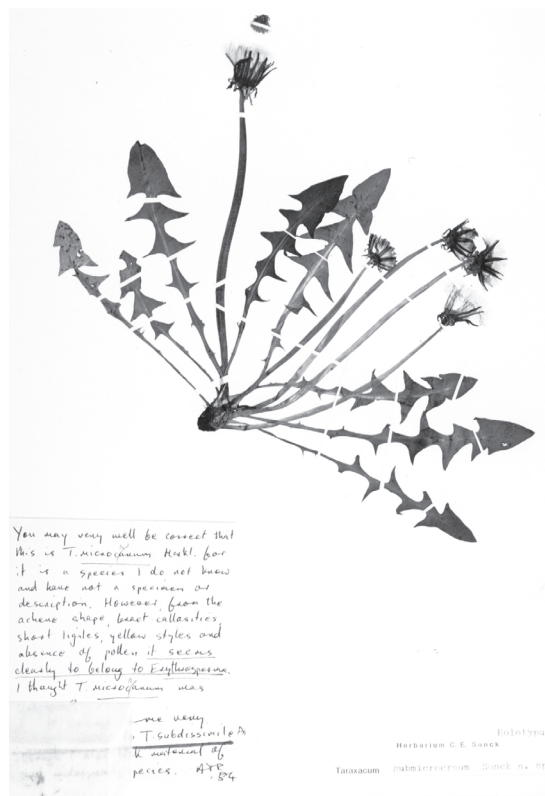


Fig. 11. *Taraxacum submicrocratum* Sonck (holotype).

The less fortunate epithet *submicrocratum* was quite intentionally chosen to show that *Taraxaca* belonging to different sections occasionally have the same habitus, showing differences mainly in the achenes. *Taraxacum submicrocratum*, of the section *Erythrosperma*, bears the closest resemblance to *T. microcratum* Markl. (Marklund 1938: 104 and 144; Marklund 1940: 99), which belongs to section *Ruderalia*. Only the outer bracts are different; these are in *T. submicrocratum* markedly retroflex, while those of *T. microcratum* are attached to the capitule. The main difference lies in the achenes. *Taraxacum microcratum* has darker achenes with a shorter (0.6–0.75 mm) pyramid.

Among the *Erythrospermae* there are not many species that could be confused with *Taraxa-*



Fig. 12. *Taraxacum submicrocratum* Sonck (holotype). Achenes (× 15). Photo by Tuuli Timonen.

cum submicrocratum, possibly *T. brachyglossum* Dahlst. and *T. subdissimile* Dahlst., which, however, both have rather different terminal lobes and are more indented.

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