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## New species of the genus *Taraxacum* (Asteraceae, Cichorieae) from Croatia

### Abstract

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Two new species of *Taraxacum* from Istria and adjacent islands, in the northeastern part of the Mediterranean, are described as new and illustrated. Both belong to *Taraxacum* sect. *Erythrosperma* and have a chromosome number of  $2n = 3x = 24$ . Their known distribution is presented.

Key words: *Compositae*, dandelions, *Taraxacum* sect. *Erythrosperma*, taxonomy, *Taraxacum starmuehleri*, *Taraxacum edessicoides*.

The cosmopolitan genus *Taraxacum* F. H. Wigg. of the liguliflorous *Asteraceae* comprises more than 2500 species. Most of them are obligately agamospermous and polyploid (basic chromosome number  $x = 8$ ). The infrageneric classification of the genus is based on the sectional concept and comprises about 50 sections (Kirschner & Štěpánek 1997). Among them, *Taraxacum* sect. *Erythrosperma* (H. Lindb.) Dahlst. (*T. laevigatum* agg.) is a xerophytic and native element of the (boreal-)temperate to submeridional-meridional zone of Europe. North of the Alps the taxonomy of this section has been studied since about 100 years and is relatively well known. In contrast, the Mediterranean part of its area is poorly explored. Although some papers provide information to sectional taxonomy focussing on Albania (Sonck 1988), Corse (Soest 1957a, 1966), Cyprus (Lindberg 1946), Greece (Dahlstedt 1926, Soest 1966, 1971, 1976, Sonck 1984, 1985a), Italy (Hoppe & Hornschuch 1818, Lojacono 1903, Soest 1966), Portugal (Soest 1948, 1951, 1955), Spain (Lindberg 1932, Richards 1992, Sahlin 1981, 1984, Soest 1954a, 1954c, 1966, 1971), France (Soest 1954b, 1957b, 1966, Soest & Lambinon 1976, Sonck 1985), Turkey (Rechinger 1959, Soest 1966, 1968, 1974) the studies have local character and a comprehensive investigation is still far away. In the course of the preparation of the contribution on *Taraxacum* for the "Flora of Istria", Croatia (edited by W. Starmühler, Austria, Graz) the present author discovered two hitherto unknown species of this section, which are described as new to science.

***Taraxacum* (sect. *Erythrosperma*) *starmuehleri* Uhlemann, sp. nov.**

Holotype: Croatia, Istria, east coast, Labin S, between Drenje and Sveti Marina, roadside, 1.4.2002, *Uhlemann* (B 100261969; isotypes: B 100261968, DR, herb. Uhlemann).

*Planta* mediocriter alta (10-20 cm), gracilis. *Folia* viridia, subglabra, immaculata. *Petioli* inlati, angusti, rubropurpurei. *Nervus medianus* sordide viridis. *Laminae foliorum* distincte lobata; *lobi laterales* (2-)3-4 utrimque, anguste deltoidei, patentes vel parum recurvi, acuti, integri vel in marginibus distalibus saepe dente conspicuo vel lobulo instructi, in marginibus proximalibus integri vel raro dente minuto instructi; *lobus terminalis* foliorum exteriorum major, incisus, foliorum interiorum parvus, lobulo apicali saepe elongato usque linguiforme protracto; *interlobia* bene evoluta, plana, viridia, saepe dentata. *Scapi* glabri. *Involucrum* obscurum glauco-viride, pruinatum. *Squamae exteriores* erectae, anguste lanceolatae, 2-4 mm latae, 5-7 mm longae, anguste albido-marginatae, sub apice corniculatae. *Calathium* 25-30 mm diametro, luteum, radians. *Ligulae marginales*, planae, subtus stria canoviolacea instructae. *Antherae* polliniferae. *Stylus* superne virescens. *Achenium* fuscostramineum, 3-3.2 mm longum (pyramide exclusa), superne spinulosum, ceterum squamulosum vel rugosum, in pyramidem cylindricam, 0.9-1 mm longam abrupte abiens, rostrum 9 mm longum, *pappus* albus.

*Taraxacum starmuehleri* is a delicate plant, 10-20 cm tall with light green leaves. The petioles are thin, unwinged and purple-red coloured. The midrib is brownish green (dirty green). The leaves are distinctly lobed with (2-)3-4 lobe pairs. The lobes are narrowly triangular, patent to somewhat recurved, entire or dissected by one big tooth or lobule on the distal margin. The proximal margin of the lobe is usually entire, or rarely provided with a small tooth. The terminal lobe of the outer leaves is large and incised. The inner leaves have a small, triangular terminal lobe often with a lingulate tip. The interlobes are well differentiated, smooth and usually green. The scapes are glabrous. The involucre as well as the outer bracts are dark bluish green and pruinose; the outer bracts are narrowly lanceolate, erect, bordered, corniculate, 2-4 mm wide and 5-7 mm long. The flower head is about 25-30 mm in diameter and pure yellow. The outermost ligules are striped greyish violet beneath. Pollen is present. The styles are discoloured. The achenes are greyish brown, 3-3.2 mm long (without cone), the cone is cylindrical and c. 1 mm long, the rostrum 9 mm long. The pappus is white.

*lc.* – Fig. 1, see also Fig. 4A-B (in colour) in the electronic supplement to this paper at [www.bgbm.org/willdenowia/willd37/uhlemann.htm](http://www.bgbm.org/willdenowia/willd37/uhlemann.htm).

*Etymology.* – The species is named for Dr Walter Starmühler (Austria, Graz), editor and author of the Flora of Istria.

*Chromosome number.* –  $2n = 3x = 24$  chromosomes have been counted in root tip mitoses of material from Istria, Ravni, 31.3.2002, *Uhlemann* (DR).

*Affinities.* – *Taraxacum starmuehleri* is recognised by its thin, unwinged and purple-red petioles, a characteristic leaf lobation, large, incised terminal lobes on the outer leaves and small triangular terminal lobes with a lingulate tip on the inner leaves. The greyish brown fruits are a rather exceptional case in the section *Erythrosperma*. Nevertheless, due to its habitat, delicate habit, the position of the outer bracts and achene characters this species is a typical member of the section *Erythrosperma*.

The leaf shape of *Taraxacum starmuehleri* is similar to that of *T. tanyolobum* Dahlst. (1933) but the latter species has more dentate and more numerous ( $\pm 5$ ) leaf lobes, pinkish petioles and in addition purple outer bracts with recurved tips. *T. starmuehleri* is also morphologically related to *T. squamulosum* Soest (1957a), described from Corse. However, the latter species has fulvous achenes with a shorter cone (0.4 mm).

*Specimens seen.* – CROATIA: ISTRIA: Ostküste, Labin S, Ravni, Straßenrand im Dorf, 31.3.2002, *Uhlemann* (DR); Labin S, Bucht von Sveti Marina, Ruderalstelle am Straßenrand, 30.4.2005, *Uhlemann* (DR); Labin S, zwischen Crnje und Sv. Marina, Straßenrand, 1.4.2002, *Uhlemann* (DR); Westküste, Porec 15 km E, Baderna 2 km S, Straßenrand, 27.3.2005, *Uhlemann* (DR). –



Fig. 1. *Taraxacum starmuehleri*, holotype specimen at B.

CRES: Valun, Wegrand im Ort, 4.4.2002, *Uhlemann* (DR); Porozina S, lichter Eichenwald, 4.4.2002, *Uhlemann* (DR), W-Hang zum Vrana-See, 150 m, Trockenrasen, 30.4.2003, *Meister & Starmühler* (Herbarium Istriacum<sup>1</sup>); Zentralstraße/Kreuzung nach Valun, Straßenrand, 12.4.2007, *Uhlemann* (herb. Uhlemann). – KRK: Dobrinj N, Straßenrand zwischen Klimno und Soline, 8.4.2007, *Uhlemann* (herb. Uhlemann); Malinska E, Rasopasno NE, Klanice, ruderal im Dorf, Wegrand, 8.4.2007, *Uhlemann* (herb. Uhlemann).

***Taraxacum* (sect. *Erythrosperma*) *edessicoides* Uhlemann, sp. nov.**

Holotype: Croatia, Istria, east coast, Labin S, Ravni, roadside in the village, 31.3.2002, *Uhlemann* (B 100261971; isotypes: B 100261970, DR, herb. Uhlemann).

*Planta* mediocriter alta (10-20 cm), gracilis. *Folia* viridia, subglabra, immaculata. *Petioles* inalati, angusti, virides vel raro parum lucide purpurei. *Nervus medianus* viridis. *Laminae foliorum* distincte lobata; *lobi laterales* (3-)4-5 utrimque, deltoidei (praesertim in foliis exterioribus) vel anguste deltoidei, basi sublatis et convexi in apicem sat porrigentem contracti, patentes vel parum recurvi, acuti, integri vel in marginibus distalibus saepe dente conspicuo vel lobulo instructi, in marginibus proximalibus integri; *lobus terminalis* mediocris, triangularis, lobulo apicali saepe elongato usque linguiforme protracto; *interlobia* bene evoluta, plana, viridia, saepe dentata. *Scapi* parce araneosi, brunneo-virides. *Involucrum* olivaceo-viride, leviter pruinose. *Squamae exteriores* patentes usque recurvatae, canovirides, anguste lanceolatae, 2-4 mm latae, 5-7 mm longae, anguste albido-marginatae, sub apice corniculatae. *Calathium* 25-30 mm diametro, luteum, radians. *Ligulae marginales*, planae, subtus stria canoviolacea instructae. *Antherae* polline carentes. *Stylus* superne obscure virescens. *Achenium* rubro-brunneum, 2.8-3 mm longum (pyramide exclusa), superne spinulosum, ceterum squamulosum vel rugosum, in pyramidem cylindricam, 1-1.2 mm longam abrupte abiens, rostrum 10 mm longum, *pappus* albus.

*Taraxacum edessicoides* is a delicate plant, 10-20 cm tall with mid green leaves. The petioles are thin, unwinged and green or more seldom very faintly pinkish coloured. The midrib is green. The leaves are distinctly lobed with (3-)4-5 lobe pairs. The lobes are triangular with broad basis tapering into a small tip, patent to somewhat recurved, entire or dissected by one big tooth or lobule on the distal margin mainly at the inner leaves. The proximal margin of the lobe is usually entire, more rarely provided with a very small tooth. The terminal lobe is triangular with a linguulate tip. The interlobes are well differentiated, smooth and usually green. The scapes are very slightly hairy. The involucre is dark green and slightly pruinose; the outer bracts are small lanceolate, 2-4 mm wide and 5-7 mm long, more or less spreading to recurved, bordered and corniculate. The flower head is 25-30 mm in diameter and pure yellow. The outermost ligules are striped greyish violet beneath. Pollen is absent. The styles are discoloured. The achenes are reddish brown, 2.8-3 mm long (without cone), the cone is cylindrical and 1-1.2 mm long, the rostrum 10 mm long. The pappus is white.

*lc.* – Fig. 2, see also Fig. 4C (in colour) in the electronic supplement.

*Chromosome number.* –  $2n = 3x = 24$  chromosomes (Fig. 5, see electronic supplement) have been counted in root tip mitoses of material from Istria, Ravni, 31.3.2002, *Uhlemann* (DR).

*Affinities.* – *Taraxacum edessicoides* is mainly characterised by its simple leaf lobation, green petioles, pollenless flowers and reddish brown achenes with a cone exceeding 1 mm. With regard to leaf shape it is related to *T. edessicum* Sonck (1985) described from Greece, which is distinguished by more numerous leaf lobes, dirty violet petioles, yellowish green styles and pure brown achenes. *T. edessicoides* also resembles *T. stenospermum* Soest (1954a) described from Spain, but the latter has violet petioles, pollen and greyish brown achenes with a shorter cone (0.8 mm). The leaf shape of *T. edessicoides* is also similar to that of *T. polyschistum* Dahlst.

<sup>1</sup> The Herbarium Istriacum will be incorporated in the Herbarium der Botanischen Abteilung des Landesmuseums für Kärnten (KL) after publication of the “Flora of Istria” (Starmühler 1998).



Fig. 2. *Taraxacum edessicoides*, holotype specimen at B.

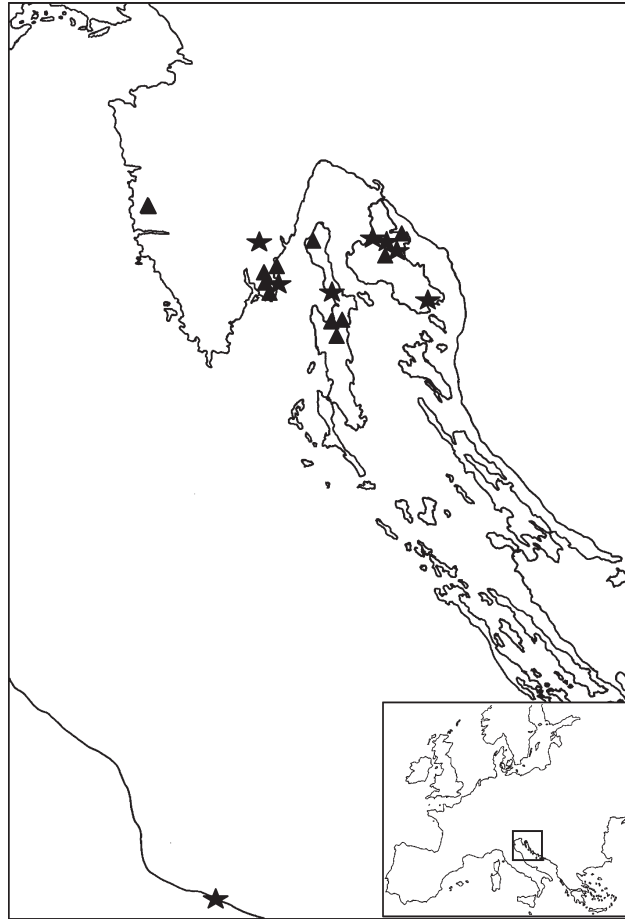


Fig. 3. Known distribution of *Taraxacum starmuehleri* (▲) and *T. edessicoides* (★).

(1909) occurring in Sweden, but the latter species differs by more falcate leaf lobes, purple petioles and broader outer bracts (4-5 mm).

*Specimens seen.* – CROATIA: ISTRIA: Ostküste, Labin S, Ravni, Straßenrand im Dorf, 31.3.2002, Uhlemann (DR); Ostküste, Labin N, Sveti Martin, Wegrund im Ort, 3.4.2002, Uhlemann (DR). – CRES: Cres, Straßenrand im Ort, 4.4.2002, Uhlemann (DR). – KRK: Malinska E, Dobrinj, Wegrund am Friedhof, 8.4.2007, Uhlemann (herb. Uhlemann); Ostküste, Baska, Baumscheibe nahe des Strandes, 11.4.2007, Uhlemann (herb. Uhlemann); Westküste, Malinska, Rasenanlage am Hafen, 13.4.2007, Uhlemann (herb. Uhlemann); Malinska E, Rasopasno NE, Klanice, ruderal im Dorf, Wegrund, 13.4.2007, Uhlemann (herb. Uhlemann). — ITALY: Pescara, 5.1866, Kuntze (DR 000110).

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## References

- Dahlstedt, H. 1909: Nya skandinaviska *Taraxacum*-arter, jämte översikt af grupperna *Erythrosperma* och *Obliqua*. – Bot. Not. **1909**: 167-179.
- 1926: Über einige orientalische *Taraxacum*-Arten. – Acta Hort. Berg. **9(1)**: 1-36.
- 1933: Einige neue *Taraxacum*-Arten aus der Schweiz. – Ber. Schweiz. Bot. Ges. **42**: 718-723.
- Hoppe, D. H. & Hornschuch, F. 1818: Tagebuch einer Reise nach den Küsten des adriatischen Meers und den Gebirgen von Krain, Kärnthen, Tyrol, Salzburg, Baiern und Böhmen; vorzüglich in botanischer und entomologischer Hinsicht. – Regensburg.
- Kirschner, J. & Štěpánek, J. 1997: A nomenclatural checklist of supraspecific names in *Taraxacum*. – Taxon **46**: 87-98. [[CrossRef](#)]
- Lindberg, H. 1932: Itinera mediterranea. Ein Beitrag zur Kenntnis der westmediterranen Flora. – Acta Soc. Sci. Fenn., Ser. B, Opera Biol. **1(2)**: 1-178.
- 1946: Iter Cyprium. – Acta Soc. Sci. Fenn., Ser. B, Opera Biol. **2(7)**: 3-37.
- Lojacono, M. 1903: Flora sicula **2(1)**. – Palermo.
- Rechinger, K. H. 1959: Zur Flora von Syrien, Libanon und den angrenzenden Gebieten der Türkei. – Ark. Bot. **5(1)**: 468-471.
- Richards, A. J. 1992: The *Taraxacum*-flora of the Sierra de Guadarrama and its surroundings (Spain). – Anales Jard. Bot. Madrid **50**: 201-208.
- Sahlin, C. I. 1981: Deux nouvelles especes de *Taraxacum* d'Espagne. – Collect. Bot. (Barcelona) **12**: 167-170.
- 1984: New Pyrenean species of *Taraxacum* (*Compositae*). – Pirineos **121**: 5-27.
- Soest, J. L. van 1948: Sur quelques *Taraxaca* et *Hieracia* du Portugal. – Agron. Lusit. **10**: 6-23.
- 1951: Sur quelques *Taraxaca* du Portugal. – Agron. Lusit. **13**: 67-76.
- 1954a: Sur quelques *Taraxaca* d'Espagne. – Collect. Bot. **4**: 1-32.
- 1954b: *Taraxacum Braun-Blanquetii* et quelques autres *Taraxaca* de France. – Vegetatio **5-6**: 524-533.
- 1954c: Sur quelques *Taraxaca* de Galice. – Brotéria Ci. Nat. **23**: 139-143.
- 1955: Nouvelle contribution pour la connaissance des *Taraxaca* du Portugal. – Fl. Lusit. **10**: 94-98.
- 1957a: Contribution a l'étude des *Taraxacum* de Corse. – Acta Bot. Neerl. **6**: 407-419.
- 1957b: Quelques nouvelles especes de *Taraxacum*, natives d'Europe. – Acta Bot. Neerl. **10**: 280-306.
- 1966: New *Taraxacum*-species from Europe I-II. – Proc. Kon. Ned. Akad. Wetensch. C **69**: 432-446, 447-463.
- 1968: New *Taraxacum* species and forms from Turkey. – Acta Bot. Neerl. **17**: 483-495.
- 1971: Quelques nouvelles especes de *Taraxacum*, natives d'Europe II. – Acta Bot. Neerl. **20**: 141-156.
- 1974: Materials for a flora of Turkey XXX. *Taraxacum*. – Notes Roy. Bot. Gard. Edinburgh **33**: 263-264.
- 1976: New *Taraxacum*-species from Europe V. – Proc. Kon. Ned. Akad. Wetensch. C **79**: 171-190.
- & Lambinon, J. 1976: Deux formes nouvelles de *Taraxacum* sect. *Erythrosperma* du littoral de la Somme (France). – Dumortiera **4**: 32.
- Sonck, C. E. 1984, 1985a: New *Taraxacum* species from Greece [I]-III. – Ann. Bot. Fenn. **21**: 157-170, **22**: 139-148, 255-262.
- 1985b: Especies nouvelles de *Taraxacum* de France II. – Ann. Bot. Fenn. **22**: 245-253.
- 1988: New *Taraxacum* species from Albania II. – Ann. Bot. Fenn. **25**: 73-83.
- Starmühler, W. 1998: Vorarbeiten zu einer "Flora von Istrien", Teil I. – Carinhia II, **189/109**: 535-576.

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