The genus *Taraxacum* (*Asteraceae, Cichorieae*) sect. *Erythrosperma* in the northern coastal part of Croatia

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Abstract: Uhlemann, I. 2017: The genus *Taraxacum* (*Asteraceae, Cichorieae*) sect. *Erythrosperma* in the northern coastal part of Croatia. Schlechtendalia **32**: 1–24.

Taraxacum sect. *Erythrosperma* was studied and revised mainly on the basis of field excursions and the author's specimens collected between 2000 and 2015 in the northern coastal part of Croatia. 10 species of this section were registered: *T. acrocuspidatum, T. annetteae, T. croaticum, T. edessicoides, T. parnassicum, T. princeps, T. starmuehleri, T. tanyolobum, T. taraxacoides*, and *T. veglianum*. For each species a detailed description, a comparison with relatives, a distribution map, drawings and photographs of relevant characters are given. All species of the section in the area under study are keyed out.

Zusammenfassung: Uhlemann, I. 2017: Die Gattung *Taraxacum* (*Asteraceae, Cichorieae*) sect. *Erythrosperma* im nördlichen Küstenbereich Kroatiens. Schlechtendalia **32**: 1–24.

Taraxacum sect. *Erythrosperma* (H. Lindb.) Dahlst. wurde im nördlichen Küstenabschnitt Kroatiens taxonomisch untersucht. Die Untersuchungen basieren im Wesentlichen auf Feldstudien und damit einhergehenden Kollektionen des Autors, die im Zeitraum von 2000 bis 2015 gesammelt wurden. 10 Arten der Sektion wurden erfasst: *T. acrocuspidatum, T. annetteae, T. croaticum, T. edessicoides, T. parnassicum, T. princeps, T. starmuehleri, T. tanyolobum, T. taraxacoides* und *T. veglianum*. Für jede Art erfolgt eine detaillierte Beschreibung, ein Vergleich mit nahestehenden Arten, die Darstellung der Funde in einer Verbreitungskarte sowie Zeichnungen und Fotografien der wichtigsten Merkmale. Alle Arten der Sektion dieses Gebietes werden in einem Schlüssel bestimmbar gemacht.

Key words: Composites, *Taraxacum* sect. *Erythrosperma*, Mediterranean, Croatia, taxonomy.

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Introduction

The cosmopolitan genus *Taraxacum* F. H. Wigg. comprises about 60 sections and approximately 3.500 species names (Kirschner & Štěpánek 1997, 2004, 2008). Among them, the section *Erythrosperma* (H. Lindb.) Dahlst. (*T. laevigatum* agg.) has about 200 described species (Kirschner et al. 2007). It is a xerophytic and native element of the (boreal-) temperate – submeridional – meridional zone of Europe.

In comparison to the relatively well-known taxonomy of this section in the boreal and temperate zone of Europe north of the Alps, the Mediterranean part of its area is besides a very few well explored regions such as Greece (Dahlstedt 1926; Soest 1966a, 1971, 1976a; Sonck 1984, 1985a, b, 1989a, b, 1993, 1999; Richards 1991; Štěpánek & Kirschner 2014a, b) and Corsica (France) (Soest 1957, 1966b, 1974a; Štěpánek & Kirschner 2012) poorly explored.

In most of the Mediterranean region, the studies concerning *Taraxacum* sect. *Erythrosperma* have local characters and are usually concerned with descriptions of new species: Albania (Sonck 1988), Croatia (Uhlemann 2007a, 2010, 2016), Cyprus (Lindberg 1946), Italy (Arrigoni 2007, Arrigoni et al. 2006, Hoppe & Hornschuch 1818, Lojacono 1903, Soest 1966b), France (without Corsica and only the Mediterranean part) (Soest 1954b, 1971; Soest & Lambinon 1976), Portugal (Soest 1955, 1956), Spain (Galán de Mera & Sáez 2016, Lindberg 1932; Richards 1992; Sahlin 1981, 1984; Soest 1954a, c, 1966a, 1971), Turkey (Rechinger 1959; Soest 1966b, 1968, 1974b).

Material

The author has been studying the *Taraxacum* flora of Croatia since 2000. The field research was always carried out in spring, starting in northern Croatia on the peninsula of Istria and gradually moving southwards to northern Dalmatia. Besides the exploration of the continental area, mainly along the coast line of mountains of Velebit, particularly islands were studied, viz. Cres, Krk, Lošinj, Pag, Rab, and Susak. The material used for the study originate mainly from the author's collections and from the following herbaria: B, DR, KL, OL.

Taxonomy

Taraxacum sect. ***Erythrosperma*** (H. Lindb.) Dahlst., Acta Flora Sueciae **1**: 36 (1921).

Basionym: *T.* [unranked] *Erythrosperma* H. Lindb., Acta Societatis pro Fauna et Flora Fennica **29**(9): 18 (1908).

Lectotype (designated by Doll (1974: 60; see also Kirschner & Štěpánek 1987): *Taraxacum rubicundum* (Dahlst.) Dahlst. (≡ *T. erythrospermum* subsp. *rubicundum* Dahlst.). Lectotypus (designated by Doll (1973: 19): "Stockholm, Djurgardsfrescati", 10. June 1898, Dahlstedt (S).

= *Taraxacum* sect. *Dissimilia* Dahlst., Acta Flora Sueciae **1**: 37 (1921). Type: *Taraxacum dissimile* Dahlst.

= *Taraxacum* sect. *Fulva* M. P. Christ., in Gröntved et al., Botany of Iceland **3**(3): 253 (1942). Type: *Taraxacum fulvum* Raunk.

= *Taraxacum* sect. *Proxima* Doll, Wissenschaftliche Zeitschrift der Universität Rostock, Reihe Mathematik-Naturwissenschaften **17**: 330 (1968). Type: *Taraxacum proximum* (Dahlst.) Raunk. (*T. erythrospermum* subsp. *proximum* Dahlst.)

Description

Plants (5–)10–15(–20) cm tall, delicate, plant base with remnants of dried leaves. *Leaves* deeply divided, lateral lobes usually small, often dentate or lobulated, petioles small, unwinged or very narrowly winged. *Scapes* bearing a single capitulum. Flowers yellow, flat or seldom tubular, anthers with pollen or without pollen, styles yellowish green to dirty greyish green to blackish. *Involucre* pale green to bluish green, often pruinose; exterior bracts appressed to the inner ones, erect-patent, arcuate (erect with recurved tips), arcuate reflexed or recurved (1–)2–3(–4) mm wide, (5–)6–8(–9) mm long, green, sometimes suffused purple or intensively purple coloured, usually with a small white border, corniculate at the apex. *Achenes* brown, reddish brown, greyish brown or greyish, achene body (2.5–)2.8–3.2(–3.5) mm long, cone subcylindrical to cylindrical, 0.7–1.2 mm long, rostrum (5–)7–9(–10) mm long, pappus white.

Key to species of *T.* sect. *Erythrosperma* found in northern coastal part of Croatia

1 Exterior bracts recurved or arcuate-reflexed, tips pointing back to the scape 2

1* Exterior bracts appressed to the inner ones, erect-patent, patent or arcuate 3

2 Exterior bracts intensively purple coloured, 2–2.5(–3) mm wide; lateral leaf lobes patent, short triangular, blunt or sometimes lingulate, distal margin with a distinct large tooth ..... *T. annetteae*

2* Exterior bracts green, sometimes suffused purple, 1–1.5(–2) mm wide. Lateral leaf lobes triangular, patent to recurved, more seldom nearly hamate, base usually broad, narrowing gradually into a small subacute tip, distal margin with parallel teeth ..... *T. princeps*

3(1) Exterior bracts erect or appressed to the inner ones 4

3* Exterior bracts arcuate, erect-patent, patent or slightly recurved 6

4 Achenes grey to greyish brown; terminal leaf lobe of the outer leaves sagittate, large (longer than wide), incised or provided with teeth on both sides ..... *T. starmuehleri*

4* Achenes brown or red-brown. Terminal leaf lobe about as long as wide 5

5 Leaves with 3–4 pairs of lateral lobes, lobes recurved to hamate, triangular to narrowly triangular (inner leaves), distal and proximal margin entire ..... *T. croaticum*

5* Leaves with 6–8 pairs of lateral lobes, lobes patent to slightly recurved, narrowly triangular to linear, distal margin usually entire, proximal margin often with a distinct tooth .. *T. taraxacoides*

6(3) Achenes grey; outer ligules often involute; pollen absent; styles blackish; exterior bracts arcuate, purplish green; lateral leaf lobes strikingly patent, triangular to narrowly triangular; distal margin with many parallel teeth ..... *T. tanyolobum*

6* Achenes red-brown; outer ligules flat 7

7 Pollen present; terminal leaf lobe trilobed, entire, with a long small tip; lateral lobes ± patent, more seldom (in inner leaves) somewhat sinuate, narrowly triangular; distal margin entire, proximal margin usually with a small tooth ..... *T. acrocuspidatum*

7* Pollen absent; terminal leaf lobe triangular, sometimes with a short lingulate tip 8

8 Leaves with 4–6 pairs of lateral lobes, lobes patent to slightly recurved to hamate, triangular to narrowly triangular (inner leaves); distal margin with many coarse teeth ..... *T. veglianum*

8* Distal margin of lateral leaf lobes usually entire or more seldom with very few small or filiform teeth 9

9 Leaves with c. 4 pairs of lateral lobes, lobes patent to slightly recurved, triangular to narrowly triangular, all lateral lobes equidistant ..... *T. edessicoides*

9* Leaves with 5–6 pairs of lateral lobes, lobes slightly recurved to recurved, triangular, the upper 2–3 lobes tend to become close together, whereas the lower ones are separated by interlobes .....*T. parnassicum*

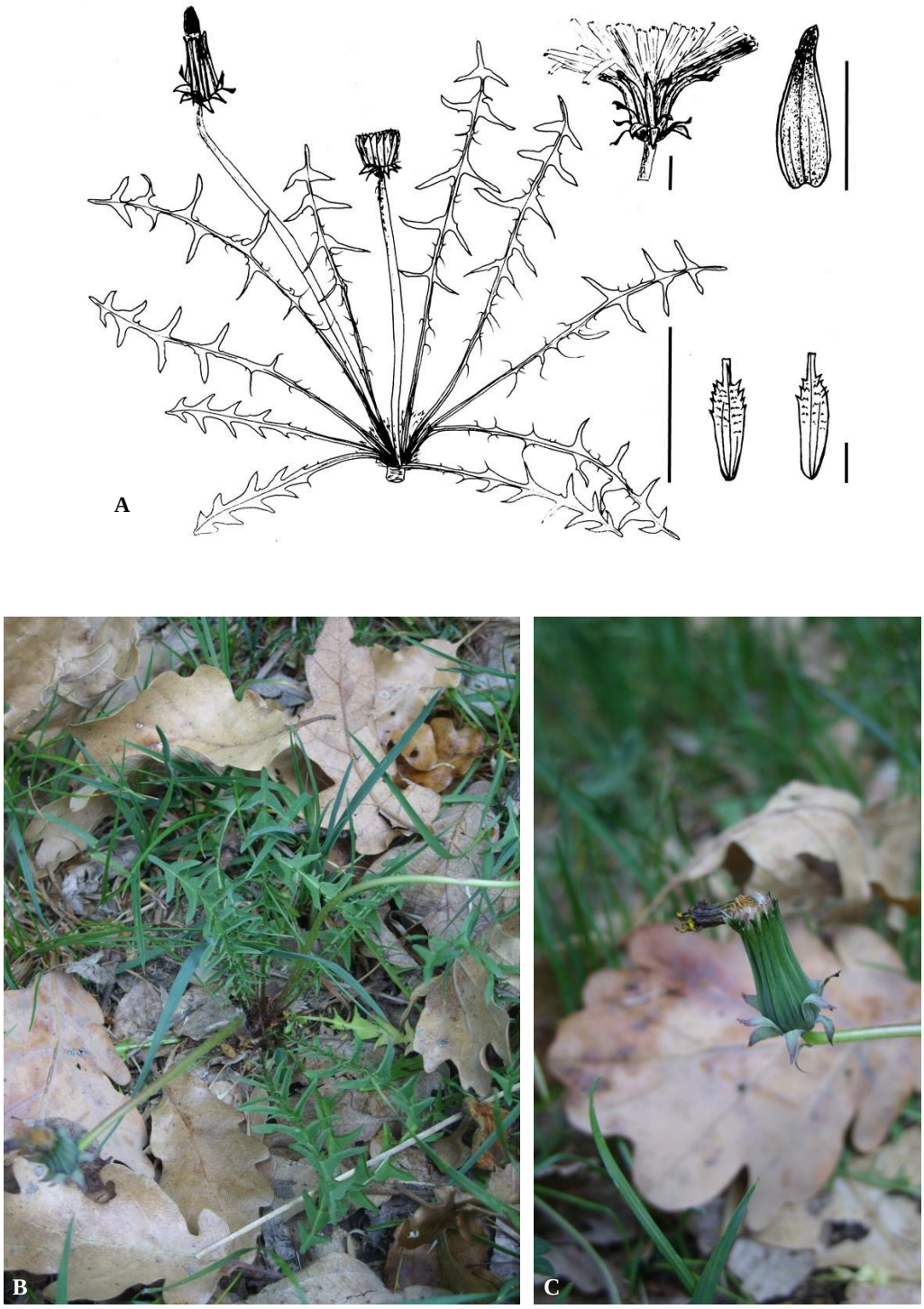


Fig. 1: ***Taraxacum acrocuspidatum***. **A** – Habit, Štifanići (scale bar = 5 cm); capitulum and single outer bract, Braga (scale bar = 5 mm); achenes, Braga (scale bar = 1 mm). **B** – Habit, Braga, 2011, *I. Uhlemann*. **C** – Capitulum, Braga, 2011, *I. Uhlemann*.

Taraxacum acrocuspidatum Sonck, Memoranda Societatis pro Fauna et Flora Fennica **53**(2): 79 (1977). (Figs 1–2)

Description:

Plants 10–15 cm tall, delicate. *Leaves* erect to subpatent, green, subglabrous, not spotted, pinnatisect, terminal lobe trilobed, entire, with a long small tip; with ca. 5 pairs of lateral lobes, lobes ± patent, more seldom (in inner leaves) somewhat sinuate, narrowly triangular, distal margin entire, proximal margin usually with a small tooth; interlobes well-developed, green, with small teeth; petiole narrow, unwinged, purple, midrib green or brownish green. *Scapes* brownish, aranose below involucre. *Capitulum* 20–25 mm in diameter, yellow; outer ligules flat, striped dark grey-purple abaxially; styles in the upper part dark grey abaxially; pollen present. *Involucre* rounded at the base, light bluish to greyish green, pruinose; exterior bracts arcuate (erect, tips recurved), with a distinct white border, adaxially pale greyish green, abaxially bluish green, with corniculations below the apex, tips purplish, 2.5–3(–4) mm wide, 6–8 mm long. *Achenes* red-brown, achene body 2.6–2.8 mm long, spinulose in the upper part, abruptly narrowing into a 0.7–0.8 mm long subcylindrical cone; rostrum 7–8 mm long; pappus white.

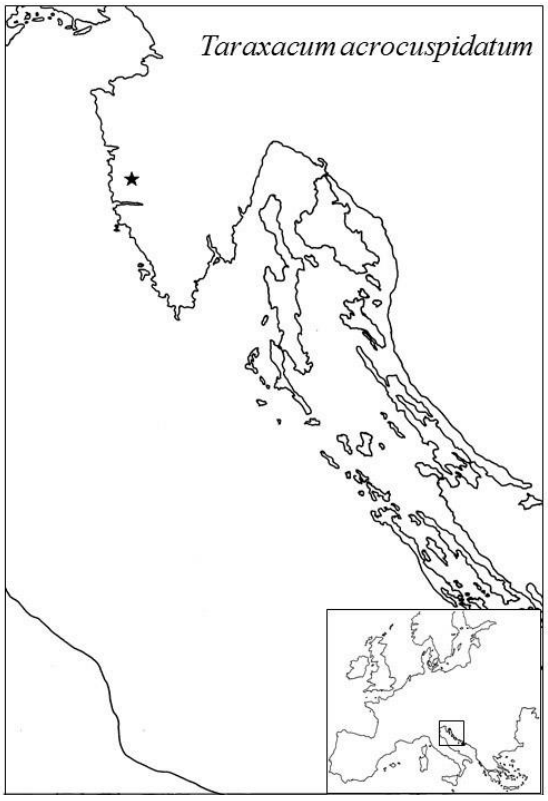


Fig. 2: ***Taraxacum acrocuspidatum***. Distribution in northern Croatia.

Chromosome number: unknown.

Diagnostic features of *T. acrocuspidatum* are a striking long and small tip of the terminal leaf lobe, patent, small triangular lateral leaf lobes only rarely becoming somewhat sinuate, purple petioles, presence of pollen, dark grey styles, erect exterior bracts with recurved purplish tips and red-brown achenes. With regard to its leaf shape it is closely related to *T. lacistophyllum* (Dahlst.) Raunk., which is widely distributed in Central Europe and one of the most frequent species of section *Erythrosperma*. *T. lacistophyllum* is distinguished from *T. acrocuspidatum* by strongly sinuate lateral leaf lobes, bluish green involucres and larger brick-red achenes.

Distribution: *T. acrocuspidatum* is described from lake Gardasee region (Italy) where it is frequent. Until now, only one locality is known in Croatia, which is the southernmost record of this species.

Specimens studied: Croatia, Istria, Westküste, Poreč 15 km e, Baderna s, Štifanići, Straßenrand am Dorfeingang, 1.4.2005, *I. Uhlemann* (Hb. Uhlemann).

Taraxacum annetteae Uhlemann, Willdenowia **46**: 225 (2016). (Figs 3–4)

Description:

Plants (5–)10–15 cm tall, delicate. *Leaves* erect to subpatent, greyish green, subglabrous, not spotted, pinnatisect, terminal lobe short and broad triangular or trilobed, entire or with 1–2 small lateral teeth, tip conspicuously short lingulate; lateral lobes 4–5 pairs, patent (tips sometimes turned upwards), blunt to lingulate, usually the distal margin and less often also proximal margin have a distinct tooth; interlobes well-developed but short, tar coloured, sometimes with a few teeth; petiole narrow, unwinged, light purple, midrib green or brownish green. *Scapes* brownish, aranose below involucre. *Capitulum* 20–25(–30) mm in diameter, yellow; outer ligules striped dark grey-purple abaxially; styles in the upper part dark grey abaxially; pollen present. *Involucre* rounded at the base, olive-green, a bit pruinose at the base; in outer involucral

bracts, only the basal part erect, tips and the remaining part claw-like recurved (arcuate-reflexed), with a distinct white border, adaxially intensively purple coloured, abaxially purplish green, with small corniculations below the apex, lanceolate, 2–2.5(–3) mm wide, 8–9 mm long. *Achenes* pale brown, achene body 2.5–2.6 mm long, strongly spinulose in the upper part, abruptly narrowing into a 0.8–0.9 mm long cylindrical cone; rostrum 8–9 mm long; pappus white.

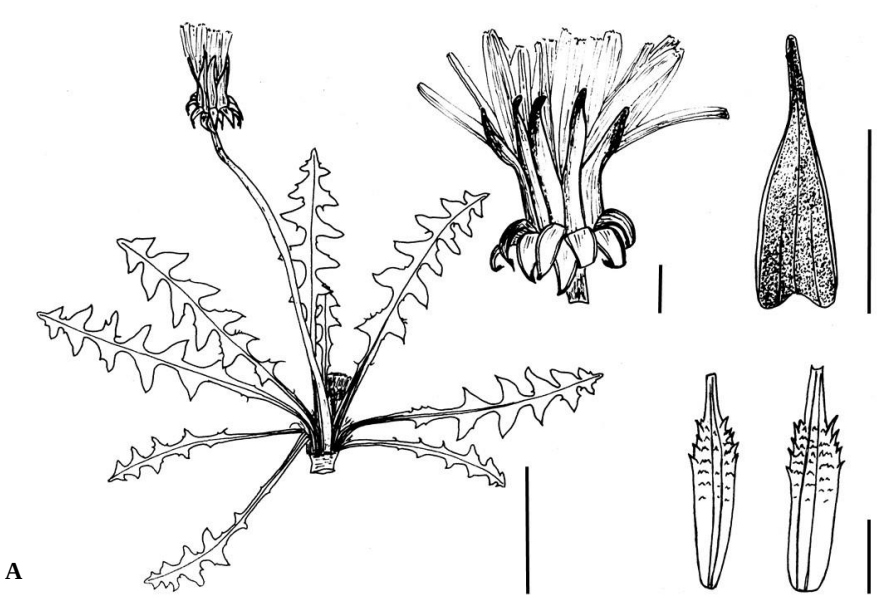
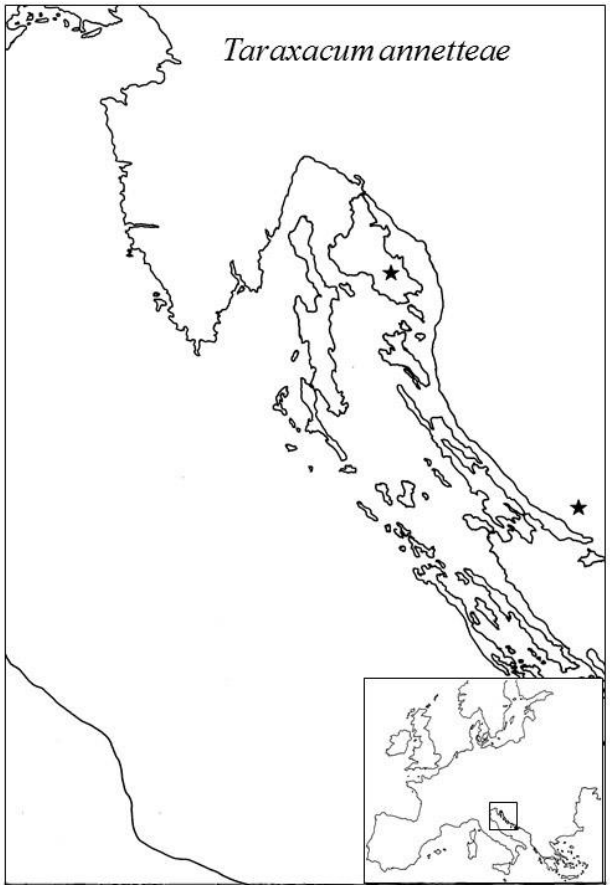


Fig. 3: ***Taraxacum annetteae***. **A** – Habit, Velika Paklenica (scale bar = 5 cm); capitulum and single outer bract, Baška (scale bar = 5 mm); achenes, Velika Paklenica (scale bar = 1 mm). **B** – Capitulum, Velika Paklenica, 2009, *I. Uhlemann*.

Chromosome number: unknown

The most striking diagnostic feature of *Taraxacum annetteae* is the intense purple coloration (even in shady places) of the arcuate-reflexed outer bracts with their tips pointing back to the scape. Each of these outer bract character states (colour and position) is rare in *T.* sect. *Erythrosperma*, but the combination is unique.

With regard to the arcuate-reflexed outer bract position, *Taraxacum annetteae* resembles *T. lacistophylloides* Dahlst., but the latter species has light green outer bracts, a more robust habit, grey achenes and a completely deviating shape of lateral leaf lobes. In *T. purpureocornutum* Soest, a rare and probably endemic species from Corsica (Štěpánek & Kirschner 2012), only the outermost outer bracts are arcuate-reflexed, whereas the inner ones are arcuate or patent. Moreover, this species has a completely deviating leaf shape, pinkish grey-green outer bracts, produces no pollen and has larger achenes with a longer pyramid than *T. annetteae*. Only a few other species of *Taraxacum* sect. *Erythrosperma* have intensely purple-coloured outer bracts, such as *T. pupureomarginatum* Soest, but this species differs from *T. annetteae* in having irregularly arcuate outer bracts, yellow-green styles and larger, grey achenes. Also the Central and North European *T. bellicum* Sonck has an intensely purple outer bract coloration, but in contrast red-brown achenes c. 3 mm long with a cone 1.3–1.5 mm long, triangular, acuminate lateral leaf lobes and a long sagittate, incised terminal leaf lobe. With regard to leaf shape, *Taraxacum lingulilobum* Sonck, described from Greece and also found in Bulgaria (Štěpánek & Kirschner 2014a), is similar, but this species has green or very faintly dirty violet petioles, dark green outer bracts and red-brown achenes more than 3 mm long with a cone c. 1 mm long.



Distribution: *T. annetteae* is an extremely rare species. Until now it is only known from two remote localities in Croatia where it is abundant and form large populations.

Specimens studied: Croatia, Krk, südöstlicher Teil, Pass vor der Einfahrt in das Tal nach Baška, ca. 50 m oberhalb des Denkmals, Straßenrand, zahlreich, 10.4.2007, *I. Uhlemann* (B, Hb. Uhlemann); Dalmatia, Starigrad, Velika Paklenica, etwa 2 km oberhalb des Parkeingangs, Wegrand, zahlreich, 15.4.2009, *I. Uhlemann* (B, DR, Hb. Uhlemann).

Fig. 4: ***Taraxacum annetteae***. Distribution in northern Croatia.

Taraxacum croaticum Uhlemann, Willdenowia **46**: 228 (2016). (Figs 5–6)

Description:

Plants 10–15(–20) cm tall, delicate. *Leaves* erect to subpatent, greyish green, subglabrous, not spotted, pinnatisect, terminal lobe broad triangular, entire, lingulate; lateral lobes 3–4(–6) pairs, recurved to hamate, triangular to narrowly triangular (inner leaves), distal and proximal margin entire; interlobes well-developed long, green, entire or with some teeth; petiole narrow, unwinged, purple, midrib green or brownish green. *Scapes* brownish, usually smooth. *Capitulum* 20–25 mm in diameter, yellow; outer ligules striped dark grey-purple abaxially; styles in the upper part dark greyish green to black abaxially; pollen absent. *Involucre* rounded at the base, olive-green, pruinose; outer involucral bracts erect to appressed, with a distinct white or pinkish border, adaxially pale greyish green, abaxially olive-green, with very small

corniculations below the apex, (2–)3–4 mm wide, 7–9 mm long. *Achenes* pale brown (without red colour), achene body 3.0–3.1 mm long, densely spinulose in the upper part, abruptly narrowing into a 1.0–1.2 mm long cylindrical cone; rostrum 6–8 mm long; pappus white.

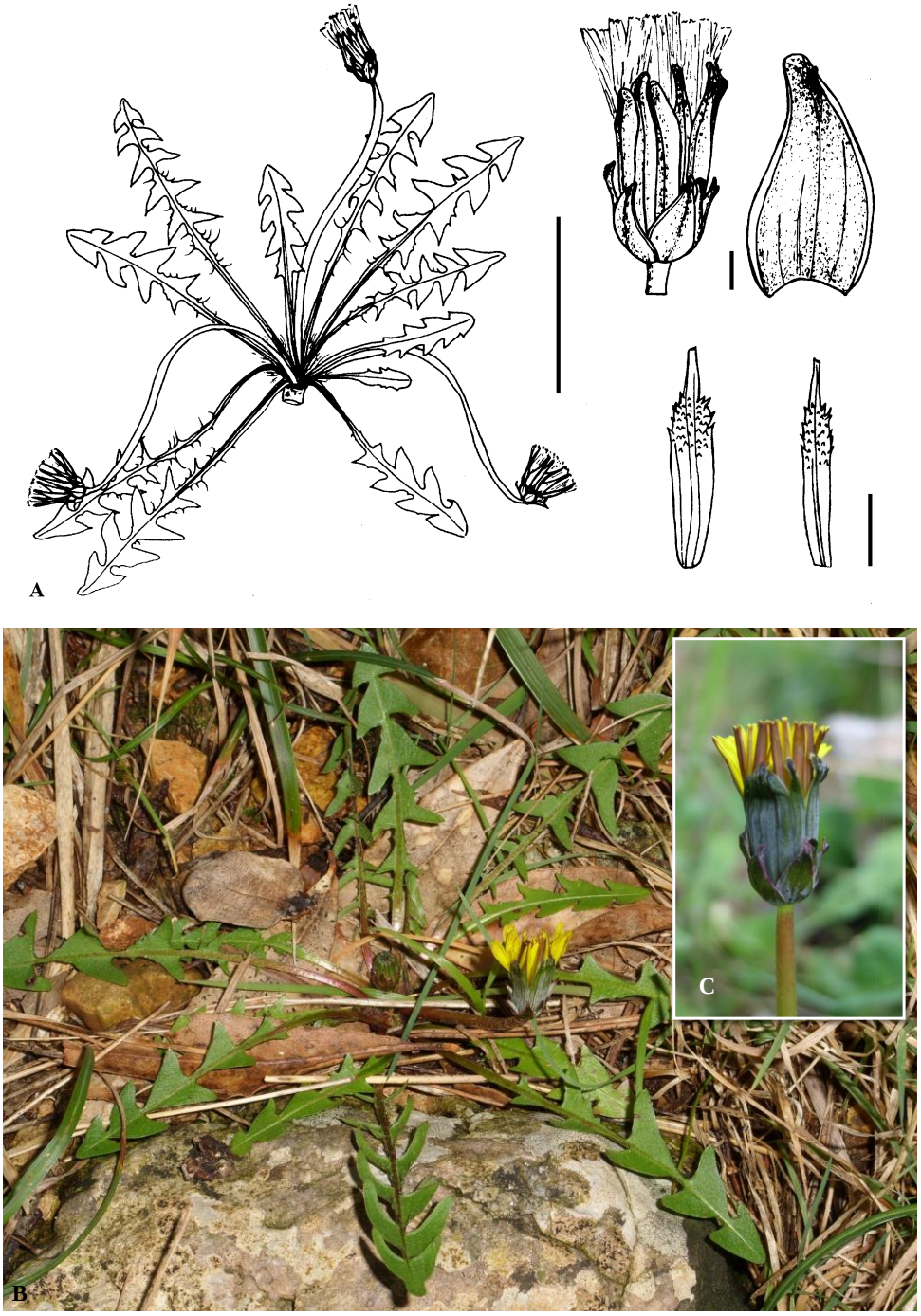


Fig. 5: ***Taraxacum croaticum***. **A** – Habit, Valun (scale bar = 5 cm); capitulum and single outer bract, Valun (scale bar = 5 mm); achenes, Veli Lošinj (scale bar = 1 mm). **B** – Habit, Valun, 2010, *I. Uhleman*. **C** – Capitulum, Valun, 2010, *I. Uhlemann*.

Chromosome number: unknown.

Diagnostic features of *T. croaticum* are greyish green leaves with entire edges of recurved or hamate lateral lobes, long interlobes, purple petiole, absence of pollen, dark grey or blackish styles and pale brown achenes without any reddish colour. With regard to leaf shape this species

is related to other Erythrosperms with more or less hamate lateral lobes like *T. lambinonii* Soest which is distinguished by strongly hamate leaf lobes, shorter interlobes, presence of pollen and (greyish) brown achenes, and furthermore *T. aquitanum* Hofstra with strongly hamate leaf lobes, shorter interlobes, presence of pollen, erect to patent outer bracts and red-brown achenes with a smaller, 0.7–0.8 mm long cone.

Distribution: *T. croaticum* is widespread and scattered in Istria and on the islands of Cres, Lošinj, Pag and Rab, but it is locally frequent (vicinity of Valun, Veli Lošinj and Kampor). A single remote locality is in Dalmatia, Starigrad. This species is not known outside of the coastal part of northern and central Croatia.

Specimens studied: Croatia, Istria, Ostküste, Opatija, Vebrinaciin johtavan polun varressa kaupungin yläpuolella, 7.5.1988, *J. Räsänen* (Hb. Räsänen, Hb. Uhlemann); Istrien, Westküste, Peroj n, Trift, Garrigue, 52 m NN, 14.4.2012, *K. G. Bernhardt* (Hb. Bernhardt); Isle of Cres, Valun, Wegkreuzung nahe des Kiesstrandes am Ortsrand, 25.3.2008, *I. Uhlemann* (Hb. Uhlemann); Insel Cres, nordwestlicher Teil, Dragozetići, Straßenrand im Dorf, 4.4.2002, *I. Uhlemann* (Hb. Uhlemann); Insel Cres, Valun s, Serpentinstraße oberhalb des Ortes, 25.3.2008, *I. Uhlemann* (B, Hb. Uhlemann); Insel Cres, Südwestküste, Ustrine, Ortslage, Straßenrand, 25.3.2008, *I. Uhlemann* (Hb. Uhlemann); Isle of Lošinj, Umgebung von Mali Lošinj, im Aleppo-Föhren-Bestand zwischen Hotel Bellevue und dem Strand, 14.5.2012, *H. Teppner* (Hb. Teppner); Insel Lošinj, Veli Lošinj, Kapelle Sveti Ivan, Asphaltstraße auf dem Höhenrücken, Straßenrand, 24.3.2008, *I. Uhlemann* (DR, Hb. Uhlemann); Insel Lošinj, Straße zwischen Veli Lošinj und Mali Lošinj, Straßenrand, 12.4.2007, *I. Uhlemann* (B, DR, Hb. Uhlemann); Isle of Pag, Nordspitze der Insel, Tovarnele, Ortslage, zwischen alten Olivenbäumen, 14.4.2009, *I. Uhlemann* (Hb. Uhlemann); Isle of Rab; Rab sw, Straße nach Suha Punta, Straßenrand ca. 2 km n des Ortes, 14.4.2010, *I. Uhlemann* (B, Hb. Uhlemann), Insel Rab, Rab w, Kampor, Naturlehrpfad s des Ortes, Wegrand, 11.4.2010, *I. Uhlemann* (B, DR, Hb. Uhlemann); Dalmatia, Norddalmatien, Starigrad, Velika Paklenica, ca. 2 km oberhalb des Parkeingangs, Wegrand, 15.4.2009, *I. Uhlemann* (Hb. Uhlemann).

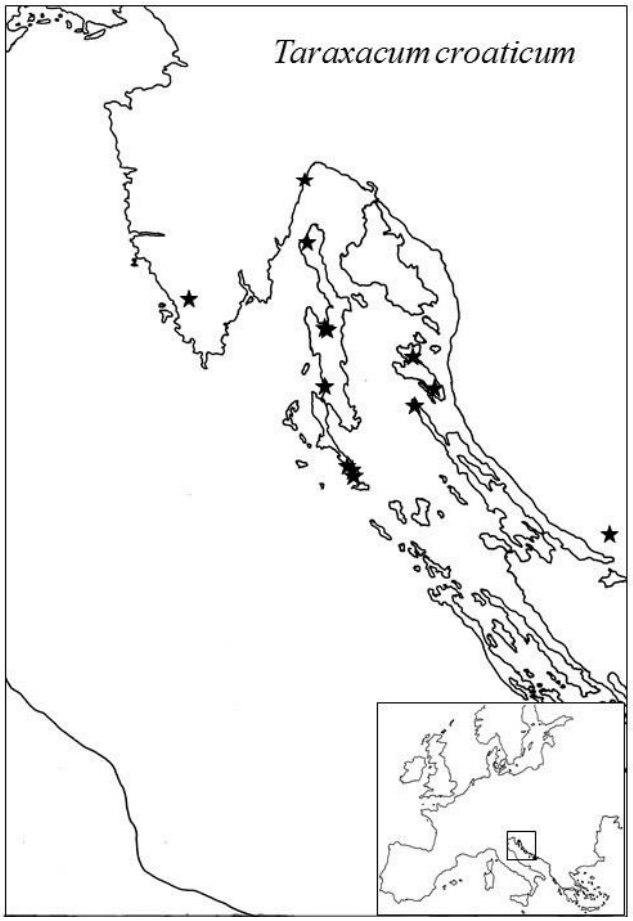


Fig. 6: ***Taraxacum croaticum***. Distribution in northern Croatia.

Taraxacum edessicoides Uhlemann, Willdenowia **37**(1): 118 (2007). (Figs 7–8)

Description:

Plants 10–20 cm tall, delicate. *Leaves* erect to subpatent, deep green, glabrous or sparsely aranose above (mainly along the midrib), not spotted**,** pinnatisect, terminal lobe triangular to sagittate, entire or with minute contractions, acuminate or lingulate; lateral lobes (3–)4–5 pairs, patent to slightly recurved, triangular to narrowly triangular, base usually broad, narrowing gradually into a small subacute tip, distal margin usually entire or more seldom with very few small or filiform teeth, proximal margin entire; interlobes narrow, well-developed, green, sometimes with a few filiform teeth; petiole narrow, unwinged, green or rarely faintly pinkish coloured, midrib green. *Scapes* greenish to brownish, sparsely aranose. *Capitulum* 25–30 mm in diameter, yellow; outer ligules striped dark grey-purple abaxially; styles in the upper part dark

greyish green abaxially; pollen absent. *Involucre* rounded at the base, olive-green, sparsely pruinose; outer involucral bracts patent to slightly recurved, with a distinct white border, adaxially whitish green, abaxially mid green, tips usually dark green or reddish, corniculated below the apex, 2–4 mm wide, 5–7 mm long. *Achenes* red-brown, achene body 2.8–3.0 mm long, spinulose in the upper part, abruptly narrowing into a 1–1.2 mm long cylindrical cone; rostrum c. 10 mm long; pappus white.

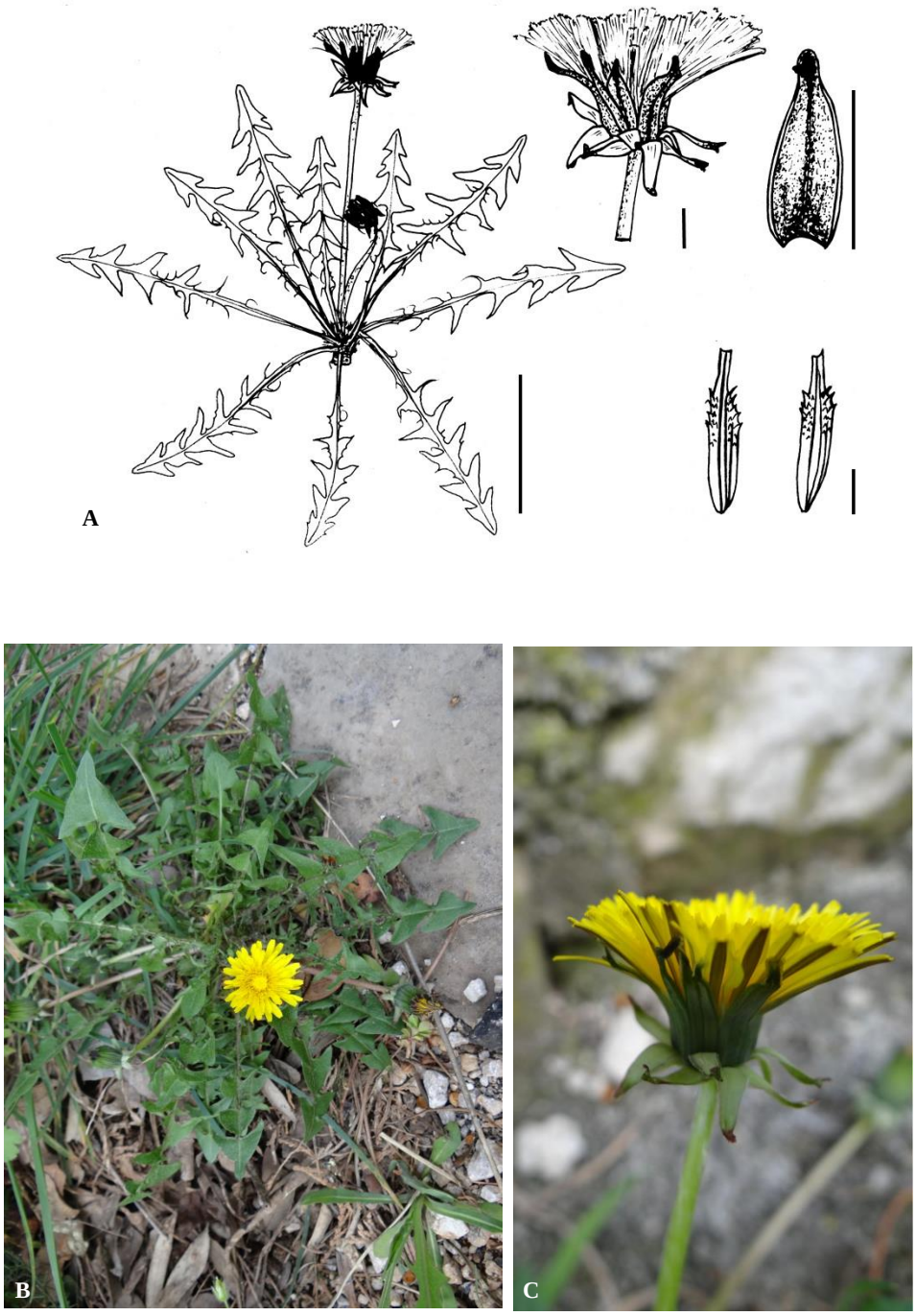


Fig. 7: ***Taraxacum edessicoides***. **A** – Habit, Dobrinij (scale bar = 5 cm); capitulum and single outer bract, Ravni (scale bar = 5 mm); achenes, Ravni (scale bar = 1 mm). **B** – Habit, Ravni, 2015, *I. Uhlemann*. **C** – Capitulum, Ravni, 2015, *I. Uhlemann*.

Chromosome number: 2n=3x=24, material: Istria, Ravni, 31.3.2002, *I. Uhlemann* (Fig. 8A).

Diagnostic features of *T. edessicoides* are a simple leaf lobation, green petioles, flowers without any pollen, dark styles and a reddish brown achene with long cylindrical cone. There are some morphologically similar species like *T. edessicum* Sonck which differs in having more numerous lateral leaf lobes, violet petioles, yellowish green styles, and pure brown achenes; *T. stenospermum* Soest has violet petioles, pollen formed, greyish brown achenes, and *T. poliochloroides* R. Doll with purplish petioles, more acute lateral leaf lobes and (greyish) brown achenes.

Distribution: *T. edessicoides* is a relatively rare species restricted to Istria and some islands of bay of Kvarner. A single remote locality is located in Italy (Pescara). Only at the type locality in Ravni (east coast of Istria) this species occurs frequent and forms large populations. Elsewhere, it was found only with few plants.

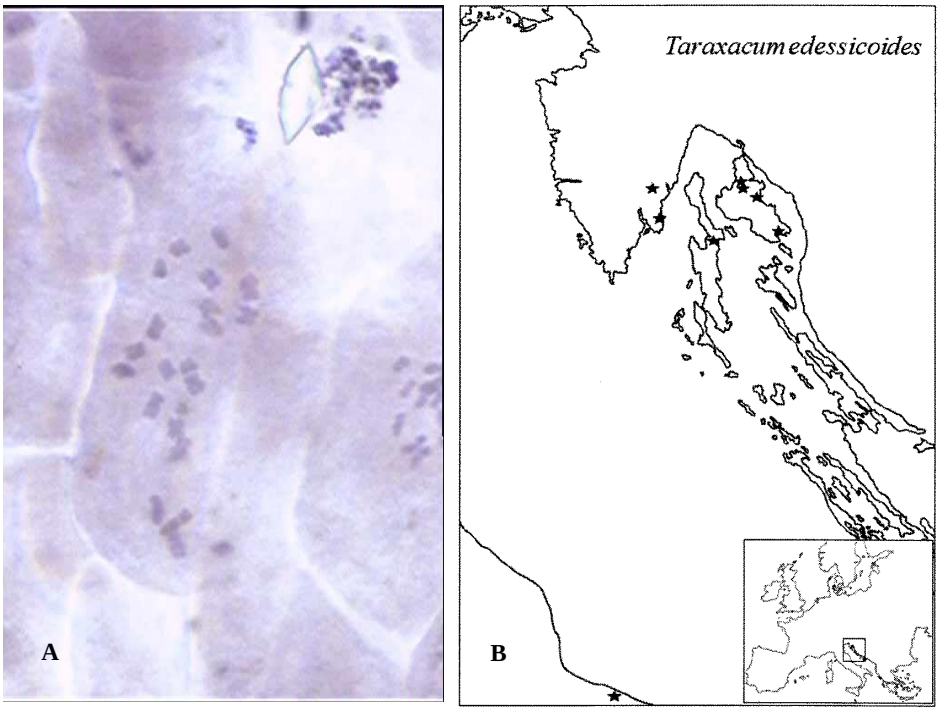


Fig. 8: ***Taraxacum edessicoides***. **A** – Metaphase plate: 2n=3x=24, material: Istria, Ravni, 31.3.2002, *I. Uhlemann*. **B** – Distribution in northern Croatia.

Specimens studied: Croatia, Istria, Ostküste, Labin s, Ravni, Wegrand im Ort (= locus classicus), 6.4.2015, *I. Uhlemann* (DR, Hb. Uhlemann); Isle of Krk, Malinska e, Dobrinij, Wegrand am Friedhof, 8.4.2007, *I. Uhlemann* (DR, Hb. Uhlemann). – Further sites in Uhlemann (2007a, 2008).

Taraxacum parnassicum Dahlst., Acta Horti Bergiani **9**: 29 (1926). (Figs 9–10)

= *T. silesiacum* Dahlst. ex G. E. Hagl., Botaniska Noiser 1938: 500 (1938).
= *T. badium* Soest, Veröffentlichungen des Geobotanischen Instituts Rübel, Zürich **42**: 111 (1969).
= *T. praegracilens* Sonck, Annales Botanici Fennici **26**: 52 (1989a).
= *T. pseudogracilens* Sonck, Annales Botanici Fennici **25**: 76 (1989b).
= *T. gracillimum* Soest, Veröffentlichungen des Geobotanischen Insituts Rübel, Zürich **42**: 20, 112 (1969).

Description:

Plants 10–15 cm tall, delicate. *Leaves* erect to subpatent, mid green, glabrous or sparsely aranose above (mainly along the midrib), not spotted, pinnatisect, terminal lobe triangular, entire, acuminate or more seldom short lingulate; lateral lobes 5–6 pairs, patent to slightly recurved, triangular, tip acute, distal margin usually entire or more seldom with a few teeth, proximal margin entire; interlobes between the upper 2 or 3 lateral lobes very short or almost absent, between the lower lobes present but short, green, entire or with a few filiform teeth;

petiole narrow, unwinged, purple, midrib green to greenish brown. *Scapes* greenish brown, sparsely aranose. *Capitulum* c. 20 mm in diameter, yellow; outer ligules striped dark grey-purple abaxially; styles in the upper part dark greyish to blackish abaxially; pollen absent. *Involucre* rounded at the base, olive-green, pruinose; outer involucral bracts erect with recurved tips, with a distinct white border, adaxially usually somewhat dirty purplish, abaxially green, corniculated below the apex, 2–3 mm wide, 5–7 mm long. *Achenes* red-brown, achene body 2.9–3.3 mm long, spinulose in the upper part, abruptly narrowing into a 1–1.2 mm long cylindrical cone; rostrum 6–8 mm long; pappus white.

Chromosome number: 2n=3x=24, material: Istria, isle of Krk, Baška pass, 10.4.2007, *I. Uhlemann* (Fig. 10A).

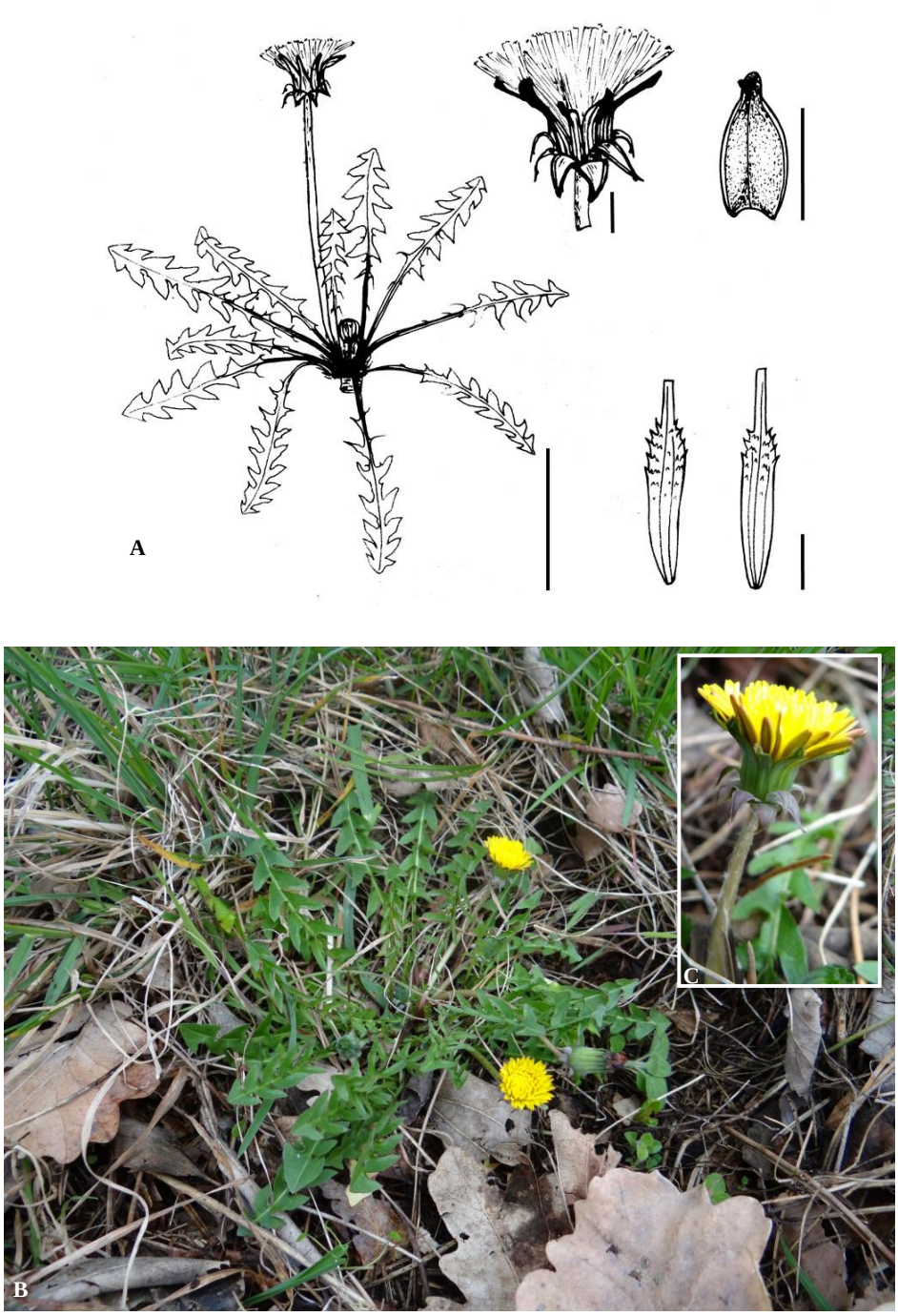


Fig. 9: ***Taraxacum parnassicum***. **A** – Habit, Sveti Martin (scale bar = 5 cm); capitulum and single outer bract, Sveti Martin (scale bar = 5 mm); achenes, Krk (scale bar = 1 mm). **B** – Habit, Sveti Martin, 2015, *I. Uhlemann*. **C** – Capitulum, Sveti Martin, 2015, *I. Uhlemann*.

Diagnostic features of *T. parnassicum* are a simple leaf lobation, with patent to slightly recurved, usually entire, triangular lateral lobes (the upper 2–3 lobes tend to become close together, whereas the lower ones separated by short interlobes), purple petioles, flowers without any pollen, dark styles and a dark reddish brown achene.

Distribution: *T. parnassicum* is one of the most common species of section *Erythrosperma* with the largest area of distribution covering the southern part of Scandinavia, entire Central Europe up to the southern part of eastern Mediterranean (Greece) and reaches westwards to Corsica (France) (Kirschner & Štěpánek 2012). In Croatia, *T. parnassicum* is rare and occurs in scattered localities, but in some cases it forms populations with numerous plants like on the Isle of Krk.

Specimens studied: Croatia, Istria, Ostküste, Labin w, Sveti Martin „Pineta“, Waldwegrand hinter dem Haus, 6.4.2015, *I. Uhlemann* (DR, Hb. Uhlemann); Isle of Krk, südöstlicher Teil, Pass vor der Einfahrt in das Tal nach Baška, c. 50 m oberhalb des Denkmals, Straßenrand, 10.4.2007, *I. Uhlemann* (DR, Hb. Uhlemann); Isle of Pag, Pag, Sendeanlage oberhalb der Stadt, Wegrand, spärlich, 12.4.2009, *I. Uhlemann* (Hb. Uhlemann); North Dalmatia, Karlobag, Straße nach Gospic, Baske Ostarije, Straßenrand, 16.4.2009, *I. Uhlemann* (DR, Hb. Uhlemann); Nord Dalmatien, Starigrad, Velika Paklenica, c. 2 km nördlich des Parkeingangs, Wegrand, 15.4.2009, *I. Uhlemann* (Hb. Uhlemann). – Further sites in UHLEMANN (2001).

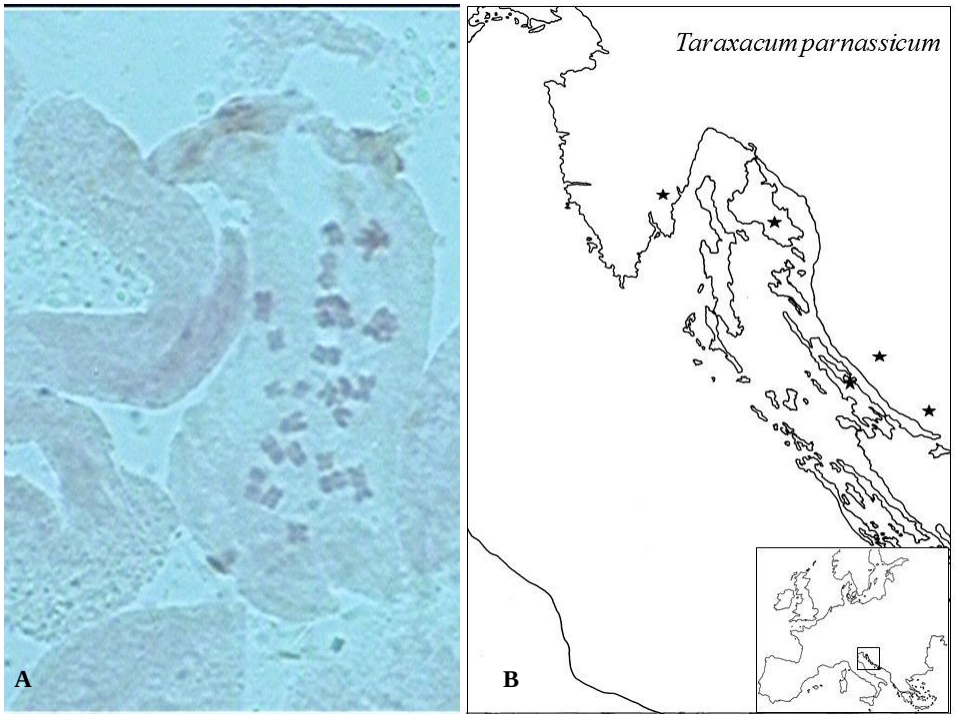


Fig. 10: ***Taraxacum parnassicum***. **A** – Metaphase plate, material: Istria, isle of Krk, Baška pass, 10.4.2007, *I. Uhlemann*. **B** – Distribution in northern Croatia.

Taraxacum princeps Vašut & Trávniček, Thaiszia, Journal of Botany, Košice **14**: 38 (2004).
(Figs 11–12)

Description:

Plants (5–)10–15(–20) cm tall, delicate. *Leaves* erect to subpatent, greyish green, glabrous not spotted, pinnatisect, terminal lobe large (longer than wide), triangular to sagittate, entire, contracted or with irregular arranged teeth, conspicuously lingulate; lateral lobes (3–)4–5 pairs, recurved, triangular, base usually broad, narrowing gradually into a small subacute tip, distal margin with parallel teeth, seldom entire, proximal margin entire; interlobes narrow, well-developed, green, usually entire or more seldom with a few filiform teeth; petiole narrow, unwinged, pinkish or faintly purple coloured, midrib brownish green. *Scapes* brownish green, sparsely aranose. *Capitulum* 15–20(–25) mm in diameter, yellow; outer ligules striped dark grey-purple abaxially; styles in the upper part dark greyish green to blackish abaxially; pollen present. *Involucre* rounded at the base, olive-green, pruinose; outer involucral bracts recurved, with an indistinct white border, adaxially whitish green to purplish, abaxially mid green,

corniculated below the apex, 1—1.5(–2) mm wide, c. 5 mm long. *Achenes* (red)-brown, (in dried condition usually without a red colour), achene body 2.7--3.3 mm long, densly spinulose in the upper part, abruptly narrowing into a 0.9–1.1 mm long cylindrical cone; rostrum 8–10 mm long; pappus white.

Chromosome number: 2n=3x=24 (Vašut & Trávniček 2004).

Diagnostic features of *T. princeps* are a large sagittate-lingulate terminal leaf lobe, a simple leaf lobation with a few triangular, distally parallel-toothed lateral lobes, pinkish coloured petioles, pollen bearing flowers, blackish styles, outer bracts with an inconspicuous border and a pure brown achene (in fresh condition with a little red colour which is fading while drying). Two morphological relatives, like *T. chelelobatum* Sahlin with loosely appressed outer bracts, a shorter cone (0.5–0.6 mm long) of the red-brown achene and araneous inner leaf lamina and *T. isophyllum* G. E. Hagl. with erect to patent outer bracts, pollen absence and a shorter cone (0.7 mm long) of the red-brown achene, are distinct in various characters.

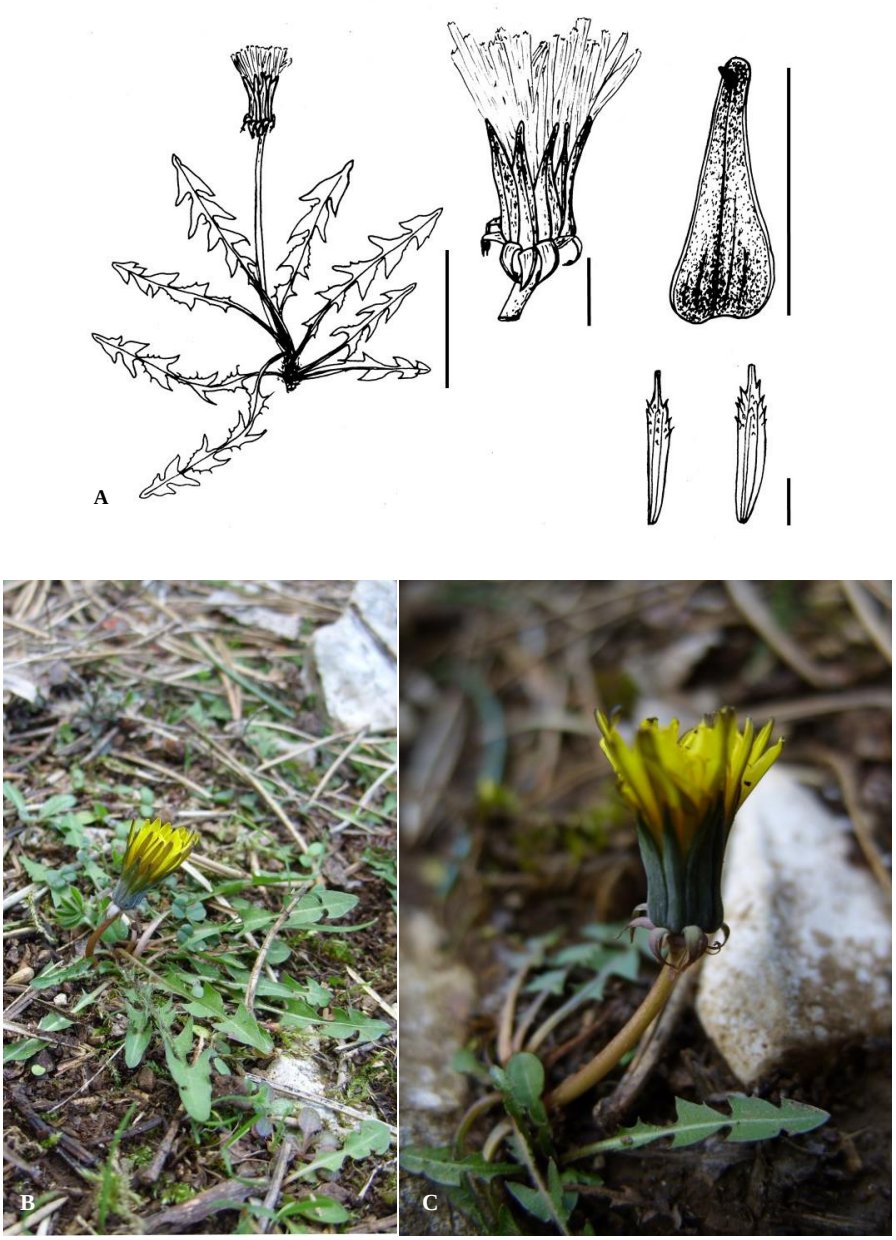
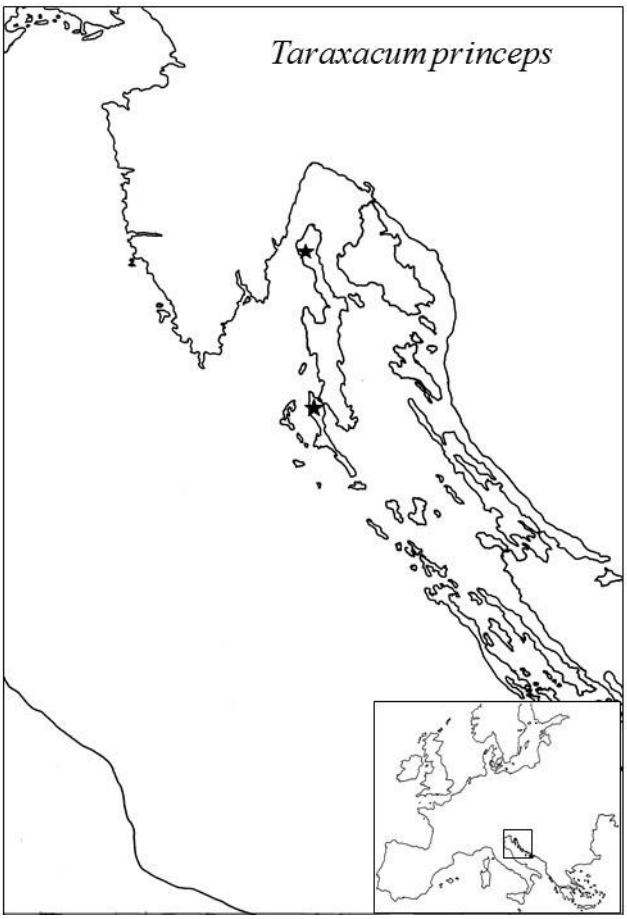


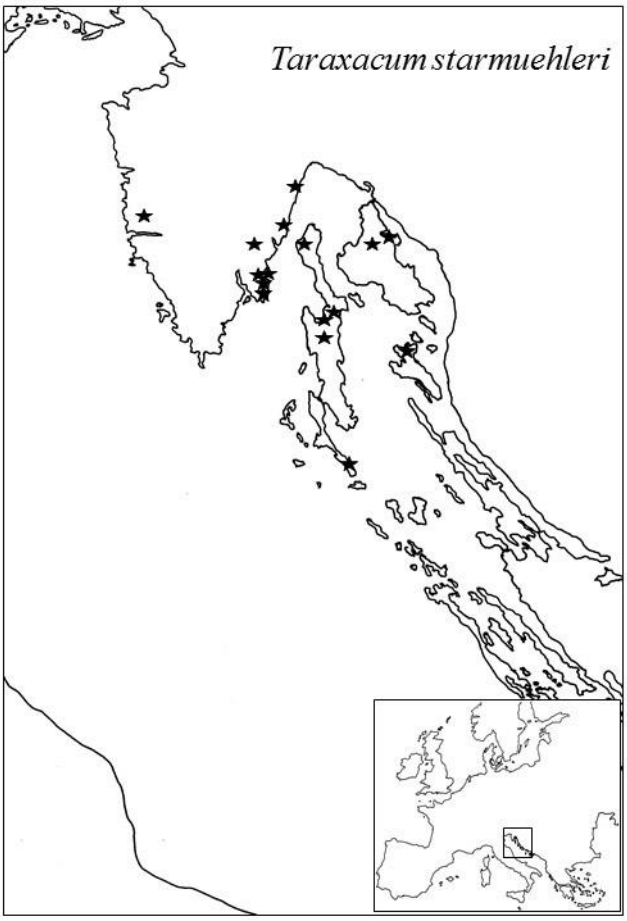
Fig. 11: ***Taraxacum princeps***. **A** – Habit, Osoršćica (scale bar = 5 cm); capitulum and single outer bract, Osoršćica (scale bar = 5 mm); achenes, Osoršćica (scale bar = 1 mm). **B** – Habit, Osoršćica, 2008, *I. Uhlemann*. **C** – capitulum, Osoršćica, 2008, *I. Uhlemann*.



Distribution: *T. princeps* is an extremely rare species in the northern coastal part of Croatia. It is presently known only from two localities on the islands of Cres and Lošinj with a few plants in each case. In general, *T. princeps* is a Central European species occurring in Czech Republic, Slovakia and Lower Austria (Vašut & Trávniček 2004).

Specimens studied: Croatia, Isle of Lošinj, Osoršćica, Aufstieg von Nerezine zum Sv. Nikola, oberes Weg-Drittel, Wegrand, c. 500 m NN, 26.3.2008, *I. Uhlemann* (DR, OL, Hb. Uhlemann); Isle of Cres, Nordwesten der Insel, Dragozetići, Straßenrand im Ort, 4.4.2002, *I. Uhlemann* (Hb. Uhlemann).

Fig. 12: ***Taraxacum princeps***. Distribution in northern Croatia.



Taraxacum starmuehleri Uhlemann, Willdenowia **37**(1): 116 (2007).
(Figs 13–14)

Description:

Plants 10–20 cm tall, delicate. *Leaves* erect to subpatent, mid green, ± glabrous, not spotted, pinnatisect, terminal lobe of the outer leaves sagittate, large (longer than wide), incised or with teeth on both sides, terminal lobe of the inner leaves triangular (approximately as long as wide), usually entire, acuminate or lingulate; lateral lobes 3–4 pairs, patent to slightly recurved, narrowly triangular, distal margin usually entire or more seldom with a single tooth or incised, proximal margin entire; interlobes well-developed narrow, plane, green, with some filiform teeth; petiole narrow, unwinged, purple, midrib green or brownish green. *Scapes* brownish, glabrous. *Capitulum* 25–30

Fig. 13: ***Taraxacum starmuehleri***. Distribution in northern Croatia.

mm in diameter, yellow; outer ligules striped dark grey-purple abaxially; styles in the upper part greyish green abaxially; pollen present. *Involucre* rounded at the base, glaucous, pruinose; outer involucral bracts erect, with a distinct white border, adaxially pale greyish green, abaxially olive-green, corniculated below the apex, 2–4 mm wide, 5–7 mm long. *Achenes* grey to greyish brown, achene body 3.0–3.2 mm long, spinulose in the upper part, abruptly narrowing into a 0.9–1.0 mm long (sub-)cylindrical cone; rostrum c. 9 mm long; pappus white.

Chromosome number: 2n=3x=24 (Uhlemann 2007a).

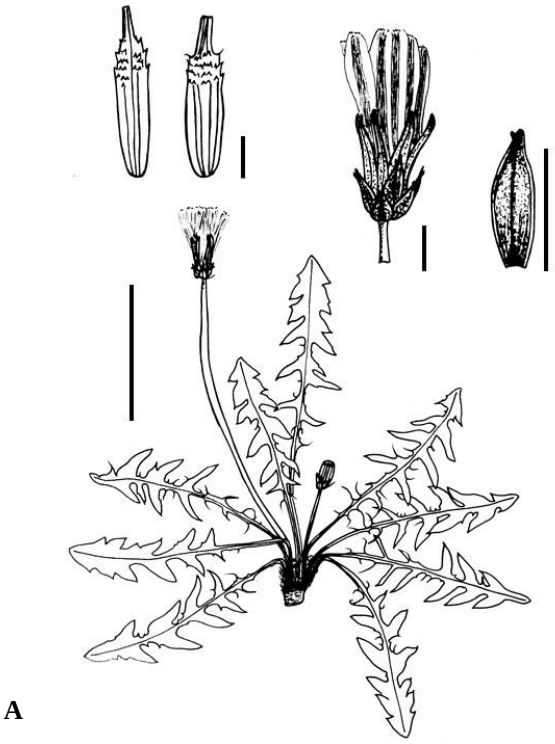


Fig. 14: ***Taraxacum starmuehleri***. **A** – Habit, Sveti Marina (scale bar = 5 cm); capitulum and single outer bract, Kampor (scale bar = 5 mm); achenes, Opatija (scale bar = 1 mm). **B** – Habit, Mošćenička, 2015, *I. Uhlemann*. **C** – Capitulum, Kampor, 2010, *I. Uhlemann*.

Diagnostic features of *T. starmuehleri* are outer leaves with incised large terminal lobes, purple petioles, presence of pollen, greyish green styles and greyish (brown) achenes. Due to its delicate habit, outer bracts with a distinct white border and corniculations below the tip and a long cylindrical cone of the achene it is a typical member of section *Erythrosperma*. Apart from other greyish brown-fruited and habitually more robust *Erythrosperma*-like taxa which are in Croatia rare and of local occurrence (singular biotypes) and of supposed hybrid origin [primary hybrids of sect. *Erythrosperma* sp. × sect. *Taraxacum* (= *Ruderalia*) spp.?], *T. starmuehleri* grows on scattered localities in northern Croatia, forms populations of medium size, and has a distinct area of distribution.

Distribution: *T. starmuehleri* is scattered in Istria and on the islands of Cres, Krk, Lošinj and Rab. It is not known outside of the northern coastal part of Croatia.

Specimens studied: Croatia, Istrien, Ostküste, Opatija c. 15 km s, Mošćenička, Straßenrand unterhalb der Serpentine vor dem Ort, 6.4.2015, *I. Uhlemann* (DR, Hb. Uhlemann); Istrien, Ostküste, Labin s, Ravni c. 400 m oberhalb des Ortes an der schmalen, asphaltierten Straße nach Skitača, 6.4.2015, *I. Uhlemann* (DR, Hb. Uhlemann); Istrien, Ostküste, Opatija, Park Angiolina, Wegrand, 6.4.2015, *I. Uhlemann* (DR, Hb. Uhlemann); Isle of Cres, Valun, Parkplatz oberhalb des Ortes, Straßenrand, 25.3.2008, *I. Uhlemann* (Hb. Uhlemann); Isle of Lošinj, Veli Lošinj, se Ortsrand, Straßenrand, 23.3.2008, *I. Uhlemann* (Hb. Uhlemann); Isle of Rab, Rab w, Kampor, Naturlehrpfad südl. des Ortes, 11.4.2010, *I. Uhlemann* (DR, Hb. Uhlemann). - Further sites in Uhlemann (2007a, 2008, 2011, 2012).

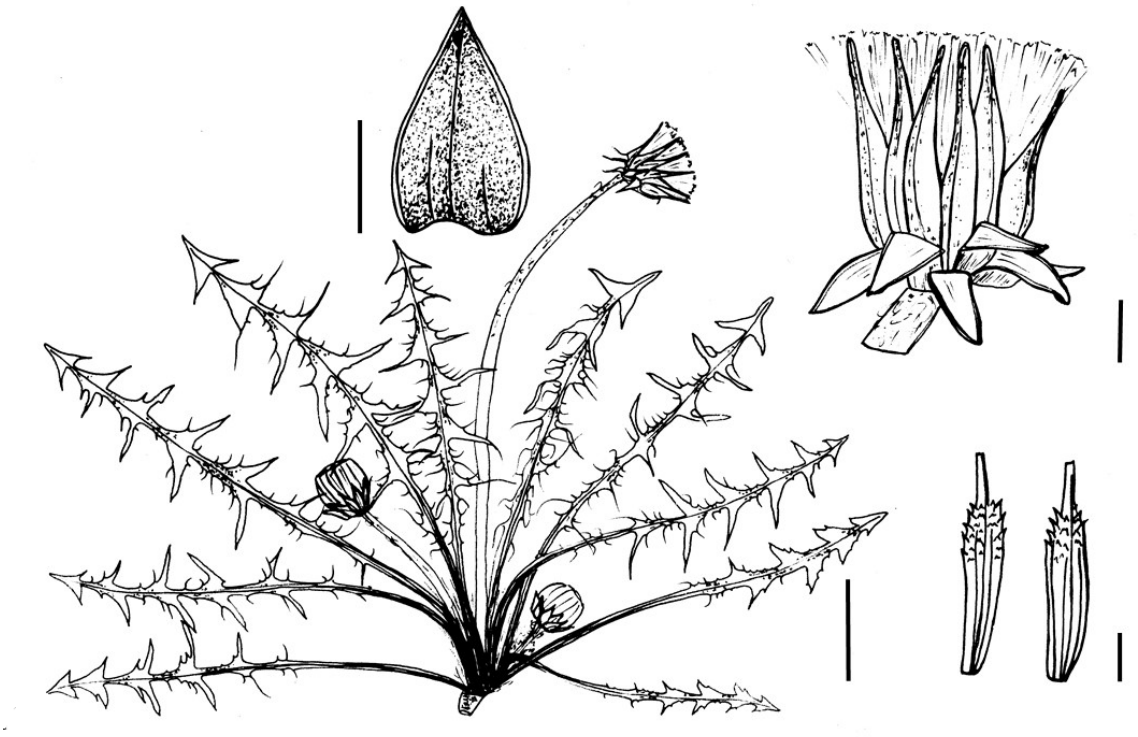


Fig. 15: ***Taraxacum tanyolobum***. Habit, Klaniće (scale bar = 5 cm); capitulum and single outer bract, Klaniće (scale bar = 5 mm); achenes, Klaniće (scale bar = 1 mm).

Taraxacum tanyolobum Dahlst., Berichte der Schweizer Botanischen Gesellschaft **42**: 720 (1933). (Figs 15–16)

Description:

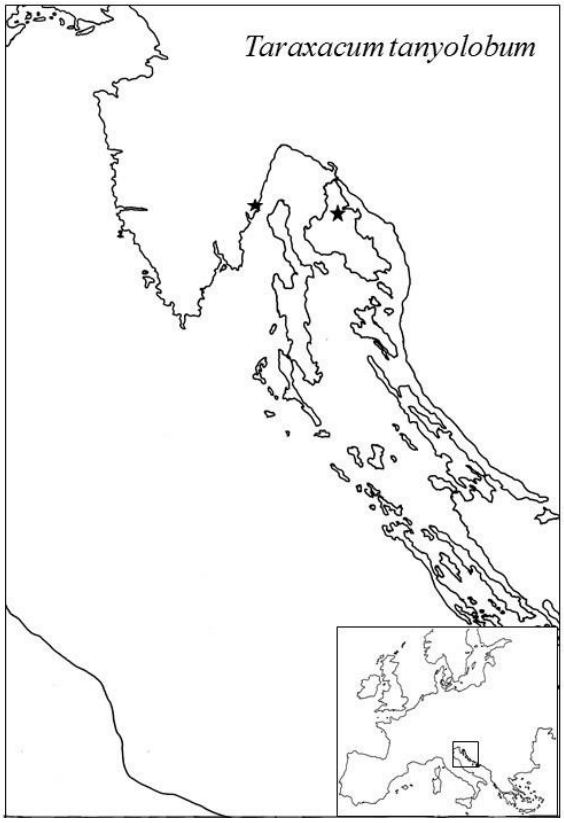
Plants (15–)20–30 cm tall, subrobust. *Leaves* erect to subpatent, greyish green, subglabrous, not spotted, pinnatisect, terminal lobe triangular, sagittate or trilobed, entire, with a lingulate tip; lateral lobes 4–5 pairs, strikingly patent, triangular to narrowly triangular, distal margin with many parallel teeth, proximal margin entire or rarely has a small tooth; interlobes well-developed, usually blackish violet, with parallel teeth; petiole narrow, unwinged, purple, midrib green or brownish green. *Scapes* brownish, aranose. *Capitulum* 25–30 mm in diameter, yellow; outer ligules often involute, striped dark grey-purple abaxially; styles in the upper part blackish

abaxially; pollen absent. *Involucre* rounded at the base, dark olive-green, pruinose; outer involucral bracts suberect to patent, tips recurved, with a distinct white border, purplish green, with very small corniculations below the apex, (2.0–)3–4 mm wide, 8–10 mm long. *Achenes* grey, achene body 3.2–3.5 mm long, spinulose in the upper part, abruptly narrowing into a 1.0–1.2 mm long cylindrical cone; rostrum 8–9 mm long; pappus white.

Chromosome number: unknown

Diagnostic features of *T. tanyolobum* are striking patent lateral leaf lobes with strongly and parallel dentate upper edges, terminal lobes with lingulate tips, purple petioles, absence of pollen, blackish styles, purplish outer bracts with very small corniculations and grey achenes. With regard to grey achenes it belongs to the *Dissimilia*-group within section *Erythrosperma* and is related to *T. starmuehleri*. The latter species is distinguished by a completely deviating leaf shape, pollen presence, green outer bracts and a more slender habit.

Distribution: *T. tanyolobum* was described from Switzerland (Basel). It is scattered in Central Europe. Up to now, only two localities are known in Croatia, which probably form the southern border of its area of distribution.



Specimens studied: Croatia, Istria, Ostküste, Opatija c. 15 km s, Mošćenička, Straßenrand unterhalb der Serpentine vor dem Ort, 6.4.2015, *I. Uhlemann* (Hb. Uhlemann); Isle of Krk, Malinska e, Rasopasno ne, Klaniće, ruderal im Dorf, 13.4.2007, *I. Uhlemann* (DR, Hb. Uhlemann).

Fig. 16: ***Taraxacum tanyolobum***. Distribution in northern Croatia.

Taraxacum taraxacoides (Hoppe & Hornschuch) Willkomm, in Willkomm & Lange, Prodromus florae hispanicae **2**: 231 (1865) (Figs 17–18)

Bas.: *Leontodon taraxacoides* Hoppe & Hornschuch, Tagebuch einer Reise nach den Küsten des adriatischen Meers und den Gebürgen von Krain, Kärnthen, Tyrol, Salzburg, Baiern und Böhmen, vorzüglich in botanischer und entomologischer Hinsicht: 166 (1818).

Description:

Plants 5–12 cm tall, delicate. *Leaves* erect to subpatent, greyish green, glabrous, not spotted, strongly pinnatisect, terminal lobe of the outer leaves triangular, terminal lobe of the inner leaves trilobed, lobules ± lingulate, usually entire; lateral lobes 6–8 pairs, patent to slightly recurved, narrowly triangular to linear, distal margin narrowing from a broad base gradually or sub-abruptly into a small, acute tip, usually entire or more seldom with a single tooth, proximal margin often with a distinct tooth; interlobes short but distinct, narrow, plane, green, usually

entire or more seldom with a few filiform teeth; petiole extremely narrow, unwinged, purple, midrib brownish green. *Scapes* purplish to brownish, glabrous. *Capitulum* 15–20 mm in diameter, yellow; outer ligules striped dark grey-purple abaxially; styles in the upper part greyish green abaxially; pollen absent or present. *Involucre* rounded at the base, dark glaucous, pruinose; outer involucral bracts, erect to loosely appressed, sometimes (later stages of development) with recurved tips, with a distinct white border, adaxially greyish green, abaxially glaucous to dark olivaceous-green, corniculated below the apex, 2–3 mm wide, 5–6(–7) mm long. *Achenes* red-brown, achene body 3.0–3.3 mm long, spinulose in the upper and sometimes middle part, abruptly narrowing into a 0.8–1.0 mm long cylindrical cone; rostrum 5–7 mm long; pappus white.

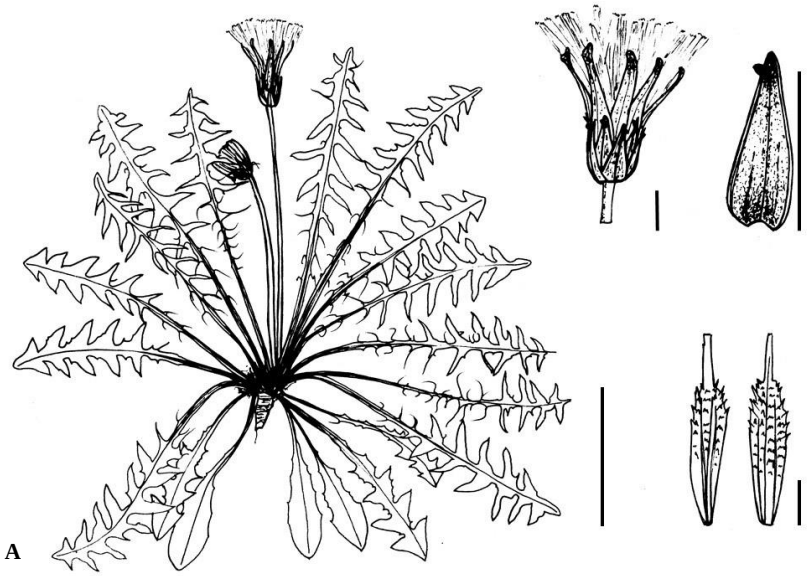


Fig. 17: ***Taraxacum taraxacoides***. **A** – Habit, Veli Lošinj (scale bar = 5 cm); capitulum and single outer bract, Veli Lošinj (scale bar = 5 mm); achenes, Limska draga (scale bar = 1 mm). **B** – Habit, Veli Lošinj, 2015, *I. Uhlemann*. **C** – Capitulum, Veli Lošinj, 2015, *I. Uhlemann*.

Chromosome number: 2n=3x=24, material: Istria, Sveti Martin, 22.4.2000, *I. Uhlemann* (Fig. 18A).

Diagnostic features of *T. taraxacoides* are an extremely delicate habit, thin purple petioles, small lateral leaf lobes, erect, small, bordered outer bracts with corniculations below the tip and red-brown achenes. In contrast to the vast majority of *Taraxacum* species, *T. taraxacoides* was described in the early 19th century from the Triest region (Italy) when nothing was known about the agamospermous reproductive behaviour in the genus [discovery of agamospermy in *Taraxacum* by Raunkiaer (1903)]. Štěpánek & Kirschner (2012) typified the species. *T. taraxacoides* belongs to the group of *T. rubicundum* (Dahlst.) Dahlst. (≡ *T. erythrospermum* Andr. subsp. *rubicundum* Dahlst.), a relatively frequent species in Central Europe occurring on limestone, described from Sweden. Both species are morphologically extremely close but distinguished by a number of (quantitative?) leaf, involucrum and achene characters. Further related species are, for instance, *T. cognoscibile* Kirschner & Štěpánek with bigger achenes, *T. herae* Sonck from Greece with a shorter cone at the achene and a somewhat deviating leaf shape, and *T. dunenseforme* Sonck from Lake Garda (Italy) with more blunt lateral leaf lobes and more than one tooth on the lower edge and erect outer bracts with recurved tips.

Distribution: *T. taraxacoides* is the most frequent species of section *Erythrosperma* in the northern coastal part of Croatia. Two single remote (the southernmost) localities are located in the Zadar region (Dalmatia). Westwards the species is known from three single localities in the region of Verona (Italy, Veneto), Riva (Lake Garda, Italy) and Corsica (France) (Štěpánek & Kirschner 2012).

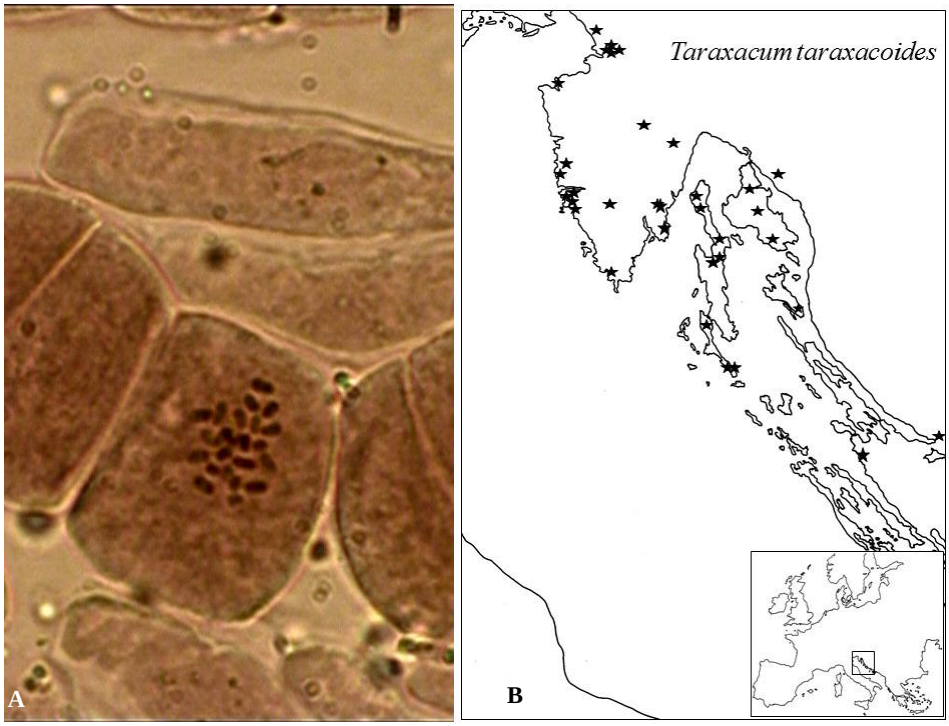


Fig. 18: ***Taraxacum taraxacoides***. **A** – Metaphase plate, material: Istria, Sveti Martin, 22.4.2000, *I. Uhlemann*. **B** – Distribution in northern Croatia.

Specimens studied: Croatia, Bay of Kvarner, Festland gegenüber der Insel Krk, Senj, c. 100 m vor dem nördlichen Ortseingang, Wegrand, 11.4.2009, *I. Uhlemann* (DR, Hb. Uhlemann); Istria, Westküste, zwischen Vrsar und Flengi, Straßenrand, 26.3.2005, *I. Uhlemann* (Hb. Uhlemann); Istrien, Westküste, Rovinj s, Parkanlage an der Küste, lückiger Trockenrasen, 31.3.2005, *I. Uhlemann* (Hb. Uhlemann); Istien, Westküste, Poreč s, Limska draga, Gebüschsaum, 31.4.2005, *I. Uhlemann* (DR, Hb. Uhlemann); Istrien, Ostküste, Labin n, Sveti Martin, Waldsaum, 22.4.2000, *I. Uhlemann* (Hb. Uhlemann); Istrien, Ostküste, Labin w, Sveti Martin, „Pineta", Waldwegrand hinter dem Haus, 6.4.2015, *I. Uhlemann* (DR, Hb. Uhlemann); Istrien, Ostküste, Labin w, Sveti Martin 1 km e, Straßenrand, 6.4.2015, *I. Uhlemann* (Hb. Uhlemann); Inneristrien, Gebiet des Monte Maggiore, an der Straße von Vela Učka nach Mala Učka, 924 m NN, Karstheide, 2.5.2008, *U. & W. Starmühler* (KL); Inneristrien, nördlicher Teil, Ročko Polje, Straßenabzweig nach Hum, Straßenböschung, zahlreich, 8.4.2015, *I. Uhlemann* (DR); Inneristrien, Kanfanar s, Wegrand, 2.4.2002, *I. Uhlemann* (DR); Isle of Cres, Nordwesten der Insel, Porozina s, lichter

Quercus pubescens-Wald, Wegrand, 4.4.2002, *I. Uhlemann* (DR 007211); Insel Cres, Westküste, Serpentinstraße oberhalb Valun, Straßenrand, zahlreich, 25.3.2008, *I. Uhlemann* (Hb. Uhlemann); Insel Cres, mittlerer Teil der Insel, zwischen Vrana und Batanji, Straßenrand, 4.4.2002, *I. Uhlemann* (Hb. Uhlemann); Insel Cres, nördlicher Teil, c. 0.5 km n Predošćica, Schafweide unterhalb des Berges Barbin, 7.4.2015, *I. Uhlemann* (DR); Insel Cres, nördl. Teil, Dragozetići, Straßenrand am Ortseingang, 7.4.2015, *I. Uhlemann* (DR); Isle of Krk, Straße zwischen Punat und Stara Baška, Straßenrand an der höchsten Stelle der Straße, 8.4.2007, *I. Uhlemann* (Hb. Uhlemann); Insel Krk, Malinska e, Rasopasno ne, Klanice, ruderal im Dorf, 8.4.2007, *I. Uhlemann* (DR, Hb. Uhlemann); Insel Krk, Straße zwischen Punat und Vrbnik, Straßenrand, 11.4.2007, *I. Uhlemann* (DR, Hb. Uhlemann); Isle of Lošinj, Veli Lošinj, Aufstieg zur Kapelle Sv. Ivan, Wegrand, 24.3.2008, *I. Uhlemann* (DR); Insel Lošinj, Osoršćica, Gipfel des Sveti Nikola, 557 m NN, 26.3.2008, *I. Uhlemann* (Hb. Uhlemann); Isle of Rab, Suha Punta 2 km nw, Straßenrand, 14.4.2010, *I. Uhlemann* (Hb. Uhlemann); Dalmatia, Zadar 10 km n, Jadranska magistrala, Straßenrand, 15.4.2009, *I. Uhlemann* (DR); Norddalmatien, Starigrad, Cypressen-Hain am nördlichen Ortseingang, Straßenrand, 16.4.2009, *I. Uhlemann* (DR). – Further sites in Štěpánek & Kirschner (2012) and Uhlemann (2001, 2002, 2003, 2005, 2007b).

Taraxacum veglianum Uhlemann, Willdenowia **40**: 179 (2010). (Figs 19–20)

Description:

Plants 10–15(–20) cm tall, delicate. *Leaves* erect to subpatent, light greyish green, crispate, subglabrous, not spotted, pinnatisect, terminal lobe of the outer leaves sagittate or triangular, entire or more seldom with a few teeth, terminal lobe of the inner leaves small sagittate or trilobed, usually with some teeth on both lateral sides, acuminate or lingulate; lateral lobes (3–)4–6(–7) pairs, patent to slightly recurved to hamate, triangular to narrowly triangular (inner leaves), distal margin with many coarse teeth, proximal margin entire or rarely has a small tooth; interlobes well-developed but short, crispate, green, with some teeth; petiole narrow, unwinged, purple, midrib green or brownish green. *Scapes* brownish, aranose in the upper part. *Capitulum* 20–25 mm in diameter, yellow; outer ligules striped dark grey-purple abaxially; styles in the upper part greyish green abaxially; pollen absent. *Involucre* rounded at the base, olive-green, pruinose; outer involucral bracts suberect to patent, tips recurved, with a distinct white border, adaxially pale greyish green, abaxially olive-green, corniculated below the apex, 2.5–4 mm wide, 8–10 mm long. *Achenes* dark reddish brown, achene body 3.0–3.2 mm long, spinulose in the upper part, abruptly narrowing into a 0.8–1.0 mm long cylindrical cone; rostrum 8–10 mm long; pappus white.

Chromosome number: 2n=3x=24 (Uhlemann 2010).

Diagnostic features of *T. veglianum* are greyish green leaves with strongly dentate upper edges of recurved or hamate lateral lobes, purple petioles, absence of pollen, greyish green styles and dark reddish brown achenes. Another striking character, in particular at sites, is its late flowering time. *T. veglianum* opens its ligules about one week later after anthesis of the remaining *Taraxacum* species as observed in 2015 by the author in populations at Ravni (Istria). With regard to leaf shape, this species is related to other Erythrosperms with more or less hamate lateral lobes like *T. lambinonii* Soest, which is distinguished by more blunt leaf lobes, blackish styles, presence of pollen and greyish achenes and furthermore *T. aquitanum* Hofstra with strongly hamate, entire lateral leaf lobes, presence of pollen and smaller achenes.

Distribution: *T. veglianum* is scattered in Istria and on the island of Cres, but abundant on the isle of Krk. It is further known from two remote localities on the east coast of Lake Garda (Italy): Malcesine, Monte Baldo, Waldweg unterhalb der Mittelstation der Seilbahn, 25.4.2011, *I. Uhlemann* (Hb. Uhlemann); Caprino Veronese n, Braga, Wegrand im Dorf, 24.4.2011, *I. Uhlemann* (Hb. Uhlemann).

Specimens studied: Croatia, Istria, Ostküste, Labin s, Ravni c. 400 m oberhalb des Ortes, Straßenrand an der schmalen, asphaltierten Straße nach Skitača, 6.4.2015, *I. Uhlemann* (Hb. Uhlemann). – Further sites in Uhlemann (2010, 2011, 2012).

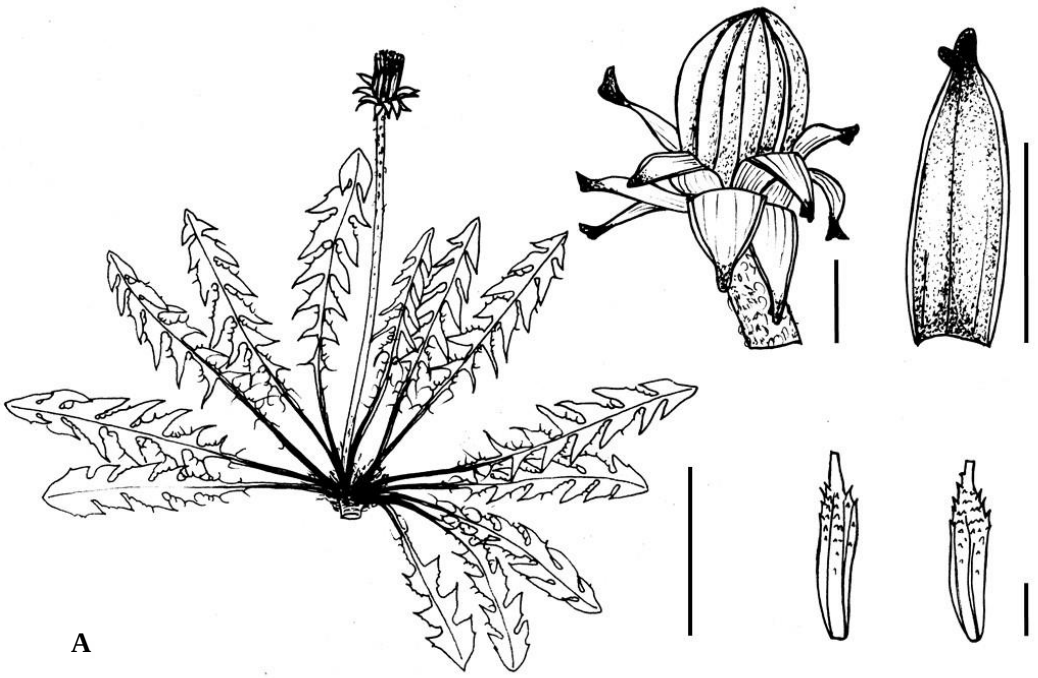


Fig. 19: ***Taraxacum veglianum***. **A** – Habit, Ravni (scale bar = 5 cm); capitulum and single outer bract, Ravni (scale bar = 5 mm); achenes, Krk (scale bar = 1 mm). **B** – Habit, Ravni, 2015, *I. Uhlemann*. **C** – Capitulum, Ravni, 2015, *I. Uhlemann*.

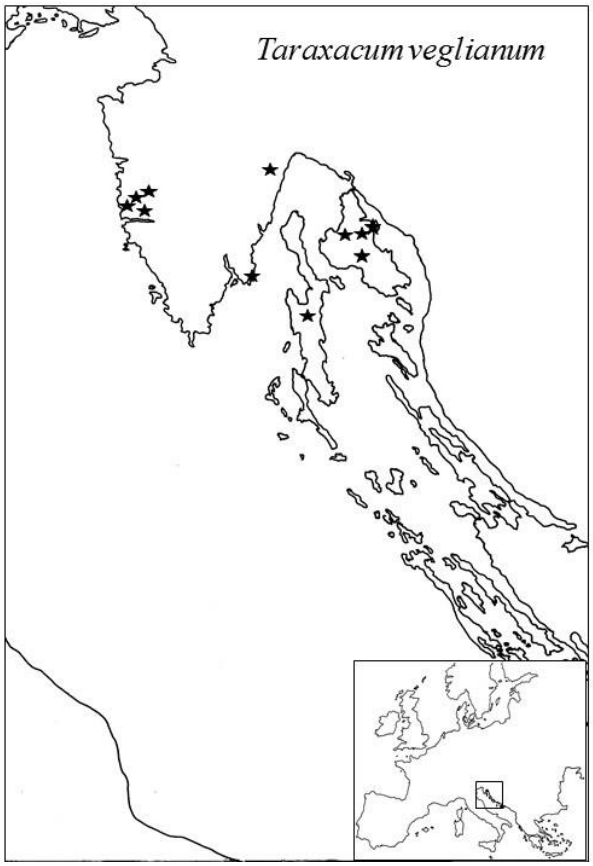


Fig. 20: ***Taraxacum veglianum***. Distribution in northern Croatia.

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