

Five new species of *Taraxacum* sect. *Ruderalia* from Central Europe and Denmark

Pět nových druhů rodu *Taraxacum* sect. *Ruderalia* ze střední Evropy a Dánska

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A detailed study of *Taraxacum* sect. *Ruderalia* for the 8th volume of the Flora of the Czech Republic revealed five new agamosperous species, viz. *T. atroviride* Štěpánek et Trávníček, *T. clarum* Kirschner, Štěpánek et Trávníček, *T. moldavicum* Chán, H. Øllgaard, Štěpánek, Trávníček et Žíla, *T. urbicola* Kirschner, Štěpánek et Trávníček and *T. violaceifrons* Trávníček. These species are formally described, thoroughly characterized morphologically and compared with similar taxa. They are known from numerous localities in Central Europe; *T. moldavicum*, in addition to the Central European distribution, is known to occur in two regions in Denmark. All these species are also documented by photographs of their general habit and important features.

Key words: Central Europe, Denmark, chorology, new species, sect. *Ruderalia*, *Taraxacum*, taxonomy

Introduction

Since the early 1980s, research on the taxonomy and distribution of the genus *Taraxacum* in the Czech Republic has yielded many results (for details, see Kirschner & Štěpánek 1982, 1983, 1984a, 1984b, 1985a, 1985b, 1986a, 1986b, 1989, 1992a, 1992b, 1992c, 1994, 1995a, 1995b, 1997, 1998a, 1998b, den Nijs et al. 1990, Bureš 1993, 1994, Kirschner et al. 1993, 1994, 2002, Chán 1994, 1996, Chán et al. 1995, 2001, 2006, Trávníček & Hájek 1996, Trávníček & Lustyk 1996, Trávníček et al. 1999, 2000, Danihelka & Grulich 2000, Øllgaard 2003, Vašut 2003, Schmid et al. 2004, Vašut & Trávníček 2004, Vašut et al. 2005, Trávníček & Štěpánek 2008). Among the dandelion sections rich in species, the vulnerable sect. *Palustria* (Lindb. fil.) Dahlst. was described in a monograph (Kirschner & Štěpánek 1994, 1998a), and the interest of specialists focused on the sections *Erythrosperma* (Lindb. fil.) Dahlst., *Hamata* H. Øllgaard and the taxonomically most intricate sect. *Ruderalia* Kirschner, H. Øllgaard et Štěpánek. The latter group has been studied for more than twenty years but is still poorly known. The authors and their collaborators (V. Žíla and V. Chán of Strakonice, S Bohemia, in particular), with substantial support from other European specialists (mainly, H. Øllgaard of Viborg, Denmark, A. J. Richards of Hexham, England, H. Zevenbergen, P. Oosterveld, A. Hagendijk of The Netherlands, C.-F. Lundevall of Lidingö, Sweden, etc.), recognized, and in some

cases also described, many taxa of the sect. *Ruderalia* from the Czech Republic and adjacent countries, but continuing research reveals several novelties every year. Some of these newly recognized forms were described as new species: *Taraxacum atrox* Kirschner et Štěpánek, *T. elegantius* Kirschner, H. Øllgaard et Štěpánek, *T. hercynicum* Kirschner et Štěpánek, *T. sertatum* Kirschner, H. Øllgaard et Štěpánek and *T. tragopogon* Kirschner et Štěpánek (see Kirschner & Štěpánek 1992a, 1997); the latter name was synonymized with *T. porrigentilobatum* Railons. Some of these new species are also known from other countries, often quite remote from Bohemia (Denmark, Finland, Sweden). Another eight species were described with type localities outside the Czech Republic but were known from Bohemia or Moravia at the time of publication: *Taraxacum ancistratum* H. Øllgaard, *T. crassum* H. Øllgaard et Trávníček, *T. deltoidifrons* H. Øllgaard, *T. guttigestans* H. Øllgaard in Kirschner et Štěpánek, *T. infuscatum* H. Øllgaard, *T. jugiferum* H. Øllgaard (types coming from Denmark), *T. lundense* H. Øllgaard et Wittzell (Sweden) and *T. fascinans* Kirschner, Mikoláš et Štěpánek (Slovakia). Thus, this international collaboration resulted in the description of twelve new species. The institutional collaboration and research proved to be fruitful also in other regions (e.g., Kirschner et al. 2006).

The present authors recently finished an account of the genus *Taraxacum* for the 8th volume of Flora of the Czech Republic. This account not only includes more than two hundred previously described species but also five taxa newly recognized under work-names in the last decade and awaiting formal description and validation. All the names published below (except *T. violaceifrons*) are described as a result of the collaboration of several authors. In all cases, the named authors provided the descriptions and other protologue data. The geographical regions used in the lists of localities follow the regional phytogeographical division of the Czech Republic (Skalický 1988).

1. *Taraxacum atroviride* Štěpánek et Trávníček, **spec. nova**

(Figs 1–6)

HOLOTYPE: Bohemia merid., montes Šumava (distr. phytogeogr. 88h. Svatotomášská hornatina), pagus Frymburk: in pratis secundum viam publicam prope ripam merid. lacus structilis „Lipenská přehrada“, ca. 1.5 km situ occ.-mer.-occ. a pago Frymburk, 740 m s. m., 48°39'12" N, 14°08'48" E, leg. J. Štěpánek et al., 24.V.1997, PRA (no. det. JK & JŠ 15219).

Plantae mediocres usque validae, foliis erecto-patentibus usque suberectis, subobscure saturate viridibus, subopacis, sparse araneosis, immaculatis, interlobiis plerumque obscure coloratis. Lamina ambitu oblanceolata usque anguste oblongo-lanceolata, 15–25 cm longa, 3.5–6.0 cm lata, 3.5–4plo longior quam lata, lobo terminali comparate parvo, plus minusve triangulari vel trilobato, acuto vel saepe apice lingulato usque lineari-elongato, marginibus distalibus plerumque concavis, marginibus proximalibus saepissime rectis, patentibus usque recurvatis, lobis lateralibus conspicuis, utrinque numero 5–6, anguste triangularibus usque triangulariter lanceolatis, plerumque apice elongatis, marginibus distalibus saepissime plus minusve rectis usque concavis vel leviter sigmoideis, integris vel dentibus solitariis sat magnis instructis, marginibus proximalibus vulgo rectis, rarius subconcavis, plerumque patentibus vel recurvis, interlobiis mediocriter longis vel raro abbreviatis, obscure marginatis et plerumque distincte obscure purpureo-coloratis, integerrimis vel saepe dentatis, interdum dentibus conspicuis elongatis, ad 1 cm longis instructis, nonnunquam margine subinvoluta, nervo mediano pallide viridi. Petiolus omnino mediocriter usque sublanceolatus, pallide viridis. Scapus laete viridis, post anthesin interdum sursum inconspicue brunneo-purpurascens, sub calathio conspicue floccoso-araneosus, ceterum saepe glabrescens. Calathium sat magnum, diametro 4.5–6.0 cm, planum usque subconvexum, saturate luteum, ligulis marginalibus planis, 24–28 mm longis, 2.8–3.1 mm latis, apice minute denticulatis, denticulis plerumque rubescentibus, extus stria sat distincta griseo-brunneo-violacea notatis, ligulis internis subcanaliculatis, stigmatibus pallide griseo-viridibus, antheris polliniferis, granis pollinis diametro variis. Involucrum squamis



Fig. 1. – *Taraxacum atroviride*, holotype; scale bar = 10 cm.



Fig. 2. – *Taraxacum atroviride*, general habit, live plant (locality: S Bohemia, Korkusova Huť settlement near Vimperk); scale bar = 10 cm.

exterioribus numero 14–20, anguste usque late lanceolatis, 14–16 mm longis, 3.3–4.7 (–5.1) mm latis, irregularibus, plerumque patentibus, aliquibus oblique squarrosis marginibus saepe subinvolutis, obscure viridibus, paulum pruinosis, post anthesin plerumque paulatim rubescentibus, marginibus inconspicuis angustissimis 0.1 mm latis, albidis. Achenium 3.6–4.0 mm longum (pyramiden inclusum), pyramide anguste conica usque fere cylindrica, ca. 0.4–0.6 mm longa, pallide griseo-stramineum, superne spinulosum, ceterum plus minusve tuberculatum vel sublaeve, rostro (9–) 10–12 mm longo. Floret V (–VI).

Species agamosperma. $2n = ?$

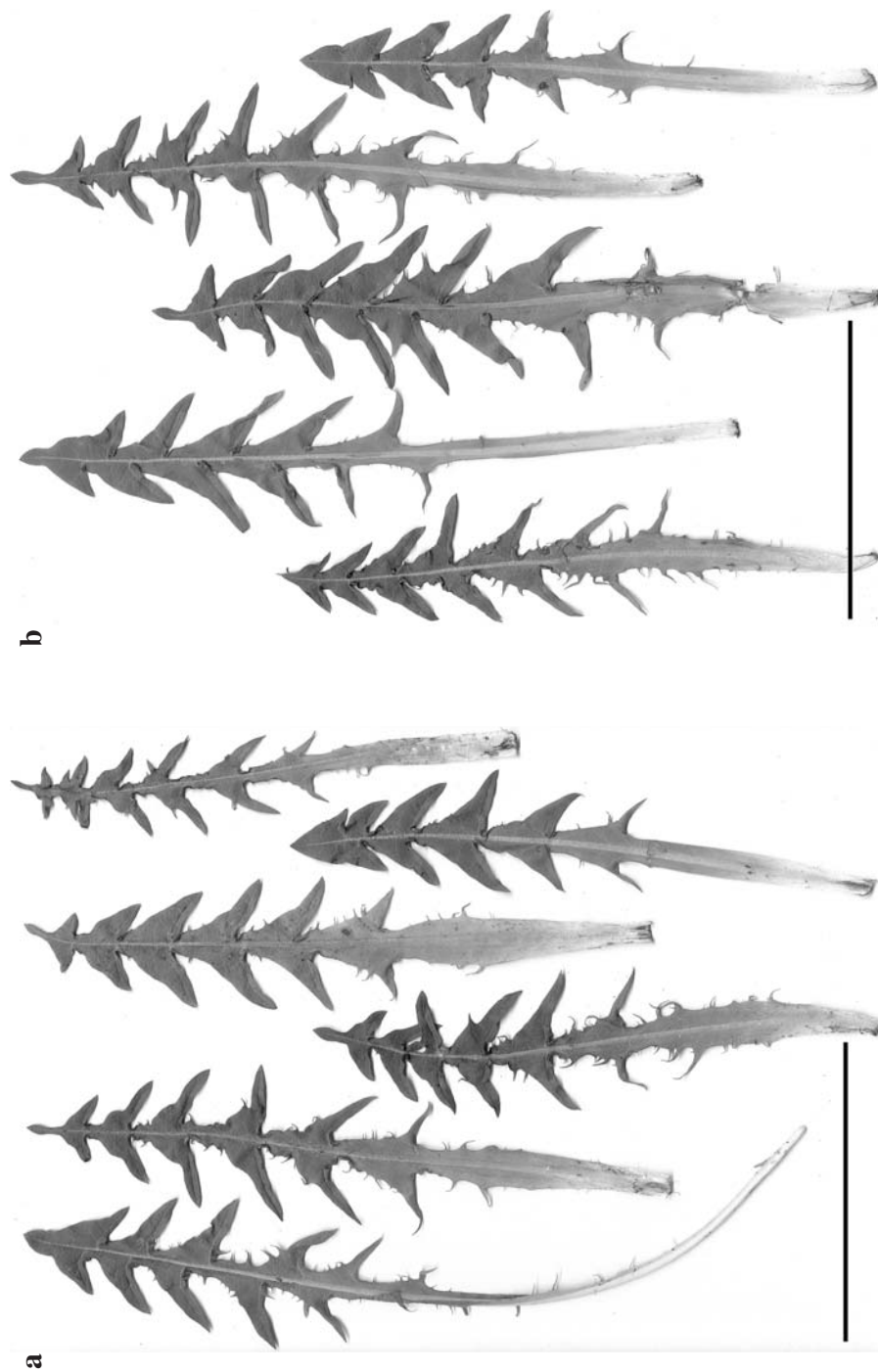


Fig. 3. – *Taraxacum atroviride*, plasticity in leaf-shape (a, b – leaves from 3 localities: S Bohemia, region of Vimperk, settlements of Korkusova Huť, Horní Vltavice and Hlinišť); scale bars = 10 cm.

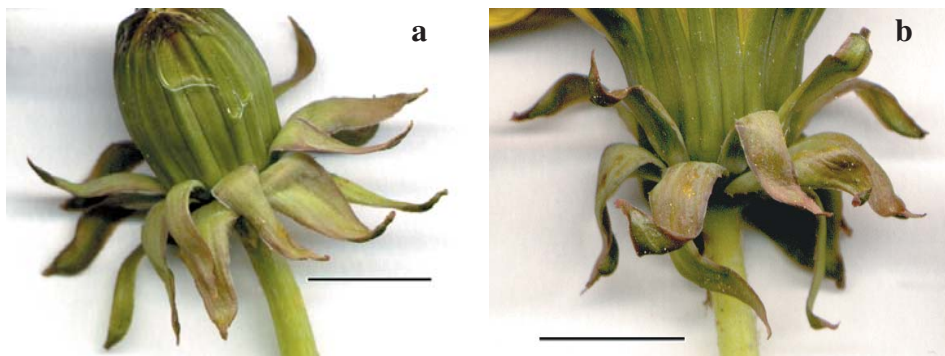


Fig. 4. – *Taraxacum atroviride*, a – detail of young capitulum, b – detail of involucre (locality: S Bohemia, Hliniště settlement near Vimperk); scale bars = 1 cm.

Taraxacum atroviride is distinguished by dark green leaves, interlobes often quite tar-coloured, petioles green and winged, lateral lobes relatively narrow and terminal lobe with a lingulate to linear apex. Outer bracts of *T. atroviride* are quite irregular, most often \pm patent, some of them slightly twisted with involute margins, \pm dark green, later often suffused brownish-red, with almost indistinct, very narrow (ca 0.1 mm wide) whitish border.

The outer bract characters resemble those of *T. eudontum* Sahlin described from The Netherlands and adjacent regions. The latter species is distinct from our taxon in having narrow petioles, lateral lobes with a distinct tooth on the proximal margin and more broadly bordered outer bracts. Another similar species is *T. macrolobum* Dahlst. characterized by paler leaves with purely green interlobes, narrow petioles, slightly crisped leaf blades, often more distinctly dentate interlobes and/or lateral lobe distal margins, and more regular outer bracts. *Taraxacum linguatum* M.P. Christ. et Wiinst. is another, more remotely similar

species having paler leaves without coloured interlobes, narrower petioles and lateral lobes with a distinct, \pm obtuse apex. Leaf shape and colour of *T. atroviride* are similar to the recently described *T. infuscatum* H. Øllgaard; the latter is distinct in its 18–20 mm long reflexed outer bracts and more numerous lateral lobes.

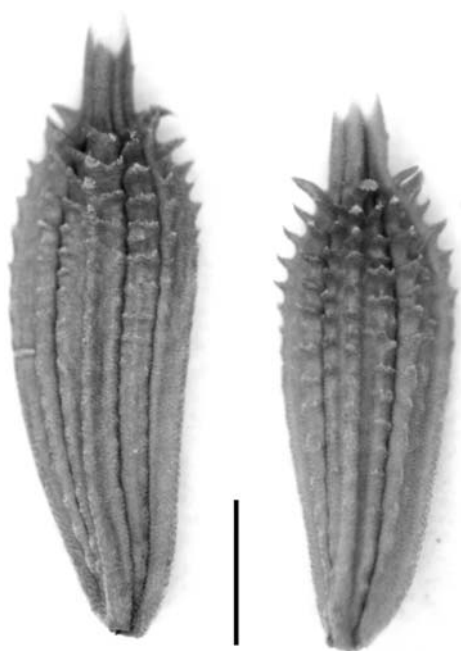


Fig. 5. – *Taraxacum atroviride*, achenes (locality: S Bohemia, Horní Vltavice settlement near Vimperk); scale bar = 1 mm.

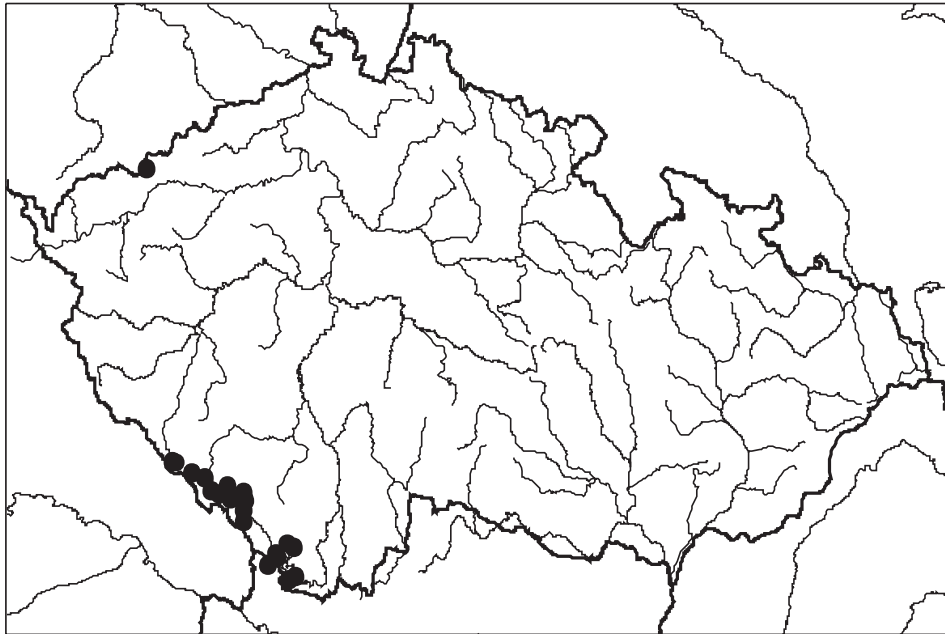


Fig. 6. – Distribution of *Taraxacum atroviride*.

Distribution and habitat: This species occurs in the nutrient rich meadows, pastures and road verges in the Czech and Austrian parts of the Šumava Mts (Böhmerwald). One locality is known from NW Bohemia. It is possibly also present in other adjacent areas, particularly Bavaria.

Herbarium specimens and localities (Fig. 6)

Czech Republic: **37l. Českokrumlovské Předšumaví:** Květušín settlement near Hořice na Šumavě village, lawns in the settlement (Trávníček, 25.5.1997, OL). – **85. Krušné hory:** Kovářská village near Vejprty town, roadsides 0.6 km NEN (–NE) from the railway station (Trávníček, 22.5.2004, OL). – **88a. Královský hvozd:** Železná Ruda town, lawns and meadows at the ski-lift between the town and Špičák settlement (Trávníček, 25.V.1996, OL). – Železná Ruda town, meadow at the road towards Javorná village 2 km NE of the town, near Pamferova Huť settlement (Trávníček, 25.V.1996, OL). – opp. Železná Ruda: in prato ad viam publicam (no. 27 = E53) Železná Ruda – Javorná, prope praedium Pamferova Huť, ca. 2 km situ bor.-orient. ab opp. Železná Ruda. 850–870 m s. m., 49°09' N, 13°15'40" E (Štěpánek, Chán, Trávníček & Žíla, 26.5.1996, PRA, no. det. JK & JŠ 16868). – **88b. Šumavské pláně:** Vimperk, pagus Nové Hutě: in prato ad locum Pláně, ca. 1.0–1.5 km situ bor.-bor.-occid. a pago Nové Hutě, 1050–1080 m s.m., 49°03' N, 13°38–39' E, 6947b (Štěpánek, Chán, Trávníček & Žíla, 27.V.1995, PRA, no. det. JK & JŠ 16870). – opp. Vimperk, pagus Kvilda: in caespitibus in pago Kvilda, 1040–1080 m s. m., 49°01' N, 13°35' E (Štěpánek, Chán, Trávníček & Žíla, 27.V.1995, PRA, no. det. JK & JŠ 16869). – Kvilda village near Vimperk town, grassy places in the village (Trávníček, 27.V.1995, OL). – opp. Vimperk, pagus Modrava, vicus Filipova Huť: in caespitibus in vico Filipova Huť, ca. 1100 m s. m., 49°01'40" N, 13°31'20" E (Štěpánek, Chán, Trávníček & Žíla, 28.V.1995, PRA, no. det. JK & JŠ 16872). – Filipova Huť settlement near Kašperské Hory town, lawns in the village (Trávníček, 28.V.1995, OL). – Prášily settlement near Železná Ruda town, lawns in the settlement (Trávníček, 26.V.1996, OL). – opp. Sušice, vicus Srní: in prato ad viam publicam Prášily – Srní, ante peripheriam vici Srní, ca. 850 m s. m., 49°05' N, 13°28'30" E (Štěpánek, Chán, Trávníček & Žíla, 26.V.1996, PRA, no. det. JK & JŠ 16865). – Srní village near Kašperské Hory town, meadows

at the road towards Prášily settlement near the SW margin of the village (Trávníček, 26.V.1996, OL). – **88d. Boubínsko-stožecká hornatina:** Borová Lada village, meadow at the crossroad near E margin of the village (Trávníček, 28.V.1995, OL). – Korkusova Huť settlement, meadow at the N margin of the settlement E of the road towards Vimperk town, ca 825 m n.m. (Trávníček, 18.V.2002, OL; Žíla, 19.V.2002, herb. Žíla). – Kubova Huť settlement near Vimperk town, lawns in the settlement, ca 1000 m n.m. (Trávníček, 18.V.2002, OL). – Hlinišť settlement, meadow N of the road towards České Žleby village at forest margin 2.5 km SSE of the settlement, ca 840 m n.m. (Trávníček, 18.V.2002, OL; Žíla, 19.V.2002, herb. Žíla). – **88g. Hornovltavská kotlina:** opp. Horní Planá, vicus Bližší Lhota: in prato prope vici Bližší Lhota peripheriam occidentalem, 750 m s. m., 48°45'28" N, 14°00'36" E (Štěpánek et al., 24.V.1997, PRA, no. det. JK & JŠ 16864). – opp. Horní Planá, vicus Zadní Hamry: in prato prope domum ad ripam sinistram rivi Hamerský potok haud procul a ponte viae publicae, 740 m s. m., 48°44'30" N, 14°00'59" E (Štěpánek et al., 24.V.1997, PRA, no. det. JK & JŠ 16866). – Zadní Hamry settlement near Horní Planá town, meadow at the hamlet on left bank of the Hamerský potok brook (Trávníček, 24.V.1997, OL). – Otice settlement near Horní Planá town, lawns in the settlement (Trávníček, 25.V.1997, OL). – Horní Vltavice village, meadow E of the road towards Volary town 1.5 km SSE of the village, ca 800 m n.m. (Trávníček, 18.V.2002, OL; Žíla, 19.V.2002, herb. Žíla). – **88h. Svatomášká hornatina:** pagus Frymburk, vicus Svatý Tomáš: in caespitibus in vico Sv. Tomáš, 990 m s. m., 48°38'28" N, 14°06'12" E (Štěpánek et al., 24.V.1997, PRA, no. det. JK & JŠ 16863). – Svatý Tomáš settlement near Frymburk village, lawns in the settlement (Trávníček, 24.V.1997, OL). – pagus Frymburk: in pratis secundum viam publicam prope ripam merid. lacus structilis „Lipenská přehrada“, ca. 1.5 km situ occ.-mer.-occ. a pago Frymburk, 740 m s. m., 48°39'12" N, 14°08'48" E (Štěpánek et al., 24.V.1997, PRA, no. det. JK & JŠ 15219, the holotype). – Frymburk village, meadows at the road on the S shore of Lipenská přehrada water reservoir 1.5 km WSW of the village (Trávníček, 24.V.1997, OL).

Austria (Upper Austria): Böhmerwald Mts, Schöneben settlement near Ulrichsberg village, meadows and lawns in the settlement, 944 m a.s.l. (Žíla, 18.V.2003, herb. Žíla).

2. *Taraxacum clarum* Kirschner, Štěpánek et Trávníček, *spec. nova* (Figs 7–11)

Holotype: Bohemia centralis, urbs Praha: in caespitibus ad pagum Klukovice in vicus peripheria meridio-occidentali, ca. 320 m s.m., 50°02'12–14" N, 14°22'00–10" E, leg. J. Štěpánek, 1.V.1989, PRA (Kirschner et Štěpánek, *Taraxaca Exsiccata*, no. 695). Isotypes distributed as exsiccata Kirschner et Štěpánek, *Taraxaca Exsiccata*, no. 695, e. g. in OL, PRC.

Exsiccates: Kirschner et Štěpánek, *Taraxaca Exsiccata*, nos. 694–697.

Plantae mediocres, raro subrobustae, foliis erecto-patentibus, laete usque saturate virescentibus, opacis, immaculatis, disperse usque (in foliis interioribus) subdense araneosis. Lamina ambitu oblonga, 2.9–3.9plo longior quam lata, lobo terminali mediocri, longitudine latitudo aequante vel saepe valde superante et conspicue elongato, triangulariter galeiformi vel triangulariter sagittato, non raro in medio subcontracto, apice depresso acuto, margine proximali paulum concavo, integro, paulo recurvato, interdum lobo terminali asymmetrico, lobis lateralibus conspicuis, utrinque numero 3–4 (5), interdum asymmetricis, mediocribus, plus minusve triangularibus, plerumque parum recurvis, marginibus distalibus saepissime subconvexis, integris vel sparse denticulatis, marginibus proximalibus rectis vel subconcavis, integris, rarius dente unico vel dentibus duobus minutissimis praeditis, interlobiis mediocriter vel fere longis, dente unico vel aliquot dentibus plus minusve conspicuis, 0.2–0.7 mm longis acutis praeditis, inconspicue vel conspicue atomarginatis, ceterum immaculatis, nonnunquam margine subinvoluta, nervo mediano omnino pallide viridi vel deorsum brunneo-purpureo. Petiolus anguste vel sublate alatus, roseolus usque pallide roseo-purpureus. Scapus ad basin plus minusve roseo-purpureus, ante anthesin superne laete viridis, post anthesin interdum sat conspicue brunneo-purpurascens, irregulariter sparse floccoso-araneosus usque ad glabrescens, sub calathio interdum dense araneosus. Calathium sat magnum, diametro 4.0–5.5 cm, subconvexus, luteum, ligulis marginalibus planis, apice minute denticulatis, extus stria griseo-brunnea notatis, ligulis internis canaliculatis, stigmatibus pallide griseo-viridibus, antheris polliniferis, granis pollinis diametro variis. Involucrum squamis exterioribus numero 15–20, late lineari-lanceolatis usque late linearibus, 12–15 mm longis, 3.0–4.5 (–5.0) mm latis, recurvis vel retroflexis, sigmoideis, aliter planis, non tortuosis, superne pallide griseo-viridibus, praesertim post anthesin apice conspicue vinosis, subtus obscure griseo-viridibus, marginibus albidis angustis 0.2–0.3 mm latis conspicuis. Achenium 3.4–3.8 mm longum (pyramiden inclusum), pyramide conica, 0.4–0.6 mm longa, pallide griseo-stramineum, superne spinulosum, ceterum plusminusve tuberculatum vel sublaeve, rostro 11–13 mm longo. Floret IV–V (–VI).

Species agamosperma.

Karyological note: Triploidy in this species was ascertained by means of flow cytometry using material from the Czech Republic: N Moravia, Chomýž settlement near the town of Krnov (Trávníček, Doležel, Číhalíková & Lysák ined.).

Taraxacum clarum is a quite remarkable species of the section *Ruderalia*, relatively easy to distinguish by its greyish green (pruinose), narrowly but distinctly whitish bordered, reflexed outer bracts that later on become wine-reddish at the apex. Leaf lobation is not complicated, usually with 3–4 pairs of lobes, interlobes with one or several \pm distinct teeth. The terminal lobe may be asymmetrical, often \pm elongated (longer than its width), with a constriction in the middle or with 1–2 opposite incisions. Petioles are pink to pale pinkish violet, narrowly to medium broadly winged.

Taraxacum clarum might be confused with the recently described *T. freticola* H. Øllgaard, which has outer bracts unbordered or with an indistinct, very narrow border, outer bract apex less conspicuously red coloured and less pruinose, petioles usually paler (pale pinkish) to pale green (outer leaves); *T. freticola* usually has 4–5 lateral lobe pairs. In its leaf shape, *T. clarum* resembles *T. macranthoides* Hagl. but the latter has pale green (not pruinose), indistinctly bordered outer bracts with apices usually not reddish coloured. The reflexed, pruinose, apically red outer bracts of *T. clarum* are similar to those of *T. horridifrons* Railons. However, the bracts of *T. horridifrons* lack distinct borders and its leaves are very different. Another species with similar outer bracts is the common Central European *T. acervatum* Railons. that is characterized by outer bracts much less conspicuously pruinose, leaves with 5–6 narrower lateral lobe pairs, usually distinctly dentate on distal margins, and the terminal lobe broader, with broadly linear mucronate apex.

Taraxacum clarum first appeared under a provisional name (*T. non-squalidum*) in the literature (see Kirschner & Štěpánek 1992b: 4, 1995b: 73, Chán 1994: 38, 1996: 28), later also under the present name (Trávníček et al. 1999: 19, 2000: 258).

Distribution and habitat: In nutrient rich meadows, pastures, lawns and road verges. This species is known from a number of localities in the Czech Republic, a single site in NW Slovakia and one locality in NE Germany (Neubrandenburg town). Trávníček & Štěpánek (2008) present a survey of the herbarium specimens and distribution map.

3. *Taraxacum moldavicum* Chán, H. Øllgaard, Štěpánek, Trávníček et Žíla, **spec. nova** (Figs 12–18)

Holotype: Bohemia australis, distr. phytogeogr. Šumava (88g), oppidum Vimperk, pagus Horní Vltavice: in prato ad viam publicam oppidum Volary versus, ca 1.5 km situ merid.-merid.-orient. a pago, 48°56'38.9"N, 13°45'50.8"E, alt. 800 m s.m., leg. V. Žíla, 19.V.2002, PRA (no. det. JK & JŠ 16718). Isotypus: LI.

Exsiccates: Kirschner et Štěpánek, Taraxaca Exsiccata, nos. 675–678.

Plantae validae, satis robustae, foliis erectis prasinis paulum nitentibus immaculatis glabriusculis. Lamina ambitu oblongo-oblancoolata usque anguste elliptica, 10–25 cm longa, 3.5–7.0 cm lata, 2.5–3plo longior quam lata, lobo terminali conspicuo magno, triangulariter galeiformi, latitudine longitudo aequante vel paulo superante, in tertia parte inferiore interdum parum coartato, apice depresso acuto, margine distali convexo vel sigmoideo integro, margine proximali recto vel paulum concavo, saepissime patente vel paulo recurvato, lobis lateralibus conspicuis, utrinque numero 3–4 (5), \pm magnis, anguste triangularibus, patentibus vel nonnunquam recurvato-hamatis, margine distali saepissime convexo integro, margine proximali recto vel paulum concavo, integerrimo vel non raro dente unico praedito, interlobiis distinctis mediocriter longis, integris vel sparse dentatis, plerumque inconspicue atomarginatis immaculatis, nervo mediano pallide viridi usque paulum brunneo-rubro atque



Fig. 7. – *Taraxacum clarum*, holotype; scale bar = 10 cm.



Fig. 8. – *Taraxacum clarum*, general habit, live plant (locality: NW Slovakia, Oravská Magura Mts, Oravská Lesná village); scale bar = 10 cm.

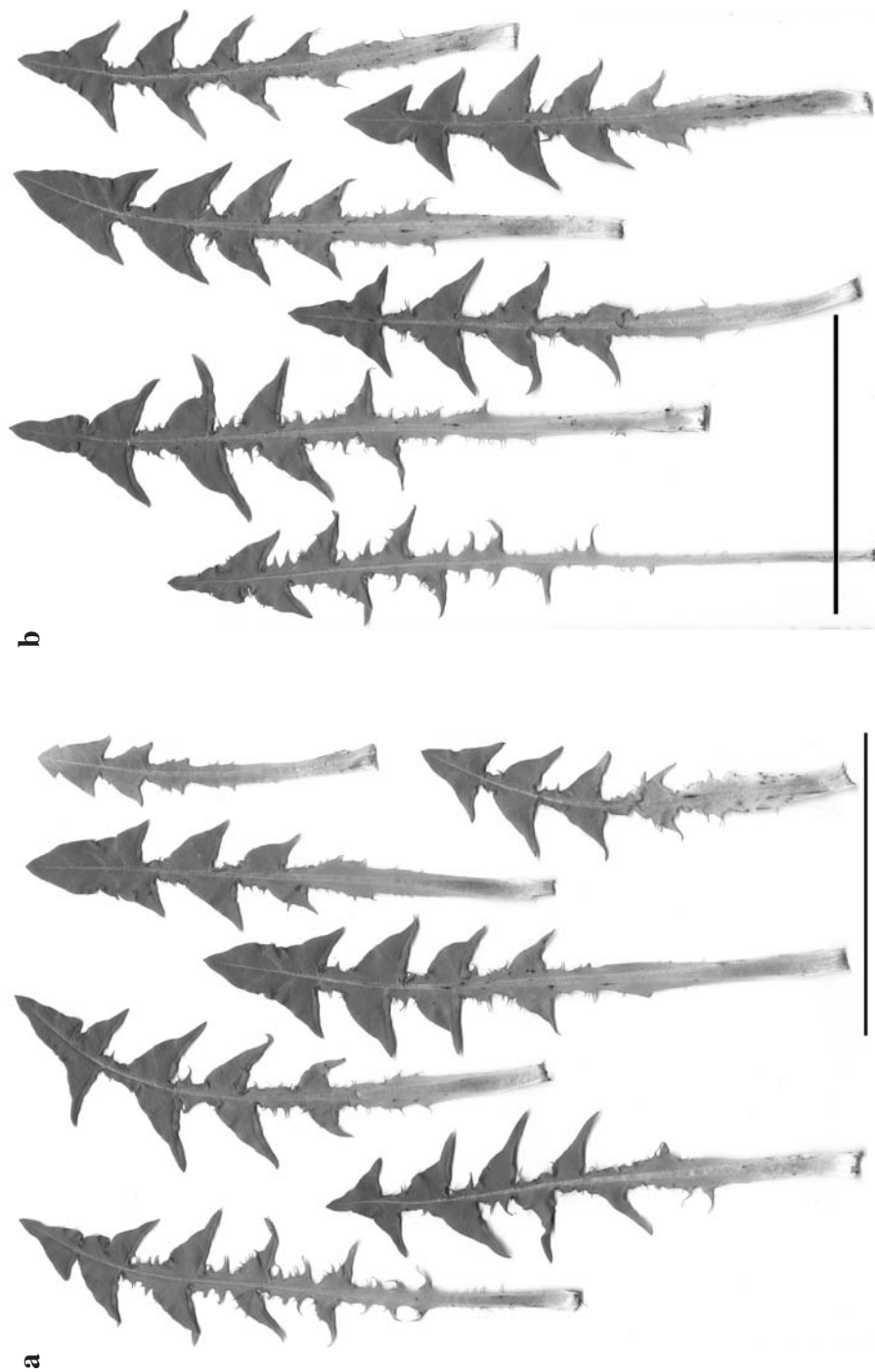


Fig. 9. – *Taraxacum clarum*, plasticity in leaf-shape (a, b – locality: NW Slovakia, Oravská Magura Mts, Oravská Lesná village); scale bars = 10 cm.

striatulato. Petiolus inaltus vel anguste alatus, conspicue intense nitide purpureus. Scapus ad basin purpureus, superne laete viridis, post anthesin interdum paulum brunneo-purpurascens, irregulariter sparse floccoso-araneosus. Calathium magnum, diametro (4–) 5–6 cm, subconvexum, saturate luteum, ligulis marginalibus planis, 23–27 mm longis, 2.5–2.9 mm latis, apice minute denticulatis, extus stria griseo-brunneo-violacea notatis, ligulis internis subcanaliculatis, stigmatibus pallide griseo-viridibus, antheris polliniferis, granis pollinis diametro variis. Involucrum squamis exterioribus numero 18–24, late lanceolatis usque ovato-lanceolatis, 13–16 mm longis, (4.0–) 4.5–6.0 (–6.5) mm latis, regulariter patentibus vel paulo recurvis, saepe satis sigmoideis aliter planis (non squarrosis), superne pallide viridibus, indistincte glaucis, plerumque post anthesin interdum paulatim rubescentibus, subtus paulo obscurioribus, marginibus albicantibus angustis, ca. 0.3 mm latis, conspicuis. Achenium 3.7–4.1 mm longum (pyramiden inclusum), pyramide anguste conica usque fere cylindrica, ca. 0.5–0.7 mm longa, pallide griseo-stramineum, superne spinulosum, ceterum plusminusve tuberculatum, rostro (11–) 12–14 mm longo. Floret V (–VI).

Species agamosperma, triploidea, chromosomatum no. $2n = 24$ cl. V. Javůrková determinavit (e loc. Bohemia australis, Bližší Lhota, leg. B. Trávníček a. 1997).

Among the Central European species of the sect. *Ruderalia*, *T. moldavicum* is comparatively easy to distinguish by its conspicuous outer bracts: they are regularly arranged, most often slightly recurved and forming a “collar”, pale green and almost not glaucous, with a distinct narrow whitish border. Another conspicuous feature of *T. moldavicum* is the distinct glossy purple coloration of often narrowly winged petioles. Leaf blades are not divided in a complicated way, usually having only 3–4 lateral lobes and a conspicuous, triangular, helmet-shaped terminal lobe. In its purple petioles and the uncomplicated leaf shape pattern, *T. moldavicum* is similar to *T. obtusifrons* Markl., a common Central European species. The new species is easily distinguished from the latter by the whitish bordered, almost non glaucous outer bracts, a more robust general habit, terminal lobe usually longer than its width and more acute, lateral lobes often with a tooth on the proximal margin. Another species resembling *T. moldavicum* is *T. praestabile* Railons., not



Fig. 10. – *Taraxacum clarum*, detail of involucre (locality: NW Slovakia, Oravská Magura Mts, Oravská Lesná village); scale bar = 1 cm.

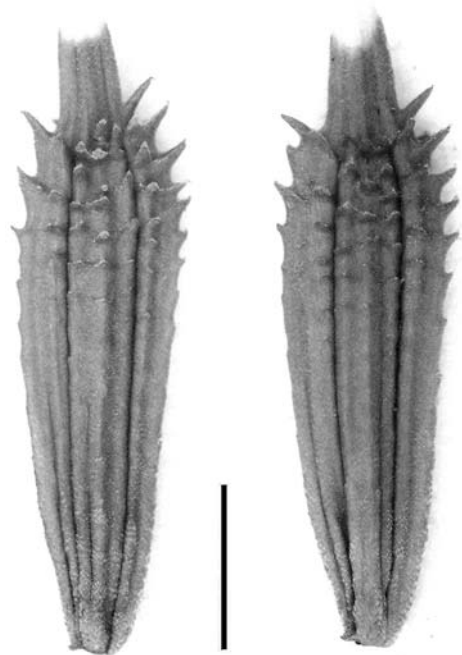


Fig. 11. – *Taraxacum clarum*, achenes (locality: N Moravia (Silesia), Chomýž settlement near Krnov); scale bar = 1 mm.

a well known taxon described from Finland, recently found also in Central Europe (Trávníček & Štěpánek 2008). *Taraxacum praestabile* differs in having leaves with 4–6 sidelobes, shorter interlobia, and not so markedly and glossy coloured petioles, which are usually distinctly winged, especially in their upper part (the petiole is gradually broadened towards leaf lamina). The outer involucre bracts of *T. praestabile* are somewhat glaucous and less distinctly bordered, and do not form a regular “collar” as in *T. moldavicum*. Besides, *T. moldavicum* differs from *T. praestabile* in the frequent presence of downward-pointing teeth on proximal lobe margins. *Taraxacum coartatum* Hagl., well-known species of the sect. *Ruderalia*, has slightly similar leaf morphology as *T. moldavicum*, but markedly differs in shape and position of outer bracts, which are narrower, \pm unbordered and usually twisted.

Distribution and habitat: This species is recorded from disturbed mesophilous habitats typical for members of the section *Ruderalia*: cultivated meadows, pastures, village greens, grassy road verges. In the Central European part of its distribution area, *T. moldavicum* probably prefers the higher rainfall regions as it is found only at higher (submontane) altitudes.

Taraxacum moldavicum is a distinct species occurring in the Šumava Mts (Böhmerwald) and adjacent regions in Central Europe, and independently and almost simultaneously detected in two areas of the Jutland Peninsula in Denmark, in particular in the vicinity of the town of Randers in the northern part of the peninsula (Figs 17, 18). In spite of this remote distribution, the Danish plants apparently are taxonomically identical with the Central European ones. As far as the distribution data goes, the southern part of the range is a little bigger than the northern one. The exploration of the European dandelion flora is not so advanced as to allow conclusions about the primary and secondary distributions of this species. We can only speculate that the Danish occurrence is of secondary nature, and might be a result of a relatively recent introduction, on the basis of the fact that this very conspicuous species escaped the attention of the taraxacologists in Denmark and the adjacent, relatively well explored regions. In the section *Ruderalia*, there are several species believed to have reached N Europe from Central Europe during the 20th century (Øllgaard 2003). The Šumava Mts almost lack endemic taxa and there are several possible migration sources for *T. atroviride*. Most probably, further localities should be sought in the Alps (e.g., Fér et al. 2007). It should be noted that in other apomictic groups with more geographically restricted species there are S Bohemian endemics (e.g., Lepší & Lepší 2006).

Herbarium specimens and localities (Figs. 17–18):

Czech Republic: **37g. Libínské Předšumaví:** Zbytiny village near Prachatice town, on the S margin of the village, 808 m a.s.l. (Žíla, 12.V.2002, LI, herb. Žíla). – Markov village near Prachatice town, meadow on a margin of the village, 948 m a.s.l. (Žíla, 12.V. 2002, LI, herb. Žíla). – **37i. Chvalšinské Předšumaví:** opp. Horní Planá, vicus Hodňov: in pratis prope vici Hodňov peripheriam occidentalem, alt. 800 m s. m., 48°46'56" N, 14°04'19" E (Štěpánek et al., 25.V.1997, PRA, no. det. JK & JŠ 15223). – **37l. Českokrumlovské Předšumaví:** Bližná village near Volary town, area of the graphite pits in the village (Žíla & Procházka, 3.V.1998, LI). – Světlík settlement near Frymburk village, pasture at the road towards Blatná settlement, 806 m a.s.l. (Žíla, 18.V.2003, herb. Žíla). – oppidum Český Krumlov, pagus Větrní, vicus Bláha: in prato ad rivum apud viam publicam inter pagos Větrní et Světlík, ca. 0.5 km situ occidentali a vico Bláha, alt. 645 m s. m., 48°44'44" N, 14°15'30" E (Žíla, 15.V.2004, PRA, no. det. JK & JŠ 16339 et 16340, Kirschner et Štěpánek, *Taraxaca Exsiccata*, nos. 675 et 676). – **37m. Vyšebrodsko:** Lipno nad Vltavou village, meadow at the road 0.5 km NE of the village (Trávníček, 24.V.1997, OL; Žíla, 24.V.1997, LI). – **43a. Čertovo břemeno:** Alenina Lhota village near Prčice town, meadows E of the road towards Cunkov village, 6453c (Trávníček, 8.V.2004, OL). – **88a. Královský hvozd:** opp. Železná Ruda, vicus Alžbětín: in prato secundum viam publicam, haud



Fig. 12. – *Taraxacum moldavicum*, holotype; scale bar = 10 cm.



Fig. 13. – *Taraxacum moldavicum*, general habit, live plant (locality: S Bohemia, Horní Vltavice settlement near Vimperk); scale bar = 10 cm.

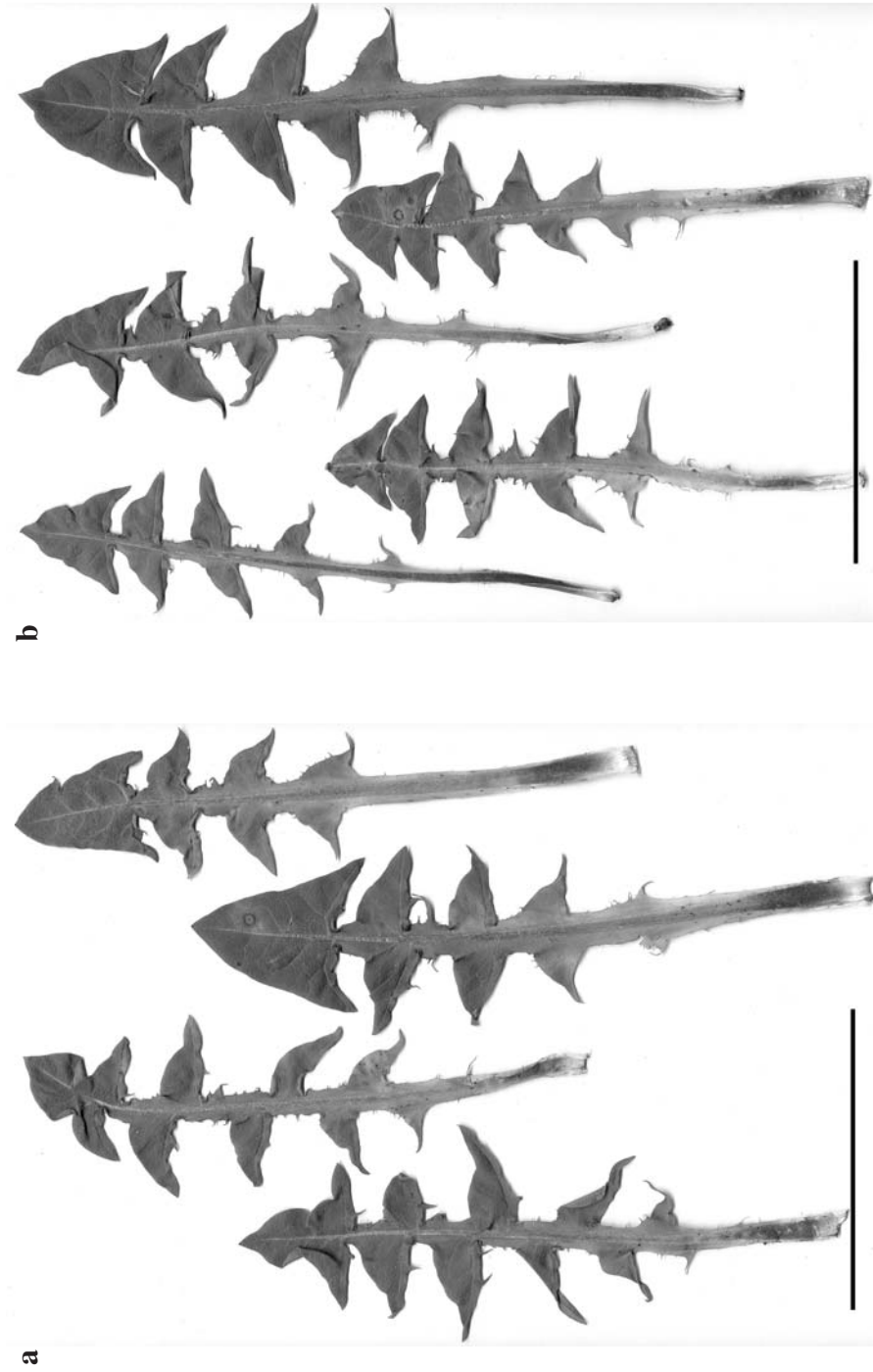


Fig. 14. – *Taraxacum moldavicum*, plasticity in leaf-shape (a, b – from 2 localities: S Bohemia, region of Vimperk, settlements of Korkusova Huť and Horní Vltavice); scale bars = 10 cm.

procul a loco termini transeudi situ merid.-occid. a vico Alžbětín, alt. 730–750 m s. m., 49°07'30" N, 13°12'30" E (Štěpánek, Chán, Trávníček & Žíla, 25.V.1996, PRA, no. det. JK & JŠ 15221). – **88b. Šumavské pláně:** Nové Hutě village near Vimperk town, meadow at the road 1.5 km ENE of the village, 1028 m a.s.l. (Žíla, 11.V.2002, LI, herb. Žíla). – Kvilda village near Vimperk town, lawns in the village (Žíla, 27.V.1995, LI). – **88d. Boubínsko-stožecká hornatina:** Borová Lada village, meadow at the crossroad near E margin of the village (Trávníček, 28.V.1995, OL). – opp. Vimperk, pagus Borová Lada: in prato ad pagū Borová Lada peripheriam orient., situ orient. a via publica Borová Lada – Nový Svět, alt. 900–920 m s. m., 48°59'30" N, 13°40' E (Štěpánek, Chán, Trávníček & Žíla, 28.V.1995, PRA, no. det. JK & JŠ 15222). – Korkusova Huť settlement, meadow at the N margin of the settlement E of the road



Fig. 15. – *Taraxacum moldavicum*, detail of involucre (locality: S Bohemia, Horní Vltavice settlement near Vimperk); scale bar = 1 cm.

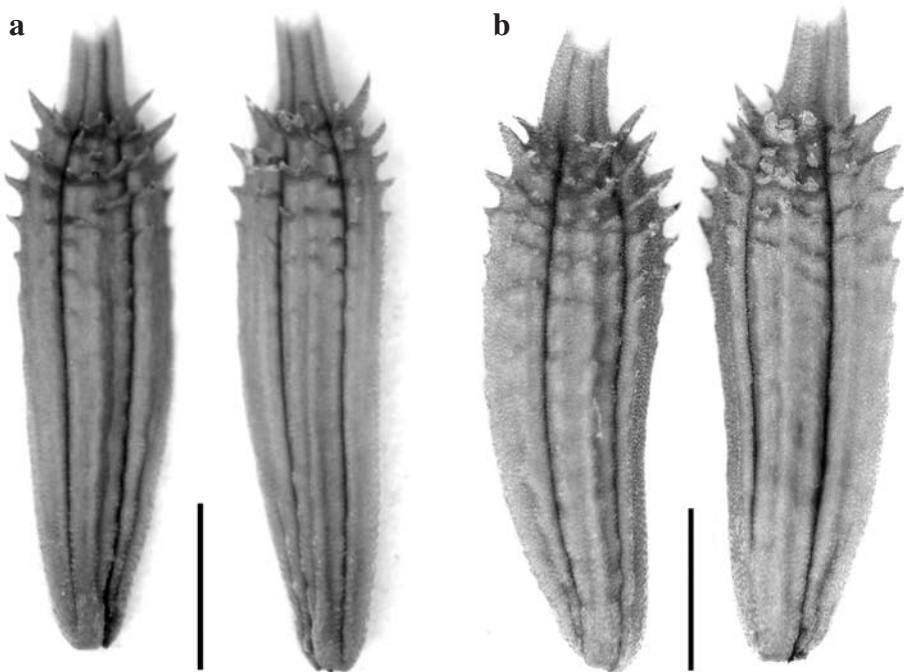


Fig. 16. – *Taraxacum moldavicum*, achenes (a – locality: S Bohemia, Horní Vltavice settlement near Vimperk, b – locality: N Jutland, Randers); scale bars = 1 mm.

towards Vimperk town, ca 825 m a.s.l. (Trávníček, 18.V.2002, OL; Žíla, 19.V.2002, LI). – Zátoň village near Volary town, meadows at the forest margin 1 km SE of the village, ca 800 m a.s.l. (not. Chán, Trávníček & Žíla, 18.V.2002). – Hlinišť settlement, meadow N of the road towards České Žleby village at forest margin 2.5 km SSE of the settlement, ca 840 m a.s.l. (Trávníček, 18.V.2002, OL, Žíla, 19.V.2002, LI). – **88g. Hornovltavská kotlina:** opp. Volary: in prato ad viam publicam inter opp. Volary et pagum Blažejovice, ca 2 km situ boreo-orientali ab oppido, ca. 48°55'30" N, ca. 13°55' E (Štěpánek, Chán & Žíla, 18.V.1998, PRA, no. det. JK & JŠ 16645). – Lenora village near Volary town, meadows between Kaplický potok brook and the left bank of Vltava river, N of the village (Žíla & Chán, 21.V.1995, LI). –

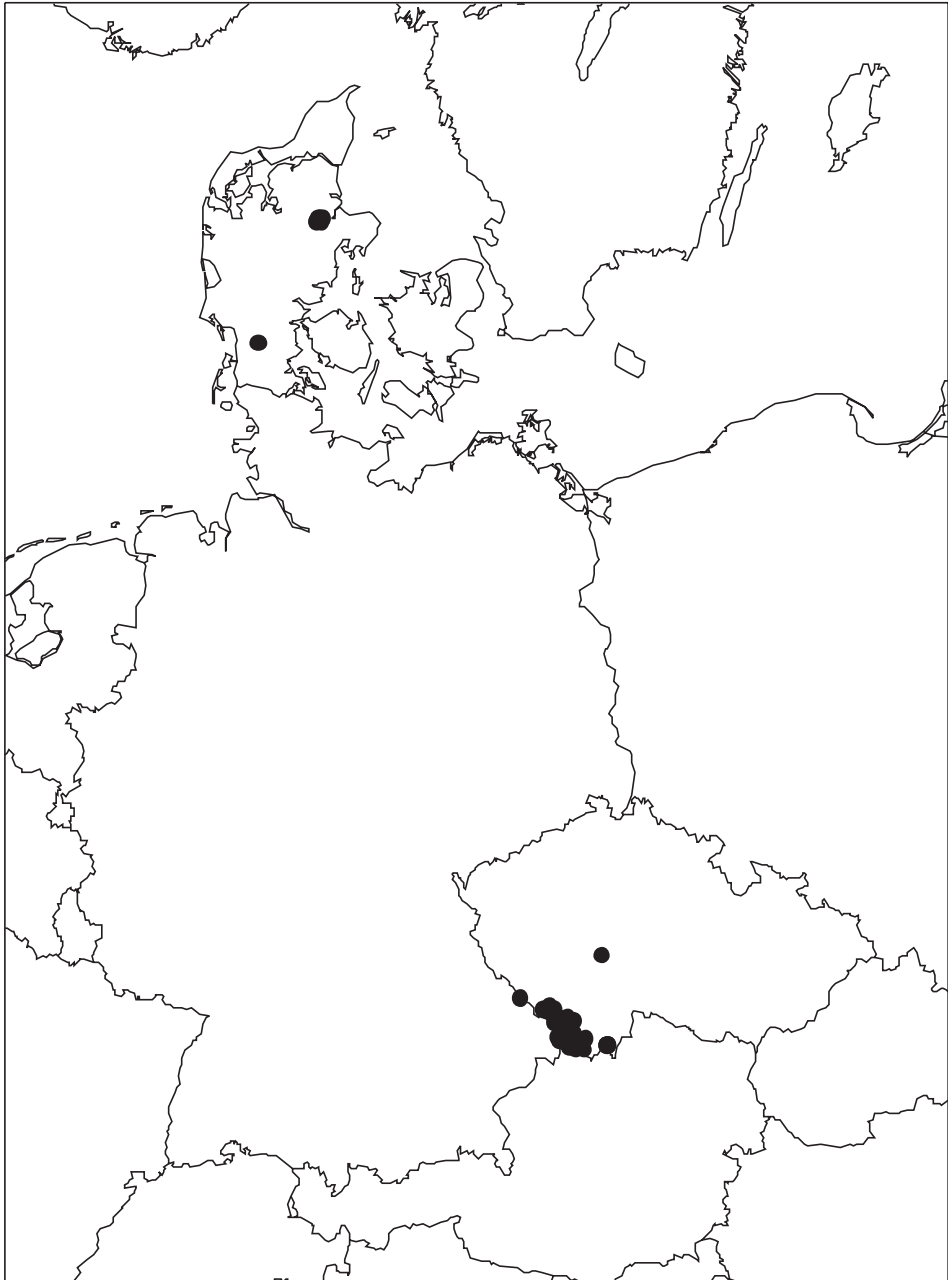


Fig. 17. – Distribution of *Taraxacum moldavicum*.

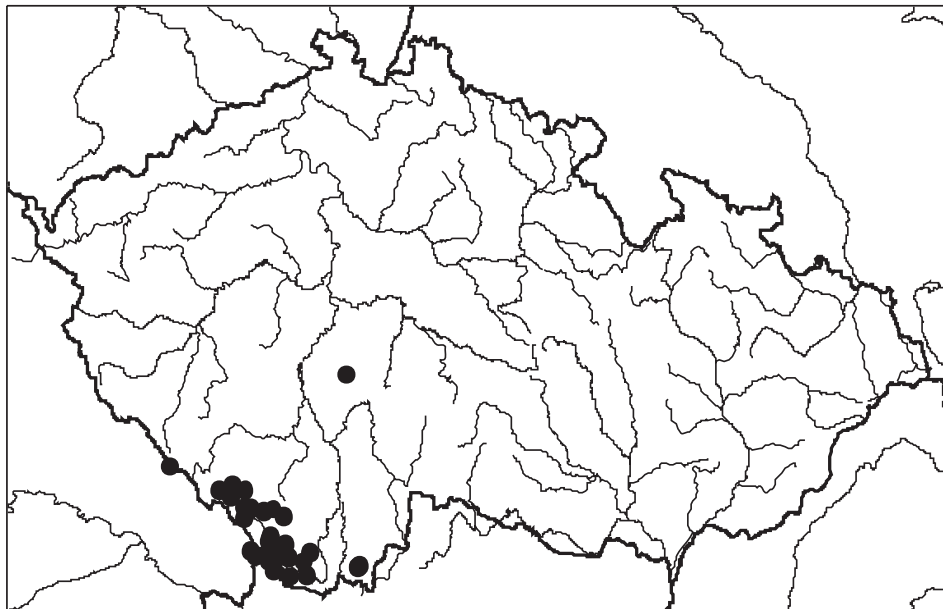


Fig. 18. – Distribution of *Taraxacum moldavicum* in the Czech Republic and adjacent regions.

Želnavna village near Volary town, meadows on the slope NW of the spot height 814.7 m, 0.5–1.0 km WNW of the village (Žíla & Chán, 21.V.1995, herb. Žíla). – Želnavna village near Horní Planá town, slope meadow 1 km WNW of the village (Trávníček, 24.V.1996, OL). – Horní Vltavice village, meadow E of the road towards Volary town 1.5 km SSE of the village, ca 800 m a.s.l. (Trávníček, 18.V.2002, OL; Žíla, 19.V.2002, LI, herb. Žíla). – Bělá settlement near Nová Pec village, meadow on the slope NW of the spot height 782 m, 1 km W of the settlement (Žíla & Chán, 20.V.1995, LI; Žíla, 18.V.1998, LI, herb. Žíla). – pagus Bělá prope Nová Pec: in prato in decl. boreo-occidentali collis (cota 781.7) in pagi Bělá peripheria boreo-occidentali, alt. 700–770 m s. m., 48°48' N, 13°57'00–30" E (Štěpánek, Chán & Žíla, 18.V.1998, PRA, no. det. JK & JŠ 16341 et 16342, Kirschner et Štěpánek, *Taraxaca Exsiccata*, nos. 677 et 678). – Nová Pec village near Horní Planá town, meadow at the road 1.75 km S of the railway station of the village (Trávníček, 24.V.1997, OL). – pagus Nová Pec: in pratis prope viam publicam ca 1.75 km situ merid. a statione ferroviae Nová Pec, alt. 750 m s. m., 48°46'22" N, 13°57'21" E (Štěpánek et al., 24.V.1997, PRA, no. det. JK & JŠ 16646). – Bližší Lhota village near Horní Planá town, meadow near W margin of the settlement (Trávníček, 24.V.1997, OL; Žíla, 24.V.1997, LI, herb. Žíla). – opp. Horní Planá, vicus Bližší Lhota: in prato prope vici Bližší Lhota peripheriam occidentalem, alt. 750 m s. m., 48°45'28" N, 14°00'36" E (Štěpánek et al., 24.V.1997, PRA, no. det. JK & JŠ 16744). – Zadní Hamry settlement near Horní Planá town, meadow at the hamlet on left bank of the Hamerský potok brook (Trávníček, 24.V.1997, OL; Žíla, 24.V.1997, LI). – opp. Horní Planá, vicus Zadní Hamry: in prato prope praedium ad ripam sinistram rivi Hamerský potok haud procul a ponte viae publicae, alt. 740 m s. m., 48°44'30" N, 14°00'59" E (Štěpánek et al., 24.V.1997, PRA, no. det. JK & JŠ 15238). – **88h. Svatotomášská hornatina:** Svatý Tomáš settlement near Frymburk village, lawns in the settlement, 990 m a.s.l. (Žíla, 24.V.1997, LI). – pagus Frymburk, vicus Sv. Tomáš: in caespitibus in vico Sv. Tomáš, alt. 990 m s. m., 48°38'28" N, 14°06'12" E (Štěpánek et al., 24.V.1997, PRA, no. det. JK & JŠ 15239). – **89. Novohradské hory:** Radčice village near Kaplice town, cultural meadow 0.5 km S of the village, 709 m a.s.l. (M. & P. Lepší, 9.V.2003, CB). – Radčice village near Kaplice town, cultural meadow 1 km SSE from the village centre, 723 m a.s.l. (M. & P. Lepší, 9.V.2003, CB). – Pohorská Ves village near Kaplice town, Rapotice settlement, cultural meadow 1 km WSW from the Červený vrch hill, 715 m a.s.l. (M. & P. Lepší, 9.V.2003, CB).

Austria (Upper Austria): Böhmerwald Mts, Schwarzenberg im Mühlkreis village, meadow on the E margin of the village, 835 m a.s.l. (Žíla, 17.V.2003, herb. Žíla). – Böhmerwald Mts, Grünwald settlement near Aigen im Mühlkreis village, meadows on a margin of the settlement, 933 m a.s.l. (Žíla, 18.V.2003, herb. Žíla). – Böhmerwald Mts, Schöneben settlement near Ulrichsberg village, meadows and lawns in the settlement, 944 m a.s.l. (Žíla, 18.V.2003, herb. Žíla).

Germany (SE Bavaria): Böhmerwald Mts, Riedelsbach settlement near Neuraichenau village, meadow near the settlement, 823 m a.s.l. (Žíla, 17.V.2003, herb. Žíla).

Denmark (Jutland): TBU13a-Ejy: Randers tds. E, Kristrup, at the road Kristrup Engvej, at a transformer station, disturbed courtyard, recno 61971 (Øllgaard & Brandt-Pedersen, 23.IV.2002, herb. Øllgaard, no. det. HØ-02-40). – TBU13a-Ejy: Randers 5 km tds. S, Haslund, Frederiksdalvej, ca. 100 m from road 46, road verge, recno 60233 (Øllgaard & Brandt-Pedersen, 15.V.2001, herb. Øllgaard, no. det. HØ-01-209). – TBU13a-Ejy: Randers 3.5 km tds. SSW, Tebbestrup, ca. 300 m NE of the crossroads, ruderal area, recno 58360 (not. Brandt-Pedersen, 4.V.1998, no. det. TBP-98-466). – TBU13a-Ejy: Randers 5 km tds. S, Haslund, Frederiksdalvej, ca. 100 m from road 46, roadside, recno 58359 (not. Brandt-Pedersen, 9.V.1998, no. det. TBP-98-593). – TBU13a-Ejy: Randers 5 km tds. S, Haslund, Frederiksdalvej, ca. 100 m from road 46, road verge, recno 54572 (Øllgaard, 11.V.1999, herb. Øllgaard, no. det. HØ-99-205). – TBU13b-Ejy: Randers, Vestre Boulevard, at Randershallen, lawn, recno 65797 (Øllgaard & Brandt-Pedersen, 7.V.2004, herb. Øllgaard, no. det. HØ-04-207). – TBU14-Ejy: Randers 5.5 km tds. SW, Stevnstrup, Engvej, tds. the river, fallow field, recno 62449 (Øllgaard & Brandt-Pedersen, 5.V.2002, herb. Øllgaard, no. det. HØ-02-233). – TBU14-Ejy: Randers, Neder Hornbæk, Gammel Viborgvej, betw. the motorway bridge and Fladbrovej, roadside, recno 61981 (Øllgaard & Brandt-Pedersen, 23.IV.2002, herb. Øllgaard, no. det. HØ-02-60). – Randers town, margin of the road towards Tanum village near the highway viaduct at the W margin of the town (Trávníček, 15.V.2003, OL). – TBU49-Sjy: Gram, at the church, road verge, recno 63829 (Øllgaard & Brandt-Pedersen, 7.V.2003, herb. Øllgaard, no. det. HØ-03-105).

4. *Taraxacum urbicola* Kirschner, Štěpánek et Trávníček, *spec. nova* (Figs 19–23)

H o l o t y p e: Moravia, distr. phytogeogr. 83. Ostravská pánev: Studénka town, wet meadows 1 km SW from the railway station, 230 m a.s.l., 49°41'55" N, 18°03'26" E, coll. B. Trávníček, 4.5.1993, OL (no. 6288). Isotypes: OL (nos. 6289, 6290).

E x s i c c a t e s: Kirschner et Štěpánek, *Taraxaca Exsiccata*, nos. 137 (ut *T. aequilobum* Dahlst.), 636 et 637.

Plantae mediocres, rarius validae, foliis erecto-patentibus prasinis usque ad (pallide) subgriseo-viridibus, opacis vel subnitidis, immaculatis vel subtus interlobiis inconspicue atromarginatis, sparse vel disperse araneosis, nervo mediano nonnunquam subconfertim araneoso. Lamina ambitu oblonga usque oblongo-lanceolata, 2.8–3.8 (–4.0) plo longiore quam lata, regulatim profunde divisa, lobo terminali parvo vel mediocri, saepissime latitudine longitudo aequante, ± triangulari, saepe apice anguste lingulato, margine distali ± recto vel paulum sigmoideo integro vel raro inciso, margine proximali plerumque recto integro, saepissime patente vel paulum recurvato, lobis lateralibus utrinque numero 5–6 (7), patentibus vel parum recurvis, plerumque oppositis, mediocribus, ± triangularibus, saepe parte distali anguste elongata, acutissima, marginibus distalibus plerumque sigmoideis, integris, rarius dentibus subulatis minutis praeditis, marginibus proximalibus saepissime ± rectis, integris, interlobiis mediocriter longis, margine leviter undulatis, integris vel dente unico vel dentibus sparsis praeditis, conspicue atromarginatis, nervo mediano deorsum purpurascente, inconspicue striatolato, ceterum pallide viridi. Petiolus inalatus vel praesertim sursum usque ad mediocriter late alatus, satis conspicue purpureus. Scapus ad basin purpureus, superne (ante anthesin) laete viridis, post anthesin saepe brunneo-purpurascens, irregulariter sparse floccoso-araneosus, superne interdum dense araneosus. Calathium satis magnum, diametro (4.0–) 4.5–5.5 cm, subconvexum, saturate luteum, ligulis marginalibus planis, 22–24 mm longis, 2.5–2.8 mm latis, apice minute denticulatis, extus stria griseo-brunneo-violacea notatis, ligulis internis canaliculatis, stigmatibus griseo-viridibus, antheris polliniferis, granis pollinis diametro variis. Involucrum squamis exterioribus numero 18–21, linearie-lanceolatis usque lanceolatis, 13–15 mm longis, 2.5–4.0 mm latis, maxime irregularibus, oblique tortuosis marginibus paulum revolutis, et patentibus usque recurvis, et retroflexis, superne subobscurae viridibus, fere epruinosis, plerumque etiam post anthesin non badio-rubescens, subtus obscurae griseo-viridibus, margine inconspicuo angusto albido vel omnino carente. Achenium 3.7–4.1 mm longum (pyramiden inclusum), pyramide anguste conica, ca. (0.5–) 0.6–0.9 mm longa, obscure griseo-stramineum, superne spinulosum, ceterum plusminusve obtuse tuberculatum, rostro 11–13 mm longo. Floret IV–V (–VI).

Species agamosperma, triploidea, chromosomatum no. $2n = 24$ cl. J. Čiháliková determinavit (e loc. Moravia borealis (Silesia), Horní Skorošice, leg. B. Trávníček a. 1995).

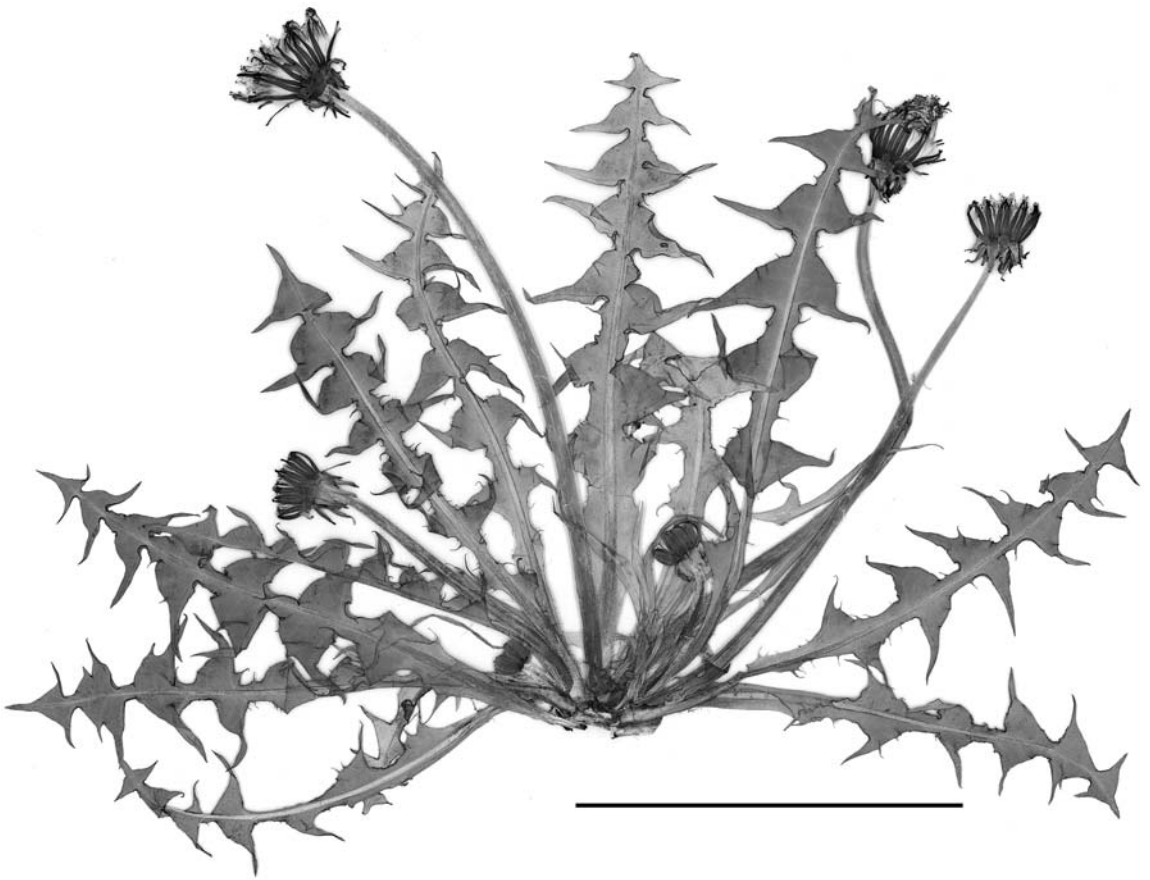


Fig. 19. – *Taraxacum urbicola*, holotype; scale bar = 10 cm.

Karyological note: Triploidy in this species was ascertained also by means of flow cytometry using material from the Czech Republic: N Moravia, Chomýž settlement near Krnov (Trávníček, Doležel, Čihalíková & Lysák ined.).

Taraxacum urbicola belongs to medium-sized species of the section *Ruderalia*. It has mid-green to slightly greyish green, regularly lobed leaves. Its petiole is unwinged or moderately winged in the upper part, quite conspicuously purplish-coloured. Terminal lobe is not exceedingly large, with a lingulate apex. Lateral lobes (in 5–6 symmetrical pairs) with often sigmoid, usually entire or sparsely dentate distal margin. Interlobe surface is without dark coloration but interlobe margins are distinctly tar-coloured. Outer bracts are irregular, conspicuously twisted, without a distinct border, green, even usually without reddish brown coloration when old.

Taraxacum urbicola belongs to the group around the well-known and widespread *T. aequilobum* Dahlst. In the Czech literature, it is either included in *T. aequilobum* (as in



Fig. 20. – *Taraxacum urbicola*, general habit, live plant (locality: C Moravia, Plučisko settlement near Přerov); scale bar = 10 cm.

Kirschner et Štěpánek, *Taraxaca Exsiccata*, fasc. IV, 1988, and probably also in Kirschner & Štěpánek 1992b, 1992c, 1995a, 1995b) or misidentified with *T. aequilobum* s. str. (Chán 1994, 1996, Chán et al. 1995, 2001, Trávníček & Hájek 1996, Trávníček et al. 1999, 2000).

The reason for this confusion is the similarity of the outer bracts in *T. urbicola* and *T. aequilobum*: very irregularly arranged, conspicuously twisted, with slightly revolute margins. *Taraxacum urbicola* is distinguished from *T. aequilobum* s. str. primarily by its narrower and more deeply purplish petioles, leaf blade broader, with a lower number of lateral lobes, *T. urbicola* has a lower growth and smaller capitula. Other, more distantly similar taxa are *T. latens* H. Øllgaard, *T. edmondsonianum* H. Øllgaard and *T. crispulum* Hagl. The former differs from *T. urbicola* in having regularly arranged reflexed, more distinctly bordered outer bracts, paler leaves and often shorter interlobes, *T. edmondsonianum* also by regular, reflexed outer bracts, paler leaves and more broadly winged petioles, lateral lobes with an elongated, linear and often upwards pointing apex and terminal lobe usually without the lingulate apex. *Taraxacum crispulum*, an imperfectly known species described from the vicinity of Lund, S Sweden, according to the protologue (Haglund 1934: 6–8) and the holotype, differs from *T. urbicola* by paler, ± crispate leaves with more distinctly dentate and darker interlobes, terminal lobes often with conspicuous incisions, and outer bracts probably with more distinct borders.

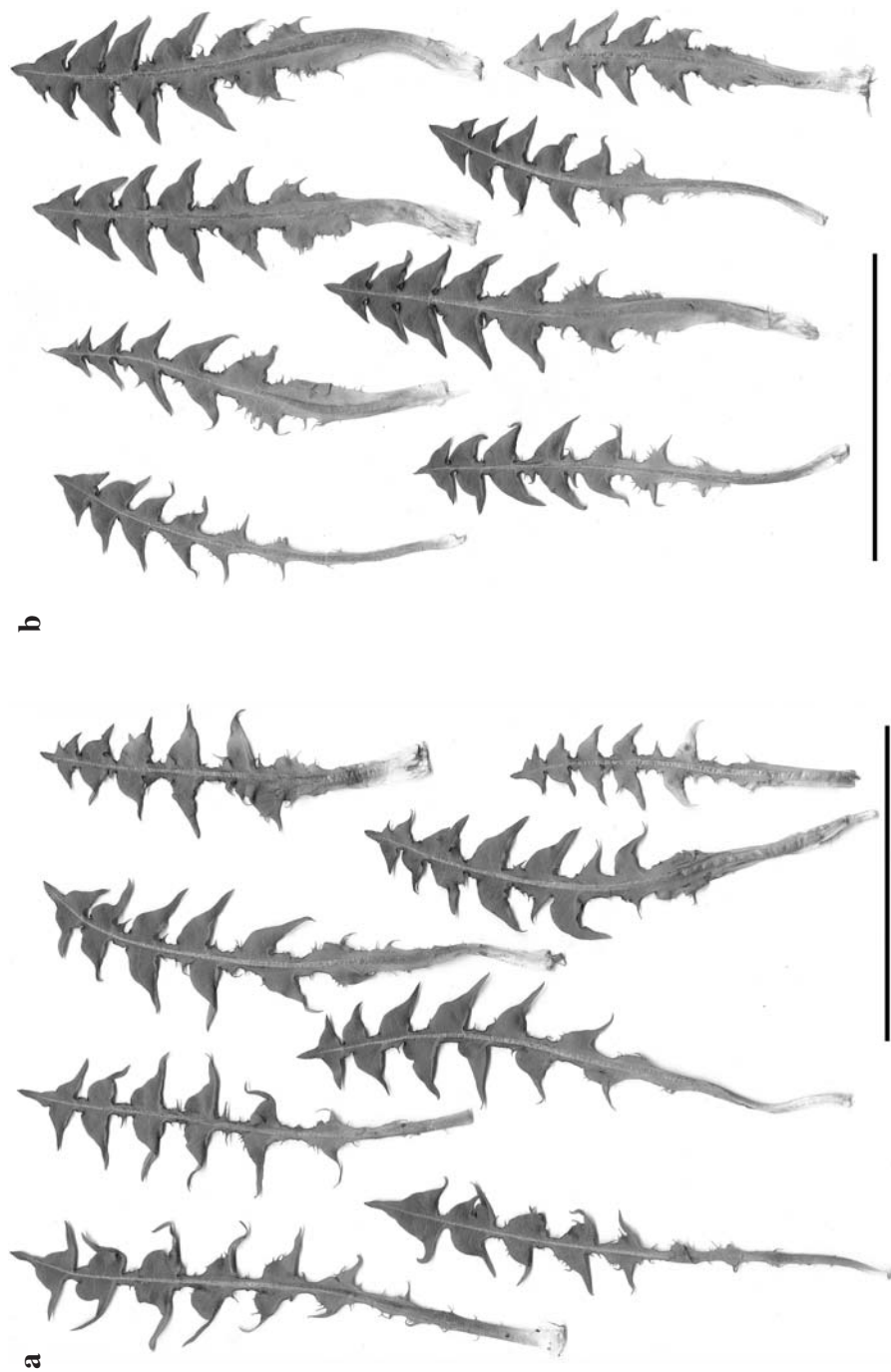


Fig. 21. – *Taraxacum urticicola*, plasticity in leaf-shape (a – locality: C Moravia, Plučisko settlement near Přerov, b – locality: Moravia, origin unknown); scale bars = 10 cm.

Two recent illustrations of *T. urbicola* are published: in Øllgaard et al. 2002: 34 (a herbarium specimen photo) and in Uhlemann 2003: 57 (a drawing under the name '*T. aequilobum* agg., Typ B').

Note: In the Czech Republic, the group of *T. aequilobum* is represented by *T. urbicola* and another three morphotypes sharing the general features of outer bracts. The latter three forms can be distinguished from our new species by more numerous lateral lobes (6–8 pairs) and medium broadly to broadly winged petioles. The most common of them is depicted in Uhlemann, 2003: 57, under the name '*T. aequilobum* agg., Typ A'. The true *T. aequilobum* is relatively rare in the Czech Republic, probably confined to mountain areas. The last form, the least known, is more common in E Bohemia. The whole group requires revision; the latter three forms are quite difficult to distinguish.

Distribution and habitat: *Taraxacum urbicola* is a species with a quite broad ecological range, centred in warmer areas, often on disturbed sites, even tolerating habitats quite dry in summer. It often grows in lawns and trampled sites in villages, along roads and paths, in gardens and parks, in meadows, abandoned fields, rarely in fields. *Taraxacum urbicola*, so far as the material goes, is a widespread Central European species. It is recorded from numerous localities in the Czech Republic and known to occur in Germany (Saxony), in W Slovakia and Poland (see also Øllgaard et al. 2002: 33, 34). It is expected to occur in Austria. Trávníček & Štěpánek (2008) give a survey of the herbarium specimens and distribution map.



Fig. 22. – *Taraxacum urbicola*, detail of involucre (locality: N Moravia, Mořkov village near Nový Jičín); scale bar = 1 cm.



Fig. 23. – *Taraxacum urbicola*, achenes (locality: E Bohemia, Horní Jelení village near Holice); scale bar = 1 mm.

5. *Taraxacum violaceifrons* Trávníček, spec. nova

(Figs 24–28)

Holotype: Moravia centralis, distr. phytogeogr. 21b. Hornomoravský úval, opp. Kojetín, pagus Lobodice: in prato in silva 1.7 km situ merid.-orient. a pago Lobodice, 190 m s.m., 49°23'03" N, 17°19'10" E, leg. B. Trávníček, 1.V.1997, OL 6287 (Kirschner et Štěpánek, *Taraxaca Exsiccata*, no. 638). Isotypes distributed as exsiccate Kirschner et Štěpánek, *Taraxaca Exsiccata*, no. 638, e. g. in PRA, PRC.

Exsiccate: Kirschner et Štěpánek, *Taraxaca Exsiccata*, nos. 638, 639 et 708.

Plantae mediocres, circa 15–30 cm altae, sat graciles, foliis saepissime erectis, cineraceo-viridibus, impolitis (subopacis), glabris vel sparse araneosis. Lamina plerumque sat angusta, ambitu lanceolata usque anguste oblongo-lanceolata, 7–20 cm longa et 2.5–4.0 (–5.0) cm lata, regulariter, satis saepe non profunde lobata, lobo terminali mediocri vel (in foliis exterioribus) parvo, plerumque subtriangulari, integro, plus minusve subabrupte in apicem mucronatum elongatum et acutum transientibus, margine distali recto vel paulum convexo, lobis lateralibus numero (4)5(6) utrobique, saepissime oppositis, 1.0–2.0 (–2.5) cm longis, frequentissime triangularibus usque anguste triangularibus (interdum paulum recurvatis), acutis, integris, plerumque subreflexis (raro fere patentibus), marginibus distalibus rectis usque paulum convexis vel sigmoideis, integerrimis vel subulate denticulatis, marginibus proximalibus plerumque rectis, integerrimis vel dente parvo instructis, interlobiis mediocriter longis, 3–7 mm latis, planis, integerrimis vel subulate denticulatis, plerumque pallide usque violaceo-brunneis, angustissime atomarginatis, nervo mediano pallide viridi vel deorsum roseo-violaceo. Petiolus anguste vel angustissime alatus, conspicue roseo-violaceus. Scapus inferne roseo-violaceus, sursum viridis vel inconspicue coloratus, irregulariter araneosus vel glabrescens. Calathium 3.5–4.5 cm in diametro, leviter convexum, saturate luteum, ligulis marginalibus fere planis, 17–19 mm longis, 2.0–2.3 mm latis, apice minute denticulatis, extus stria cano-violacea notatis, ligulis internis canaliculatis, stigmatibus griseo-luteo-viridibus, antheris parce polliniferis, granis pollinis diametro variis. Involucrum squamis exterioribus numero 16–20 (–23), lineari-lanceolatis usque lanceolatis, 12–14 mm longis et 2.0–3.5 (–4.0) mm latis, fere regularibus, arcuatim reflexis usque retroflexis, supra pallide cineraceo-viridibus, saepe dilute roseo-violascentibus, leviter pruinosis, marginibus inconspicuis angustissime (0.1–0.2 mm) albomembranaceis. Achenium 3.7–4.2 mm longum (pyramide inclusa), pyramide anguste conica usque cylindrica, 0.5–0.8 mm longa, fusco-stramineum, superne dense spinulosum, ceterum plerumque valde (subacute) tuberculatum, rostro 9–12 mm longo. Floret IV–V.

Species agamosperma.

Karyological note: Triploidy in this species was ascertained by means of flow cytometry using material from the Czech Republic: central Moravia, Popůvky village near Kojetín town (Vašut et al. 2004).

Within the sect. *Ruderalia*, *Taraxacum violaceifrons* belongs to the group of medium-sized, rather slender species with non-complicated and regularly lobed leaves with unwinged or only narrowly winged, reddish to purple petioles, and relatively narrow, ± reflexed outer bracts (this group may be represented by *T. accedens* Hagl., *T. geminatum* Hagl., *T. oinopolepis* Dahlst. and *T. mimulum* Dahlst. ex Lindb. fil.). Besides the mentioned characters, the species is characterized by ± flat, rather broad interlobes with a narrow tar-coloured border, mucronate, or somewhat elongated acute apex of terminal lobes and outer bracts often suffused light lilac. The achenes of *T. violaceifrons* have markedly densely tuberculous, never smooth, lower half of the achene body.

Taraxacum violaceifrons shows a certain resemblance to *T. accedens* Hagl. However, this similar species differs from *T. violaceifrons* by lighter colour of leaves, usually with only 4–5 lateral lobes, more obtuse lobe apices, frequent presence of conspicuously downward-pointing large teeth on proximal lobe margin and by achenes usually with lower part almost smooth. In the Czech Republic, the relatively close morphological relative of *T. violaceifrons* is *T. urbicola* (see above). However, the leaves of *T. urbicola* are broader, mid-green, the outer involucral bracts are irregularly arranged (usually twisted) and usually



Fig. 24. – *Taraxacum violaceifrons*, holotype; scale bar = 10 cm.



Fig. 25. – *Taraxacum violaceifrons*, general habit, live plant (locality: C Moravia, Kojetín); scale bar = 10 cm.

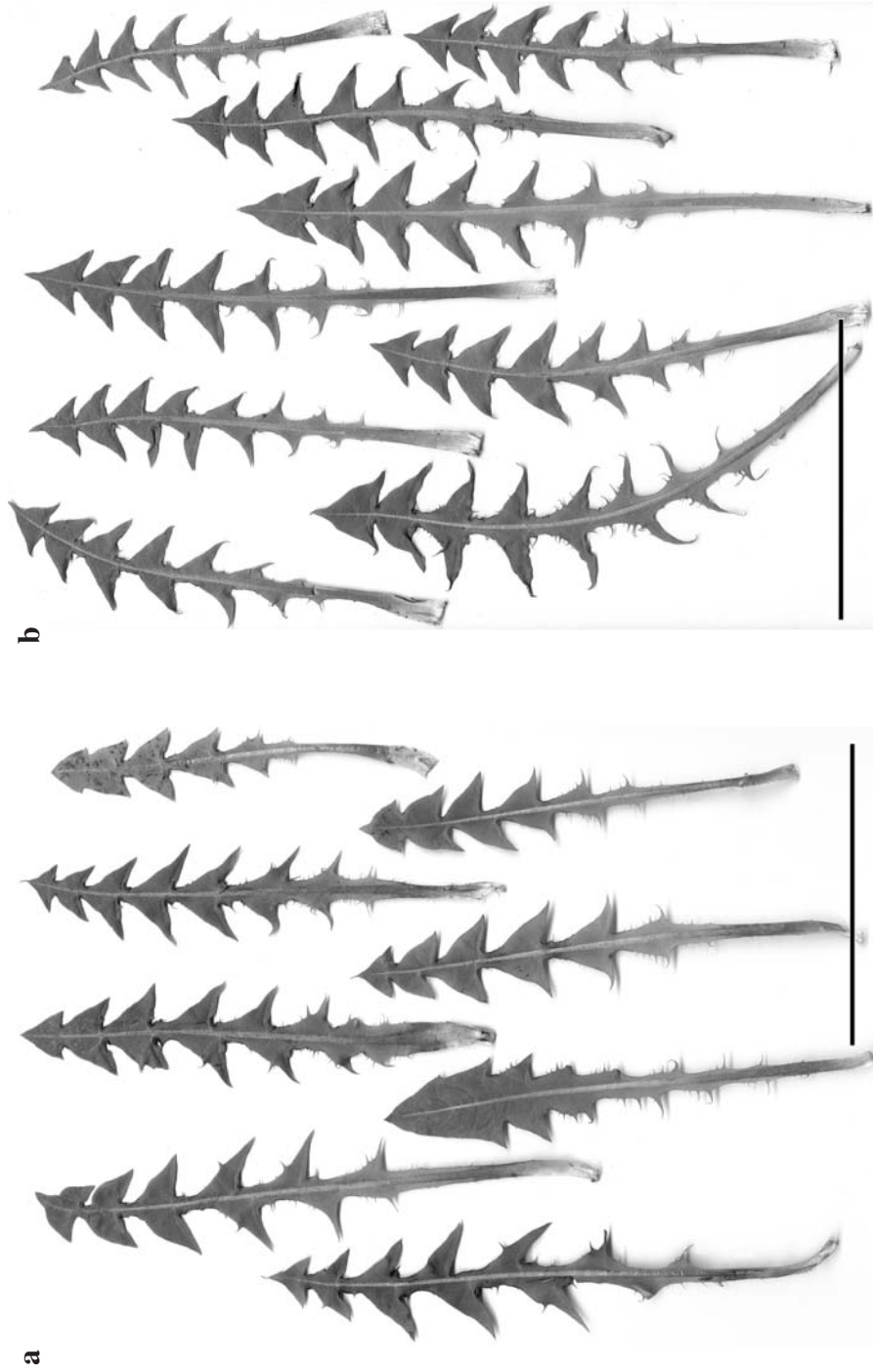


Fig. 26. – *Taraxacum violaceifrons*, plasticity in leaf-shape (a – locality: C Moravia, Kojetín, b – C Moravia, Popůvky village near Kojetín town); scale bars = 10 cm.

without greyish lilac coloration, lower part of the achene body is not so markedly tuberculous. *Taraxacum linearisquameum* van Soest (= *T. pannonicum* Sahlén), the frequent accompanying species of *T. violaceifrons* in SE part of the Czech Republic, differs especially by regular pollen and diploid chromosome number.

Distribution and habitat: *Taraxacum violaceifrons* belongs to an interesting group of thermophilous and rather xerophilous species of the sect. *Ruderalia*. In its hitherto known distribution range it occurs particularly in warmer and dry regions, frequently together with ecologically close apomictic microspecies *T. atrox* Kirschner et Štěpánek, *T. baeckii-forme* Sahlén and the sexually reproducing *T. linearisquameum*. Other accompanying species are *T. glossodon* Sonck et H. Øllgaard, *T. hepaticum* Railons. and *T. interveniens* Hagl., all abundantly occurring in the Czech Republic. *Taraxacum violaceifrons* is found in habitats more or less influenced by human activity, such as grassy and waste places in villages and towns, roadsides, parks, gardens and disturbed meadows. As a weedy plant, it grows in fields and vineyards.

Currently, *T. violaceifrons* is recorded from the Czech Republic, S Poland and W Slovakia. In the Czech Republic many localities are known in the eastern part of the country (the species occurs abundantly in S and central part of Moravia) and a few localities in N and NW Bohemia. There are few localities recorded in Slovakia, but it is likely to be common in the warmer parts of this country. *Taraxacum violaceifrons* is likely to be common in Austria (particularly Lower Austria) and perhaps in Germany and Hungary. Trávníček & Štěpánek (2008) give a survey of the herbarium specimens and distribution map.



Fig. 27. – *Taraxacum violaceifrons*, detail of involucre (locality: C Moravia, Popůvky village near Kojetín town); scale bar = 1 cm.

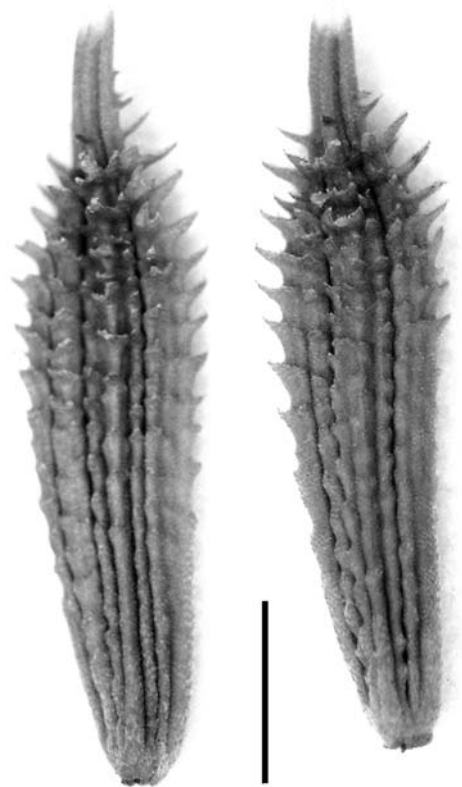


Fig. 28. – *Taraxacum violaceifrons*, achenes (locality: C Bohemia, Bělušice village near Kolín town); scale bar = 1 mm.

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Souhrn

Z území České republiky je popsáno 5 nových druhů rodu *Taraxacum* ze sekce *Ruderalia*: *T. atroviride* Štěpánek et Trávníček, *T. clarum* Kirschner, Štěpánek et Trávníček, *T. moldavicum* Chán, H. Øilgaard, Štěpánek, Trávníček et Žíla, *T. urbicola* Kirschner, Štěpánek et Trávníček a *T. violaceifrons* Trávníček. Všechny tyto druhy jsou známé z mnoha lokalit. Druh *T. atroviride* roste zejména v oblasti Šumavy (byl nalezen hlavně na české a vzácně i na rakouské straně pohoří). Druh *T. clarum* se vyskytuje roztroušeně na celém území ČR a vzácně byl nalezen i na západním Slovensku a v severovýchodním Německu. Druh *T. moldavicum* roste především v jižních Čechách (zejména na Šumavě, kde přesahuje i do rakouské i bavorské části tohoto pohoří) a současně byl zjištěn také v Dánsku. Druh *T. urbicola* roste dosti hojně po celém území ČR, jednotlivé lokality byly nalezeny také v sousedních státech: v Německu (Sasko), Polsku a na Slovensku. Druh *T. violaceifrons* se vyskytuje dosti hojně v teplejších oblastech ČR, zejména ve východní části státu, několik lokalit bylo zjištěno také na Slovensku a v jižním Polsku.

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