

## Further new *Taraxacum* species (Asteraceae, Cichorieae) from northern Europe

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HANS ØLLGAARD

## Further new *Taraxacum* species (*Asteraceae*, *Cichorieae*) from northern Europe

### Abstract

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Five new species of *Taraxacum* from northern Europe (*T. freticola*, *T. leptoscelum*, *T. nigrescens*, *T. opertum*, and *T. palmgrenii*) are validly named, described and discussed, and their known distribution is presented. All are members of *T.* sect. *Ruderalia*. For two species known by illegitimate names (later homonyms), new names are proposed: *T. homoschistum*, *T. longiconicum*.

Key words: *Compositae*, dandelions, taxonomy.

Herbarium abbreviations follow Holmgren & Holmgren (1998-). A list of specimens seen, in addition to the type material, is given in an electronic supplement to this paper at <http://www.bgbm.org/willdenowia/willd36/Ollgaard.htm>

***Taraxacum*** (sect. *Ruderalia*) ***freticola*** [H. Øllg. in Mirek & al. 2002: 165, nom. nud., ex] H. Øllg., **sp. nov.**

Holotype: Denmark, Nordjylland (N Jutland), “Distr. 11, Hadsund, “Hornbechsvej, ved en sti””, 56°43'0"N, 10°06'5"E, 2.5.1981, Øllgaard HØ-81-33 (C); isotypes: HØ-81-32 (B), HØ-81-29 (L), HØ 81-30, HØ 81-31 (S). – Fig. 1.

*Planta* mediae magnitudinis, 25-35 cm alta, rosula ± erecta. *Folia* pallide viridia, omnia lobata subglabra immaculata, petiolo anguste alato (vel in speciminibus valde expositis late alato) pallido (in foliis interioribus rubescente), nervo medio viridi vel sordide brunnescente, striolis nullis. *Lobi laterales* utrinque c. 4 recurvi integri deltoidei, margine distali convexo vel sinuato integro, apice subacuminato subacuto, margine proximali fere recto integro. *Lobus terminalis* foliorum exteriorum et mediorum mediae magnitudinis obtusiusculus, interiorum major fere obtusus. *Interlobia* bene definita angulata parum crispata, plerumque viridia. *Scapus* glabrescens,



Fig. 1. *Taraxacum freticola* – holotype specimen.

sub involucre valde araneosus. *Involucrum* viride parce pruinose. *Squamae exteriores* lanceolatae, 15-16 mm longae, 4-4.9 mm latae, plerumque leviter et sordide violascentes, marginibus planis non hyalinis, apice non vel parce corniculato, curvato-reflexae. *Squamae interiores* latitudine inter se fere aequales. *Calathium* circa 55 mm diametro luteum modice densum convexum. *Ligulae* planae vel subcanaliculatae, denticulis apicalibus luteis, marginales subtus stria ipsius ligulae angustiore cano-rubescente ornatae. *Antherae* polliniferae, grana pollinis diametro variabilia. *Stigmata* virescentia. *Achaenium* fusco-stramineum, pyramide inclusa 4.2-4.4 mm longum, superne spinulis mediae longitudinis subrobustis rectis instructum, pyramide 0.8-1 mm longa cylindrica laevi. *Rostrum* = 12 mm longum. *Pappus* albus.

As a member of *Taraxacum* sect. *Ruderalia*, *T. freticola* is a rather small to medium-sized species, 25-35 cm tall, with a ± erect rosette of very pale green, only indistinctly hairy, unspotted leaves. The petioles are narrowly winged (more broadly in fully exposed specimens), pale in outer and ± reddish in inner leaves. The midrib is green to indistinctly brownish and lacks striolate pattern. All leaves are distinctly lobed, with c. 4 lobe pairs. The side lobes are recurved, undivided, with the distal margin convex or s-curved, usually entire, and with a somewhat acuminate, medium acute tip. The proximal lobe margin is almost straight or irregular, entire or subulate-dentate. The terminal lobe of the outer and middle leaves is medium-sized, somewhat larger in the inner leaves, and usually almost obtuse. The interlobes are well differentiated, angular, only faintly plicate and usually green.

The scapes are mostly glabrescent but hairy under the involucre. The involucre is dark green, only faintly pruinose. The outer bracts are 15-16 × 4-4.9 mm, usually somewhat brownish violet tinged, regularly arranged, ± curved-reflexed. The margins of the outer bracts are flat, without hyaline border and without corniculation near the tip. The inner bracts are almost equally wide, not coalescent. The flower head is c. 55 mm in diameter, medium yellow, medium dense, with a ± convex profile. The ligules are flat or canaliculate, with yellow apical teeth, the outer circle has a narrow, indistinct reddish grey stripe on the underside. Pollen is present, with grains of obviously varying diameter. The stigmas are discoloured.

The achenes are straw-coloured to greyish brown, 4.2-4.4 mm long (incl. the 0.8-1 mm long, cylindrical, smooth cone). The achene spinules are medium long, medium strong, straight. The rostrum is = 12 mm long. The pappus is white.

*Discussion.* – Because of its lobation and reflexed rather broad outer bracts *Taraxacum freticola* is best placed in an informal group of morphologically related species within *T.* sect. *Ruderalia*, series *Retroflexa*. In this group it stands out by its rather pale petioles, the almost obtuse end lobes, and the often dirty purplish, unbordered outer bracts. The somewhat acuminate lobe tips resemble those of *T. oxyrhinum* Sahlin which, however, has darker green leaves and only c. 3.5 mm wide outer bracts. Furthermore, the latter species usually has at least some obtuse lobe tips, and in some leaves the midribs tend to be brownish adaxially for almost the total length.

*Distribution.* – Denmark and Poland.

*Taraxacum* (sect. *Ruderalia*) ***homoschistum*** H. Øllg., **nom. nov.** ≡ *Taraxacum hastatum* Markl. in Acta Soc. Fauna Fl. Fenn. 55(5): 8. 1926 [non Brenner 1925: 57]. – For the holotype, see Lundevall & Øllgaard (1999: 71).

*Notes.* – This species was first described by Marklund (1926) as *Taraxacum hastatum*, and until 1982 (see below) that name was in common use. Saarsoo & Haglund (1962: 528) regarded *T. hastatum* Markl. and *T. undulatiflorum* M. P. Christ., published in 1936, as one species that they named *T. hastatum*, either being unaware of or ignoring Brenner's earlier *T. hastatum*. Jokela (1963: 26) likewise maintained the name *T. hastatum* Markl., but included both *T. undulatiflorum* and *T. hastatum* Brenner in synonymy. In Hagendijk & al. (1982: 146) *T. undulatiflorum* is accepted and regarded as identical with *T. hastatum* Markl. but different from *T. hastatum* Brenner. However, the photograph in Hagendijk & al. (1982: fig. 205) is in fact *T. hastatum*

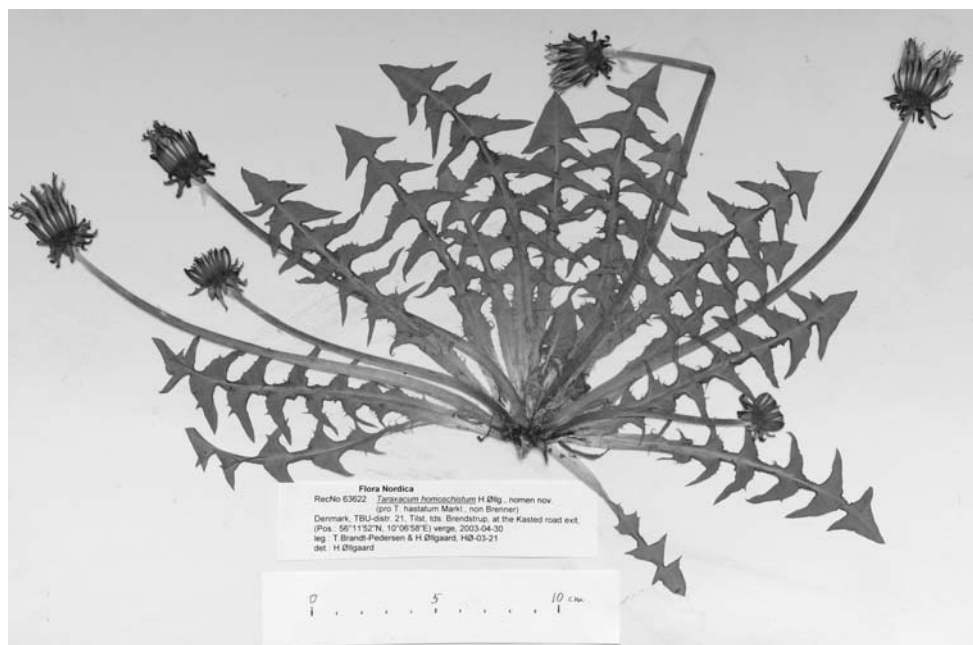


Fig. 2. *Taraxacum homoschistum* – specimen Brandt-Pedersen & Øllgaard HØ-03-21 (herb. Øllgaard) (see character tabulation in Table 1).

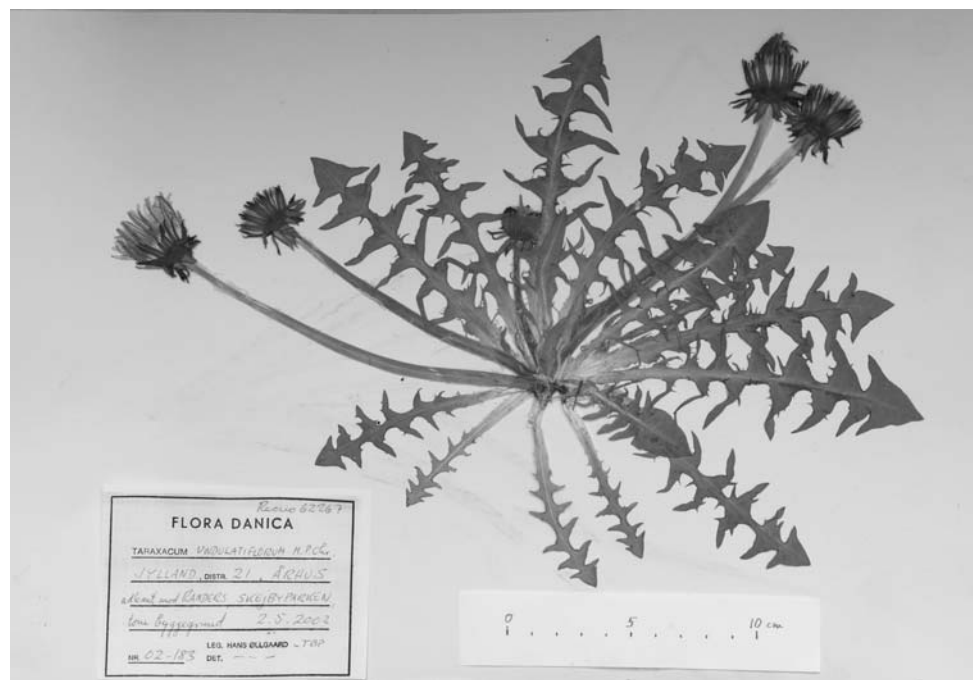


Fig. 3. *Taraxacum undulatiflorum* – specimen from Denmark, Jylland, Århus, 2.5.2002, Øllgaard HØ-02-183 (herb. Øllgaard) (see character tabulation in Table 1).

Table 1. Comparison of leaf lobes of *Taraxacum homoschistum* and *T. undulatiflorum*.

	<i>T. homoschistum</i>	<i>T. undulatiflorum</i>
Lobe pairs	± symmetrical, resembling bird's wings	not quite symmetrical, not reminding of bird's wings
Disposition	very regular in density, shape and direction	irregular in density (often more spaced in proximal leaf half), shape and direction
Division	rarely (only in extreme modifications) cleft by a deep incision	often cleft by a ± deep incision
Distal half	± gradually narrowing towards the tip	usually ± linear
Proximal margin	at the base, perpendicular to the midrib	at the base, often antrorse
Marginal teeth	if present, are small and mainly in the interlobes	usually present, especially on the lobe margins, but also in the interlobes, often very long

Markl. (= *T. homoschistum*). Kirschner & Štěpánek (1983: 443) question whether *T. hastatum* Markl. and *T. undulatiflorum* are conspecific. The *T. undulatiflorum* illustration in Dudman & Richards (1997: 187) again represents *T. homoschistum*.

*Taraxacum homoschistum* and *T. undulatiflorum* are different but morphologically related, medium-sized species with ± pale leaf petioles and recurved, greenish to irregularly and slightly reddish outer bracts of medium length and width, and with medium-sized flower heads, polliniferous anthers and somewhat greenish stigmas. They are separated mainly by leaf characters, as seen from the photographs (Fig. 2 and 3) and Table 1.

*Distribution.* – Both species are known from Britain, the Czech Republic, Denmark, Finland, Germany, the Netherlands and Sweden, *T. homoschistum* also from Norway.

***Taraxacum*** (sect. *Ruderalia*) ***leptoscelum*** [Sahlin ex H. Øllg. in Glowacki & al. 2001: 68, in Mirek & al. 2002: 167, Øllgaard & al. 2002: 29, nom. nud., ex] H. Øllg., **sp. nov.**

Holotype: Germany, “Hessen, Kreis Fritzlar: Fritzlar, vall i utkanten av staden mot SE” [cultivated grass field on the SE outskirts of the city], 51°07'2"N, 9°17'3"E, 7.5.1975, *Sahlin 64661* (B). – Fig. 4.

*Planta* mediae magnitudinis sed sat gracilis, 20-35 cm alta, rosula ± erecta. *Folia* saturate viridia, omnia lobata subglabra immaculata, petiolo longo angusto rubri-purpureo, nervo medio viridi vel sordide brunnescente, striolis nullis. *Lobi laterales* utrinque (3-)4 recurvi integri deltoidei, margine distali plerumque regulariter convexo integro, apice subacuto, margine proximali fere recto integro vel parce subulato-dentato. *Lobus terminalis* foliorum exteriorum et mediorum parvus vel mediae magnitudinis, obtusiusculus, interiorum major. *Interlobia* ad medium folii longa (in partem distalem breviora), angusta, bene definita, angulata, parum crispa, parce piceata vel saepe viridia. *Scapus* glabrescens, sub involucro valde araneosus. *Involucrum* viride parce pruinatum. *Squamae exteriores* sat parvae (10-11 mm longae, c. 2.5 mm latae), lanceolatae, laete vel obscure virides, marginibus planis non hyalinis, apice non vel parce corniculato, ± patentes vel paulo curvato-reflexae. *Squamae interiores* latitudine inter se fere aequales. *Calathium* 45-55 mm diametro, modice densum vel densum, convexum, modice luteum. *Ligulae* planae vel partim subcanaliculatae, denticulis apicalibus luteis, marginales subtus stria ipsius ligulae angustiore rubro-canesciente ornatae. *Antherae* polliniferae, grana pollinis diametro variabilia. *Stigmata* virescentia. *Achaenium* fusco-stramineum pyramide inclusa 3.6-3.8 mm longum, supere spinulis mediae longitudinis modice robustis rectis vel recurvis instructum, pyramide 0.4-0.5 mm longa cylindrica laevi. *Rostrum* 10-11 mm longum. *Pappus* albus.

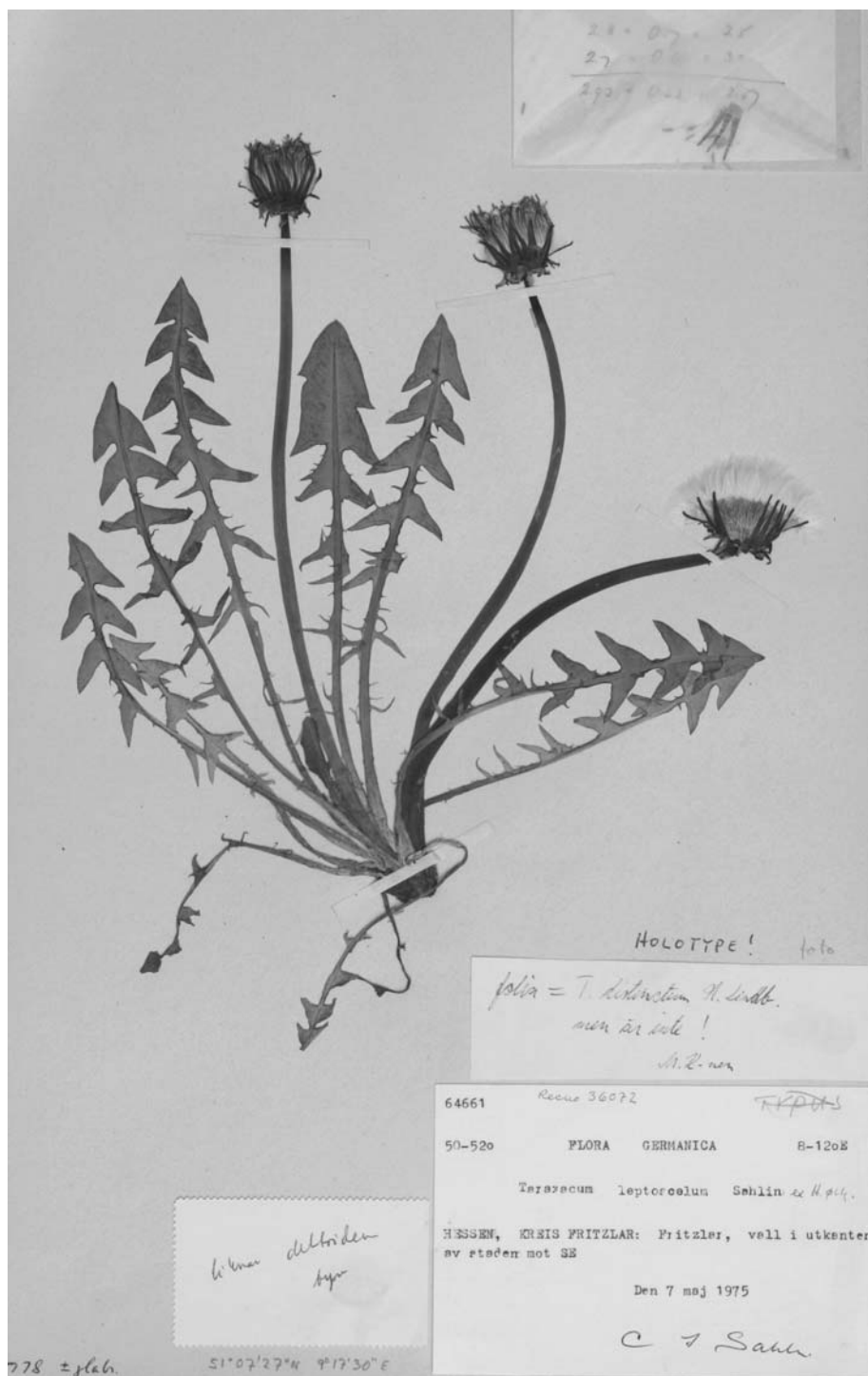


Fig. 4. *Taraxacum leptoscelum* – holotype specimen.

*Taraxacum leptoscelum* is a medium-sized but rather delicate plant for its section, 20–35 cm tall, with a ± erect rosette of pure green, glabrescent, unspotted leaves. The petioles are long, unwinged, distinctly to strongly purplish red. The midrib is green to faintly reddish or brownish and lacks a striolate pattern. All leaves are distinctly lobed, with mostly (3–)4 lobe pairs. The lobes are recurved and entire, usually with a regularly convex entire distal margin and a medium acute tip. The proximal lobe margin is almost straight, entire or subulate-dentate. The terminal lobe is small to medium-sized, or (in inner leaves) sometimes large, without a well-defined tip. The interlobes are usually unwinged, long in the middle part but shorter in the distal half of the leaf, flat, only faintly tar-blotched or often green.

The scapes are mostly glabrescent, but distinctly arachnoid under the involucre. The involucre are medium green to dark green, not (or indistinctly) pruinose. The outer bracts are rather small, 10–11 × c. 2.5 mm, lanceolate, light to dark greyish green, ± horizontal to somewhat curved-reflexed, their margins flat and unbordered and the tip without distinct corniculation. The inner bracts are not coalescent. The flower head in full bloom is 45–55 mm in diameter, medium dense to dense, with a convex profile, medium yellow. The ligules are flat or partly canaliculate, with yellow apical teeth, the outermost circle beneath with a narrow indistinctly reddish grey stripe. Pollen is produced, the pollen grains of distinctly varying diameter. The stigmas are discoloured.

The achenes are brownish grey, 3.6–3.8 mm long (including the cone). The cone is 0.4–0.5 mm long, cylindrical, smooth. The achene spinules are medium long, medium strong, straight to recurved. The rostrum is 10–11 mm long. The pappus is white.

*Discussion.* – Labels on the holotype sheet, by C. I. Sahlin and M. Kääntönen respectively, mention two species morphologically close to *Taraxacum leptoscelum*: *T. deltoideum* G. E. Haglund and *T. distinctum* H. Lindb. The latter resembles *T. leptoscelum* in having long, narrow and purple-coloured petioles, but the side lobes in *T. leptoscelum* are fewer (*T. distinctum*: 5–6 pairs), more strongly curved, the interlobes are longer, and the outer bracts more recurved. *T. deltoideum* is more robust, has greyish green leaves and somewhat broader, strongly reflexed outer bracts.

*Distribution.* – Czech Republic, Denmark, Germany, Poland and Slovakia.

*Taraxacum* (sect. *Borea*) ***longiconicum*** H. Øllg., **nom. nov.** ≡ *Taraxacum longipyramidatum* Rail. in Aquilo, Ser. Bot. 14, App.: 28. 1977 [non Schischkin 1964: 735]. – For the holotype, see Lundevall & Øllgaard (1999: 108).

*Note.* – Judging from the photograph (Railonsala 1976: 22) *Taraxacum longiconicum* belongs in *T.* sect. *Borea* (s.str.), a placement also supported by Railonsala's (1976: 10) comment: "is closely related to *T. remotijugum* Lindb. fil." (= *T. humile* Brenner), a member of *T.* sect. *Borea*. Railonsala's (1977: 28) description of *T. longipyramidatum* confirms the sectional position, but apart from the remark cited above the protologue has no discussion of the species. Until now I have not been able to study original specimens, so that assessment of the exact affinity, and indeed confirmation of distinctness, of *T. longipyramidatum* must await further study.

*Taraxacum* (sect. *Ruderalia*) ***nigrescens*** [H. Øllg. in Øllgaard & al. 2002: 21, in Mirek & al. 2002: 169, nom. nud., ex] H. Øllg., **sp. nov.**

Holotype: Denmark, distr. 34, Langeland, "Rudkøbing tds. E, road A 9 at 22.1 km, at the southern Longelse exit, moist mossy road verge", 54°56'0"N 10°48'0"E, 8.5.2001, *Brandt-Pedersen & Øllgaard HØ-01-106* (C [2 parts of the same individual]). – Fig. 5.

*Planta robusta mediae magnitudinis, 20–40 cm alta, rosula patente. Folia subcanescenti-viridia, omnia lobata subglabra immaculata, petiolo ± alato pallido, nervo medio viridi vel sordide brunnescente, striolis nullis. Lobi laterales utrinque 5–6 recurvi integri vel interdum profunde fissi, deltoidei, margine distali irregulariter sinuato vel convexo, integro vel interdum dente*





Fig. 5. *Taraxacum nigrescens* – holotype specimen.

longo robusto praedito, apice modice acuto, margine proximali saepius fere recto, raro dente conspicuo munito. *Lobus terminalis* parvus vel mediae magnitudinis, subacutus vel subobtus. *Interlobia* bene definita angulata  $\pm$  crispa, plerumque extenuato-piceata vel sordide viridia. *Scapus* glabrescens, sub involucro valde araneosus. *Involucrum* subobscure viride valde pruinosum. *Squamae exteriores* breviores latiores, 12-13 mm longae, 4.5-6 mm latae, apiculatae, supra canovirides subtus obscure virides vel saepe sordide violaceae regulares erecto-patentes vel patentes, marginibus planis non vel angustius hyalinis, prope apicem saepe incrassatae sed non corniculatae. *Squamae interiores* latitudine inter se fere aequales vel interdum inaequilatae et  $\pm$  cohaerentes. *Calathium* 55-60 mm diametro luteum, modice densum vel densum, convexum. *Ligulae* planae vel partim subcanaliculatae, denticulis apicalibus obscuris, subtus stria ipsius ligulae angustiore rubescenti-grisea ornatae. *Antherae* polliniferae, grana pollinis diametro variabilia. *Stigmata* virescentia. *Achaenium* fusco-stramineum, pyramide inclusa 3.9-4.1 mm longum, superne spinulis mediae longitudinis subrobustis vel robustioribus rectis instructum, pyramide 0.6-0.7 mm longa cylindrica laevi. *Rostrum* 10-11 mm longum. *Pappus* albus.

*Taraxacum nigrescens* is a robust, medium-sized, 20-30 cm tall plant with a patent rosette of greyish green, indistinctly hairy, unspotted leaves. The petioles are  $\pm$  winged, pale on the abaxial side (usually with no trace of red). The midrib is dirty green to distinctly brownish and lacks a striolate pattern. All leaves are distinctly lobed, with 5-6 lobe pairs. The side lobes are recurved, entire or sometimes dissected by deep incisions, with the distal margin irregular or  $\pm$  convex, entire or sometimes with a robust tooth, and a moderately acute tip. The proximal lobe margin is almost straight or irregular, usually entire, rarely bearing a conspicuous tooth. The terminal lobe is small to medium-sized, moderately acute or almost obtuse, not conspicuously larger in inner leaves. The interlobes are acutely angled to well differentiated and angular,  $\pm$  plicate, very often blurredly tar-coloured or dirty green.

The scape is mostly glabrescent but hairy under the involucre. The involucre is darkish green, pruinose. The outer bracts are relatively short and broad, 12-13  $\times$  4.5-6 mm, apiculate, greyish green ventrally, dark green dorsally, often dirty violet, regularly arranged, erect to horizontal. The margins of the outer bracts are flat, without or with a very narrow hyaline border, often thickened near the tip, but not properly corniculate. The inner bracts are almost equally wide, or sometimes coalescent and of obviously varying width. The flower head is rather large (55-60 mm in diameter), medium yellow, medium dense to dense, with a  $\pm$  convex profile. The ligules are flat or partly canaliculate, with dark apical teeth, dorsally with a narrow, indistinct reddish grey stripe. Pollen is produced, the pollen grains are of obviously varying diameter. The stigmas are discoloured.

The achenes are straw-coloured to greyish brown, 3.9-4.1 mm long (incl. the 0.6-0.7 mm long, cylindrical, smooth cone). The achene spinules are medium long, medium strong or very robust, straight. The rostrum is 9-10 mm long and bears a white pappus.

*Note.* – In Øllgaard & al. (2002) *Taraxacum nigrescens* is erroneously placed in *T.* sect. *Borea*.

*Discussion.* – Because of its pale petioles and its erect to patent outer bracts *Taraxacum nigrescens* is morphologically related to *T. tenebricans* (Dahlst.) H. Lindb., and also resembles some of the species in an informal group of morphological relatives centred on *T. undulatum* H. Lindb. & Markl. (*T.* ser. *Undulata*). *T. tenebricans* (now regarded as belonging in *T.* sect. *Macrodonta*), however, has  $\pm$  erect, usually unwinged, more strongly toothed leaves and narrower outer bracts. In *T.* ser. *Undulata* most species have spreading, arcuate-recurved outer bracts. Only *T. undulatum* itself has an erecto-patent collar of outer bracts, but differs in its green midribs and interlobes from *T. nigrescens* with its brownish midribs and tar-coloured interlobes. Moreover, the outer bracts of the latter are darker green or with a faint dirty violet hue, whereas those of *T. undulatum* remain greyish green even after anthesis.

*Distribution.* – Denmark and Poland.

*Taraxacum* (sect. *Ruderalia*) ***opertum*** [H. Øllg. in Dudman & Richards 1997: 180, nom. nud., ex] H. Øllg., **sp. nov.**

Holotype: “Denmark, TBU-distr. 13a, “2 km S of Jebbjerg, road 46, at 11.2 km, p-ground, verge/lawn”, 56°22'4"N, 09°57'1"E, 22.5.2003, *Brandt-Pedersen & Øllgaard HØ-03-217* p.p. (C); isotypes: *HØ-03-208*, *HØ-03-209* (AAU), *HØ-03-210*, *HØ-03-211* (B), *HØ-03-217* p.p. (C), *HØ-03-219* (DR), *HØ-03-216* (H), *HØ-03-214* (L), *HØ-03-220* (LD), *HØ-03-212* (OXF), *HØ-03-218* (PRA), *HØ-03-213*, *HØ-03-215* (S). – Fig. 6.

*Planta* mediae magnitudinis, 20-40 cm alta, rosula patente vel ± erecta. *Folia* subcanescenti-viridia, omnia lobata subglabra immaculata, petiolo late alato pallido, nervo medio viridi vel sordide brunnescente, striolis nullis. *Lobi laterales* utrinque 5-6 recurvi saepe profunde fissi, ± falcati vel (praesertim in foliis exterioribus) deltoidei, margine distali convexo vel sinuato, integro vel plerumque dentibus longis robustis ornato, apice subacuto, margine proximali concavo vel saepius recto interdum dente conspicuo munito. *Lobus terminalis* foliorum exteriorum et mediorum mediae magnitudinis, brevissime vel longius apiculatus, interiorum magnus vel maximus non apiculatus. *Interlobia* bene definita angulata ± crispa, plerumque viridia rarius parce piceata. *Scapus* glabrescens, sub involucro valde araneosus. *Involucrum* perobscure viride valde pruinose. *Squamae exteriores* lanceolatae, 14-15 mm longae, 4-4.9 mm latae, laete virides vel interdum irregulariter rubescentes, marginibus planis non hyalinis, apice non vel parce corniculato, retroflexae. *Squamae interiores* latitudine inter se fere aequales vel interdum inaequilatae et ± cohaerentes. *Calathium* 55-60 mm diametro, luteum, modice densum vel densum, convexum. *Ligulae* planae vel subcanaliculatae, denticulis apicalibus luteis, subtus stria ipsius ligulae angustiore cano-rubescente vel canescente ornatae. *Antherae* polliniferae, grana pollinis diametro variabilia. *Stigmata* virescentia. *Achaenium* fusco-stramineum pyramide inclusa 4.1-4.2 mm longum, superne spinulis mediae longitudinis subrobustis rectis instructum, pyramide 0.6-0.7 mm longa cylindrica laevi. *Rostrum* 10-11 mm longum. *Pappus* albus.

*Taraxacum opertum* is a medium-sized 20-40 cm tall species with a patent to ± erect rosette of faintly greyish green, only indistinctly hairy, unspotted leaves. The petioles are usually broadly winged, pale (usually with no trace of red). The midrib is green to indistinctly brownish and lacks a striolate pattern. All leaves are distinctly lobed, with 5-6 lobe pairs. The lobes are recurved, often dissected by deep incisions, ± falcate or (in outer leaves) often with the distal margin ± convex, entire or with robust long teeth of irregular size and a medium acute tip. The proximal lobe margin is ± concave or almost straight or irregular, often with a ± conspicuous tooth. The terminal lobe of the outer and middle leaves is medium-sized, usually with a short or longish well-differentiated tip. The end lobe of the inner leaves is large, usually without distinct tip. The interlobes are well differentiated, angular, ± plicate, usually green.

The scapes are mostly glabrescent but hairy under the involucre. The involucre is blackish green, very dark, strongly pruinose. The outer bracts are lanceolate, 14-15 × 4-4.9 mm, whitish green, rarely irregularly coloured, regularly arranged, vertically deflexed. The margins of the outer bracts are flat and without hyaline border, without a corniculation near the tip. The inner bracts are of almost equal width, but sometimes coalescent and of varying width. The flower head is rather large (55-60 mm in diameter), medium yellow, medium dense to dense, with a ± convex profile. The ligules are flat or canaliculate, with yellow apical teeth, on the underside with a narrow, indistinct reddish grey or greyish stripe. Pollen is present, the pollen grains are of obviously varying diameter. The stigmas are discoloured.

The achenes are straw-coloured to greyish brown, 4.1-4.2 mm long (incl. the 0.6-0.7 mm long, cylindrical, smooth cone). The achene spinules are medium long, medium strong, straight. The rostrum is 10-11 mm long. The pappus is white.

*Discussion.* – *Taraxacum opertum* is recognised mainly by its pale-petioled leaves with a characteristic lobation and by the strongly pruinose involucre with strongly reflexed, green, medium broad to broad, unbordered outer bracts. The leaf lobes are very often deeply cleft and/or ± toothed with long, not very acute teeth. The closest morphological relatives are primarily *T. pallidipes* Markl., *T. croceiflorum* Dahlst., and *T. lacerifolium* G. E. Haglund, which all have pale petioles



Fig. 6. *Taraxacum opertum* – holotype specimen.

and  $\pm$  deeply reflexed outer bracts. *Taraxacum pallidipes* differs in having narrowly bordered outer bracts and undissected leaf lobes. Besides, *T. pallidipes* is normally a conspicuously hairy plant with a less pronounced lobe dentation, with teeth that are relatively short and more acute. In *T. pallidipes* the end lobes lack the well-defined tip often present in *T. opertum*. Both *T. croceiflorum* and *T. lacerifolium* have non-pruinose involucre and a more crowded leaf lobation. Furthermore, *T. croceiflorum* has red-tipped outer bracts and darker yellow flowers, with ligules that are striped red dorsally. The inner bracts of *Taraxacum opertum* often hang together irregularly during and after anthesis, which is rarely seen in *T. pallidipes*, *T. croceiflorum* and *T. lacerifolium*.

*Distribution.* – Britain, Czech Republic, Denmark, Germany and Sweden.

*Taraxacum* (sect. *Ruderalia*) *palmgrenii* [Pettersson in Sältin 1965: 13, nom. nud., ex] H. Øllg., **sp. nov.**

Holotype: Finland, A (AI), “Vårdö, Lövä, “Storåker, gräsvall n.n. väst om byn” [cultivated grass field NNW of the community], 60°15'5"N, 20°22'1"E, 24.6.1955, *Olofsson*" (H 160257; isotypes: H 160256, 160258, 224029, 224030, 224031).

*Planta* mediae magnitudinis, 20-40 cm alta, rosula patente vel  $\pm$  erecta. *Folia* subcanescenti-viridia, omnia lobata subglabra vel indermum subaraneosa, immaculata, petiolo anguste vel late alato, pallido vel in foliis interioribus  $\pm$  rubescente, nervo medio viridi vel sordide brunnescente, striolis nullis. *Lobi laterales* utrinque c. 5 patentes vel recurvi saepe profunde fissi, in foliis exterioribus interdum  $\pm$  falcati vel deltoidei, margine distali convexo vel sinuato integro vel plerumque dentibus longis robustis ornato, apice subacuto vel subobtusum, margine proximali saepius recto plerumque integro vel raro dente conspicuo munito. *Lobus terminalis* mediae magnitudinis, subobtusum vel breviter linguatum. *Interlobia* bene definita angulata  $\pm$  plicata viridia. *Scapus* glabrescens, sub involucre valde araneosus. *Involucrum* pallide viride inconspicue pruinoso. *Squamae exteriores* 12-13 mm longae, 4-5 mm latae, pallide canovirides raro irregulariter rubescentes, regulares, marginibus planis non hyalinis, apice parum incrassato sed non corniculato, retroflexae. *Squamae interiores* latitudine inter se fere aequales vel interdum inaequilatae et  $\pm$  cohaerentes. *Calathium* 50-55 mm diametro luteum modice densum vel densum convexum. *Ligulae* planae vel subcanaliculatae, denticulis apicalibus luteis, subtus stria ipsius ligulae angustiore cano-rubescente ornatae. *Antherae* polliniferae, grana pollinis diametro variabilia. *Stigmata* virescentia. *Achaenium* fusco-stramineum, pyramide inclusa 3.9-4.1 mm longum, superne spinulis mediae longitudinis mediocriter robustis rectis instructum, pyramide 0.6-0.7 mm longa cylindrica laevi. *Rostrum* 9-10 mm longum. *Pappus* albus.

*Taraxacum palmgrenii* is a medium-sized 20-40 cm tall species with a patent to  $\pm$  erect rosette of faintly greyish green, usually indistinctly but sometimes fairly hairy, unspotted leaves. The petioles are narrowly to broadly winged, pale or (in inner leaves) reddish. The midrib is green to indistinctly brownish and lacks a striolate pattern. All leaves are distinctly lobed, with c. 5 lobe pairs. The side lobes are patent to recurved, often dissected by deep incisions, sometimes falcate or (in outer leaves) often with the distal margin  $\pm$  convex, entire or with robust long teeth of irregular size and a medium acute to almost obtuse tip. The proximal lobe margin is almost straight or irregular, usually entire, rarely with a  $\pm$  conspicuous tooth. The terminal lobe is medium-sized, subobtusum or with a short linguate tip. The interlobes are well differentiated, angular, plicate, green.

The scapes are mostly glabrescent but hairy under the involucre. The involucre is pale to dark green, indistinctly pruinose. The outer bracts measure 12-13  $\times$  4-5 mm, they are pale greyish green, rarely irregularly coloured, regularly arranged, deeply reflexed to vertically deflexed. The margins of the outer bracts are flat and without hyaline border, often with a thickening near the tip, but without a real corniculation. The inner bracts are almost equally wide, but sometimes coalescent and of obviously varying width. The flower head is c. 50-55 mm in diameter, medium yellow, medium dense, with a  $\pm$  convex profile. The ligules are flat or canaliculate, with yellow apical teeth, the outermost ligules are narrowly and indistinctly striped reddish grey dorsally. Pollen is produced, the pollen grains are of obviously varying diameter. The stigmata are discoloured.

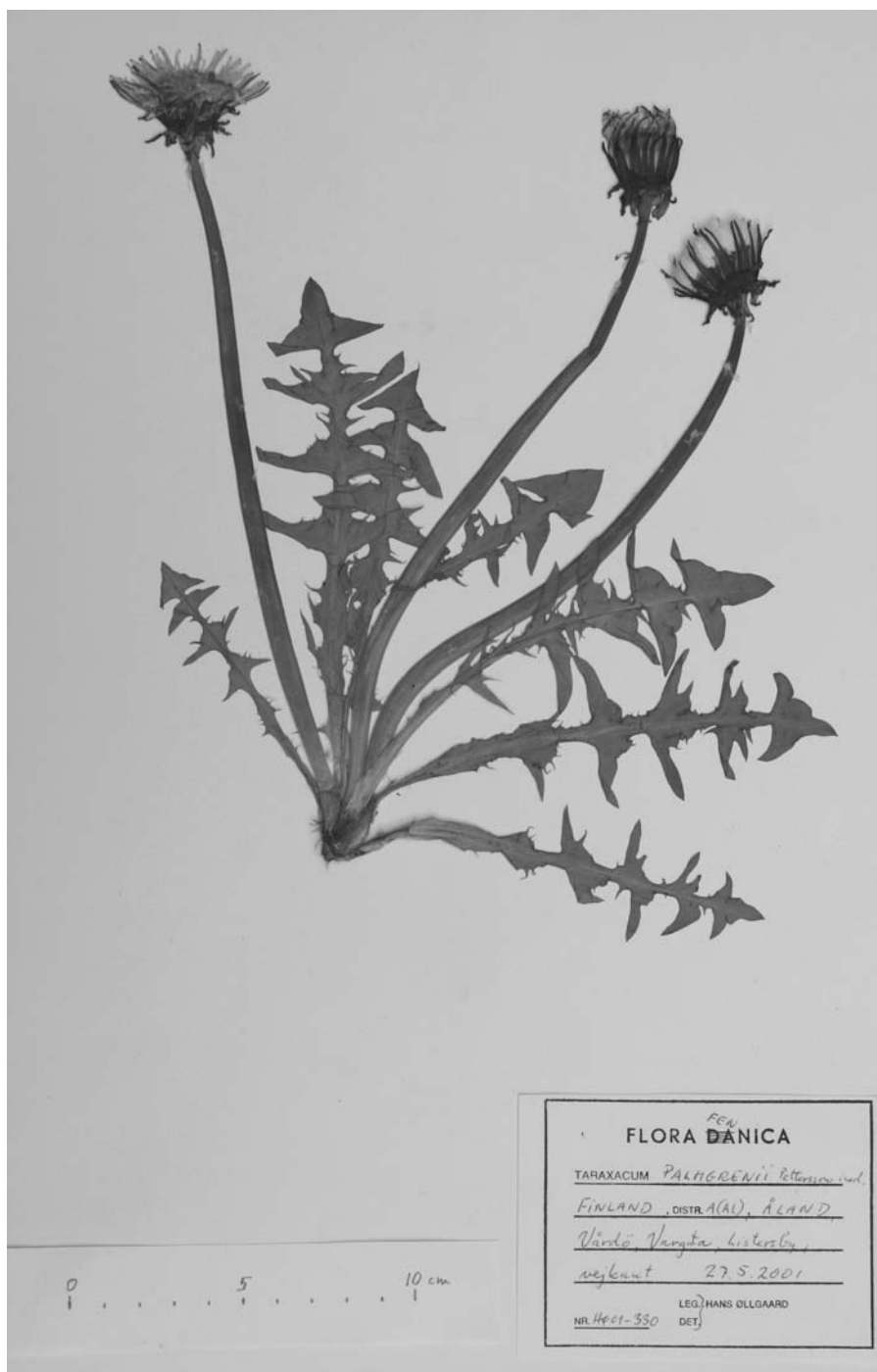


Fig. 7. *Taraxacum palmgrenii* – specimen Øllgaard & Räsänen HØ-01-330 (C).

The achenes are straw-coloured to greyish brown, 3.9-4.1 mm long (incl. the 0.6-0.7 mm long, cylindrical, usually smooth cone). The achene spinules are medium long, medium strong, straight. The rostrum is 9-10 mm long. The pappus is white.

*Discussion.* – Usually *Taraxacum palmgrenii* is easily recognised, especially the living plant seen in the wild when the entire leaf lobes appear somewhat concave, with several lobes conspicuously dissected, and because of its deeply reflexed outer bracts. However, herbarium specimens are more difficult to interpret. They have been confused with *T. olitorium* G. E. Haglund, which, however, has less reflexed outer bracts with a narrow hyaline border (quite unbordered outer bracts in *T. palmgrenii*) and straight leaf lobes with no convex distal lobe margins, not even when they are entire. Undissected forms of *T. palmgrenii* might look somewhat like the common species *T. lingulatum* Markl., also producing side lobes of the “bird’s wings” type. However, the latter is never seen with dissected lobes, and usually its lobes are far more irregular in appearance, often with one or more lobe tips quite obtuse in the distal leaf part. Besides, the outer bracts are longer and usually broader, and the fruits are somewhat longer.

*Distribution.* – Denmark, Finland and Sweden

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