

A new hexaploid species of *Taraxacum* sect. *Palustria* from Savoie, the W Alps

Nový hexaploidní druh pampelišky ze sekce *Palustria* ze savojských Západních Alp

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Taraxacum flos-lacus Kirschner et Štěpánek, spec. nova is described from subalpine and alpine belts of Alpi Graie, E France. It represents the second known hexaploid species of the sect. *Palustria*.

Key words: *Asteraceae*, *Taraxacum flos-lacus* spec. nova, taxonomy, polyploidy

The section *Palustria* of the genus *Taraxacum* comprises about 130 species. Only two of them exhibit obligate sexuality, both probably at the diploid level. The other species of the section are apomicts and polyploids, mostly triploids and tetraploids (Kirschner & Štěpánek 1998). The majority of species are confined to lower altitudes and foothills, and prefer wet or temporarily wet, mineral rich to subsaline sites with competition suppressed by flooding, grazing, mowing or other factors. The diversity of the section is centred in central and southern Europe, and its geographical range reaches Anatolia and Transcaucasus in the east.

We studied the taxonomy of the section in considerable detail, and a monograph of the section was published to summarize the taxonomic data from the literature, our field and herbarium investigations as well as our experimental studies (Kirschner & Štěpánek 1998). An important microevolutionary phenomenon observed in the section is an autonomous, probably repeated polyploidization (Kirschner & Štěpánek 1996, 1998). The highest ploidy level ascertained in the section is hexaploid, with $2n = 48$ found in *T. ranunculus* Kirschner et Štěpánek, a member of the predominantly S European group of taxa similar to *T. tenuifolium* (Hoppe et Hornschuch) Koch and *T. mendax* Kirschner et Štěpánek.

During the botanical exploration of Parc National de la Vanoise (Savoie, Rhône-Alpes), Jan Štěpánek found populations of a taxon of the sect. *Palustria* at remarkably high altitudes of 2200–2350 m a.s.l. The plants could not be identified with any of the known species of the section, and the subsequent cultivation showed that they represent a new species described below. In addition to the morphological characters, the new species is distinct in another feature: it proved to be hexaploid ($2n = 48$).

Taraxacum flos-lacus Kirschner et Štěpánek, spec. nova (Fig. 1)

Plantae graciles vel mediocriter altae. Folia $\pm$ suberecta vel ascendunt, linearia, ca 4–10 (–12) cm longa, plerumque 0.5–1.2 cm lata, subcanescente viridia et saepe sat purpurascunt, glabra, indivisa, remote dentata, sinuato-dentata vel sinuato-lobulata, lobulis lateralibus numero 3–5, patentibus usque recurvis, lobulo terminali indistincto, obtuse acuto, interlobiis plerumque integris. Petiolus angustus, roseo-violaceus. Scapus viridi-

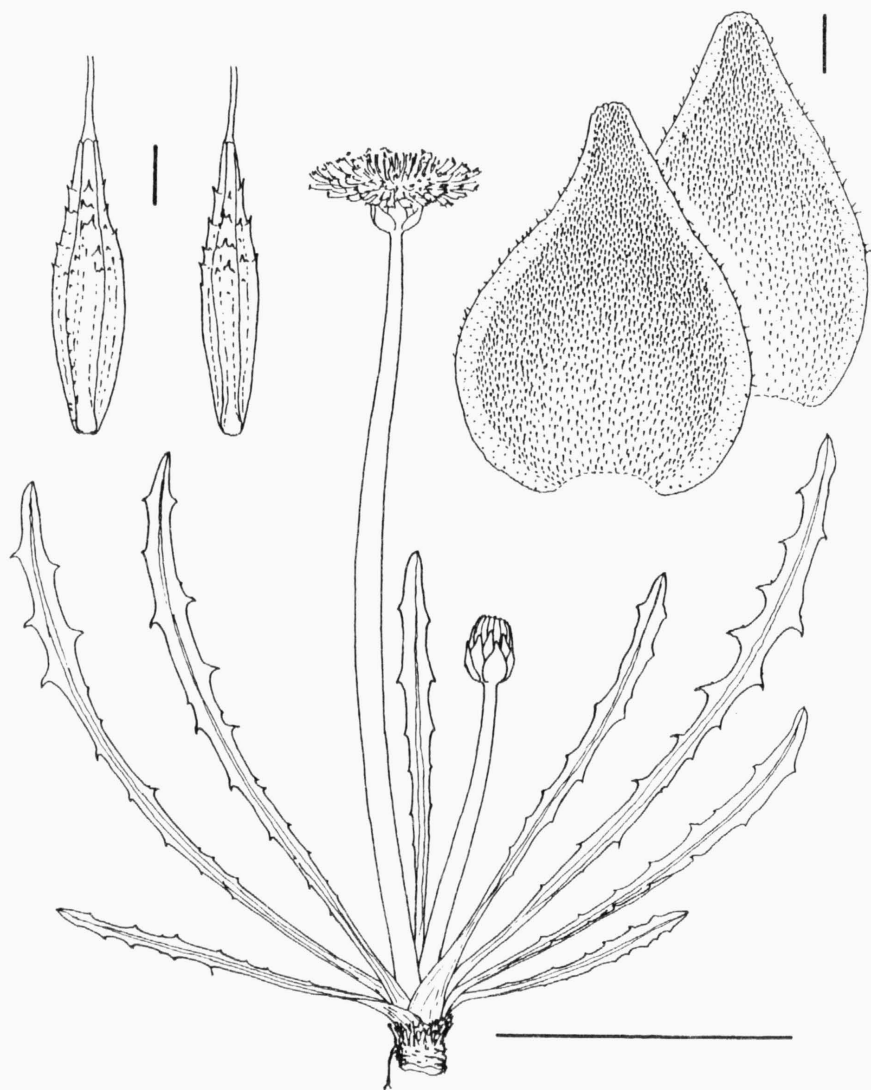


Fig. 1. – *Taraxacum flos-lacus* Kirschner et Štěpánek, spec. nova, habitus (no. JŠ 6186), bar = 5 cm, achenes (no. JŠ 6186), bar = 1 mm, outer involucral bracts (no. JŠ 6190), bar = 1 mm.

brunnescens, superne saepe violascens, post anthesin rubro-violaceus, glaber. Involucri squamae exteriores subimbricatae, numero 10–12, adpressae, late ovatae usque lanceolatae, 6.5–9.0 mm longae, 3.5–5.0 mm latae, omnes obscure virides, superne saepissime obscure rubescente-virides, emarginatae, tantum limbo membranaceo sordidulo (griseo-rubescens) 0.2–0.4 mm lato, margine ciliatae. Calathium luteum, 2.5–3.5 cm in diametro, ligulae marginales extus stria pallida griseo-viridia notatae, ligulae interiores dentibus apicalibus luteis vel pallide rubescentibus praeditae. Stigmata pure lutca, antherae polline carentes vel raro paulum polliniferae, granis pollinis diametro irregularibus. Achenium 4.2–5.5 mm longum, 0.9–1.2 mm latum, corpore superne sparse spinuloso (spinulis tenuisque acutis), in pyramidem conicam (ca 1.0–1.5 mm longam) conspicue sensim abeunte. Rostrum 6–7 mm longum, pappus ± albus, ca 6 mm longus.

Species apomicta e sectione *Palustriorum* (H. Lindb.) Dahlst.

$2n = 48$ (ex isotypo JŠ 6186)

Holotype deposited in PRA: "Gallia orientalis, département Savoie, urbs Grenoble, Alpes Occidentalis, Alpi Graie (Grajische Alpen), opp. Modane, Parc National de la Vanoise, pagus Termignon: in ripa et in alluvionibus lacus alpini parvi in planitia 'Plan du Lac', situ meridionali a casa alpina Refuge du Plan du Lac (2375 m), ca 7 km situ boreali a pago Termignon." Alt. ca. 2350 m s. m. 6°50' E, 45°20'30" N. 2 VIII 1996 J. Štěpánek & J. Štěpánková, no. det. 15209. Plants cultivated in Průhonice (cult. no. JŠ 6186).

Paratypes: ibid. (Termignon, Plan du Lac), cult. no. JŠ 6182 (no. det. 15213), JŠ 6183 (no. det. 15214), JŠ 6184 (no. det. 15212), JŠ 6185 (no. det. 15211). – France, Alpi Graie, Termignon, Chapelle S. Barthélémy, ca. 2280 m, 6E51'E, 45E21'N. 2 VIII 1996 J. Štěpánek & J. Štěpánková, cult. in Průhonice under no. JŠ 6190, no. det. 15208, herb. PRA

Note: Isotypes (JŠ 6186) and paratypes (JŠ 6182–6185) will be distributed as *Taraxaca Exsiccata*, no. 602.

Only eight species of the section share a rare combination of pure yellow stigmas and pollen absence with our new species, and none of them can be considered as morphologically close to our taxon (cf. Kirschner & Štěpánek 1998: 19–20). *Taraxacum flos-lacus* is superficially similar to *T. helenastes* G. Hagl. and *T. heleocharis* Kirschner et Štěpánek in the leaf characters but it can be readily distinguished by its outer bracts lacking broad pale greenish margins. Among species reaching higher altitudes in the Alps, *T. flos-lacus* might be compared with *T. lacustre* Soest. The latter has higher number of imbricate outer bracts, more densely spinulose and more abruptly narrowed achene bodies.

While polyploidy at the triploid and tetraploid levels in *Taraxacum* is a common condition, higher ploidy levels than pentaploids are distributed unevenly and generally are very rare. The only group with a regular occurrence of high polyploids (octoploids to dodecaploids) is that of *T. confusum* Schischk. in the Caucasus (Kirschner & Štěpánek 1996). In the sect. *Palustria*, on the other hand, higher polyploids (penta- and hexaploids) are quite exceptional, and a high ploidy level is a good indicator of the distinctiveness of the taxon in question. The distribution of ploidy levels in *Palustria* is a good example of the importance of polyploidy in the genus (only reliable chromosome counts are given): $2n = 16$ (1 species), $2n = 24$ (34), $2n = 32$ (24), $2n = 40$ (7), $2n = 48$ (2).

The section *Palustria* is characterized by the highest proportion of tetraploids, when compared with the other sections of dandelions. It should be added that, unlike in other groups of plants, polyploidy is not significantly associated with higher latitude or altitude in the section *Palustria*.

Acknowledgements

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