



A new species of *Hieracium* sect. *Pannosa* (Asteraceae) from Bulgaria

ZBIGNIEW SZELĄG¹ & VLADIMIR VLADIMIROV²

¹*Institute of Botany, Jagiellonian University, Kopernika 31, PL-31-501 Kraków, Poland, aszzelag@wp.pl*

²*Department of Plant and Fungal Diversity and Resources, Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, Acad. Georgi Bonchev St., bl. 23, 1113 Sofia, Bulgaria, vladimir_dv@abv.bg*

Abstract

Hieracium crinitopannosum, a new species of presumably hybrid origin between *H. petrovae* and *H. crinitum*, is described from the Rhodopes in southern Bulgaria and illustrated. It is similar to *H. cappadocicum* from Turkey, but differs in the densely and conspicuously serrate-dentate leaves. The new species is triploid ($x=9$) and reproduces apomictically.

Key words: Asteraceae, Balkan Peninsula, biodiversity, Europe, taxonomy

Introduction

In Europe *Hieracium* (Linnaeus 1753: 799) s.str. is dominated by apomictic polyploids (triploids and tetraploids). Sexual diploids are very rare and with some exceptions (e.g. *H. umbellatum* Linnaeus 1753: 804) occur mainly in refugial areas of Southern Europe (Merxmuller 1975). One of the most important areas of this kind is the Balkan Peninsula, where diploid populations and even new diploid species have been discovered recently (Vladimirov 2000, 2003; Vladimirov & Szelaġ 2006; Chrtek *et al.* 2007; Szelaġ *et al.* 2007; Szelaġ 2010; Ilnicki & Szelaġ 2011; Szelaġ & Ilnicki 2011).

The diploid, sexual *Hieracium* species are regularly accompanied by their hybrids. It is often possible to find the second parent species nearby, that makes it substantially easier to identify the hybrid. Such a situation may be seen in the Rhodopes in southern Bulgaria, where *H. petrovae* Vladimirov & Szelaġ (2006: 261), one of the recently described diploid species, occurs. During field studies in the Central Rhodopes we found a large population of the hitherto unknown taxon with the morphological characters intermediate between *H. petrovae* from *H. sect. Pannosa* Zahn (1906: 69) and *H. crinitum* Smith (Sibthorp & Smith 1813: 134) from *H. sect. Italica* Fries (1862: 7, 107). We decided to describe the plants from the Rhodopes as a new species.

Hieracium crinitopannosum Szelaġ & Vladimirov *sp. nov.* (Fig. 1)

Type:—BULGARIA. Central Rhodopes, along the road from Devin town to Mihalkovo village, 625 m, 41°49'41"N, 24°26'55"E, 20 July 2004, Z. Szelaġ & V. Vladimirov (holotype SOM 169412, isotypes KRA, Herb. Hierac. Z. Szelaġ).

Paratypes:—BULGARIA. Central Rhodopes, 5–6 km from Mihalkovo village by the road to Krichim town, 550 m, 41°52'08"N, 24°25'07"E, 10 July 2011, V. Vladimirov (SOM 169413 to 169417, Herb. Hierac. Z. Szelaġ).

Affinity:—*Hieracium crinitopannosum* is similar to *H. cappadocicum* Freyn (1891: 55) described from Turkey, but differs in the densely and conspicuously serrate-dentate leaves (see Szelaġ 2012: 356, fig. 6).



FIGURE 1. Holotype of *Hieracium crinitopannosum* (SOM 169412)

Description:—Rhizomatous perennial. Stem 25–55 cm high, robust, 4.0–4.5 mm in diameter at the base, villous-lanate, covered by subplumose, 8–10(–13) mm long hairs. Leaves 8–13, gradually reduced upwards with conspicuously longer and denser indumentum at the base. Basal and lower cauline leaves crowded in a false rosette, leaf blades 10–16(–22) cm long and 4.5–5.5 cm wide, ovate-lanceolate, broadest near the middle, coarsely serrate-dentate, with 8–12 spreading teeth on each side, gradually tapered to a winged, 2–3(4.5) cm long petiole; middle cauline leaves 8–11 cm long and 4–4.5 cm wide, ovate, serrate-dentate, subsessile; the upper cauline leaves smaller, broadly ovate, dentate, sessile; all leaves with sparse stellate hairs and dense subplumose hairs 2–3 mm long on the upper surface and sparse to moderate stellate hairs and dense

subplumose hairs 4–6 mm long on the lower surface. Synflorescence with 3–9(–18) capitula (and occasionally some capitula aborted). Acladium 10–12 cm long. Synflorescence with 2–5 lateral branches, usually longer than acladium, each with 2–3 capitula. Peduncles covered with dense, stellate hairs and dense, flexuous, subplumose hairs 10–13 mm long. Flowering capitula 3–3.5 cm in diameter. Involucre subglobose, 12–13(15) mm long and 14–15 mm wide; involucre bracts linear-lanceolate, subacute at apex, 11–13 mm long and 1.3–1.5 mm wide; the outermost ones with dense stellate hairs, moderate to dense flexuous hairs 5–6 mm long, and moderate minute glandular hairs 0.05–0.06 mm long, with membranous margin; the inner ones with wider membranous margin, along the midrib with dense papillae and stellate hairs, moderate to sparse microglandular hairs and flexuous simple hairs. Ligulate florets yellow, glabrous at apex. Styles yellow. Receptacular pits with membranous, glandular-ciliate margin. Achenes 3.5–4.0 mm long, stramineous, with yellowish-white pappus 6–7 mm long. Pollen in anthers numerous and of varying size.

Chromosome number:— $2n = 3x = 27$.

Mode of reproduction:—Agamospermous.

Phenology:—Flowering July and August. Fruiting until September.

Distribution and habitat:—The species has been recorded in a few sites in the Central Rhodopes, Bulgaria. It grows in places with open vegetation, e.g. eroded and rocky slopes on siliceous bedrock at 500–700 m a.s.l., where sub-populations with several dozens to a few hundred individuals in each have been observed. Occurrence of the species in the Rhodopes in northern Greece is likely.

Discussion:—The geographical range of the apomictic hybrid taxa often extends outside that of the presumable parental species. This is also the case in *Hieracium crinitopannosum*, which, unlike the mesothermophilous *H. petrovae*, ‘left’ the deep, calcareous gorges of the Central Rhodopes and occurs in their northern foreland in the Vacha River valley, where it meets the thermophilous *H. crinitum*, i.e. its alleged second parental species.

Zahn (1938) placed the intermediate species of presumably hybrid origin between members of *H. sect. Pannosa* and *H. sect. Italica* into the *H. heldreichii* agg. Determining the sectional placement of intermediate *Hieracium* species (with parental species belonging to different sections) into one of the ‘ancestral’ sections, although arbitrary, is useful from the practical point of view. Otherwise, the number of sections in the genus would have to be increased at least threefold, with many of them monotypic. That is why we propose to include *H. crinitopannosum* into *H. sect. Pannosa* as more closely resembling the morphology of *H. petrovae* than that of *H. crinitum*.

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References

- Chrtěk, J., Mráz, P., Zahradníček, J., Mateo, G. & Szélag, Z. (2007) Chromosome numbers and DNA ploidy levels of selected species of *Hieracium* s.str. (Asteraceae). *Folia Geobotanica* 42: 411–430.
- Frey, J. (1891) *Plantae novae orientales*. *Oesterreichische Botanische Zeitschrift* 41: 9–12.
<http://dx.doi.org/10.1007/BF01794219>
- Fries, E. (1862) *Epicrisis generis Hieraciorum*. *Uppsala Universitets Årsskrift* 1862: 1–159.
- Ilnicki, T. & Szélag, Z. (2011) Chromosome numbers in *Hieracium* and *Pilosella* (Asteraceae) from Central and Southeastern Europe. *Acta Biologica Cracoviensia, Series Botanica* 53(1): 102–110.

<http://dx.doi.org/10.2478/v10182-011-0014-3>

- Linnaeus, C. (1753) *Species plantarum*. L. Salvius, Holmia [Stockholm]. 1200 pp.
- Merxmüller, H. (1975) Diploide Hieracien. *Anales del Instituto Botánico A.J. Cavanilles* 32: 189–196.
- Sibthorp, J. & Smith, J.E. (1813) *Florae Graecae prodromus* 2(1). R. Taylor et Soc., London, 210 pp.
- Szeląg, Z. (2010) *Hieracia balcanica* V. A new diploid species in *Hieracium* sect. *Naegeliana* (Asteraceae) from Macedonia. *Annales Botanici Fennici* 47: 315–319.
<http://dx.doi.org/10.5735/085.047.0410>
- Szeląg, Z. (2012) Typification of the *Hieracium* (Asteraceae) names described by J. Freyn from Turkey. *Polish Botanical Journal* 57: 347–370.
- Szeląg, Z. & Ilnicki, T. (2011) Diploid chromosome numbers in *Hieracium* and *Pilosella* (Asteraceae) from Macedonia and Montenegro. *Acta Biologica Cracoviensia, Series Botanica* 53(2): 124–126.
<http://dx.doi.org/10.2478/v10182-011-0023-2>
- Szeląg, Z., Ilnicki, T., Niketić, M. & Tomović, G. (2007) Diploid chromosome numbers in five *Hieracium* species from Serbia and Montenegro. *Acta Biologica Cracoviensia, Series Botanica* 49(1): 119–121.
- Vladimirov, V. (2000) Diploid species of the genus *Hieracium* s.l. in Bulgaria. *Abhandlungen und Berichte des Naturkundemuseums Görlitz* 72 (Suppl.): 16.
- Vladimirov, V. (2003) A new diploid *Hieracium* (Asteraceae: Lactuceae) from Bulgaria. *Botanical Journal of the Linnean Society* 143: 213–218.
<http://dx.doi.org/10.1046/j.1095-8339.2003.00210.x>
- Vladimirov, V. & Szeląg, Z. (2006) A new diploid species of *Hieracium* sect. *Pannosa* (Asteraceae) from Bulgaria. *Botanical Journal of the Linnean Society* 150: 261–265.
<http://dx.doi.org/10.1111/j.1095-8339.2006.00461.x>
- Zahn, K.H. (1906) Beiträge zur Kenntnis der Archhieracien Ungarns und der Balkanländer I. *Magyar Botanikai Lapok* 5: 62–94.
- Zahn, K.H. (1938) *Hieracium*. In: Graebner fil., P. (ed.) *Synopsis der mitteleuropäischen Flora* 12(3). Borntraeger, Berlin, 708 pp.