Four new species of Hieracium L. (Compositae) from NE Turkey

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Abstract

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Hieracium rizense, H. tersundagense, H. spodocephalum and *H. polygonifolium,* four species of *H.* subg. *Hieracium* from the Black Sea Region, which is one of the main centres of diversity of the genus in Turkey, are described as new to science and illustrated.

Introduction

> Zu allem Ueberflusse enthält fast jede Sendung orientalischer Hieracien neue, bisher unbeschriebene Formen, welche grossentheils die Grenzen der bisher am festesten umschriebenen Arten ebenso verwischen, wie es bei den mitteleuropäischen Formen schon längst bekannt ist. – J. Freyn (1895).

Hieracium L. is a large genus of perennial herbs, well-known for its taxonomic complexity. Over 10 000 mostly apomictic species have been described up to know (Willis 1973). The genus is divided into three subgenera. Two of them, *Hieracium* s.str. and *Pilosella* (Hill) S. F. Gray, are represented in Turkey. Sell & West (1974, 1975), who prepared the account of hawkweeds for the "Flora of Turkey", recognized these subgenera as distinct genera. In the genus *Hieracium* s.str. they reported 99 species belonging to 14 series. Records of two further species are mentioned by Özhatay & al. (1994, 1999).

The second author currently studies the distribution and relationship of the species of *Hieracium* L. subg. *Hieracium* in the Black Sea Region of Turkey. This region is one of the main centres of diversity of the genus *Hieracium* in Turkey. Among the 300 collections from NE Anatolia which have been examined so far we have found some species new to science. A whole set of the collections is deposited at KTUB, 174 duplicates are in the personal herbarium of the first author.

Descriptions

Hieracium rizense Gottschl. & Coşkun., **sp. nova**

Holotypus: Turkey, Vil. Rize (A 8), Ayder to Asağı Kavrun Mezrasi, roadside, 1700-1800 m, 3.8.1999, *Coşkunçelebi 272* (KTUB; isotypus: herb. Gottschlich No. 38844). – Fig. 1-2.

Caulis 60-80 cm altus, aphyllopodus (raro hypophyllopodus), effloccosus, epilosus eglandulosusque. *Folia* caulina 10-13, viridia, inferiora in petiolum ± longum plerumque alatum attenuata, sequentia ad basim longe attenuata; laminae anguste rhombicae (inferiores usque ad 15:1 cm, sequentes 10:1 cm ad 5:1 cm), denticulatae vel (ad basim) serrato-dentatae, dentes 3-5 mm longi; folia ad marginem et in costa dorsali eglandulosa, epilosa vel sparsim pilosa. *Synflorescentia* laxe paniculata, rami 7-9, 1-3-cephali, capitula (10-)13-16(-20), acladium 5-7 cm longum. *Pedunculi* modice floccosi, epilosi, parcissime glandulosi. *Involucra* 9-10 mm longa, squamae oligoseriales, papillosae, acutae vel acutissimae, atrovirides, ad marginem pallide virides, sparsim pilosae, sparsim vel modice glandulosae (glandulae breves longaeque mixtae), sparsim floccosae. *Styli* lutei. *Achenia* atrobrunnea. *Floret* mense Iulio et mense Augusto.

Relationships

Hieracium rizense is similar to some N European taxa of *H.* sect. *Tridentata* (Fr.) Arv.-Touv. such as *H. sparsifolium* Lindeb. (= *H. laevigatum* subsp. *sparsifolium* (Lindeb.) Zahn). It has nearly the same habitus, especially because of its few cauline leaves, but differs from these taxa in the shape of its lower cauline leaves, whose laminae narrow into a short, winged petiole. The involucral bracts are attached in few rows. These characters could indicate an introgression of *H.* sect. *Pseudostenotheca* (Fr.) Üksip. Such taxa were united formerly under *H. muricellum* Fr. (Zahn 1921-23) or *H.* ser. *Muricella* Üksip (Üksip 1960). *H. muricellum* s.str., however, is no species of the genus *Hieracium*. Nikolaev (1989) identified the type of *Hieracium muricellum* as *Picris hieracioides*. The rest of the described taxa of *H. muricellum* s.l. / ser. *Muricella* shows a great morphological variability. Some of these species are more closely related to *H.* sect. *Pseudostenotheca* such as *H. biebersteinii* Litv. & Zahn, some are more similar to *H. laevigatum,* for instance *H. pseudosparsum* Uechtr. ex Zahn (= *H. gandogeri* Zahn, nom. illeg.). Other species have more and broader leaves such as *H. caucasiense* Arv.-Touv. or *H. macrogonum* (Zahn) Sell & West. Among all these *H. rizense* is more closely related to *H. biebersteinii,* from which it differs in the longer internodes of the lower part of the stem, the very few hairs of its phyllaries and peduncles and its yellow styles.

In the key of the "Flora of Turkey" *Hieracium rizense* may be inserted as follows:

Group C:

18. At least some phyllaries acute
    18a. Lower cauline leaves in a false rosette, elliptic or ovate . . . . . *H. phaeochristum*
    18a. Lower cauline leaves not in a false rosette, lanceolate . . . . . *H. rizense*
18. All phyllaries obtuse

Hieracium tersundagense Gottschl. & Coşkun., **sp. nova**

Holotypus: Turkey, Vil. Gümüşhane (A 7), Tersundağı Geçidi, alpine pasture, 2000 m, 1.8.1999, *Coşkunçelebi 246* (KTUB; isotypus: herb. Gottschlich No. 38859). – Paratypi: Ibid., Tersundağı Geçidi, *Picea* forest and roadside, 1800 m, 1.8.1999, *Coşkunçelebi 236* (KTUB, herb. Gottschlich No. 38865). – Fig. 3-4.

Caulis 60-70 cm altus, phyllopodus, eglandulosus effloccosusque, ad basim sparsim pilosus. *Folia basalia* 4-6(-8), glauco-viridia, ad basim longe attenuata, anguste angulato-obovata (15:2 cm ad 10:1.5 cm), in parte distali subintegerrima, in parte proximali dentata, ad marginem et in costa dorsali subdense hirsuta. *Folia caulina* 2-4, denticulata, ad marginem et in costa dorsali modice hirsuta. *Synflorescentia* laxissime paniculata, rami 9-12, (1-)3-6(-10)-cephali, capitula (15-)20-50(-65), acladium 1 cm longum. *Pedunculi* tenues, glabri, sub involucro cum 1-3 bracteolis nigris. *Involucra* 9-10 mm longa, squamae oligoseriales, tenues acutaeque, acutissimae, dorso atrovirides, ad marginem haud pallide virides, disperse pilosae glandulosaeque, effloccosae. *Styli* subatri, distincte tuberculati. *Achenia* ferruginea. *Floret* mense Iulio et mense Augusto.

Relationships
Hieracium tersundagense belongs to *H.* sect. *Pseudostenotheca* (Fr.) Üksip (= *Hololeion* Zahn p.p.). Because of its great number of heads and the lack of hairs on the peduncles it shows some similarity to '*H. foliosissimum* (Woronow & Zahn) Üksip' (comb. inval.). The type of foliation (number, shape and insertion) is similar to *H. macrolepis* Boiss. *H. tersundagense* is well defined by the combination of these characters.

In the key of the "Flora of Turkey" *Hieracium tersundagense* may be inserted as follows:
Group A:
24. Leaves denticulate to shortly dentate
    25. Basal leaves broadly ovate to oblong-lanceolate . . . . . *H. subhastulatum*
    25. Basal leaves lanceolate
        25a. Capitula 2-12, peduncles with numerous stellate hairs and few glandular hairs . . . . . *H. hypopityforme*
        25a. Capitula (15-)20-50(-65), peduncles glabrous . . . . . *H. tersundagense*

Hieracium spodocephalum Gottschl. & Coşkun., **sp. nova**
Holotypus: Turkey, Vil. Artvin (A 8), Kafkasör, roadside, 1400 m, 6.8.1999, *Coşkunçelebi 284* (KTUB; isotypi: G, herb. Gottschlich No. 38832+33). – Fig. 5-6.

Caulis (35-)45-65(-75) cm altus, aphyllopodus, inferne dense, superne subdense pilosus, effloccosus eglandulosusque. *Folia* caulina 15-20, viridia, semiamplexicaulia, inferiora anguste rhombica (9-13 × 2-3 cm), superiora anguste elliptica (3-5 × 1-1.5 cm), denticulata, supra disperse, subtus margineque subdense pilosa eglandulosaque. *Synflorescentia* paniculata, rami 4-6, (1-)2-5-cephali, capitula (5-)8-15(-20), acladium 1.5-2.5 cm longum. *Pedunculi* dense floccosi, modice pilosi, disperse vel modice glandulosi. *Involucra* 9-10 mm longa, squamae subacutae, atrovirides, ad marginem pallide virides, modice pilosae, disperse vel modice glandulosae, ad marginem subdense supra modice floccosae. *Styli* subatri. *Achenia* atrobrunnea (jam matura?). *Floret* mense Julio et mense Augusto.

Relationships
Hieracium spodocephalum belongs to *H.* sect. *Prenanthoidea* W.D.J. Koch. It differs from all taxa of this section hitherto described from Turkey or the Caucasian region in having only few glands on its peduncles and phyllaries. Instead, peduncles and phyllaries are covered with simple eglandular and a large number of stellate hairs, which give the involucres a greyish appearance (Greek: "spodos" = greyish). Numerous stellate hairs on the phyllaries (but only near the base) and semiamplexicaul leaves also occur in *H. syreistschikovii* Zahn and *H. virosiforme* Woronow & Zahn, which are regarded by Zahn (1921-23) as subspecies of *H. cincinnatum* Fr. The latter species has an intermediate position because of its long, rigid bulbous-based hairs and combines *H. virosum* Pallas with *H. sparsum* s.l. *H. spodocephalum* does have long hairs too, but because of its smaller involucres with more or less acute phyllaries it rather seems to be intermediate between *H. prenanthoides* Vill. and *H. olympicum* Boiss. This hypothesis has to be proved by chemical or molecular methods.

In the key of the "Flora of Turkey" *Hieracium spodocephalum* may be inserted as follows:
Group C:
4. Leaves without glandular hairs; involucre with numerous stellate hairs, mainly at the base
    6. Involucre with numerous simple eglandular hairs
        6a. Involucre 10-11 mm, phyllaries ± imbricate, obtuse . . . . . *H. syreistschikovii*
        6a. Involucre 9-10 mm, phyllaries scarcely imbricate, acute. . . . . *H. spodocephalum*

Hieracium polygonifolium Gottschl. & Coşkun., **sp. nova**
Holotypus: Turkey, Vil. Gümuşhane (A 7), Tersundağı Geçidi, alpine pasture, 2100 m, 1.8.1999, *Coşkunçelebi 221* (KTUB; isotypi: G, herb. Gottschlich No. 38873). – Fig. 7-8.

Caulis 45-55 cm altus, phyllopodus, inferne modice, superne disperse pilosus, effloccosus, supra medio disperse vel modice glandulosus. *Folia basalia* 3-5, viridia, longe petiolata (5-8 cm), laminae anguste ellipticae, (5-)10-15 × 2-3.5 cm, longe attenuatae, acutae, integerrimae vel denticulatae, subtus margineque ut in petiolis modice pilosae, ad marginem disperse glandulosae. *Folia caulina* 3-5, semiamplexicaulia, margines, pili, glandulae ut in foliis basalibus. *Synflorescentia* paniculata, rami 3-6, (1-)2-5-cephali, capitula 8-15, acladium 1-1.5 cm longum. *Pedunculi* tenues, modice raro subdense glandulosi, disperse pilosi vel epilosi, effloccosi. *Involucra* 8-9 mm longa, ad basim subturbinata; squamae oligoseriales, angustae, acutae, atrovirides, ad marginem pallide virides, disperse pilosae vel epilosae, modice glandulosae, effloccosae sed ad apicem modice comosae. *Styli* atri. *Achenia* atrobrunnea. *Floret* mense Iulio et mense Augusto.

Relationships

Because of its semiamplexicaul cauline leaves *Hieracium polygonifolium* is obviously related to *H.* sect. *Prenanthoidea* W.D.J. Koch. It differs from all taxa of this section in the presence of basal leaves and the small number of cauline leaves. On the one hand, these characters correspond to *H. umbrosum* or *H. jurassicum,* but on the other hand, the thin peduncles, the slightly turbinate involucres and the phyllaries, which are attached only in few rows, point rather to *H.* sect. *Pseudostenotheca*. These characters do not fit *H. jurassicum* Griseb. s.str., *H. tamderense* Hub.-Mor and *H. barbeyi* G. E. Post, which occur in E Turkey as well. With this intermediate combination of characters *H. polygonifolium* is related to species such as *H. medschedsense* Zahn, *H. chlorophilum* (Kozl. & Zahn) Üksip ex Sennik. from the Caucasus or *H. juranomorphum* (Zahn) Zahn from Bulgaria. However, all of them have more cauline leaves, indicating a greater influence of *H. prenanthoides*. *H. ratluense* Zahn, which has nearly the same number of cauline leaves, differs from *H. polygonifolium* in accordance with the original description in "involucra 9-10 mm ovato-cylindrica (...) squamis sublatiusculus (...) flores ± tubulosi".

In the key of the "Flora of Turkey" *Hieracium spodocephalum* may be inserted as follows:

Group A:

42. Cauline leaves 3-7
    - 42a. Cauline leaves semiamplexicaul . . . . . *H. polygonifolium*
    - 42a. Cauline leaves shortly petiolate or sessile

Acknowledgements

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Fig. 1. *Hieracium rizense* – isotype (herb. Gottschlich).

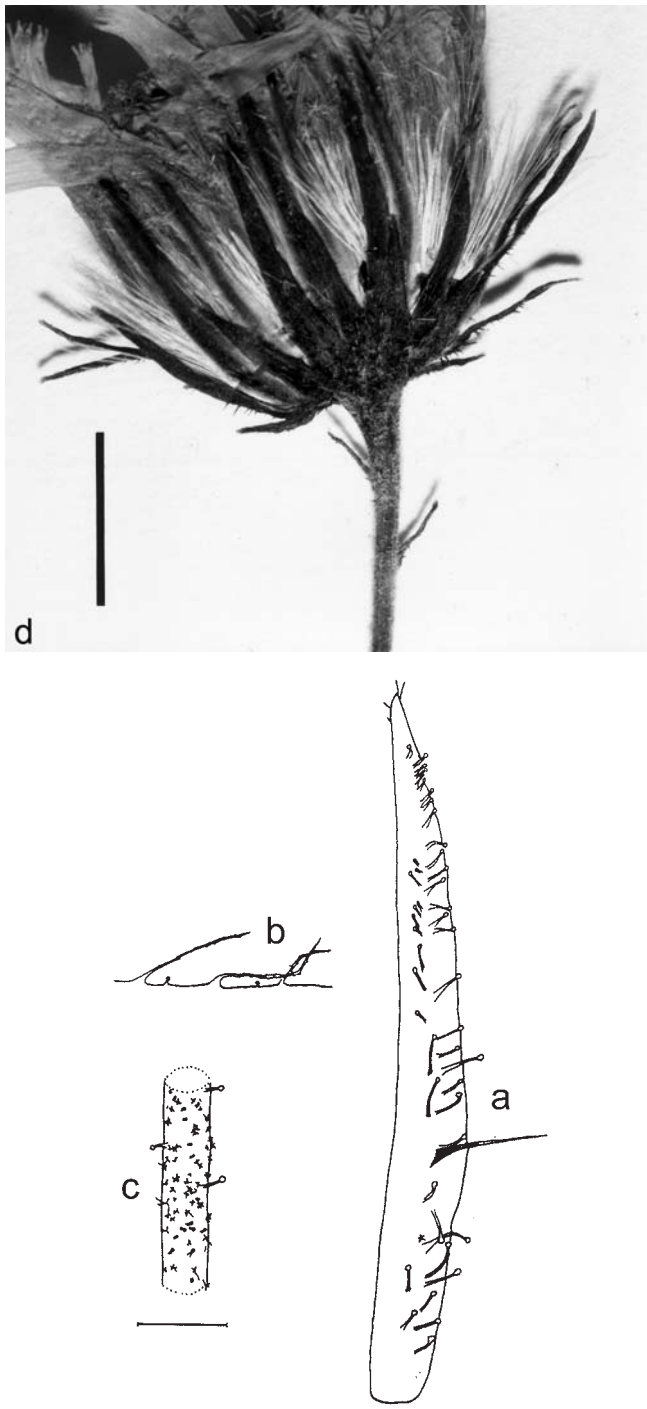

Fig. 2. *Hieracium rizense* – a: phyllary; b: leaf margin; c: peduncle; d: capitulum. – Scale bar: a-c = 1 mm, d = 5 mm; from the isotype (herb. Gottschlich).

Fig. 3. *Hieracium tersundagense* – isotype (herb. Gottschlich).

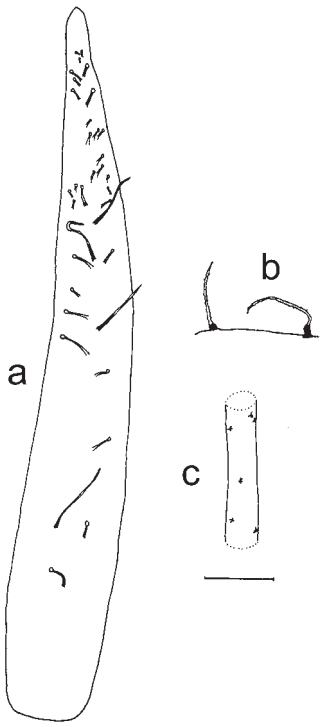

Fig. 4. *Hieracium tersundagense* – a: phyllary; b: leaf margin; c: peduncle; d: capitulum. – Scale bar: a-c = 1 mm, d = 5 mm; from the isotype (herb. Gottschlich).

Fig. 5. *Hieracium spodocephalum* – isotype (herb. Gottschlich).

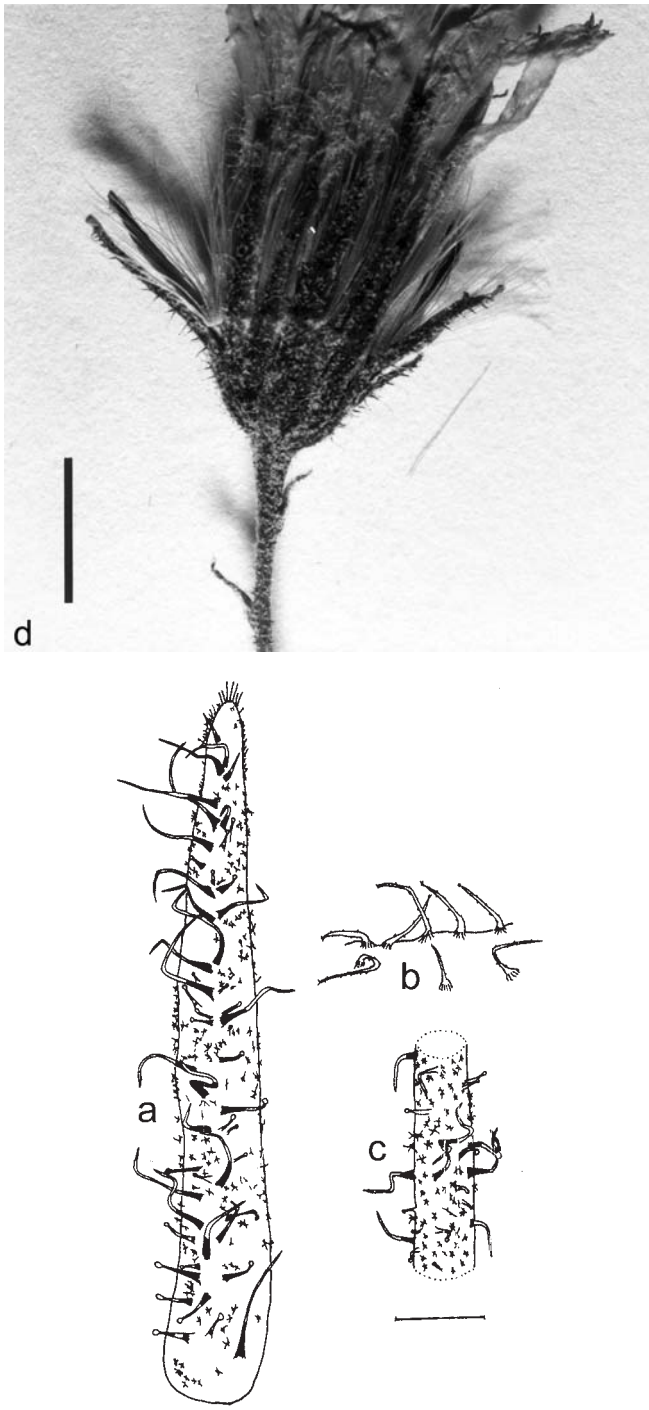

Fig. 6. *Hieracium spodocephalum* – a: phyllary; b: leaf margin; c: peduncle; d: capitulum. – Scale bar: a-c = 1 mm, d = 5 mm; from the isotype (herb. Gottschlich).

Fig. 7. *Hieracium polygonifolium* – isotype (herb. Gottschlich).

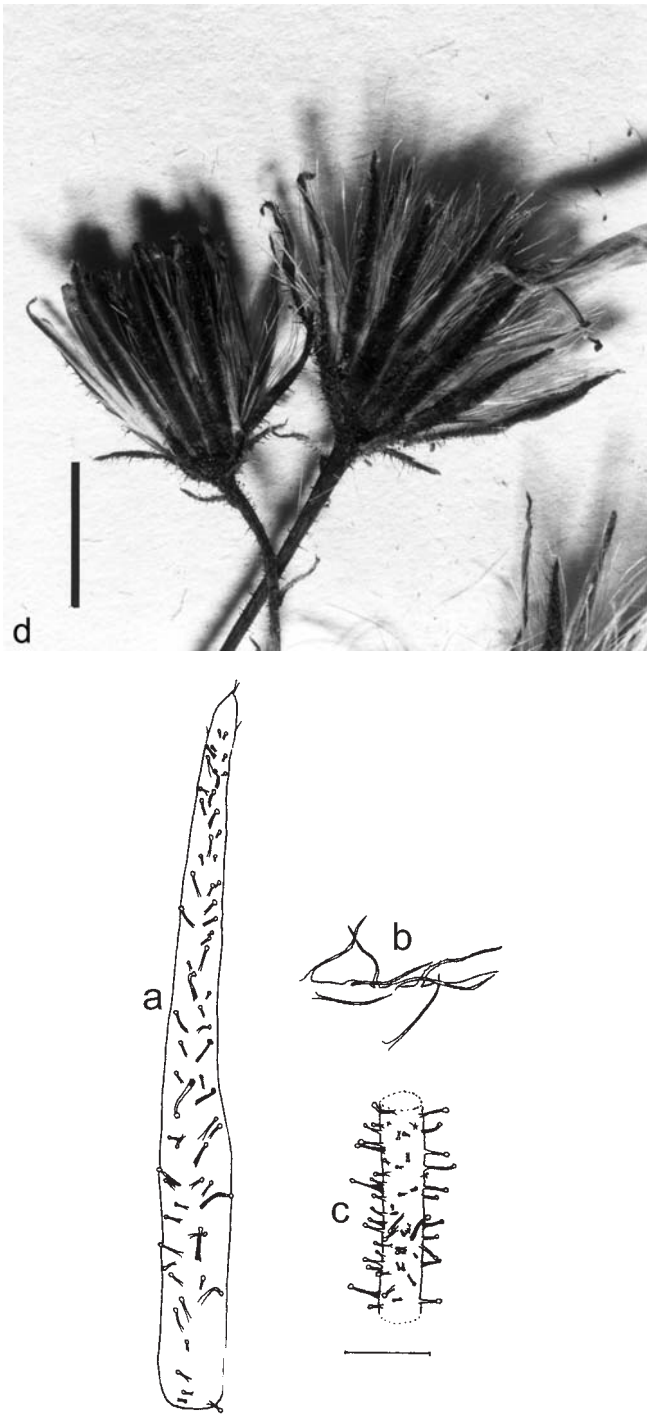

Fig. 8. *Hieracium polygonifolium* – a: phyllary; b: leaf margin; c: peduncle; d: capitulum. – Scale bar: a-c = 1 mm, d = 5 mm; from the isotype (herb. Gottschlich).