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Personalities of Russian amateur botany, 2. Alexander Mikhailovich Polilov (1869–?), a forgotten plant collector in Russian Lapland, and his collection of *Hieracium pasense*

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Alexander Polilov collected many zoological and botanical specimens during his service as a medical doctor for the Arctic Ocean Hydrographic Expedition (1898–1915). Basic details of Polilov's biography are presented. His botanical collections originated from the Kola Peninsula and are housed at LE. On the basis of a specimen collected by Polilov, *Hieracium pasense* was described as new to science from the north-western part of Murmansk Region, Russia. This species is related to *H. gemellum* from Sweden and is distributed in a small area between Kirkenes (Sør-Varanger, Norway) and Vichany Bay (Murmansk Region, Russia); its presence in Norway is documented with herbarium specimens at H. *Hieracium eurofinmarkicum* (as a synonym) and the Russian occurrence of *H. gracilentipes* (misidentification) are included into this species here, with an updated description and a distribution map. A lectotype of *Hieracium gemellum* subsp. *eurofinmarkicum* is designated. On the basis of its limited distribution area, the conservation status of the species is assessed as Endangered.

Introduction

Among plant collectors, there can be people who were well-known in their own professional field but otherwise made no contribution to botanical science. After their times, such persons may become forgotten by the next generation of botanists. This seems to be the case of Polilov, a plant collector in the Russian Arctic who has been known only from his herbarium labels and who has been cited only by his family name.

With the present contribution, I would like to uncover some basic details of Polilov's biography and professional activity, to inform the botanical public of his contribution to the science. A variety of available sources has been used for the purpose.

On the occasion, a plant specimen that was collected by Polilov and became the type of a plant species name (*Hieracium pasense* Üksip) was analysed, and the identity, taxonomy and nomenclature of the species was studied. This contributes to the taxonomy of *Hieracium* L. in East Fennoscandia.

Brief biography of Alexander Polilov and his botanical collections

Alexander Mikhailovich Polilov was born in 1869 to a noble family in Nizhny Novgorod Region, Russian Empire (Rupasov 2017). He received primary education in the Nizhny Novgorod Institute for nobility (gymnasium). In 1889–1893 Polilov studied natural sciences in the Saint-Petersburg Imperial University; in 1893–1897 he continued professional education in the Imperial Military Medical Academy in Saint-Petersburg, which he finished cum laude. During his studies, Polilov specialised in physiology and experimental pathology.

Polilov started his carrier as a military doctor in 1897, when he was appointed as an assistant to an infantry regiment, and then to a military hospital in Bryansk. In 1899 Polilov became a resident physician at the Navy Hospital in Kronstadt (now part of Saint-Petersburg). He served for the Naval Ministry of the Russian Empire until the end of his professional activities. Polilov (1903) defended his doctoral dissertation in medicine on the influence of white electric light on the blood composition, temperature and skin sensitivity of healthy humans.

The Main Hydrographic Office of the Admiralty, the Naval Ministry in the Russian Empire, established the first Arctic Ocean Hydrographic Expedition (1898–1906), which continued as the second Expedition in 1910–1915. Polilov served as a medical doctor in those expeditions since their beginning, and travelled on the ship ”Pakhtusov” in the Barents Sea and Kara Sea. Besides medical duties, Polilov also made meteorological, hydrological and medical observations, which were published separately in several booklets (e.g. Polilov 1906). He was responsible for collection of zoological objects, which were delivered to the Zoological Museum of the Russian Academy of Sciences (Smirnov 2011). Those collections were specifically requested by the Museum in 1908; they were accurately and precisely labelled and were used in faunistic studies (Smirnov 2011).

Besides animals, during the last years of the expeditions Polilov also collected plants. His plant specimens were sent to the Imperial Botanical Garden in Saint-Petersburg, probably straight after the expeditions. In 1931 the Garden's collections became part of LE, Herbarium of the Komarov Botanical Institute, in which they are kept now. Polilov's botanical collections seem to have originated from present-day Murmansk Region, along the Western Murman Coast (from the Paz River in the west up to the Kola Bay in the east, close to the shore line). Although Polilov's collections were rather numerous, his first name was not spelled out on herbarium labels, and later botanists cited his specimens by his family name only (e.g. Semenova-Tian-Shanskaya 1959). This resulted in a certain level of obscurity that is currently associated with Polilov's name in botany.

The last years of Polilov are unknown. He served as a deputy head physician in Kronstadt until 1922. Following the Kronstadt rebellion of 1921, in the spring and summer of 1922 many permanent inhabitants of Kronstadt were expelled by bolsheviks as potentially dangerous to their regime. On 6 June of 1922 Polilov was reported to the authorities as a person of noble origin who openly disagrees with communist ideas. The report was approved and Polilov was expelled from Kronstadt. I can only guess that, as it was common in those times, after losing the job he was unable to find another decent employment and most likely was finally executed under secret circumstances. No major public source recorded the year of his death, including the Russian National Library.

Polilov was well known for his contributions to science. He was a member of the Arkhangelsk Society for Studies in the Russian North (Doikov 2008). There is a small island in the Arctic Sea (70.21° N, 58.34° E, between the Novaya Zemlya Archipelago and the Vaigach Island) named in 1901 after Polilov by Captain Alexander Varnek (Varnek 1902).

As far as I know, the botanical collections of Polilov have never been discussed separately in literature. By chance one of his specimens became a type of one species name, and is discussed in detail below.

Taxonomic treatment of *Hieracium pasense* Üksip, based on a specimen collected by Polilov

Hieracium pasense Üksip in Bot. Not. (Leningrad) 19: 501. 1959; Üksip 1960: 278; Schljakov 1966: 284; Schljakov 1989: 237.

Type (Fig. 1): Russia. Murmansk Region. Lps. Paz River on the way from the church of Boris & Gleb to the waterfall, 12/25.08.1912, A.M. Polilov (holotype LE).

= *Hieracium gemellum* subsp. *eurofinmarkicum* Norrl. in Cajander, Melan Suomen Kasvio (ed. 5): 738. 1906. ≡ *Hieracium carpathicum* subsp. *gemellum* var. *eurofinmarkicum* (Norrl.) Zahn in Engler, Pflanzenreich 77: 813. 1921. ≡ *Hieracium eurofinmarkicum* (Norrl.) Schljak. in Pojarkova, Fl. Murmansk Region 5: 286. 1966; Schljakov 1989: 238. – *Hieracium eurofinmarkicum* Norrl., Hier. Exs. 8: ind. 1906, nom. nud. – *Hieracium* [sp. non indic.] subsp. *eurofinmarkicum* Norrl., Hier. Exs. 8: No. 96. 1906, nom. nud.

Type (Fig. 2): Russia. Murmansk Region. Lps. "Petjenga [Pechenga] ad pag. Knäschuscha [Knyazhukha, also Näsykkä, now part of Pechenga Village], in monte", 26.08.1899, C.W. Fontell [Norrlin, Hieracia Exsiccata 8: No. 96] (lectotype H, designated here; isolectotypes H, LE, S).

– *Hieracium gracilentipes* auct. non (Dahlst.) Dahlst.: Schljakov 1989: 237.

Stems usually single, 40–60 cm high, with numerous pale thin simple hairs 3 mm long in basal part and dark-based or blackish stiff simple hairs 1–1.5 mm in apical part, finely stellate mostly in apical part, with minute glandular hairs ca. 0.2 mm long within and under synflorescence. Plants arosulate, with 1–3 basal leaves persisting until anthesis. Basal leaves pseudo-rosulate, lanceolate to oblong-lanceolate, cuneate, subobtuse, minutely dentate or crenate. Cauline leaves 4–8, sparse, rather dark-green above, pale-green below; lower leaves lanceolate to rhombic-lanceolate, gradually attenuated into a winged petiole, subacute, narrowly cuneate, subentire or minutely denticulate; middle leaves 5–8 cm long, 1.5–2.5 cm wide, usually panduriform, variously constricted near base, very narrowly auriculate, acute, usually minutely to distinctly denticulate; upper leaves lanceolate-ovate, acute, rotund at base; upper and lower surfaces with scattered simple and stellate hairs. Synflorescence with 3–5 or more heads, in a compact corymb or with additional branches; branches often short, sometimes abbreviated, with scattered to rather dense black glandular hairs 0.3–0.4 mm long (Fig. 3d), rarely also with a few stiff dark-based simple hairs, densely stellate. Capitula cupuliform. Phyllaries (Fig. 3a) 7.5–9 mm long, 1–1.3 mm wide, dark-grey or blackish to black, broadly oblong to triangular, subacute to subobtuse (outermost ones up to broadly triangular), broadly covered (except for rather wide margins) with sparse to dense thin black glandular hairs 0.3–0.7(1) mm long (Fig. 3b) and usually solitary to rare black-based to black simple hairs up to 1 mm long, with very rare or almost absent stellate hairs on surface, apically with inconspicuous ornamentation of very short ciliae (Fig. 3c). Styles with dark spines. Ligulae eciliate. Achenes unknown.

Distribution (Fig. 4). Russia (Murmansk Region, Pechenga District and Zaozersk Closed Town), Norway (Sør-Varanger). Biogeographic provinces (Suomen Hyönteistieteellinen Seura 1938; Jonsell 2004): ØFi (Norway); Lps, Lt (Russia). The known distribution area is ca. 120 km in diameter.

Distribution notes: Greuter (2006+) recorded *H. pasense* as endemic to Russia and *H. eurofinmarkicum* as present in Russia and Finland, whereas Schljakov (1966, 1989) reported both species from Norway ("northeast Scandinavia") but not from Finland. The Finnish record in Greuter (2006+) was based on the misinterpreted reference to Norrlin (1906b) that was borrowed from Zahn (1921). Norrlin (1906b) made no record of *H. gemellum* subsp. *eurofinmarkicum* from Finnish Lapland, and the presence of this taxon in Finland is not documented by herbarium specimens. Schljakov's reports of the species from Norway are confirmed with specimens at H, previously unpublished.

According to the distributional data available, the species has been assessed for the level of possible protection measures using the GeoCat tools (http://geocat.kew.org). Although there is no information on any significant decline in its abundance or distribution, the limited distribution area (extent of occurrence 2 700 000 km^2, area of occupancy 24 000 km^2) suggests that the species may be Endangered.

Other specimens examined (Sennikov 2019). Russia. Murmansk Region. Pechenga District. Lps. Köngäs [Bo-

Figure 1. Holotype of *Hieracium pasense* Üksip.

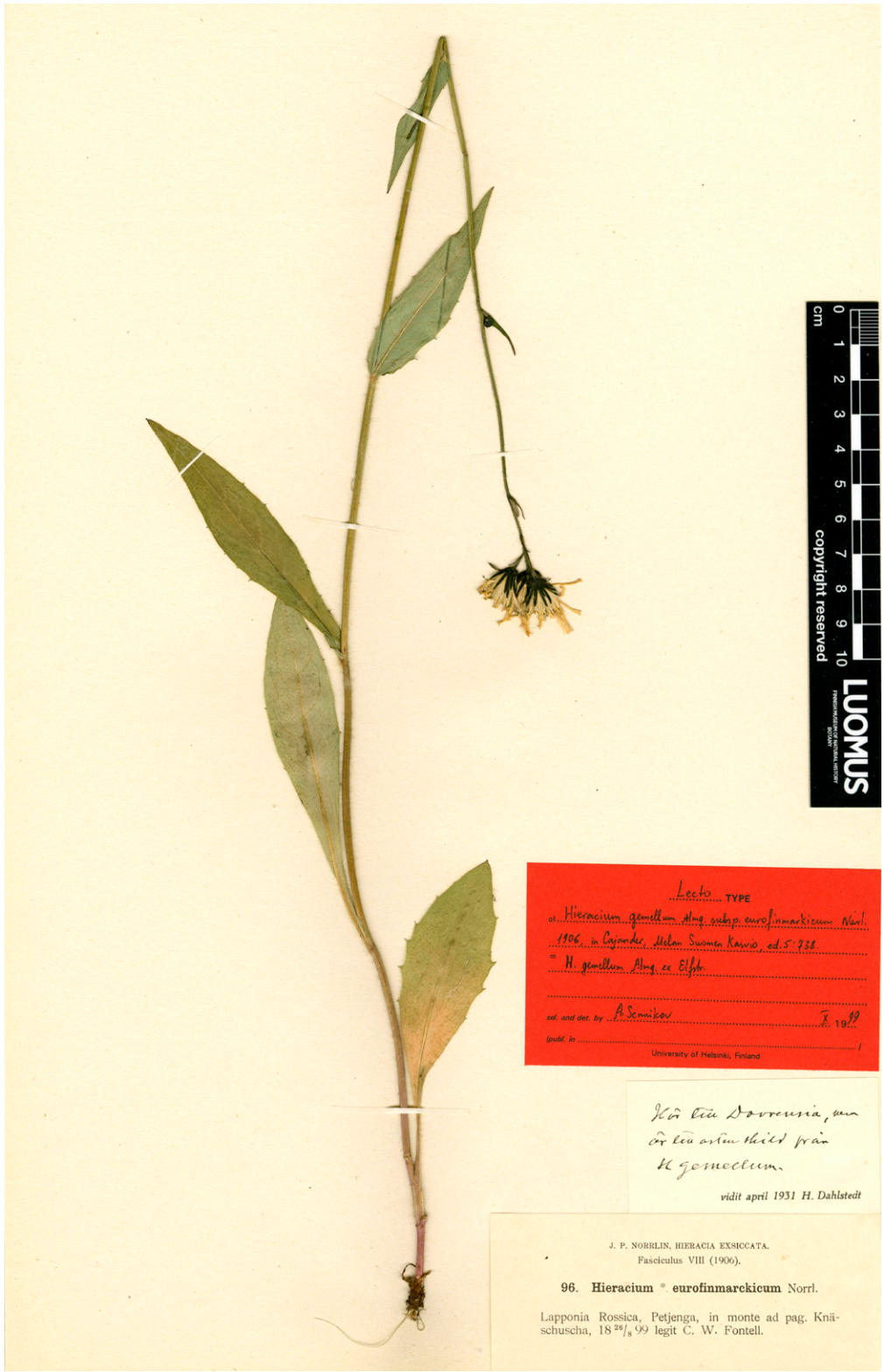

Figure 2. Holotype of *Hieracium gemellum* subsp. *eurofinmarkicum* Norrl.

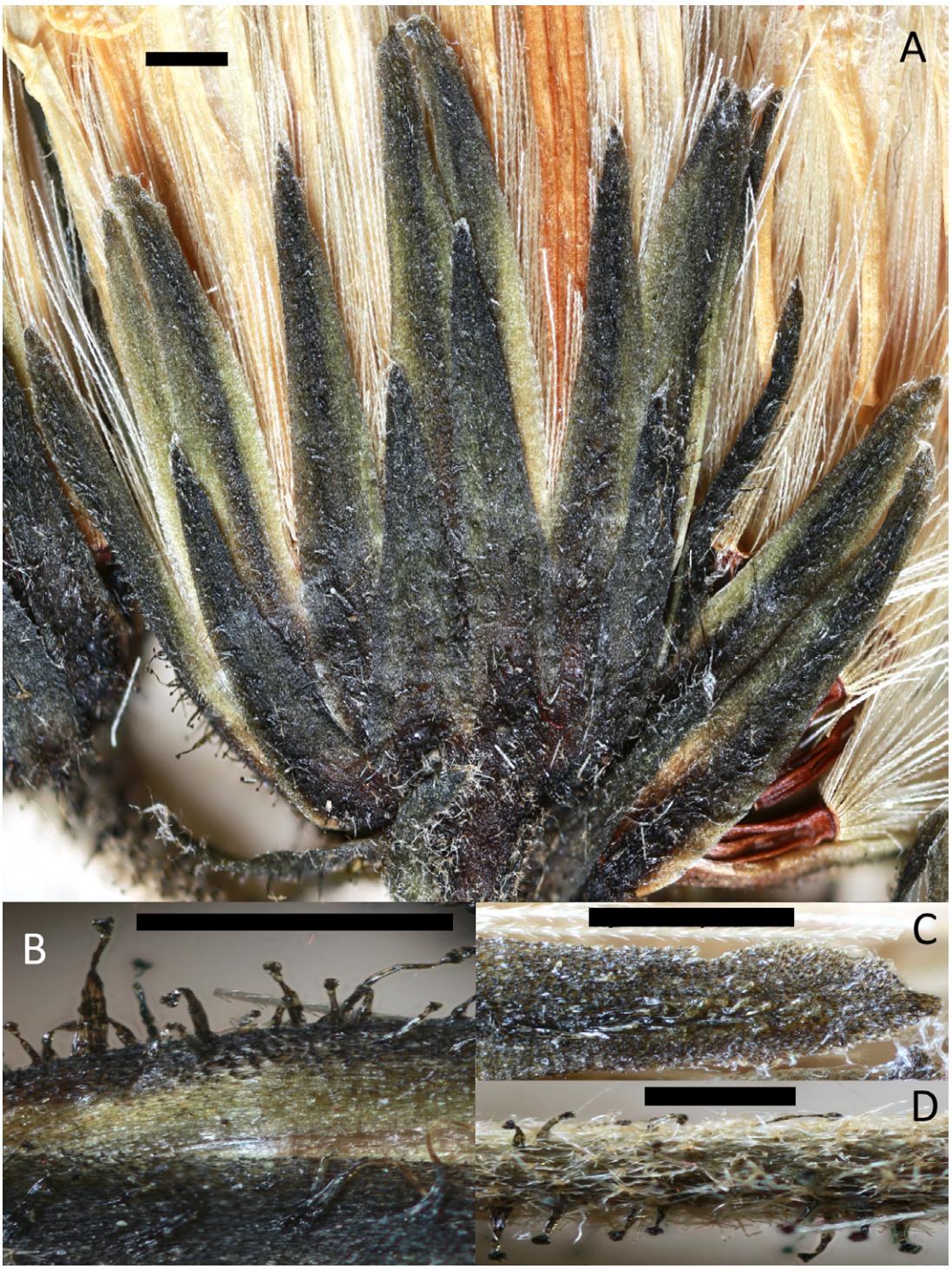

Figure 3. Flowering head of *Hieracium pasense*.
A. Complete head. B. Lower part of a phyllary. C. Apical part of a phyllary. D. Synflorescence branch. Scales: 1 mm. Based on the isotype at H.

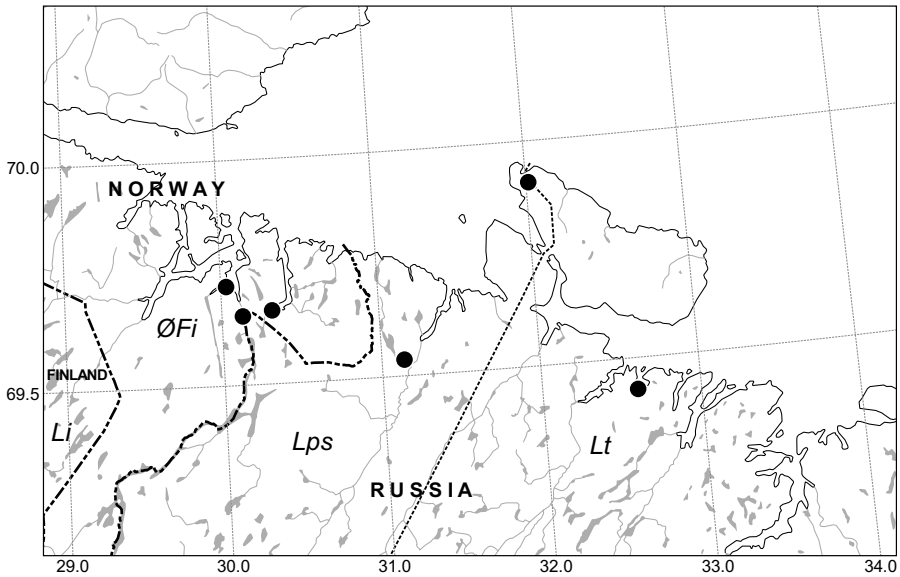

Figure 4. Distribution of *Hieracium pasense*.

risoglebskaya], 18.07.1878, E. Wainio (H, TUR); Borisoglebski, meadow forest 0.5 km south of the church, 25.08.1998, T. Alm & A. Often (TROM 126991); Kervanto [S of Vaida-Guba], 21.07.1937, U. Saxén (H). Zaozersk Closed Town. Lt. Vichany Bay, margin of seashore meadow, 27.08.1958, N.I. Orlova, E.G. Chernov, A.F. Svezhenina 575 (LE, ex KPBG). — Norway. Sør-Varanger. ØFi. "Betesmark vid Jarfjorden", 15.08.1899, C.W. Fontell (H); Kirkenes, 10.09.1899, C.W. Fontell (H).

Ecology. River sides, meadows, various open places.

Taxonomic notes. This was originally the first taxon described in the *Dovrensia*-group in East Fennoscandia; a few others were known at that time but not mentioned in the publication (Norrlin 1906b). It was described as a subspecies of *H. gemellum* Almq. ex Elfstr. from a few localities south of Varanger fiord, and later reduced to a variety when *H. gemellum* was treated as a subspecies of the broader *H. carpathicum* Bess. (Zahn 1921). Schljakov (1989) and Greuter (2006+) followed this taxonomic placement.

Although one original collection originated from the Russian territory and was distributed as exsiccata (Norrlin 1906a), this taxon was overlooked in the Flora of the USSR (Üksip 1960). Schljakov (1966) was the first to pick it up in floristic treatments after the original publication; he elevated the taxon to the species level as *H. eurofinmarkicum*. Since that, this species was accepted in Schljakov (1989) and Czerepanov (1995) until Sennikov (1999) reduced it back to *H. gemellum* under a broader species concept.

The species clearly differs from *H. gemellum* s.str. in the following features: middle cauline leaves narrow; phyllaries with absent to very few (vs. rare to sparse or rather frequent) simple hairs and almost absent to very few (vs. sparse to rather frequent) stellate hairs. This species grows on riverside meadows in Norwegian and Russian Lapland, whereas *H. gemellum* is a species of mountain birch forests in Sweden (Jemtland, Herjedalen).

While revising collections at LE for the treatment of *Hieracium* in the Flora of the USSR, Albert Üksip spotted a specimen collected by Polilov from the Paz River that was originally named *H. murorum* L.; this specimen had a few cauline leaves with a base that he interpreted as cuneate to rotund. Because of the largely lanceolate leaves and the numerous slender glandular hairs on the involucre, Üksip (1959) described this specimen as a new species, *H. pasense* Üksip, and compared it with *H. leptogrammum* Dahlst., a Swedish member of the Diaphanoidea-group (cf. Tyler 2010a). In his taxonomic treatment, Üksip (1960) classified the species in *H.* sect. *Vulgata* subsect. *Diaphanoides* "cycle" *Leptogramma* Üksip.

The original label of the type collection was corrupted in the protologue (Üksip 1959). Üksip was misled by the old spelling of the river, "Paza", and omitted the precise locality (the church of Boris & Gleb). Besides, he erroneously added that the plant was collected "in tundra" (Üksip 1959, 1960), whereas the actual label has no statement of ecology. As evident from later collections, the type locality should be characterised as forest meadow.

Schljakov (1966) realised that the broad phyllaries and basally constricted, narrowly auriculate cauline leaves of *H. pasense* do not allow its classification within *H.* sect. *Vulgata*. He correctly moved this arosulate plant to *H.* sect. *Alpestria* (Fr.) Burn. & Gremli, next to *H. eurofinmarkicum*. The alleged differences between these two species included the cauline leaves of *H. eurofinmarkicum* being more clearly rotund to auriculate at the base and very little toothed, whereas the leaves of *H. pasense* were said to be nearly non-auriculate and clearly dentate. This classification and differences were maintained in Schljakov (1989), and the species was accepted in Czerepanov (1995). So far, it has been treated as a local endemic.

Having checked the collection of *H. eurofinmarkicum* distributed in Norrlin (1906a), I can see a significant variation of the leaf width and clasping. Smaller plants in this collection have a very narrow leaf base and can hardly be distinguished from H. pasense in its type locality. The other diagnostic characters, including details of the indumentum on phyllaries and synflorescence branches, are completely identical and follow the same pattern of variability. The type localities of the two species are situated at the distance of 40 km. Norrlin in herbarium collections at H referred a specimen from the type locality of *H. pasense* to *H. eurofinmarkicum*, and I would confirm that these two names belong to the same taxon (cf. Sennikov 1999).

Besides the specimens of *H. eurofinmarkicum* and *H. pasense*, I refer to the same species the only specimen from the north-western part of Murmansk Region on which Schljakov (1966, 1989) grounded his report of *H. gracilentipes* (Dahlst.) Dahlst. (correct nomenclature from Tyler 2010b). *Hieracium gracilentipes* is based on material from central Sweden (Herjedalen), which regularly has remote but acute dentation of middle cauline leaves, which are rather narrowly oblong but clearly auriculate. Besides the leaf shape, it also differs in a greater number of simple and stellate hairs on the involucres. I consider the specimen referred to this species by Schljakov as a misidentification.

In Russia, *Hieracium pasense* is an Atlantic species. Its distribution is limited to the western shore of the Barents Sea, which is characterised by a high level of active temperatures (Isachenko 2001). These temperatures drop rapidly east of the Kola Bay, apparently precluding the occurrence of Atlantic plant species further east.

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