Typification of species of *Hieracium s. stricto* described by Norrlin from central Scandinavia

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Twenty-six names of taxa of *Hieracium* sections *Hieracium*, *Bifida* and *Vulgata* (Asteraceae) described by the Finnish author J.P. Norrlin based on material from central Sweden and adjacent Norway and originally published in 1888 are lectotypified, and their applications are discussed. The replacement name *H. cognatum* T. Tyler & Sennikov is proposed as a substitute for the illegitimate *H. propinquum* (Norrl. *ex* Hamb.) Johanss., *non* Sudre.

Introduction

The principles of what has been referred to as the 'North European' or 'Nordic' school of modern Hieracium taxonomy (as opposed to the school of K.H. Zahn followed by most central European authors; Haveman 2013) were first formulated by Almquist (1881) based on observations in a small area of southern Sweden. Shortly thereafter, similar principles were applied in other regions of southern Sweden by K.O.E. Stenström (e.g. Stenström 1889) and H. Dahlstedt (e.g. Dahlstedt 1893a) resulting in the description of hundreds of apomictic species. Only when these southern regions were considered relatively well explored were comparable investigations carried out in central (e.g. Johansson 1909, 1914) and northern Sweden (e.g. Folin 1928, 1942). However, simultaneously with these pioneering works in southern Sweden, J.P. Norrlin began to

investigate the *Hieracium* flora of Finland and already in 1886 he undertook a journey to the most easily accessible regions of central Sweden and adjacent Norway with the aim of finding out to what extent the taxa recognized by him in Finland could be found also in central and western Fennoscandia (Norrlin 1888a).

As no Swedish *Hieracium* expert had by then published anything on species found that far north, most of the taxa found and described by Norrlin from central Sweden (the province of Jämtland) were new to science. However, as is usually the case with pioneering works, the principles and standards of modern *Hieracium* taxonomy were not yet fully established in 1888, when Norrlin published his results. As a consequence, later Swedish authors found it somewhat difficult to interpret his descriptions and taxonomic system which resulted in considerable uncertainty in the application of his names. Although repre-

sentative specimens were distributed in *exsiccata*, the situation was further complicated by the fact that Norrlin brought his main collections back to Finland (now at H), where they were not readily accessible to the Swedish *Hieracium* experts who were mainly based in Stockholm (S). As evidenced by the determination strips on the sheets, the original collections in H from Swedish Jämtland made by Norrlin were not studied by any Swedish expert until the mid-1930s. By then, the first period of active *Hieracium* research in Sweden was already close to its end and its results had already been summarized in the nomenclatural and biogegraphical works of K. Johansson (e.g. Johansson 1923, 1926, 1927, 1929).

Thus, when we are now trying to revive the forgotten knowledge of the early Swedish *Hieracium* experts and carry on from where they stopped in the 1940s (Tyler 2004), again beginning in southern Sweden (Tyler 1998) but now approaching the central and northern parts of the country (e.g. Tyler 2008a & 2010), the need to solve all problems related to the taxa described from Jämtland by Norrlin has become increasingly urgent. In line with this, the aim of the present study was to designate lectotypes and ascertain and discuss the application of all names of *Hieracium* sections *Hieracium*, *Bifida* and *Vulgata* published by Norrlin (1888a) based on Swedish material (or reported from Sweden).

In the protologues for most of his new taxa, Norrlin (1888a) cited the numbers of representative specimens distributed almost simultaneously under the title of *Hieracia Exsiccata* (Norrlin 1888b). As those specimens were directly cited by the exsiccata numbers, they are syntypes (McNeill et al. 2012: Art. 9.5) and take priority in lectotypification over other elements of the original material, which may have been indicated by locality data but otherwise not cited in the protologues (Art. 9.12). The existence of numerous syntypes in the exsiccata means that typifications are generally straightforward, except when Norrlin distributed several gatherings (specimens of the same taxon, collected at different dates though in the same area) under the same number of the exsiccata. In such cases the identity and quality of the gatherings were carefully evaluated to assure that the most representative specimens are selected to match the

current application of the names concerned.

The identity of the designated lectotypes is verified against the current use of their respective names in Sweden (Johansson 1927, Tyler 2008a, 2010, and material in Swedish herbaria identified by e.g. H. Dahlstedt and K. Johansson). The nomenclature of the plant names published by Norrlin follows Sennikov (2002). The typified names are arranged in alphabetic order of legitimate (if present, or otherwise illegitimate) homotypic names at the rank of species.

Hieracium abbreviatum (Norrl. *ex* Hamb.) Johanss. (1927 p. 9)

BASIONYM: H. sylvaticum ssp. abbreviatum Norrl. ex Hamb. (1897: p. 115, nom.). — First described as H. [sp. non indic.] ssp. abbreviatum Norrl. (1888a: p. 91), nom. inval. — TYPE: Sweden. 'Suecia ad Storlien in letere montis subgraminoso. 14/7 86' (ex Norrl. Hierac. Exsiccata I: 109) in H! (lectotype, designated here).

Apparently, this species has not been recollected from the original locality after the original collection had been made, and today the area around Storlien is an intensively exploited skiing resort. In the original publication, the type locality is given more precisely as 'sluttningen ovanför nybygget' [= the slope above the new settlement], but it is unclear which settlement was considered new in 1886. As such, there is not much of a 'current usage' to rely on, but the species was accepted in the checklist of Johansson (1927) and the lectotype does not clearly belong to any well-known species.

H. adunans Norrl. (1895: p. 559)

Replaced synonym: *H. approximatum* Norrl. (1888a: p. 112), *nom. illeg.*, *non* Jord. (1848). — Type: Sweden. 'Suecia ad Åre 11/7 86, in clivo subgraminoso' (*ex* Norrl. Hierac. Exsiccata I: 140b) in H! (lectotype, designated here).

The lectotype consists of a fully developed specimen that fits the current application of the name.

H. aquilum Norrl. (1888a: p. 91)

Type: Sweden. 'Suecia ad Storlien in clivo graminoso saxoso, 15/7 86' (ex Norrl. Hierac. Exsiccata I: 108) in H! (lectotype, designated here).

The lectotype has somewhat paler simple hairs and a more prominent apical coma on the phyllaries than later collections referred to the same species, but otherwise it fits the current application of the name.

H. chlorellum Norrl. (1888a: p. 97)

Type: Finland. 'Ruokolaks, Vuoksenniska, loco aprico arenoso; 24/7 84; *Th. Saelan*' mounted on two separate sheets in H! (lectotype, designated here).

The protologue provided by Norrlin (1888a) is essentially a description of an aberrant (unnamed) form found in Norway ["possibly a separate variety"], but starts with a short diagnosis of a plant clearly considered as the typical form of the species by the author. The latter is stated to be "found in many places in Finland" (with reference to 'Herbarium Musei Fennici' authored by Saelan et al.) and a lectotype is here designated from this context. The identification of the lectotype has been confirmed by both H. Dahlstedt and A. Palmgren as indicated by separate labels on the sheets. As currently understood, H. chlorellum is a fairly variable species in particular with respect to the leaf dentation, which varies from relatively dense and sharp, sometimes ± dimorphous, to very coarse and uneven or even \pm sinuous. The lectotype belongs to a morphotype with sharp dentation of the leaves, but it has relatively abundant glandular trichomes on phyllaries and peduncles, making it clearly distinct from H. caesiiflorum Almq. ex Norrl. to which some other forms of H. chlorellum are superficially similar.

H. cognatum T. Tyler & Sennikov, nom. nov.

Replaced synonym: *H. sylvaticum* ssp. *propinquum* Norrl. *ex* Hamb. (1897: p. 118, *nom*.). — First described as *H*. [sp. non indic.] ssp. *propinquum* Norrl. (1888a: p. 95), *nom. inval.* — Homotypic synonym: *H. propinquum* (Norrl. *ex* Hamb.) Johanss. (1927: p. 41), *nom. illeg.*, *non* Sudre (1899). — Type: Norway. 'Norvegia ad Tyvold 21/7 86, loco saxoso' (*ex* Norrl. Hierac. Exsiccata I: 116a) in H! (lectotype, designated here).

The lectotype consists of two plants of which at least the right-hand-side one should be suf-

ficiently well developed to fix the application of the name. The name has only rarely been used since first coined and no later gatherings appear to exist. The lectotype defines a species superficially similar to H. praetenerum (Almq. ex Dahlst.) Dahlst., but clearly distinct by its broader leaves which are \pm evenly covered by ca. 0.6–0.8 mm long hairs (not glabrous as in H. praetenerum), straight short branches of the synflorescence (not strongly arcuate), relatively more abundant simple and stellate hairs on the phyllaries and very short ligules.

H. conspurcans Norrl. (1888a: p. 98)

TYPE: Sweden. 'Suecia ad Åre, 12/7 86, prope templum' (ex Norrl. Hierac. Exsiccata I: 118a) in H! (lectotype, designated here).

The lectotype consists of a fully developed specimen that fits the current application of the name.

H. constringens Norrl. (1889: p. 111)

Replaced synonym: *H. orarium* ssp. constrictum Norrl. (1888a: p. 108). — Type: Norway. 'Norvegia, ad Stören 24/7 86' (ex Norrl. Hierac. Exsiccata I: 132a) in H! (lectotype, designated here).

The lectotype consists of a somewhat meagre specimen with relatively narrow leaves and only three capitula, but otherwise fits the current application of this name.

H. cordigerum Dahlst. (1892 exs. I 9)

First described as H. [sp. non indic.] ssp. cordigerum Norrl. (1888a: p. 94), nom. inval. — Type: Sweden. 'Suecia ad Åre (locis diversis) /7 86', the specimen marked 'c' on the sheet, (ex Norrl. Hierac. Exsiccata I: 114c) in H! (lectotype, designated here).

Three specimens (four plants) marked 'a-c' are included in this *exsiccata* number and their collection data are only summarized on the printed label, but they apparently all belong to the same species and the specimen marked 'c' is best developed and therefore chosen as lectotype. Its leaves are slightly narrower than usual for this species, but otherwise the specimen fits the current application of the name.

H. cultratum Dahlst. (1892 exs. I: 112)

First described as H. [sp. non indic.] ssp. cultratum Norrl. (1888a: p. 92), nom. inval. — Type: Sweden. 'Suecia, Jemtland ad Storlien, 14/7 86' (ex Norrl. Hierac. Exsiccata I: 112) in H! (lectotype, designated here).

The lectotype consists of two plants, one of which is fully developed and fits the current application of this name.

H. diminuens (Norrl.) Norrl. (1889: p. 112)

Basionym: *H. murorum* ssp. *diminuens* Norrl. (1888a: p. 87). — Type: Sweden. 'Suecia ad Åre solo turfaceo juxta viam (locis diversis)/6 & 7 86', the right-hand-side plant on the sheet (*ex* Norrl. Hierac. Exsiccata I: 100) in H! (lectotype, designated here).

As indicated on the printed label, this *exsic-cata* number consists of several gatherings but they are not in any way separated on the sheets. Therefore, even if the plants appear almost identical, the right-hand-side specimen is specified as the lectotype here. The type has only faintly discoloured styles, phyllaries without simple hairs and ciliate ligules (characters that are variable within this species as currently circumscribed).

H. expallidum Norrl. (1888a: p. 89)

Type: Sweden. 'Suecia ad Åre in devexo graminoso 3/7 86' (ex Norrl. Hierac. Exsiccata I: 107) in H! (lectotype, designated here).

The lectotype consists of two well developed plants fully fitting the current application of this name.

H. fulvescens Norrl. (1888a: p. 101)

Type: Norway. 'Norvegia, Singsaas in clivo, 19/7 86' (ex Norrl. Hierac. Exsiccata I: 124) in H! (lectotype, designated here).

The lectotype consists of a fully developed specimen that fits well with the current application of the name.

H. fuscocinereum Norrl. (1888a: p. 92)

Type: Sweden. 'Suecia ad Storlien in clivo saxoso, 15/7 86' (ex Norrl. Hierac. Exsiccata I: 110) in H! (lectotype, designated here).

The lectotype consists of a somewhat meagre but otherwise well developed specimen that fits the current application of this name.

H. laceratum (Norrl. ex Hamb.) Norrl.

in Cajander (1906: p. 701), nom. illeg., non Jord. ex Boreau. — BASIONYM: H. sylvaticum ssp. laceratum Norrl. ex Hamb. (1897: p. 116, nom.). — First described as H. [sp. non indic.] ssp. laceratum Norrl. (1888a: p. 93), nom. inval. — Type: Sweden. 'Suecia ad Åre, 10/7 86' (ex Norrl. Hierac. Exsicata I: 113) in H! (lectotype, designated here).

This name has since long been considered a synonym of *H. pendulum* (Dahlst.) Dahlst. (1900) and the lectotype fits the current application of that latter name perfectly.

H. laetiflorum Prain (1921: p. 129)

First described as *H.* [*sp. non indic.*] ssp. *laetiflorum* Norrl. (1888a: p. 102), *nom. inval.* — Type: Sweden. 'Suecia, Åre, in prato macro humidiusculo juxta caespitem, 11/7 86' (*ex* Norrl. Hierac. Exsiccata I: 126) in H! (lectotype, designated here).

This name has since long been considered a synonym of *H. stenolepis* Lindeb. (1877) and the lectotype apparently consists of a modification of that species from relatively fertile habitats (i.e. with unusually large and well developed, deeply incised leaves). As *H. stenolepis* is particularly adapted to grow in exposed rocky habitats, individuals growing in more shaded and fertile situations are usually strongly modified and such plants have been the basis of several specific and infraspecific taxa, at least most of which in our opinion have no genetic basis.

H. longimanum (Norrl.) Dahlst. (1896, exs. X: 34)

emend. Johanss. (1927: p. 74). — Basionym: *H. caesium* var. *longimanum* Norrl. (1888a: p. 101). — Type: Sweden. 'Suecia, Åre, in devexo graminoso, 11/7 86' (ex Norrl. Hierac. Exsiccata I: 123a) in H! (lectotype, designated here).

The lectotype consists of a well developed specimen that fits the current application of this name.

H. maculiferum (Norrl.) Dahlst. (1893b exs. IV: 31)

BASIONYM: H. caesium var. maculiferum Norrl. (1888a: p.

100). — Type: Sweden. 'Suecia ad Åre, in prato subhumido macro, 11/7 86' (ex Norrl. Hierac. Exsiccata I: 120b) in H! (lectotype, designated here).

The lectotype consists of a well developed specimen that fits the current application of this name.

H. melanolepis (Almq. *ex* Norrl.) Norrl. (1888b exs. I: 103)

BASIONYM: *H. murorum* ssp. *melanolepis* Almq. *ex* Norrl. (1888a: p. 87). — TYPE: Sweden. 'Suecia, ad Storlien loco nemoroso fertiliore, 15/7 86' (*ex* Norrl. Hierac. Exsiccata I: 103a) in H! (lectotype, designated here).

The epithet melanolepis was first introduced by Norrlin (1888a) for a subspecies of H. murorum but it was given the rank of species in the almost simultaneously published and crossreferenced exsiccata (Norrlin 1888b). In both places it is ascribed to 'Almqv. descr.', but it is not clear to which of the numbered but unnamed taxa described by Almquist (1881) this reference points, particularly since H. pellucidum Laest. (1824), to which H. melanolepis since long has been considered a synonym, was also accepted by Norrlin (1888a) with a dubious reference to Almquist. Anyway, the lectotype specimen for H. melanolepis (as well as other specimens distributed by Norrlin in his exsiccata) clearly belong to H. pellucidum as evidenced by the shape of the leaves and the very small capitula with short and dark phyllaries densely covered by moderatelylong black glandular hairs and sparse but consipcuous stellate hairs along the margins.

H. oligophyllum Norrl. (1888a: p. 107)

TYPE: Sweden. 'Suecia ad Åre in devexo prati, 2/7 86' (ex Norrl. Hierac. Exsiccata I: 130) in H! (lectotype, designated here).

The lectotype consists of two well developed plants that fit the current application of this name.

H. prolixum Norrl. (1888a: p. 94)

Type: Sweden. 'Suecia ad Åre in clivo saxoso, 2/7 86' (ex Norrl. Hierac. Exsiccata I: 115a) in H! (lectotype, designated here).

The lectotype consists of a well developed specimen that fits the current application of this name

H. rubiginans Norrl. (1888a: p. 99)

Type: Sweden. 'Suecia ad Åre 8–12/7 86' (ex Norrl. Hierac. Exsiccata I: 119b) in H! (lectotype, designated here).

As indicated by its label, this *exsiccata* number consists of several gatherings and the collection data is only summarized on the printed label. Therefore, the specimen marked 'b' on the sheet, which is best developed, is specified as the lectotype.

H. scalenum (Norrl.) Omang (1910: p. 77)

BASIONYM: *H. fuscocinereum* ssp. *scalenum* Norrl. (1888a: p. 92). — Type: Sweden. 'Suecia ad Storlien in clivis diversis, 15/7 86' (*ex* Norrl. Hierac. Exsiccata I: 111) in H! (lectotype, designated here).

The lectotype consists of two plants, one of which is well developed; both fit the current application of this name.

H. storliense Norrl. (1888a: p. 105)

Type: Sweden. 'Suecia, Jemtl. ad Storlien, 15/7 86, in clivo saxoso fertiliore' (*ex* Norrl. Hierac. Exsiccata I: 128b) in H! (lectotype, designated here).

The exsiccata number comprises two gatherings denoted 'a' and 'b' and the latter specimen is clearly best developed and thus designated as lectotype. Both gatherings fit the current application of the name and does not differ significantly from the later described *H. storliense* var. pseudostorliense (Johanss.) Johanss. and var. similistorliense Folin making the recognition of varieties of this species unnecessary.

H. subalpestre Norrl. (1888a: p. 111)

Type: Sweden. 'Suecia ad Åre in devexis sat graminosis, 2 & 9/7 86' (ex Norrl. Hierac. Exsiccata I: 139b) in H! (lectotype, designated here).

As indicated by the printed label, this *exsic*cata number comprises several gatherings and the collection data is only summarized on the label, but the specimen marked 'b' on this sheet is clearly best developed and thus specified as the lectotype.

H. subpellucidum Norrl. (1888b index)

First described as *H.* [sp. non indic.] ssp. subpellucidum Norrl. (1888a: p. 104), non. inval. — Type: Sweden. 'Suecia, Åre (e locis diversis)/7 86' (ex Norrl. Hierac. Exsiccata I: 127), the right-hand specimen on this sheet in H! (lectotype, designated here).

As indicated by the printed label, this *exsic-cata* number comprises several gatherings and the collection data is only summarized on the label, but the specimens are not marked separately on the sheet. The lectotype specimen to the right fits the current application of this name, while we are more uncertain about the specimen mounted to the left (which has an imperfectly developed synflorescence with unusually numerous simple hairs on the peduncles).

H. tenebrosum Norrl. (1888a: p. 106)

Type: Norway. 'Norvegia ad Singsaas, 18/7 86' (ex Norrl. Hierac. Exsiccata I: 129) in H! (lectotype, designated here).

This name has since long been considered a synonym of *H. diaphanoides* Lindeb. (1882). The lectotype consists of two relatively meagre plants with few and narrow leaves and smallish capitula, but the broad and very broadly obtuse median phyllaries covered by long and dark glandular trichomes and only few stellate trichomes indicate that the identification with *H. diaphanoides* is correct, as do the somewhat arching synflorescence branches and the conspicuous stellate indumentum on the lower side of the cauline leaves. For further discussion about the variability of *H. diaphanoides* and closely related species *see* Tyler (2008b).

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