Ann. Bot. Fennici 44: 204–212 ISSN 0003-3847
Helsinki 20 June 2007

"*Hieracium sublividum*" (Asteraceae) — more than one species

Torbjörn Tyler

Department of Ecology, Plant Ecology and Systematics, Sölvegatan 37, SE-223 62 Lund, Sweden (e-mail: torbjorn.tyler@ekol.lu.se)

Received 19 Jan. 2006, revised version received 11 Oct. 2006, accepted 8 Nov. 2006

Tyler, T. 2007: "*Hieracium sublividum*" (Asteraceae) — more than one species. — *Ann. Bot. Fennici* 44: 204–212.

The material in Swedish herbaria previously identified as *Hieracium sublividum* (Dahlst.) Johanss. was revised using both the traditional taxonomical approach and PCA analysis based on 44 morphological characters. Only about half of the specimens did belong to *H. sublividum s. stricto* (known from the provinces Småland, Öland and Östergötland). Three new species were revealed and are described anew as *H. askii* T. Tyler (from Småland), *H. emblae* T. Tyler (from Gotland) and *H. hangvarense* T. Tyler (from Gotland). The characteristics of all four accepted species are described, illustrated and discussed.

Introduction

When a taxon is poorly understood, or originally confused, it very easily becomes a 'rubbish bin' for various kinds of misunderstood and/or very rare morphotypes. Once some authority has identified a number of more or less deviating specimens as belonging to a certain taxon it becomes too easy to continue to throw all sorts of deviating specimens into that already apparently very variable taxon. *Hieracium sublividum* (Dahlst.) Johanss. appears to have been such a confused taxon, to which several authors, including myself, have tended to refer specimens that could not easily be referred to any better-known species.

When first describing this taxon, Dahlstedt (1893) included mainly a number of specimens from the southern part of the province of Östergötland, but he also mentioned a few specimens from neighbouring Småland and from the Baltic island of Gotland. Later, both Dahlstedt and the eminent hieraciologist Karl Johansson identified additional specimens from these provinces as belonging to this species, even though it is apparent from various determination-strips in the herbaria that at least Johansson had some doubts concerning the homogeneity of the material.

In my very first publication on *Hieracium* (Tyler 1998), the description of the indument and capitula of *H. sublividum* was mainly based on the original material of the species (from the province of Östergötland). However, since those duplicates of the original material that were then available to me (in LD) had poorly developed leaves, I chose to describe and illustrate the leaves from material from the island of Gotland. When I returned to this species for the treatment of the hawkweeds of Gotland (Tyler 2002), I carried with me this 'hybrid description' and since I then concentrated on that province and had no reason to carefully compare the material from

Gotland with that from mainland Sweden, I did not fully understand the difference between the forms and resticted myself to a vague statement that '*the material from Gotland has a rather deviating leaf shape as compared with material from the mainland* [...] *but I have not found any more sturdy diagnostic differences*' (Tyler 2002, translated from the Swedish original). Later on, I occasionally identified modern gatherings as *H. sublividum* but I have always hesitated and felt somewhat ashamed for that I have not been able to really understand the species. Quite some time ago, I realised that the material from Gotland ought to be separated as a species of its own, but it was not until recently that I understood that this case was even more complicated and that it would need to be the topic of a separate study.

Outside Sweden, *H. sublividum* has been recognized in the Baltic countries, but the material from there is of dubious identity and will be critically revised by A. Sennikov (pers. comm.)

Material and methods

All material kept as *H. sublividum* in the herbaria LD and S was gathered for the present study; altogether about 60 sheets. There should be some additional specimen of this species in UPS, but as far as I know those are only duplicates of gatherings also kept in LD and S. Apart from simply scrutinizing these specimens and making taxonomic inferences by the traditional inductive method, I decided to use the set of characters developed by Tyler (2006, based on Tyler 2004; with some modification of the character states to fit the present material) to get a more objective description of the variation. The characters are 44 in total but only 34 of them were variable in the present material. All characters were coded for at least one specimen from each site where '*H. sublividum*' had been collected and the resultant data matrix was subjected to Principal Component Analysis (PCA). Included in the data matrix were also comparable data from an idealized specimen (i.e. based on means for several specimen) of 11 additional species that are known from southern Sweden and which could possibly have been confused with *H. sublividum* (i.e. *H. acidotum*, *H. albiduliforme*, *H. albidulum*, *H. canitiosum*, *H. chlorellum*, *H. helenae*, *H. juelii*, *H. molybdinum*, *H. praviforme*, *H. scandinaviorum* and *H. sinuosifrons*). The PCA was carried out in the program PAST (Hammer *et al*. 2005).

Results

The result of the PCA analysis (scattergram of the first three components) is shown in Fig. 1. The first three components explained 22%, 14% and 9% of the total variation in the data set, respectively. The most influential characters (i.e. with the highest loadings) were the relative width of the leaves, the shape of the leaf base, the amount of stellate hairs on the stem leaf, the number of glandular hairs on the phyllaries, the length of the simple hairs on the phyllaries, the number of glandular hairs on the peduncles, the pigmentation of the styles, and the length of the acladium. From this analysis it is apparent that the specimens previously lumped into '*H. sublividum*' do not represent a single homogenous entity. To the contrary, most of them rather fall into three or four distinct groups and several of the better-known species are placed in between these groups giving an indication of the relative distinctness and separation of the former (Fig. 1).

Discussion

Most of the specimens previously referred to *H. sublividum* fell into one of three distinct groups in the PCA scattergram (Fig. 1). One of these groups, containing the type of *H. sublividum*, consisted of specimens from the province of Småland, southernmost Östergötland and northernmost Öland. Another group consisted of specimens from Oskarshamn and the nearby parishes in easternmost Småland, and the third group contained all specimens from the island of Gotland. On closer inspection, the latter group consist of two subgroups, mainly separated along the third PCA component. When I returned to the actual specimens, these four groups turned out to represent four clearly different taxa (*see* below).

Also in the PCA scattergram, the idealized specimen of the 11 better-known species was arranged partly in-between the four different

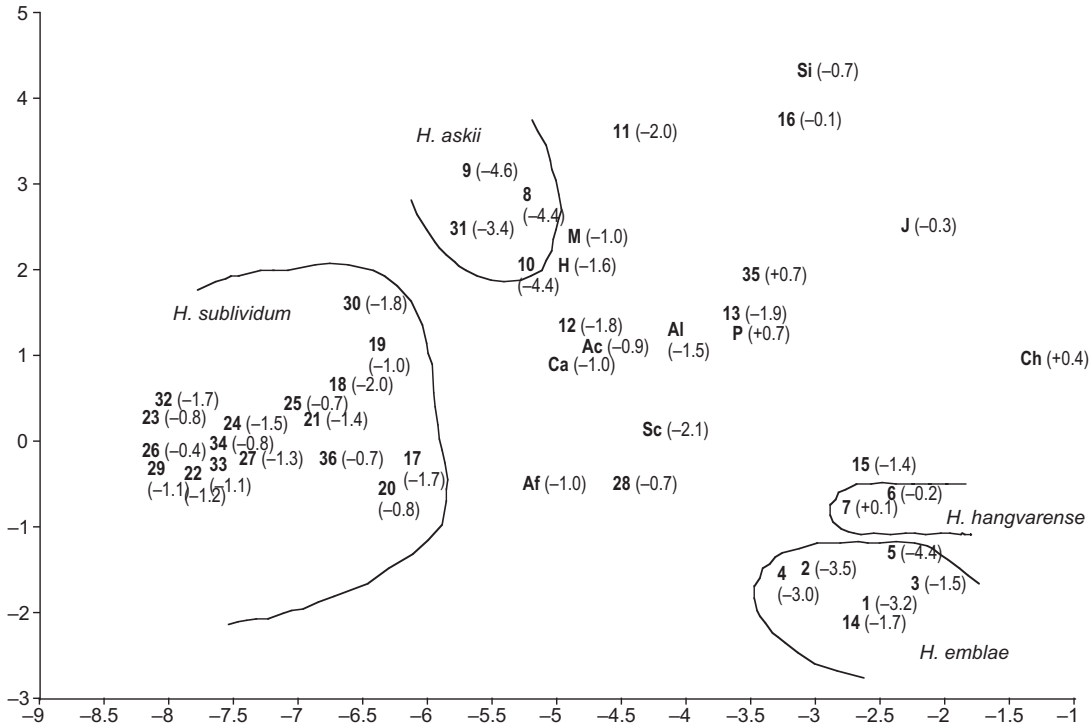

Fig. 1. PCA scatterplot based on 34 variable morphological characters showing the distribution along the three first PCA components of selected specimen previously referred to *Hieracium sublividum* (denoted by numbers in bold referring to the list of examined specimen). Lowercase values indicate the position of the specimen along the third PCA component. The distribution of specimen here referred to *H. sublividum s. stricto* and the new species *H. askii*, *H. emblae*, and *H. hangvarense* is indicated. Included in the analysis were also idealized specimen of 11 additional species. Ac = *H. acidotum*, Af = *H. albiduliforme*, Al = *H. albidulum*, Ca = *H. canitiosum*, Ch = *H. chlorellum*, H = *H. helenae*, J = *H. juelii*, M = *H. molybdinum*, P = *H. praviforme*, Sc = *H. scandinaviorum* and Si = H. *sinuosifrons*.

'*sublividum*' groups, partly well oustide the area occupied by those. Placed among the 11 species were some occasional specimens previously referred to *H. sublividum*, but, most importantly, none of the 11 species clustered within, or even close to, the areas occupied by the four main '*sublividum*' groups, indicating that these do indeed represent distinct species.

The impression from the PCA scatterplot that some of the 11 reference species are more closely similar than some specimens here referred to *H. sublividum s. stricto* is probably an artifact due to the sampling of specimens and the fact that the reference species are represented by 'idealized specimen', from which most of the environmentally induced variation has been removed. In PCA analyses, inclusion of a relatively large number of specimens belonging to *H. sublividum* will result in that relatively more weight is put on the characters separating these specimens than on the characters separating the relatively few specimens representing other taxa.

Of the few '*sublividum*' specimens that did not fall into any of the four main groups, some were on closer inspection referable to other species, two appear to represent a distinct but, as far as known, extremely local taxon, and some are best treated as single aberrant or poorly conserved specimens (*see* below).

Taxonomic implications

The four distinct species, three of which are new, revealed by the present study are described and discussed below. All investigated specimens are listed and those included in the statistical analysis are indicated with numbers set in boldface.

H. sublividum (Dahlst.) Johanss. (Fig. 2)

BASIONYM: *H. silvaticum* ssp. *sublividum* Dahlst. (1893a: p. 49). — LECTOTYPE (Tyler 2000): 27. 'Suecia: Östergötland in prato macro humidiusculo ad Stora Kullen paroeciae Svanshals, 23/6 1884' (*ex* H. Dahlstedt, Hieracia Exsiccata I 42, S; isolectotype LD).

Basal leaves almost always violet below and with violet petioles but never spotted, glabrous above, elliptic-narrowly ovate (2.7–3.3 times longer than wide), truncate or more often ± asymetrically hastate at base, usually with conspiciouosly enlarged basal teeth, deeply (20%–30% of leaf width) but usually very irregularily dentate with relatively distantly set, partly narrowly triangular–subulate, partly coarse and ± mammiform teeth, usually with occational smaller teeth irregularily placed inbetween the major teeth, without or with single teeth-like appendages on the petiole (Fig. 2). Cauline leaves 0–1, glabrous above, without or with ± sparse stellate hairs below. Synflorescence almost simple with straight or slightly arcuate branches and 1.5–3.5 cm long acladium. Peduncles with sparse–numerous simple hairs (5–20 per cm) but no or solitary glandular hairs. Phyllaries on secondary capitula 11.5–13.5 mm long, ca. 0.8 mm wide at the middle, with rather short but ± subulate apex, covered with solitary–few (< 10 per phyllary), short blackish glandular hairs, abundant (ca. 35 per phyllary), moderately long (1.0–1.5 mm) simple hairs that are translucent from below the middle and very abundant stellate tomentum that is dispersed ± throughout the phyllaries but commonly most abundant in the basal half, at apex with a consipious tuft of minute hairs. Styles densly dotted–blackish when dry. Ligules glabrous at apex.

ACCEPTED SPECIMENS: Småland: **32**. 'Almesåkra. Grödeberg, nedom prästg., 1/7 1925; Leg. *G. Haglund*' (S). — **33**. 'Småland: Nässjö socken, 800 m O Hultarp, artfattig granskogssluttning; RUBIN 6E7h172265; 2004-07-06; Leg. *Tommy Nilsson* nr. H2210' (S). — **20**. 'Nässjö sn., Hultarp (sluttningarne N D i Dissedela) 26/6 1924; leg. *G. Haglund*' (S). — **36**. 'Nässjö socken, 500 m SV Södra Gissarp, vägslänt i artrikt skogsbryn; RUBIN 6E7h195290; 2004-07-06, Leg. *Tommy Nilsson* nr. H2212' (S). — **34**. 'RUB/RN: 636878, 148793; Karlstorp sn; 550 m NNO Åbrolla; Biotop: Vägslänt; datum: 040605; Leg. *Tommy Nilsson* Nr. 1015' (S). — 'Misterhults s:n, Wirqvarn; 30/6 1908; *O. Köhler*' (S). — **17**. 'Misterhult, Virkvarn 30/7 1908. *Oscar Köhler*' (S). — **18**. 'Misterhult, Virkvarn 10/7 1908. *Eugène Köhler*' (S). — **19**. 'Almesåkra sn., Gödeberg, vid vägskälet 800 m O g i Gödeberg (Gen.-stab. kart.), i slåtteräng S jämte vägen Gödeberg - Holma. Leg. *G. Haglund* 1/7 1925' (S). — 'Askeryd, Bordsjö 13/6 1890 leg. *H. Dahlstedt*.' (S). — 'Askeryd, Bordsjö, Mögefall d. 17/6 84; *H. Dahlstedt*' (S). — **21**. 'Askeryd, Bordsjö, Möjefall 28/6 1884; *H. Dahlstedt*' (S). — **22**. 'Skog vid Brevik nära Västervik. 19/6 04 *Axell Lund* [?]' (S). — **23**. 'Kalmar L. Rumskulla, Norra Kvills nationalpark, mossrik granskog, 21/7 1928; leg. *Rikard Sterner*' (S). — **25**. 'Gärdserum, Qvistrum d. 28/6 1881; *W. van der Kodde*' (S). — **30**. 'Kalmar Län: Fågelfors s:n, 50 m norr om vägen från Sjöfällan västerut, RUBIN 5G9a0741. Gles tallskog med lövinslag, vid liten skogsväg. 1999 06 13, *John Christoffersson*' (LD; This specimen is somewhat aberrent, it may be a habitat modification or a slightly differentiated taxon). — Östergötland: **24**. 'Wårdsbergs sn, Wimarka 1881, *A.R. Dahlgren*' (S). — **26**. 'Ydre, Sunds s:n, Gräshagen 18/7 1883, *H. Dahlstedt*' (S). — **27**. 'Svanshals, St. Kullen, Bonnudalsvägen d. 24/6 1884; *Hugo Dahlstedt*' (S). — Öland: 'Böda, Byerum (mot Skäftekärr), vägkant i skog; 1947, 25/6; *Erik Almquist*' (S, four rather aberrant specimens representing different habitat modifications mounted on two separate sheets) — **29**. 'Böda, kronoparken, vid vägen strax NO Byerum. 19.VI.1922. leg. *Rikard Sterner*' (S).

Fig. 2. Outlines of a series of representative leaves of *Hieracium sublividum s. stricto.*

Hieracium askii T. Tyler, *sp. nova* (Figs. 3 and 4)

Folia rosularia supra ± glabra, interdum purpurascentia, media elliptica, basi ± angustata (interioria interdum subhastata vel subsagittata), margine profunde dimorphe et crebre laciniato-dentata. Petioli interdum dentibus e foliis descendibus. Folium caulinum unicum, subtus ± dense stellatum. Anthela subpaniculata, ramis brevis suberectis. Acladium breve. Rami pedicellique glandulis nigris sparse–copiose pilisque copiose obsiti. Involucra 11–13 mm longa, squamis breve acutis vel subulatis, praesertim prope basin sat dense ± aequaliter stellato-tomentosis, glandulis parvis nigris ± copiose, pilisque longis

Fig. 3. Part of the holotype of *Hieracium askii*.

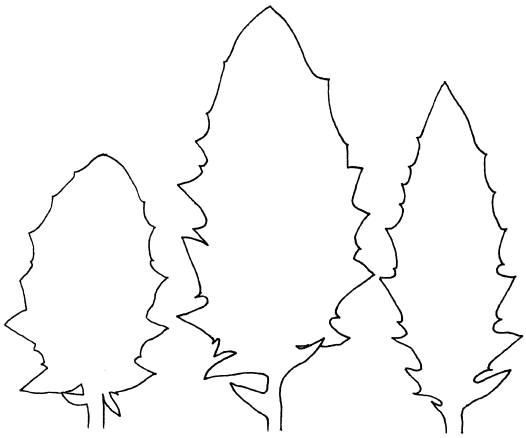

Fig. 4. Outlines of a series of representative leaves of *Hieracium askii*.

ex medio albis copiose–crebre obsitis. Apices squamarum ± comosi. Apices ligulae glabri. Stylus siccus luteus vel sparse punctatus.

HOLOTYPE: **08**. 'Sm. Oscarshamn, 1.VII.1909, *O. Köhler*' (LD; isotype S).

PARATYPES: Småland: **10**. 'Oskarshamn. 25/6 1904, *Eugenie Köhler*' (S). — **09**. 'Oscarshamn. 25.6.1903, leg. *Eugène Köhler*' (S). — 'Oskarshamn. Juni 1903. *Eugène Köhler*' (S & LD). — 'Oscarshamn. 15.VI.1903, *O. Köhler*' (LD). — 'Oscarshamn. 11.VI.1903. *O. Köhler*' (S). — 'Oskarshamn, 1/7 1901, *O. Köhler*' (S). — 'Hvena sn. Jernudden (udden nära jernkällan) 18/6 1899, *O. Köhler*' (S). — **11**. '(Hvena ?), leg. *O. Köhler*' (S). — **31**. 'RUB/RN: 63576, 14854; Klm. Virserum sn; 375 m S Gunnarsborg; Biotop: skogsvägkant, Datum: 02-05-29; Leg. *Tommy Nilsson*; Nr. 655' (LD). (The last specimen differs from the others by darker styles and slightly narrower phyllaries but most probably also belong here.)

Basal leaves sometimes violet below and with narow, sometimes violet petioles but never spotted, glabrous above, elliptic, angustate–cuneate but usually deeply divided at base (except for the outermost leaves that may be ± hastate at base), deeply (20%–30% of leaf width) and ± regularily serrato-dentate with closely set, triangular, ± acute teeth that are ± regularily dimorphic (i.e. every second teeth is distincly smaller), sometimes with teeth-like appendages on the petiole (Fig. 4). Cauline leaves usually 1, glabrous above but with ± dense stellate hairs below. Synflorescence with slightly arcuate and moderately squarrose branches and 1–2 cm long acladium. Peduncles with numerous simple hairs (10–25 per cm) and few–numerous (5–25 per cm) glandular hairs. Phyllaries on secondary capitula 11–13 mm long, ca. 0.8 mm wide at the middle, with acute–shortly subulate apex, covered with ± numerous (ca. 10–25 per phyllary), short blackish glandular hairs, abundant–crowded (> 35 per phyllary), long (1.25–1.75 mm) simple hairs that are translucent from about the middle and moderately abundant stellate tomentum that is concentrated to the basal half of the phyllaries; at apex with a ± consipious tuft of minute hairs. *Styles* purely yellow–sparsely and minutely dotted when dry. Ligules glabrous at apex.

The main differences between *H. askii* and *H. sublividum* are the slightly broader leaves with more narrowed ± angustate base and more closely set and relatively more regular dentation (Fig. 4), stem leaves that are densely stellate-hairy beneath, a more contracted synflorescence with shorter acladium, phyllaries and peduncles with ± numerous glandular hairs and often very long simple hairs that are translucent from about the middle but with relatively less abundant stellate hairs and sparsely dotted–yellowish styles.

Fig. 5. Part of the holotype of *Hieracium emblae*.

The distribution is apparently restricted to the northeastern part of the province of Småland.

ETYMOLOGY: Ask was the first man on earth in the Nordic pre-Christian mythology.

H. emblae T. Tyler, *sp. nova* (Figs. 5 and 6)

Folia rosularia supra ± glabra, vulgo purpurascentia, media late triangulari-ovata, basi truncata vel late hastata, margine regulariter profunde dimorphe et crebre serrato-dentata. Petioli saepe appendiculati. Folium caulinum unicum, subtus sparse stellatum. Anthela complexa, subpaniculata, ramis ± arcuatis. Acladium versilongis. Rami pedicellique eglandulosi, pilis sparse–copiose obsiti. Involucra 11–13 mm longa, squamis latis, breve acutis, densius ± aequaliter stellato-tomentosis, eglandulosis vel glandulis parvis nigris rare et pilis mediocris, saltem e medio albo-apiculatis, copiose obsitis. Apices squamarum ± comosi. Apices ligulae densius ciliati. Stylus siccus sparse punctatus.

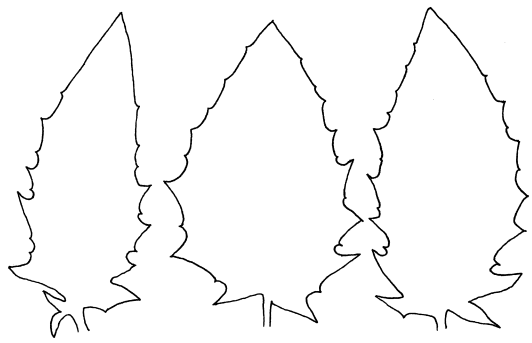

Fig. 6. Outlines of a series of representative leaves of *Hieracium emblae*.

HOLOTYPE: **02**. 'Gotland: Othem, Othemars, 24/6 1927; *E. Th. Fries*' (S).

PARATYPES: Gotland: **01**. 'Othem: Stenstugu. 24/6 1927. Leg. *E. Th. Fries*' (S & LD, partly distributed as Johansson & Samuelsson, Hieracia Scandinavica exsiccata no. 462). — **05**. 'Othem; 26.6.1896. *M. Östman*.' (S). — **04**. 'Fårösund; 6.1887. *S. Almquist*' (S). — **03**. 'Lojsta, S. Almquist' (S). — **14**. 'Othems klint; 5/7 1927; *E. Th. Fries*' (S).

Basal leaves almost always violet below and with violet petioles but never spotted, glabrous above, ovate–triangular, ± hastate at base, deeply (15%–30% of leaf width) and rather regularily dentate with closely set, narrowly triangular–almost subulate, sometimes ± falcate, sharply acute teeth that are ± regularily dimorphic (i.e. every second teeth is distincly smaller), often with teeth-like appendages on the petiole (Fig. 6). Cauline leaves usually 1, glabrous above, with ± sparse stellate hairs below. Synflorescence relatively compound with moderately arcuate and squarrose branches and acladium of variable length. *Peduncles* with sparse–numerous simple hairs (5–20 per cm) but no glandular hairs. Phyllaries on secondary capitula 11–13 mm long, ca. 1 mm wide at the middle, with broad but ± acute (triangular) apex, covered with none–solitary, short blackish glandular hairs, abundant (ca. 35 per phyllary), moderately long (1.0–1.5 mm) simple hairs that are translucent from near or below the middle and very abundant stellate tomentum that is dispersed ± throughout the

Fig. 7. Part of the holotype of *Hieracium hangvarense*.

phyllaries but clearly most abundant in the basal half; at apex with a ± consipious tuft of minute hairs. Styles sparsely dotted when dry. Ligules densly ciliate at apex.

This species is not at all similar to *H. sublividum*. The capitula are somewhat similar, even though the phyllaries are paler, somewhat broader and less acute, but the synflorescence is more compound and contracted and the styles are less pigmented, the ligules are conspiciouosly ciliate at apex and, most important, the leaves are much broader, triangular–ovate, with a regular dimorphous dentation (Fig. 6). This species is only known from the island of Gotland but appears to be fairly widespread there.

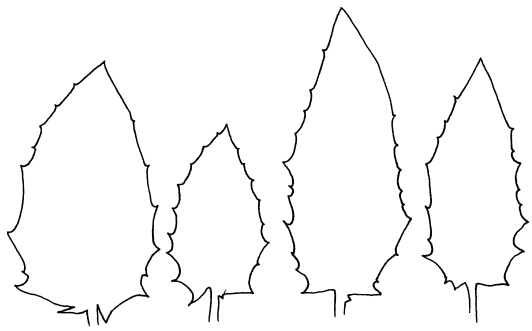

Fig. 8. Outlines of a series of representative leaves of *Hieracium hangvarense*.

ETYMOLOGY: Embla was the first woman on earth in the Nordic pre-Christian mythology.

H. hangvarense T. Tyler, *sp. nova*
(Figs. 7 and 8)

Folia rosularia media parva, supra ± glabra, saepe purpurascentia, vulgo sparse hepatico-maculata, ± late triangulari-ovata, basi truncata–breve subsagittata, margine regulariter breve et acute cuspidentata. Folium caulinum unico subtus estellatum. Anthela subsimplex, laxa paniculata, ramis longis. Rami pedicellique glandulis pilisque sparse obsiti. Involucra 10–11 mm longa, squamis dilutis cano-viridibus, angustis, breve acutis, densissime ± aequaliter stellato-tomentosis, glandulis parvis nigris rare–parce pilisque brevis, e medio albi-apiculatis, copiose obsitis. Apices squamarum manifeste comosi. Apices ligulae glabri. Stylus siccus sparse punctatus.

HOLOTYPE: **07**. 'Gotland: Hangvar socken, 1,6 km SO Austers (norra gården), frisk tallskog, RUBIN 7J2d1841; 1996-06-29; *Thomas Karlsson* nr. 96040' (S, mounted on two separate sheets).

PARATYPE: **06**. 'Gotland: Hangvar socken, Brandhagen, 2000 m NO Tajnungs, gles örtrik tallskog i sluttning; RUBIN 7J3e4618; 1992-06-21; *Thomas Karlsson* nr. 92160' (S, mounted on three sheets).

Basal leaves commonly violet below and ± spotted if exposed to intense sunlight, with narrow violet petioles, glabrous above, ovate–triangular, truncate or shallowly hastate at base, moderately (10%–15% of leaf width), ± regularily dentate with relatively distantly set, ± triangular, acute–mucronate teeth, sometimes with

occational smaller teeth irregularily placed inbetween the major teeth, without or with narrow but ± petiolate appendages on the petiole (Figs. 7 and 8). Cauline leaves 0–1, almost glabrous on both surfaces. Synflorescence almost simple with long, almost straight and hardly squarrose branches and 1.5–3.5 cm long acladium. Peduncles with few simple and glandular hairs (< 10 per cm). Phyllaries on secondary capitula pale greenish, 10–11 mm long, ca. 0.6 mm wide at the middle, narrowly acute–± subulate (the inner ones), covered with solitary–few (< 10 per phyllary), short blackish glandular hairs, numerous–abundant (ca. 10–35 per phyllary), short (< 1.0 mm) simple hairs that are translucent from about the middle and very abundant stellate tomentum that is covering ± all of the phyllaries; at apex with a consipious tuft of minute hairs. *Styles* yellowish–sparsely dotted when dry. *Ligules* glabrous at apex.

This rare species differs from *H. sublividum* by broader, ± triangular leaves that are often sparsely spotted, with relatively regular, low and acute dentation (Fig. 8), sparser and more mixed indument on the peduncles, smaller capitula with shorter indument completely dominated by extremely abundant matted stellate tomentum, and by less pigmented styles. It is only known from two sites in par. Hangvar on northern Gotland and the name of the species is derived from the name of this parish.

Specimens belonging to local, unrecognised taxa previously identified as *H. sublividum*

The following specimens from two closely adjacent localities (< 1 km apart) are very close to *H. albidulum* (Stenstr.) Johanss. & Sam. with respect to the capitula and their indument but the leaves are rather different, broadly elliptic with densly set somewhat coarse triangular–mammiform teeth that tend to continue down the petiole. Typical *H. albidulum* is not known from this province.

These specimens may represent a hitherto undescribed species but as long as no more specimens and localities are known it may well remain unnamed: **12**. 'Småland (Kalmar län): Bäckebo socken, Höga Hister (800 m V Haltemåla), skogsbrant (f.d. ängsmark); RUBIN 5G1c4711; 1985-07-01, Leg. *Thomas Karlsson* 85105a' (LD & S) — **13**. 'Småland (Kalmar län): Bäckebo socken, Haltemåla, 500 m VNV den västra gården, vägkant i örtrik barrskog; RUBIN 5G1c4320; 1985-07-01, Leg. *Thomas Karlsson* 85103a' (S).

Disregarded specimens previously identified as *H. sublividum*

Småland: **35**. 'RUB/RN: 63247, 15208; Lokal: Klm, Långemåla sn; 1400 m NNO Böta kvarn, Biotop: Örtrik vägslänt i bokskogsglänta, Datum: 010619, Leg. *Tommy Nilsson* nr. 299, 300 & 301' (S, This gathering is very difficult to identify, specimen no. 301 may possibly represent an aberrant form of *H. sinuosifrons* (Dahlst.) Dahlst. but the other two specimen have to be something different and most probably all three specimen belong to the same species.) — **16**. 'RUB/RN: 63607, 14827; Klm. Järeda sn; 100 m N Skarnevikens östspets; Torr tallskog, Datum: 02-06-05, Leg. *Tommy Nilsson* nr. 587' (LD, This specimen (identified as *H. sublividum* by T. Tyler 2005) certainly belong to *H. sinuosifrons* (Dahlst.) Dahlst.) — 'RUB/RN: 63576, 14854; Klm. Virserum sn; 375 m S Gunnarsborg; Skogsvägkant; datum: 02-05-29; Leg. *Tommy Nilsson*' (S, This specimen (identified as *H. sublividum* (?) by T. Tyler 2003) does belong to *H. acidotum* Dahlst.) — 'RUB/RN: 63739, 15003; Klm, Hultsfreds sn; 100 m SV Bygget; Vägslänt; Datum: 010611; Leg. *Tommy Nilsson* nr. 333' (S, This specimen (identified as *H. sublividum* by T. Tyler 2002) belongs to *H. pendulum* (Dahlst.) Dahlst.) — Östergötland: **15**. 'Grebo, Steckö, Juli 1869, *N.C. Kindberg*' (S, This specimen (identified as *H. sublividum* by Dahlstedt) is not very well selected and preserved and is very difficult to identify but it does certainly not belong to *H. sublividum*.) — **28**. 'Qvillinge sn, 18/7 1886, *F.E. Herfurth*' (S, This gathering, mounted on two sheets, probably belongs to *H. albiduliforme* (Johanss.) Johanss. & Sam., but the specimen are not typical for any known species.) — 'Risinge, Häradstorp /7 1900 det. & leg. *F.O. Westerberg*' (S, A poorly preserved specimen that plausably belong to *H. canitiosum* Dahlst. *ex* Malme but certainly not to *H. sublividum*.) — 'Risinge, Falsnäset 17/7 1901 det. & leg. *F.O. Westerberg*' (S, A poorly preserved and untypical specimen that most probably does not belong to *H. sublividum*).

Acknowledgments

The study is part of the author's project "The Hawkweeds of Sweden" funded by the Swedish Species Initiative and Gyllenstiernska Krapperupstiftelsen. Alexander Sennikov is thanked for reviewing the manuscript and thereby suggesting valuable improvements and for improving the Latin diagnoses.

References

Dahlstedt, H. 1893: Bidrag till sydöstra Sveriges Hieracium-flora II. — *Sv. Vet.-Ak. Handl.* 25 n. 3: 1–256.

Hammer, Ø., Harper, D. A. T. & Ryan, P. D. 2005: *PAST–PAlaeontological STatistics, ver. 1.34. User's manual.*

Tyler, T. 1998: Hag-, skogs- och klippfibblor i södra Götaland. — *LBF Medlemsblad 1998* 2: 1–64.

Tyler, T. 2000: Lectotypification of names of south Swedish *Hieracium* species (Asteraceae). — *Nordic J. Bot.* 20: 93–103.

Tyler, T. 2002: Gotlands hag- och skogsfibblor. — *Rindi* 22: 2–3.

Tyler, T. 2004: Reevaluation of the species of *Hieracium* sect. *Hieracium* that were described by Hylander from introduced populations in Scandinavian parks. — *Ann. Bot. Fennici* 41: 103–132.

Tyler, T. 2006: Patterns of morphometric variation and a new supraspecific classification of apomictic taxa of *Hieracium* (Asteraceae) from Denmark and southern Sweden. — *Pl. Syst. Evol.* 261: 39–88.