

Hieracium in the Allgäu region — a preliminary checklist

This compilation is based mainly on the monographs of Nägeli & Peter (1885–1889) and Zahn (1922–1938) as well as Vollmann's flora (1914), with additions from vouchers preserved at M, and personal collections. Included are hawkweeds known to occur within (or have been reported for) an area as defined in »Flora des Allgäus« (Dörr & Lippert 2001). "Recorded taxa" (within species) are simply reported (and not necessarily completely) without in every case meaning acceptance as taxonomically relevant. The list is just intended as a first and provisional orientation in respect to the *Hieracium* flora of the region.

(!) means that the plant is known from Kleines Walsertal (the surrounding crests included)

(↓) denotes those found in the Allgäu outside the geomorphical limits of the Alps

∅ is added to doubtful records which could not be verified by any voucher in M

SUBGENUS PILOSELLA:

H. aridum Freyn (↓)

H. arvicola Nägeli & Peter

recorded taxa: subsp. *arvicola*

H. aurantiacum L. (!)

recorded taxa: subsp. *aurantiipureum* Peter — *This is the only subspecies confidentially distinguishable from "subsp.aurantiacum" s. l. within the area.*

subsp. *porphyranthes* Nägeli & Peter

H. bauhini Schult. (↓)

H. basifurcum Nägeli & Peter (!)

H. blyttianum Fries (!) [incl. subsp. *pyrrhanthes* (Peter) Zahn] — *Distinction from H. fuscum often may be difficult but typical plants are known from the region.*

H. brachiatum Bertol. ex DC.

H. brachycomum Nägeli & Peter

H. caespitosum Dumort.

recorded taxa: subsp. *brevipilum* Nägeli & Peter [*H. onegense* (Norrl.) Norrl.] — ∅

H. fuscescens (Nägeli & Peter) Zahn — *This taxon should not be merged with H. guthnickianum as done by Schuhwerk & al. (1990), Bräutigam & Schuhwerk (2001)!*

H. fuscum Vill. [incl. *H. mirabile* Nägeli & Peter: cf. Schuhwerk 1997]

recorded taxa: subsp. *laxum* Nägeli & Peter

subsp. *variegatum* Nägeli & Peter (!)

H. glaciale Reyn. ex Fries [? *H. angustifolium* Hoppe] (!)

recorded taxa: subsp. *pullum* Nägeli & Peter

H. guthnickianum Hegetschw. (!) — *Both subspecies are critically endangered.*

recorded taxa: subsp. *algovicum* (Nägeli & Peter) Zahn

subsp. *rubrisabinum* (Nägeli & Peter) Zahn [incl. subsp. *erythrodes* (Nägeli & Peter) Zahn]

H. hoppeanum Schult. (!)

recorded taxa: subsp. *hoppeanum* (!)

subsp. *testimoniale* Nägeli ex Peter [*H. macranthum* subsp. *t.* (Nägeli ex Peter) Gottschl.]

H. hypeurum Nägeli & Peter

recorded taxa: subsp. *hypeurum*

subsp. *lasiothrix* Nägeli ex Peter

H. lactucella Wallr. (!) — *The predominantly sexual species is highly variable also within the region. Plants with dark and somewhat hairy incolucral bracts seem to prevail in Alpine habitats.*

H. latisquamiforme Tout. — *A somewhat doubtful taxon; the type specimen (B) representing a deviating growth form.*

H. montanum Nägeli & Peter non Scop. (↓)

H. niphostribes Peter

H. nothum Huter (!) [*H. fulgens* Nägeli & Peter, nom. illeg.]

recorded taxa: *H. fulgens* subsp. *calanthodium* Peter

H. fulgens subsp. *ellipticum* Nägeli & Peter (!)

H. fulgens subsp. *fulgens*

H. fulgens subsp. *hemerochromum* Nägeli & Peter, incl. var. *semiauricula* Vollm. & Zahn

H. fulgens subsp. *nutans* [Holler ex] Nägeli & Peter (!)

H. pachypilon Peter [*H. eurylepium* Nägeli & Peter]

H. paragogum Nägeli & Peter — *An old voucher specimen (in M) was annotated by Zahn as “scheint H. p. subsp. p. 2) substriatum zu sein”, but may belong to H. visianii or even H. montanum.*

H. peterianum Käser

recorded taxa: subsp. *peterianum*

H. pilosella L. (!)

recorded taxa: subsp. *melanops* Nägeli & Peter

subsp. *subcaulescens* Nägeli & Peter

subsp. *trichadenium* Nägeli & Peter

subsp. *vulgare* (Tausch) Nägeli & Peter

H. piloselloides Vill. (!)

recorded taxa: subsp. *berninae* (Griseb.) Zahn

subsp. *florentinum* (All.) Zahn

subsp. *obscurum* (Rchb.) Zahn

subsp. *parcifloccum* (Nägeli & Peter) Zahn

subsp. *poliocladium* (Nägeli & Peter) Zahn

subsp. *subobscurum* (Nägeli & Peter) Zahn

H. pseudomirabile (Touton pro subsp. *H. mirabilis*) ad interim — *Plants answering a morphological formula »H. nothum vel stoloniflorum – viridifolium« may provisionally be collected under this name. Bräutigam & Schuhwerk (2001) treated such hawkweeds under the name H. subeminsens, the type of which, however, deviates by less hairy heads with wider outer bracts.*

H. raiblense (Huter ex Nägeli & Peter) Zahn [*H. arnoseroide*s Nägeli & Peter, nom. illeg.] (↓)?

H. rubrum Peter [incl. *H. chaunantes* (Nägeli & Peter) Zahn, *H. rubriflorum* Zahn] (!)

H. schultesii F. W. Schultz (!) — *Delimitation against H. viridifolium is difficult by plants intermediate between these two hybridogeneous taxa.*

recorded taxa: subsp. subsp. *schultzi*orum (Nägeli & Peter) Zahn

H. sphaerocephalum Froel. (!) — *A very heterogeneous species (as regards leaf shape and indumentum). Critical plants approaching H. viridifolium may be classified with subsp. malacodes, a likewise heterogeneous taxon.*

recorded taxa: subsp. *flocciferum* (Nägeli & Peter) Zahn

subsp. *furcatum* (Hoppe) Zahn (!)

subsp. *malacodes* (Nägeli & Peter) Zahn (!)

H. stoloniflorum Waldst. & Kit. (!) [incl. *H. substoloniflorum* Nägeli & Peter]

H. viridifolium Peter — *see remarks at H. schultesii and H. sphaerocephalum!*

H. zizianum Tausch (↓)

SUBGENUS HIERACIUM:

H. adenophyton (Zahn) Zahn (!)

H. alpinum L. (!)

recorded taxa: subsp. *alpinum* (!) [incl. subsp. *glandulicaule* Zahn, nom. inv.]

subsp. *halleri* (Vill.) Zahn (!) — *This well defined taxon of the Alps and W. Carpathians was separated as species by Chrtek (1997).*

***H. ammobi*um** P. D. Sell & C. West [*H. psammogenes* (Zahn) Zahn non Omang]

recorded taxa: *H. psammogenes* subsp. *laceridens* (Murr ex Zahn) Tout.

H. psammogenes subsp. *oreites* (Arv.-Touv.) Tout.

H. bifidum subsp. *megalotomum* Zahn

H. bifidum subsp. *psammogenes* Zahn

H. bifidum subsp. *senile* (Kern.) Zahn

H. amplexicaule L. (!)

recorded taxa: subsp. **amplexicaule**
 subsp. **berardianum** (Arv.-Touv.) Zahn [*H. petraeum* Hoppe ex Bluff & Fingerh.]
 subsp. **pulmonarioides** (Vill.) Zahn — Ø

H. arolae (Murr) Zahn (!)

H. atratum Fries — *The presence of this species remains doubtful due to difficulties to clearly delimitate it from H. rauzense, to which all material available is placed here, in concordance with Touton (1916: 328) who felt some despair with this problem. See also the remarks under H. rauzense and H. schroeterianum.*

recorded taxa: subsp. **atratum** (!)
 subsp. **subnigrescens** (Fries) Zahn

H. benzianum Murr & Zahn

recorded taxa: subsp. **microvulgatum** Zahn (!)
 subsp. **subruncinatiforme** (Tout. sub *H. neilreichii*)
 subsp. **vulgatifolium** Zahn

H. bifidum Kit. ex Hornem. (!) — *see also H. ammobium, H. obscurisquamum, H. pseudodollineri and H. subcaesium.*

recorded taxa: subsp. **bifidum**
 subsp. **caesiiflorum** (Almq. ex Norrl.) Zahn
 subsp. **sinuosifrons** (Almq.) Zahn

H. bocconeii Griseb. (!)

recorded taxa: subsp. **bocconeii**

H. bupleuroides C. C. Gmel. (!) — *The subspecies distinguished by Nägeli & Peter (1886) and Zahn (1930) are rather weakly delimited and additionally linked by numerous transitional forms.*

recorded taxa: subsp. **scabriceps** Nägeli & Peter
 subsp. **inulifolium** (Prantl) Nägeli & Peter
 subsp. **schenkii** (Griseb.) Nägeli & Peter

H. caesium (Fries) Fries

recorded taxa: subsp. **grophosoides** (Zahn) Zahn
 subsp. **lugiorum** Zahn
 subsp. **sendtneri** (Naeg.) Zahn
 subsp. **stillachense** Harz & Zahn

H. chlorifolium Arv.-Touv. (!)

recorded taxa: subsp. **pulchrriforme** Murr & Zahn (!)

H. chondrillifolium Fries (!) — *Only 3 of the listed subspecies (viz. comolepium, megalocladum, subspeciosum) seem well delimited and show ± well defined distribution areas in the Northern and Central Alps. All other recorded subspecies may fall into the variation range of a broadly designed subsp. comolepium.*

recorded taxa: subsp. **calcicola** (Nägeli & Peter) Zahn
 subsp. **canisquamum** (Nägeli & Peter) Zahn
 subsp. **comolepium** (Nägeli & Peter) Zahn (!)
 subsp. **dolichocephalum** (Nägeli & Peter) Zahn
 subsp. **megalocladum** (Nägeli & Peter) Zahn
 subsp. **melanophaeum** (Nägeli & Peter) Zahn
 subsp. **subcuneatum** Zahn
 subsp. **subspeciosum** (Nägeli & Peter) Zahn
 subsp. **supracalvum** (Nägeli & Peter) Zahn
Plants recorded by Zahn as similar [“ähnlich”] to H. richenii Murr may or may not belong to H. chondrillifolium (grex boissieri, which is similar in habit) — Ø

H. cochlearioides Zahn

recorded taxa: subsp. **piliferitropum** Harz & Zahn
 subsp. **pseudalpinum** (Nägeli & Peter) Zahn
 subsp. **pseudoglanduliferum** Zahn

H. cydoniifolium Vill.

recorded taxa: subsp. **parcepilosum** (Arv.-Touv.) Zahn

H. dasytrichum Arv.-Touv. — *We tentatively propose an infraspecific classification (deviating from the Nägeli-Peter's and Zahn's tradition) into just subsp. dasytrichum (stems with glandular hairs) and subsp. subpiliferum*

recorded taxa: subsp. *capnoides* (Kern. ex Nägeli & Peter) Zahn (!)
 subsp. *subpiliferum* (Arv.-Touv.) Zahn

H. dentatum Hoppe (!) — *The enormous polymorphism of this complex does not allow any serious attempt to evaluate the reported forms without a broad comparison considering far more than the Allgäu region.*

recorded taxa: subsp. *aechmetes* Nägeli & Peter
 subsp. *basifolium* Nägeli & Peter
 subsp. *decorum* Nägeli & Peter
 subsp. *dentatiforme* Nägeli & Peter
 subsp. *dentatum*
 subsp. *depressum* Nägeli & Peter (!)
 subsp. *expallens* (Fries) Nägeli & Peter [subsp. *subexpallens* Zahn]
 subsp. *gaudinii* (Christener) Nägeli & Peter
 subsp. *gymnoglaucum* Harz & Zahn
 subsp. *pseudovillosum* Nägeli & Peter
 var. *valdelitigiosum* (Murr) Zahn
 subsp. *lonchites* Nägeli & Peter (!)
 subsp. *prionodes* Nägeli & Peter (!)
 subsp. *pseudovillosum* Nägeli & Peter
 subsp. *subruncinatum* Nägeli & Peter
 subsp. *subvillosum* Nägeli & Peter (!)
 subsp. *trefferianum* (Nägeli & Peter) Zahn
 subsp. *turritiforme* Nägeli & Peter (!)

H. diaphanoides Lindeb.

H. dollineri Schultz bip. ex Uechtr. — ?

recorded taxa: subsp. *eriopodum* (Kern. ex Murr) Zahn — Ø

H. glabratum Hoppe (!)

recorded taxa: subsp. *glabratum*
 subsp. *nudum* (Kern.) Nägeli & Peter [incl. subsp. *pseudoflexuosum* Nägeli & Peter] (!)

H. glanduliferum Hoppe (!)

recorded taxa: subsp. *glanduliferum*
 subsp. *piliferum* auct. [?an *H. piliferum* Hoppe, nom. illeg.; incl. subsp. *multiglandulum* (Nägeli & Peter) Zahn]

H. glaucinum Jord. — ?

recorded taxa: subsp. *glaucinum* — Ø

H. glaucum All. (!) — *The reported taxa of this polymorphous complex can hardly be defined satisfactorily.*

recorded taxa: subsp. *amauroides* Nägeli & Peter
 subsp. *isaricum* (Prantl) Nägeli & Peter
 subsp. *nipholepium* Nägeli & Peter
 subsp. *pseudobadense* Tout.
 subsp. *willdenowii* (Monn.) Nägeli & Peter

H. humile Jacq. (!)

recorded taxa: subsp. *humile*
 subsp. *pseudocottetii* Zahn (!)

H. intybaceum All. (!)

H. juraniforme (Zahn) Zahn — *Similar to *H. jurassicum* (but involucre with at least sparse, apically whitish eglandular and blackish glandular hairs, stellate hairs may also be present). The scanty material from the region does not allow a more specific determination.*

recorded taxa: subsp. *juranopsis* Zahn

H. juranum Fries [*H. jurassicum* Griseb.] (!)

recorded taxa: subsp. *cichoriaceum* (Arv.-Touv.) Zahn (!)
 subsp. *elegantissimum* (Zahn) Zahn
 subsp. *hemiplecum* (Arv.-Touv.) Zahn
 subsp. *juranum* (!)

[*H. juranum*] subsp. *pseudohemiplecum* (Zahn) Zahn
 subsp. *pseudojuranum* (Arv.-Touv.) Zahn
 subsp. *subperfoliatum* (Arv.-Touv.) Zahn

subsp. *tephroprenanthes* Zahn
 subsp. *urezzae* Zahn (!)

H. kernerii Ausserd. (!)

recorded taxa: subsp. *issense* Murr & Zahn
 subsp. *macrolobophorum* Harz & Zahn
 subsp. *pseudohumile* (Zahn) Zahn (!)

H. kuekenthalianum (Zahn) Zahn

recorded taxa: *H. tephrosoma* subsp. *trivialiforme* Zahn

H. lachenalii Suter (!)

recorded taxa: subsp. *acuminatum* (Jord.) Zahn
 subsp. *anfractum* (Jord.) Zahn
 subsp. *aspernatum* (Jord.) Zahn
 subsp. *aurulentum* (Jord.) Zahn
 subsp. *consociatum* (Jord.) Zahn
 subsp. *corrosum* (Murr & Zahn) Zahn
 subsp. *diaphanum* (Fries) Zahn
 subsp. *festinum* (Jord.) Zahn
 subsp. *frondosiforme* (Zahn) Zahn
 subsp. *irriguiceps* (Zahn) Zahn
 subsp. *irriguum* (Fries) Zahn
 subsp. *jaccardii* (Zahn) Zahn
 subsp. *lachenalii*
 subsp. *lepidulum* (Stenst.) Zahn
 subsp. *paucifoliatum* (Jord.) Zahn
 subsp. *pinnatifidum* (Lönnr.) Zahn
 subsp. *subirriguifrons* Zahn
 subsp. *subirriguum* (Dahlst.) Zahn
 subsp. *sublevicaule* (Zahn) Zahn
 subsp. *subviriduliceps* (Zahn) Zahn

H. laevigatum Willd. (!)

recorded taxa: subsp. *laevigatum*
 subsp. *retardatum* Zahn
 subsp. *rigidum* (Hartm.) Zahn

H. macilentum Fries (!) — *All collections seen correspond to Zahn's "H. epimedium grex [tricho-] epimedium". Only some can be assigned to subsp. macilentiforme; others do not fit confidently to any the subspecies which, however, were rather schematically differentiated by Zahn.*

recorded taxa: *H. epimedium* subsp. *exilentum* (Arv.-Touv.) Zahn
H. epimedium subsp. *intybellifolium* (Arv.-Touv.) Zahn
H. epimedium subsp. *macilentiforme* (Murr & Zahn) Zahn
H. epimedium subsp. *pseudoviride* (Arv.-Touv.) Zahn (!)

H. maculatum Sm. non Schrank (?)

recorded taxa: subsp. *approximatum* (Jord.) Zahn — Ø
 subsp. *maculatum* — Ø

H. melanops Arv.-Touv.

recorded taxa: ssp. *subadusticeps* Zahn — Ø

H. murorum L. (!)

recorded taxa: subsp. *atropaniculatum* (Zahn) Zahn (!)
 subsp. *bifidiforme* Z. (Zahn) Zahn
 subsp. *circumstellatum* (Zahn) Zahn
 subsp. *crepidanthes* (Zahn) Zahn
 subsp. *eu-murorum* Vollm. [nom. inv.]
 subsp. *gentile* (Jord.) Zahn
 subsp. *gypsophilum* (Griseb.) Zahn
 subsp. *micropsilon* (Jord.) Zahn
 subsp. *oblongum* (Jord.) Zahn
 [*H. murorum*] subsp. *pleiotrichum* (Zahn) Zahn (!)
 subsp. *semisilvaticum* (Zahn) Zahn
 subsp. *serratifolium* (Jord.) Zahn

subsp. *subbifidiforme* Zahn
 subsp. *valdefastigiatum* (Zahn) Zahn

H. nigrescens Willd. (!)

recorded taxa: subsp. *cochleare* (Huter ex DT.) Zahn (!)
 subsp. *heterocalathium* Bornm. & Zahn
 subsp. *pseudohalleri* Zahn (!)
 subsp. *pseudorhaeticum* Zahn (!)
 subsp. *subpumilum* (Zahn) Zahn (!)

H. obscurisquamum (Zahn) ad interim (!) — *Under this name we provisionally unite those dark-headed plants of Zahn's grex psammogenes and grex subcaesium which are characterised by involucre bracts blackish (except the marginal parts), with black eglandular (uncoloured at most in the upper third) and glandular hairs, but only few stellate hairs; the eglandular hairs are rather stiff and straight (never crispate though sometimes slightly bent apically). Some taxa of Zahn's H. murorum may also belong to this group.*

recorded taxa: *H. bifidum* subsp. *basicuneatum* (Zahn) Zahn
H. psammogenes subsp. *obscurisquamum* (Zahn) Tout. [*H. bifidum* subsp. *subcaesiceps* Zahn, nom. illeg.] (!)

H. oxyodon Fries (!)

recorded taxa: subsp. *muretii* (Gremli) Zahn
 subsp. *subcanescens* (Murr) Zahn

H. pallescens Waldst. & Kit. [*H. incisum* Hoppe] (!)

recorded taxa: *H. incisum* subsp. *bellimontis* K. Müll & Zahn (nom. inv.)
H. neilreichii subsp. *cirritiramum* Tout.
H. incisum subsp. *gemstelinum* Zahn (!)
H. i. subsp. *gymnobasis* Zahn
H. i. subsp. *hemilissum* Zahn (!)
H. i. subsp. *hittense* (Murr) Zahn
H. i. subsp. *humiliforme* Murr (!)
H. i. subsp. *incisum* [incl. subsp. *subgaudinii* Zahn]
H. i. subsp. *meizolobum* Feurst. & Zahn [nom. inv.]
H. i. subsp. *melanocinereum* Zahn
H. i. subsp. *muroriforme* Zahn
H. i. subsp. *murrianum* (Arv.-Touv. ex Murr) Zahn [*H. murrianum* Arv.-Touv. ex Murr]
H. i. subsp. *naevulatum* Zahn (!)
H. i. subsp. *niphogeton* Zahn
H. i. subsp. *ovale* Murr
H. i. subsp. *oxyodontiforme* Zahn
H. i. subsp. *pachysphaericum* Zahn
H. i. subsp. *pseudohittense* Zahn
H. i. subsp. *pseudomurrianum* Zahn
H. i. subsp. *subdentatiforme* (Hayek & Zahn) Zahn [*H. pallescens* var. s. Hayek & Zahn]
H. i. subsp. *suboreites* (Murr) Zahn
H. i. subsp. *trachselianoides* Zahn
H. i. subsp. *trachselianum* (Christen.) Zahn

H. picroides Vill. (!)

recorded taxa: subsp. *intermixtum* (Zahn) Zahn (!)
 subsp. *picroides* (!)
 subsp. *pseudosieberi* Vetter & Zahn [nom. inv.]
 subsp. *sieberi* (Tausch) Zahn (!)
 subsp. *trichopicris* (Zahn) Zahn (!)

H. pietroszense Degen & Zahn

recorded taxa: subsp. *rocrydeilema* Harz & Zahn [nom. inval.] — Ø

H. pilosum Froel. [*H. morisianum* Rchb. f.] (!)

recorded taxa: *H. villosiceps* Nägeli & Peter subsp. *villosiceps* (!)
H. villosiceps subsp. *villosifolium* Nägeli & Peter

H. porrectum Fries (!) — *See cover photo!*

recorded taxa: subsp. *alfenzinum* (Evers) Zahn (!)

subsp. *subelongatum* (Nägeli & Peter) Zahn (?) — Collections preserved under this name in *M* belong to *H. dentatum*.

H. prenanthoides Vill. (!)

recorded taxa: subsp. *bupleurifolium* (Tausch) Zahn (!)

subsp. *bupleurifolioides* Zahn

subsp. *hoegei* Zahn (!)

subsp. *lanceolatum* (Vill.) Zahn

subsp. *perfoliatum* (Froel.) Fries

subsp. *praeruptorum* (Godr.) Nyman — Ø (Presumably a mis-identification, as this is an endemic taxon of the Vosges Mountains.)

subsp. *strictissimum* (Froel.) Simk.

H. pseudodolichatum Benz & Zahn

recorded taxa: subsp. *caflischianum* Zahn — Ø

H. pseudodollineri (Murr & Zahn) Tout. — Plants occasionally deeply furcate (in habit approaching *H. dollineri*), basal leaves lanceolate, usually strongly toothed (teeth narrow, often as free teeth at the lamina-near petiole), often spotted. Involucral bracts with many stellate hairs reminding the 'glaucoïd' type (many of them nearly sessile and quite multi-rayed), but eglandular hairs rather short and sparse; singular glandular hairs occasionally on the peduncles (rarely at the lower involucral bracts).

recorded taxa: subsp. *pseudodollineri*

H. pseudopsammogenes subsp. *eriopodoides* (Zahn) Tout. [*H. bifidum* subsp. *e.* (Zahn) Zahn]

H. pseudopsammogenes subsp. *pseudopsammogenes* [*H. bifidum* subsp. *ps.* (Tout.) Zahn]

H. bifidum subsp. *toutonii* Zahn

H. rapunculoides Arv.-Touv. (!)

recorded taxa: subsp. *rapunculoides* (!)

H. rauzense Murr (!) — Following Zahn (1936), plants from the Alps have usually been treated under the name *H. rohacsense* Kit. which, however, denotes an endemic species of the W. Carpathians (Mráz & Marhold 1999) to be separated from the Alpine representatives. This still heterogenous complex remains to be studied in more detail to achieve a better classification. Materials from Allgäu is too sparse to comment, but see under *H. atratum*.

recorded taxa: subsp. *pseudarolae* (Murr) Zahn

subsp. *rauzense* (!)

subsp. *semiatratum* Zahn (!)

H. rohacsense subsp. *subsenile* (Zahn) Zahn

H. richenii Murr — cf. note under *H. chondrillifolium*!

H. sabaudum L. (!)

H. schroeterianum P. D. Sell & C. West [*H. atratum* grex *sch.* subsp. *sch.* Zahn, nom. illeg.] (!) — Considering the populations within the region, it seems to be linked rather with *H. picroides*.

H. scorzonerifolium Vill. — "Typical" plants are not yet recorded with certainty within the region.

recorded taxa: subsp. *heterocephalum* Nägeli & Peter

subsp. *polybracteum* Nägeli & Peter (!)

subsp. *pantotrichum* Nägeli & Peter — Ø

? *H. longirimum* subsp. *subvillosiforme* Tout. [nom. inv.] — may also belong here.

? *H. longirimum* subsp. subsp. *villosoides* Tout. [nom. inv.] — may also belong here.

H. serratum Nägeli & Peter

recorded taxa: subsp. *schwarzii* Harz & Zahn — Ø

H. sparsiramum Nägeli & Peter

recorded taxa: subsp. *halense* (Murr) Zahn [incl. subsp. *montis-deserti* Tout.]

H. stenoplecum Arv.-Touv. & Huter

recorded taxa: subsp. *heterogonoides* Zahn — Ø

H. subcaesium (Fries) Dichtl (!)

recorded taxa: *H. bifidum* subsp. *cardiobasis* Zahn

H. bifidum subsp. *pseudoligocephalum* Zahn

subsp. *subcaesium*

H. subglaberrimum (Nägeli & Peter) Zahn (!)

H. umbellatum L.

H. umbrosum Jord. (!)

recorded taxa: subsp. *crepidifolium* (Arv.-Touv.) Zahn (!)
 subsp. *subexilentum* (Zahn) Zahn (!)
 subsp. *suboleicolor* Zahn (!)
 subsp. *umbrosum* (!)

H. valdepilosum Vill. (!)

recorded taxa: subsp. *christeneri* (Nägeli & Peter) Zahn
 subsp. *elongatum* Zahn
 subsp. *oligophyllum* (Nägeli & Peter) Zahn
 subsp. *pseudelongatum* (Nägeli & Peter) Zahn
 subsp. *raphiolepium* (Nägeli & Peter) Zahn (!)
 subsp. *subsiniatum* (Nägeli & Peter) Zahn (!)
 subsp. *subvaldepilosum* Zahn

H. valoddae (Zahn) Zahn (!)

recorded taxa: subsp. *rofanicum* Zahn

H. villosum Jacq. (!)

recorded taxa: subsp. *calvifolium* Nägeli & Peter
 subsp. *eurybasis* Nägeli & Peter
 subsp. *glaucifrons* Nägeli & Peter (!)
 subsp. *undulifolium* Nägeli & Peter (!)
 subsp. *villosissimum* (Nägeli) Nägeli & Peter
 subsp. *villosum* (!)

H. vulgatum Fries [*H. levicaule* Jord.] (!)

recorded taxa: *H. carnosum* subsp. *austrohercynicum* Zahn [*H. levicaule* subsp. *a.* (Zahn) Zahn]
H. caesium subsp. *davallianum* Zahn [*H. levicaule* subsp. *d.* (Zahn) Zahn]
H. triviale Norrl. [*H. levicaule* subsp. *t.* (Norrl.) Zahn]

H. wilczekianum Arv.-Touv.

recorded taxa: subsp. *schwimmeri* Zahn (!) — *The original collection should be checked to elucidate the taxonomic position of this plant.*

Walter Gutermann, Franz Schuhwerk