# Hieracium gothicum (Asteraceae): a forgotten species

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## Abstract

The history of recording *H. gothicum* Fr. in the 19<sup>th</sup> and 20<sup>th</sup> centuries in Britain is given, and the rediscovery of specimens supporting the record by Dr. Druce in 1931 is reported. This Berkshire record is accepted as *H. gothicum* Fr. A link to digital images of Dahlstedt's Herb. Hierac. Skand. XI:73 & 75 (1899), from the type locality, is provided. Images of a recently collected Swedish specimen, together with the 1931 English specimens, are included below and help to confirm the identification by Dr. Zahn.

Keywords: hawkweed; Fries; Druce; Pugsley; Zahn.

## Early records in the British Isles.

The name *Hieracium gothicum* was first published by Fries (1845 p.6), with a reference to a syntype, Herb. Norm. II. 12. A second full account of the species was published by Fries (1848 p.121), and this is the reference given as the place of publication by Euro + Med Plantbase and IPNI. The information provided is spread over two pages, but in paragraph two Fries mentions a British record, "Blytt; vidi quoque ex Anglia *(Woods!)"*.

This record was noted by Babington (1851 p. 198): "England. *Mr. Woods*. Hook and Ockham, Surrey. *Mr. Watson.* Teesdale. *Mr. Backhouse.*" I have not been able to trace a published record by Joseph Woods, 1776-1864. There is a Short Note, Allen (1983 p.273), about the herbaria of Joseph Woods. The earlier collection is thought to have been given to **SWA**, in 1839-40, but has been irretrievably lost. Woods' main British herbarium was acquired after his death by F. Townsend and passed in due course to **SLBI**. Knowing that many **SLBI** specimens are on Herbaria at Home, I searched the database for specimens collected by J. Woods. Five specimens were listed. They were all going to seed and in a poor state of preservation. Only two were identified but the remaining three were not *H. gothicum.* The herbarium at **SLBI** is closed at the moment, so further inquiry is impossible.

The records by Mr. Watson looked more hopeful. However, the view of the Genus put on record by Watson (1849 p.65) is not encouraging and *H. gothicum* does not appear in volume 2. *H. gothicum* Fries does appear in volume 3. Watson (1852 p.362) records, "I cannot hesitate to pronounce the plants of Surrey and N. Hants identical with Swedish specimens of *H. rigidum* Hartm. received from Mr. C.

Hartman (the son), but apparently collected, and possibly also labelled, by Mr. Nyman of Stockholm." I searched the floras of Surrey, and in Brewer (1863 pp.121-123), although H.C. Watson contributed records of all the native hawkweed species listed, there is no mention of Hook or Ockham. In Salmon (1931 pp.418-419), under *H. tridentatum* Fr. area IV., there is a record "near Ockham! *Hb. Wats."* but under *H. rigidum* Hartm. area IV., there is another record "Ockham. Watson. Cyb. Brit. III, 362: 1852" and in area VII., there is a record "Hook *Watson I.c."* So, although Salmon had seen a dried specimen that he was convinced was *H. tridentatum* Fr., he was unable to find any specimens of *H. rigidum* Hartm. Salmon (1931) does not include *H. gothicum* in his account of the Surrey flora. In Lousley (1976 p.330), although some old records are included, Hook and Ockham are again excluded from all the records of hawkweeds in section *Tridentata* Fr.

The final record in Babington (1851) "Teesdale. *Mr. Backhouse."* is also disappointing. Pugsley (1948 p.244) records that *H. calviceps* Pugsley, together with the following species, [*H. gothicoides* Pugsley & *H. uginskyense* Pugsley] appear to be included in Backhouse's account of *H. gothicum* Fr. Sell & Murrell (2006 p.255) include *H. calviceps* Pugsley and *H. gothicum* auct. as synonyms of *H. lissolepium* Roffey. Jones (2014 p.48) records *H. lissolepium* Roffey from two localities in Teesdale, so again the record is not of *H. gothicum* Fr.

Progress in recording *H. gothicum* Fr. continued steadily and by the publication of volume IV (Watson 1859 p.197), the species was recorded from 9 vice-counties with the type of distribution given as mountainous. Watson (1873 p.222) is a disappointment, because under *H. tridentatum* there is a note; "N.B. This includes the so-called *gothicum* and *rigidum* of the southern counties, but is different from the *rigidum* of Backhouse, no. 31". Pugsley (1948 p.273) confirms that the *H. rigidum* of Backhouse is indeed different and is *H. latobrigorum* (Zahn) Roffey. Jones (2014 p.37) confirms the presence of the latter alongside the Tees in v.c.65 Northwest Yorkshire. However, despite his misgivings about the status of *H. gothicum* (Watson 1874 p.700), in the section "Comital Census", *H. gothicum* is recorded from 11 counties [vice-counties]. Of the 11 records, 7 are vouched for by the cited names of personal authorities. The total number is also split between the southern counties, Notts., southward, and northern counties, Derby northward, south 2, north 9. Watson (1883a p.231) in his final work on Topographical Botany lists 13 vice-counties with records of *H. gothicum* as follows:

48 Merioneth.	Backhouse mon.	[ <b>BM</b> ?]
49 Carnarv.	Backhouse mon.	[ <b>BM</b> ?]
62 York n. east.	Baker sp.	[Hb. H.C. Watson, K]
64 York m. west	Tatham sp.	[Hb. H.C. Watson, K]
65 York n. west	Baker.	[ <b>K</b> ?]
66 Durham.	Baker sp.	[Hb. H.C. Watson, K]
67 Northumb.	Storey sp.	[Hb. H.C. Watson, K]
68 Cheviotland.	Baker.	[ <b>K</b> ?]
80 Roxburgh?		
85 Fife.	Dewar sp.	[Hb. H.C. Watson, K]
87 Perth west.	Boswell sp.	[Hb. H.C. Watson, K]

90 Forfar. Croall sp. 92 Aber. south. Croall sp. [Hb. H.C. Watson, **K**] [Hb. H.C. Watson, **K**]

There are no records of *H. gothicum* Fr. in either of the two Supplements to Topographical Botany. The eighth edition of the London Catalogue of British Plants, Watson (1883b), has a total of 11 comital records. The study of hawkweeds in Britain can be seen to be entering a new phase after Watson (1883b).

## 1886-1950 records in the British Isles.

This period saw the introduction of sections into the list of *Hieracium* in the London Catalogue. Hanbury (1895 p.26) lists *H. gothicum* in Group X, *Rigida,* with 12 comital records, and in Hanbury (1908 p.26) the total of comital records had risen to 14 with the species now placed in Group VII, *Rigida.* In the final addition of the London Catalogue, Roffey (1925 p.29) places *H. gothicum* Fr. in section 7 *Tridentata* with 17 comital records.

Linton (1905 p.76) follows Hanbury (1895 no.977 p.26) in his treatment of *H. gothicum* and gives the authors as Fr. p.p. (1848) & Backh. J. f. (1856). The inclusion of the Backhouse records makes it clear that the Scandinavian plant now called *H. gothicum* Fr. is not being described. So, although the number of localities is approximately the same as the comital records in 1895, it seems probable that all the records will be of different taxa, not *H. gothicum* Fr.

Druce (1922 p.500) noted that the record of *H. gothicum* Fr., Shetland Isles in Linton (1905 p.77) lacks authority. Beeby (1908 p.116) also confirms "neither Mr. Linton, Mr. Hanbury, nor the writer can find any basis for the record".

Druce (1932 p. 656) published a record *H. gothicum* Fr. (*eu-gothicum* Zahn), det. Dr. K.H. Zahn. Hermitage, Berks, 1931, Druce.

The other major work in this time period is Pugsley (1948). *H. gothicum* Backh. is discussed on pp.239, 244 & 245. On p.239 Pugsley states that Backhouse applied the name *H. gothicum* in a wide sense, and on p.245 "The *H. gothicum* of Backhouse's herbarium is mainly this species" [H. gothicoides Pugsley]. H. aothicoides Pugsley is confined to Scotland, confirmed by McCosh & Rich (2018 p.58). Backhouse records from England, Ireland and Wales are other species whose identity can only be established by finding the specimens. *H. gothicum* Fr. is mentioned on 14 pages in Pugsley (1948) but the removal of the species from the British list was assured by the statement on p.239: "I have failed to trace any example identical with Dahlstedt's exsiccatae, and *H. gothicum* Fr. amend. Dahlst. cannot therefore be admitted, on present evidence, as a British species, in spite of Zahn's citation." Pugsley is referring to the citation by Zahn (1921-3 p.862) where the taxon is called *Hieracium levigatum* Willd. subsp. *gothicum* (Fr. Symb. pp.) Dahlst. Bidr. III (1894 p.182). Dahlstedt called the taxon *H. gothicum* Fr. subsp. gothicum Fr. Zahn (1921-3 p.862) records the taxon from Scotland & England but does not list any localities from which he had seen a specimen.

#### Post 1950 in the British Isles.

Sell & West (1958 p.128) include *H. gothicum* auct.? under species 189 *H. gothicoides* Pugsl.

The Flora of Berkshire, Bowen (1968) does not mention H. gothicum Fr., the

author being influenced by P.D. Sell, but is able to record *H. umbellatum* L., *H. trichocaulon* (Dahlst.) Johanss. and *H. lachenalii* C.C. Gmel. from Hermitage, thus indicating an area with three of the widespread southern England hawkweeds present. The most recent Flora of Berkshire, Crawley (2005), despite its bulk, manages to include only *H. umbellatum* L., and *H. trichocaulon* (Dahlst.) Johanss. from Hermitage. Crawley (2005) had the misfortune to appear one year before the major revision of Sell & Murrell (2006), so it is probably no surprise that *H. lachenalii* auct., non C. Gmelin appears as a synonym under *H. acuminatum* Jord. rather than under *H. argillaceum* Jord. Neither of the two editions of the Hawkweed Atlas have any record from v.c.22 Berks. of *H. acuminatum* Jord.

Sell & Murrell (2006 p.254) place *H. gothicum* auct. as a synonym of *H. gothicoides* Pugsley and (p.255) as a synonym of *H. lissolepium* Roffey. Sell & Murrell (2006 p.252) place *H. gothicum* var. *latifolium* Backh. and *H. gothicum* forma *latifolium* (Backh. f.) W.R. Linton as synonyms under *H. aphyllopoioides* F.N. Williams, a name which is a nom.illeg., see Bevan (2023 p.204).

McCosh & Rich (2011 & 2018) in the two editions of the Atlas, make no mention of an occurrence in the British Isles of *H. gothicum* Fr.

Recent work on specimens in the Druce herbarium at **OXF** has led to the discovery of seventeen sheets of specimens, plus three duplicate sheets, originally determined as *H. gothicum* Fr. or a var. or form thereof. The specimens were collected between 1884 and 1916. None of the specimens is *H. gothicum* Fr. and they have now been redetermined as follows:

#### *H. backhouseanum* (Zahn) Roffey

v.c.92 South Aberdeen, Inverey. 1897 (Linton E.F. & W.R.) Set 70.

### H. calviceps Pugsley

v.c.66 Durham, Tees bank, Winchbridge. [no date, Coll. Druce G.C.?] v.c.69 Westmorland, Codale Tarn. 1888 (Fox H.E.) v.c.69 Westmorland, Colwith Force. 1888 (Fox H.E.) v.c.69 Westmorland, River Brathay. 1905 (Linton W.R.)

#### *H. eboracense* Pugsley

v.c.66 Durham, Wear bank in shade, Bishop Auckland. 1876 (Soutter J.P.) v.c.66 Durham, Wear bank, Bishop Auckland. 1877 (Soutter J.P.)

#### H. gothicoides Pugsley

v.c.88 Mid Perth, near Garth Castle. 1913 (Shoolbred W.A.)
v.c.90 Forfar, Clova. 1889 (Linton E.F.) Set 69.
v.c.92 South Aberdeen, Castletown. 1855 (Backh. J. f.)
v.c.92 South Aberdeen, Inverey. 1897 (Linton E.F & W.R.) Set 96.
v.c.95 Elgin, Bridge of Brown. 1905 (Marshall E.S.)
v.c.96 Easterness, Laggan Bridge. 1916 (Marshall E.S.)

*H. ornatilorum* P.D. Sell & C. West v.c.60 West Lancaster, Silverdale. 1914 (Cryer J.)

*H. pseudacrifolium* Pugsley v.c.49 Carnarvon, nr Capel Curig. 1912 (Marshall E.S.)

*H. uiginskyense* Pugsley v.c.104 North Ebudes, Uig. 1884 (Linton W.R.) v.c.104 North Ebudes, Uig. 1888 (Linton E.F.) Set.69.

The list of vice-county records above, together with the list under early records in the British Isles, brings the total to 18 vice-counties. Roffey (1925 p.29) had the total as 17 comital records. The record by Marshall, v.c.95, was originally recorded as in v.c.96, the vice county boundary only being clearly defined by the publication of Dandy (1969). This would account for the additional vice county, although there could be other vice county records in other herbaria.

I was therefore very surprised to discover in **OXF**, in a folder marked indet., a specimen collected by G.C. Druce in 1931, and identified by Zahn in 1931 as *H. levigatum* Willd. subsp. *eugothicum* Zahn. The two specimens are well pressed but were of a taxon I had not seen before.

### Confirmation of the 1931 taxon.

Starting with Fries (1845 p.6), there seems at first glance little to help identify the taxon. The entry for species 11 *H. gothicum* Fr. is simply "invol. n. 5. H.N. II.12." However, Fries followed previous authors and split the genus *Hieracium* L. into six sections. Looking at these it is apparent that *H. gothicum* is associated with *H. vulgatum* Fr. rather than with the section *Accipitrina* Koch. containing *H. umbellatum*, *H. boreale* and *H. rigidum*. There is something unusual about *H. gothicum* and in the long footnote Fries wrote "Ex involucro vero ad *Accipitrina* pertinet *H. gothicum* quasi *H. vulgatum* capitulis *H. borealis;* "[from the involucre in fact *H. gothicum* belongs to Accipitrina; like *H. vulgatum* with the capitulum of *H. borealis;* ]. Fries (1848 p.121) gives a description in Latin which describes the squamis [phyllaries] as "spiraliter imbricatis", or as Babington (1851 p.198) states "spirally imbricated". A description I have never seen applied to phyllaries before, which should confirm the identification as *H. gothicum*, if the specimens have that unusual morphology.

Dahlstedt (1894 p.182) names the taxon *H. gothicum* (Fr.) subsp. *gothicum* (Fr. ex. p.) and describes the "Squamae latiusculae multiseriales sat regulariter imbricatae," [Scales (phyllaries) broad, many ranked, fairly regularly overlapping]. Like Fries, Dahlstedt (1894) placed the taxon with *H. vulgatum* Fr., in section I subsection D., *Vulgata* Genuina (Almqu.). *H. vulgatum* Fr. is the second species in the subsection and *H. gothicum* Fr. the thirteenth, on p. 174, the last species in the subsection. Both Fries (1848 p.121) and Dahlstedt (1894 p.184) mention the district Femsjö in Smäland as a locality for the species, which has not yet been lectotypified. Images of the Druce 1931 specimens are given in Figs. 1 & 2, and of a recently collected specimen provided by Tommy Nilsson in Fig. 3. Images of Dahlstedt specimens from 1896 can be seen on Sweden's Virtual Herbarium website; Herb. Lund (LD) no. 1376902 and no. 1372642.



Figure 1. *Hieracium gothicum* (detail of inflorescence below). No. 00183312. Herb. Druce, OXF. © Oxford University Herbaria, Department of Biology



Figure 2. *Hieracium gothicum* (detail of inflorescence). No. 00183312. Herb. Druce, OXF. © Oxford University Herbaria, Department of Biology

### Description

Phyllopodous or hypophyllopodous *perennial herb* with a branched stock. Stem 40-100 cm, yellow-green, lower third suffused purple, robust [**OXF** specimens], to slender in some Scandinavian specimens, striate, with moderately dense, very long (4-6 mm) simple eqlandular hairs particularly in the lower half. *Leaves* 7-12, green above paler beneath, the basal absent in **OXF** specimens. The lamina of the lower leaves 6-14 x 2.5-2.8 cm slightly broader and shorter in Scandinavian specimens. In shape lanceolate, tending towards oblanceolate occasionally in lower leaves, acute at apex, the margins of most leaves are dentate, with two or three teeth set about 2 cm apart, the lamina of the upper suddenly decreasing in size about two-thirds of the way up the stem and becoming bract-like. All with short to medium simple eglandular hairs on upper and lower surface and on the margin with stellate hairs patchily on lower surface. The lower leaves have long winged petioles which guickly get shorter on the higher leaves until they are sessile. Inflorescence with 2-20 capitula, paniculate, with suberect branches, sometimes with several lower branches; peduncles with numerous stellate hairs almost hiding small glandular hairs and sometimes with an occasional simple eglandular hair. Capitula 35-45 mm in diameter, rounded at base. *Involucral bracts* not seen in bud, the buds present on the specimens in **OXF** are too well pressed. The longest bracts are 11 mm, base to apex, and over 1 mm broad, conspicuously overlapping at middle of the capitulum, apex narrowly obtuse, bract gradually narrowing below apex, yellowish-green,

images look much darker. Outer bracts loosely arranged. Bract pubescence is sparse, mainly medium (0.7-0.9) mm, straight and stout, blackish glandular hairs with simple eglandular hairs translucent in the upper half forming about 10% of pubescence, stellate hairs confined to the lower half, the apical coma is inconspicuous. *Ligules* yellow, glabrous. *Styles* yellow but with many dark papillae, a few pollen grains present on a Scandinavian specimen. *Achenes* not seen. This description has been compiled from the Oxford specimens and the digital images of Dahlstedt's Herb. Hierac. Scand. no. XI: 73 & 75.



Figure 3. Tommy Nilsson's Herbarium No. 11277 *H. gothicum* Fr. © Tommy Nilsson.

#### **European Distribution**

Both the Euro+Med Plantbase and POWO agree that *H. gothicum* is widespread in Europe, They record it as native from North European Russia, Sweden, Poland, Slovakia, Czech Republic, Germany, Austria, Switzerland and France. The Euro+Med Plantbase gives a bibliography which is keyed to the countries in which *H. aothicum* occurs. For France and several other countries, they rely on Zahn (1936-8) and Sell & West (1976 p.410). The data are therefore based on knowledge now between 50 and 90 years old. The recently published French flora, Tison & de Faucault (2014 p.461), under Group P. 6 série de *H. laevigatum* Willd, has an entry on "*H. gothicum* Fr., de Scandinavie, a été répétitivement cité par confusion avec des H. laevigatum s.l. hypophyllopodes habituellement des individus juveniles devenant aphyllpodes à l'âge adulte." [H. gothicum Fr., of Scandinavia has repeatedly been cited due to confusion with H. laevigatum s.l. in the hypophyllopodous state. Those juveniles develop the aphyllopodous state at the adult age.] *H. gothicum* Fr., is not included in the Latin names index to the flora, but is in the index to Occasional or erroneously recorded taxa. The removal of France from the H. gothicum map on Euro+Med and POWO would reduce the western distribution of *H. aothicum* and if the records from the 19th and early 20th centuries from other countries were re-examined carefully, the distribution might be much reduced. As it is, the maps show subspecies distributed over large areas when in reality there might be only a few isolated records. *H. aothicum* Fr., as a species in Scandinavia, has the usual type of rather limited distribution. The bulk of the records are from Smaland, 17 localities, Västergötland, 13 localities and Halland, 11 localities. There have been collections from only 16 localities in the 21st century. A map can be seen at http://herbarium.emg.umu.se. Click Search history, enter Genus name and select gothicum in species, select search and when that is complete, click on the map.

#### Discussion

The first record in the British Isles was recorded by a Norwegian botanist, Blytt, and then reported by Fries (1848 p.121) but I have been unable to confirm this record. Babington (1851 p.198) included *H. tridentatum* Fr., *H. rigidum* Hartm. and *H.* gothicum Fr. in his account of Hieracium, and unlike Fries he placed all three in section Accipitrina, immediately following H. vulgatum Fr. It must be remembered that at that time, *H. rigidum* still remained an aggregate of taxa, which was not split up until 1894 by Dahlstedt. B[abington] (1897 p.113) records from the Journal of C.C. Babington that on July 7th 1842 "We went to Wynch Bridge, and found Hieracium rigidum." It seems that the "We" may have included Messrs. J. & J. Backhouse, who left on the 8th. H. tridentatum Fr., and H. gothicum Fr., are not mentioned in the Journal extracts but it is clear from the descriptions that Babington (1851) was describing three separate taxa, all of which he may have thought he had seen alive. Watson found the additional names suggested by Babington (1851) very irksome and obtained specimens of *H. rigidum* from Mr C. Hartman, apparently collected by Mr. Nyman of Stockholm and was convinced that H. gothicum = H. *rigidum* Hartm. A search of Sweden's Virtual Herbarium revealed only ten specimens of *Hieracium* collected by C.F. Nyman, who was a curator at the Naturhistoriska Museum, Stockholm. None of the specimens is of taxa in section Tridentata,

although two species in section *Oreadea* that were collected are said to be easily mistaken for section *Tridentata* taxa. Despite Watson's hope that the name on the labels was correct, it seems very possible that it was not. Backhouse (1856 p.77) wrote of *H. rigidum* [the British taxon] "that I do not feel fully satisfied of its identity with the continental *H. rigidum"*. Backhouse did not include the Surrey records of Watson in his distribution of *H. rigidum* or of *H. gothicum*. In his final work, Watson (1883a p.234), places the so-called *gothicum* and *rigidum* of the southern counties under *H. tridentatum*, agreeing with the conclusions of Backhouse about their distribution in southern England.

Hanbury (1894), wherever possible with names originating in Scandinavia, refers to the relevant exsiccata of Dahlstedt or Lindeberg, but Hartman did not issue sets of exsiccata. Thus for *H. rigidum* Hartm., Hanbury refers to Hartman (1820 p. 300) where there is a description but no mention of a type specimen. For *H. gothicum* (Fr. pt) Backhouse, Hanbury (1894) refers only to Backhouse (1856), thus guiding his readers to continue recording both species much as before. Only in Pugsley (1948) were both species removed from the British list. Pugsley never saw the Oxford sheet, placed amongst a bundle of indet. specimens and presumably overlooked the publication by Druce.

This isolated record is probably due to an accidental introduction by human activities, possibly during the planting of conifers in the woodlands of the area.

In Sweden the early publication of the name *H. gothicum* led to the attachment of subspecies or varieties. A good example is in Blekinges *Hieracium* Flora, Svanlund (1902), which lists four subspecies and one variety. All have now been published at the rank of species, the variety *blekingense* as recently as 2016. In Britain, unfortunately, many newly discovered taxa were named *H. gothicum* even though no one had a clear idea of the appearance of the taxon. As can be seen from the **OXF** specimens, the revised determinations are all species described sometime after the specimens were collected and are all British endemics.

Two of the redetermined names used above are given as synonyms in Sell & Murrell (2006). *H. backhouseanum* issued in Linton's Set of British Hieracium no. 70 as *H. gothicum* var. *latifolium* is placed as a synonym of *H. aphyllopodioides* F.N. Williams by Sell and Murrell (2006 p.252), this latter name is given by Williams as a synonym of *H. scoticum* F. Hanb., by Williams in his own publication, as explained in Bevan (2023 p.204). The only available name at the rank of species given by Sell & Murrell is *H. backhouseanum* (Zahn) Roffey. *H. calviceps* Pugsley is placed as a synonym of *H. lissolepium* Roffey in Sell and Murrell (2006 p.255). The Euro+Med Plantbase states *H. lissolepium* Roffey *nom. illeg.* for reasons they explain. IPNI class *H. lissolepium* Roffey as an *isonym*. I have therefore used the name *H. calviceps* Pugsley as the specimens fit the description and are from localities mentioned by Pugsley (1948 p.244).

*Hieracium gothicum* Fr. using the key in Stace (2010 p.723) can be seen at stage 4 to fit neatly into section *Tridentata*, unless the specimen has a short stem. I would place *H. gothicum*, in the classification of Sell & Murrell (2006), before species 37. *H. gothi*coides Pugsley, from which it can be separated by the presence of glandular and stellate hairs on the involucral bracts, which are absent in *H. gothi*coides. *H. cambricogothicum* Pugsley, now regarded as extinct by McCosh &

Rich (2018 p.453), can be distinguished by the lack of simple eglandular hairs and stellate hairs on the involucral bracts.

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