

SHORT COMMUNICATION

Hieracium doryphorum Haveman & De Ronde, a new hawkweed species from the Netherlands (Cichorieae, Asteraceae)

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Key words

biodiversity
cryptic species
Hieracium doryphorum
neotendism
taxonomy

Abstract – In this paper, we describe *Hieracium doryphorum* Haveman & De Ronde, a new species of *Hieracium* sect. *Vulgata* (Griseb.) Willk. & Lange. Specimens of this new species were previously misidentified as *H. festinum* Jord. (sub nomine *H. vulgatum* Fr. subsp. *festinum* (Jord.) Zahn), but the new species differs from the latter by its elongated and strongly dentated leaves, the absence of stellate hairs on the involucre, and the long and slender glandular hairs in the inflorescence. *Hieracium doryphorum* is locally common in the northern Veluwe, Province of Gelderland, and at the Hondsrug, Province of Drenthe, the Netherlands, and it was also sparsely found elsewhere in the Netherlands in the Provinces of Overijssel, Drenthe, and Groningen.

Samenvatting – In de derde editie van de Flore du centre de la France et du bassin de la Loire die in 1857 werd gepubliceerd door Alexandre Boreau werden door hem tal van nieuwe *Hieracium*-soorten beschreven gebaseerd op informatie die was verstrekt door Alexis Jordan, waaronder *H. festinum*. In zijn revisie van de Nederlandse havikskruiden werd deze soort uit de sectie *Vulgata* (Griseb.) Willk. & Lange door Van Soest ook uit ons land vermeld van tal van plaatsen, namelijk als *H. vulgatum* Fr. subsp. *festinum* (Jord. ex Boreau) Zahn. Het materiaal dat onder deze naam in het herbarium van Naturalis in Leiden (L) is opgenomen is echter niet homogeen. Het noordelijke materiaal valt op door de lange, smalle bladeren en de lange klieren en dit materiaal komt noch overeen met de beschrijving in de genoemde Flora, noch met het typemateriaal dat in het herbarium van het Muséum des sciences naturelles d'Angers in Angers (ANG) ligt. We beschrijven het noordelijke taxon daarom als een nieuwe soort met de naam *Hieracium doryphorum* Haveman & De Ronde. Van *H. festinum* verschilt de nieuwe soort door de lange bladeren met vaak opvallend lange tanden, het ontbreken van sterharen op het omwindsel en de dichtere bezetting van lange, slanke klieren in de bloeiwijze. *Hieracium doryphorum* is vrij algemeen op de Noord-Veluwe en de Hondsrug en is daarnaast aangetroffen op verspreide vindplaatsen in Overijssel, Drenthe en Groningen. Het epitheton *doryphorum* ('speerdruager') verwijst naar de lange smalle en puntige bladeren die aan speerpunten doen denken. *Hieracium doryphorum* is een soort van half-beschaduwde wegbermen en bosranden waarvan de vegetatie gerekend kan worden tot het Melampyryon pratensis (Melampyro-Holcetea) en de soort lijkt een zekere voorkeur te hebben voor oude wallen.

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INTRODUCTION

In 1857 the third edition of the Flore du centre de la France et du bassin de la Loire was published. The author, Alexandre Boreau (1803–1875), was a French pharmacist who

devoted his life to botany. The first edition of his Flora was published in 1840, but a novelty of the 1857 edition was the extensive treatment of the genus *Hieracium* L.; most of the species descriptions were based on information provided by Alexis Jordan (Gottschlich et al. 2011). Jordan (1814–1897) was known for his micro-morphological analysis of plants,

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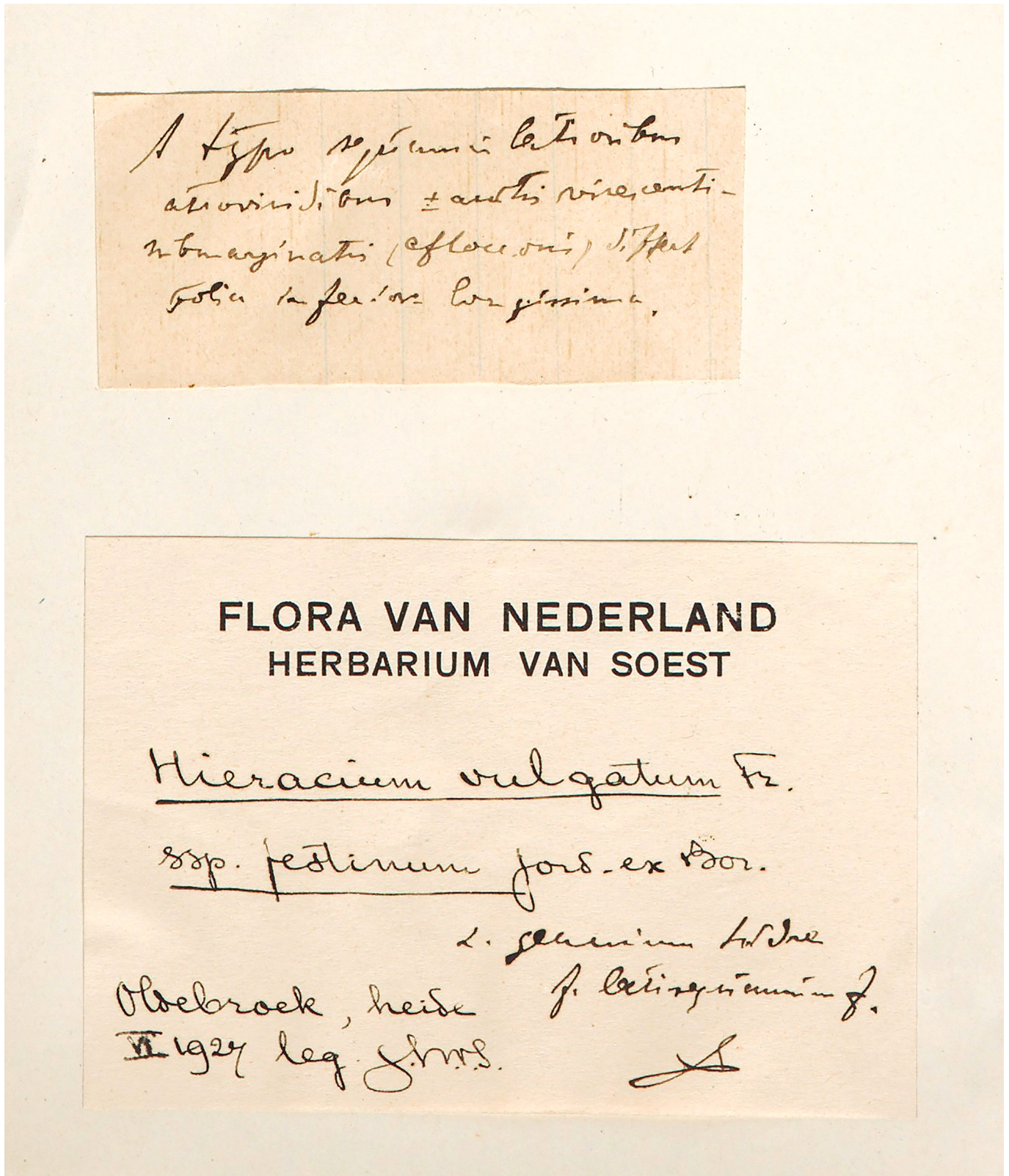


Fig. 1. Label (below) and determination label (upper) of a sheet with *Hieracium doryphorum* Haveman & De Ronde, nov. spec., from Oldebroek (L.3446958). The upper label was handwritten by Zahn and reads "A typo squamis latioribus atroviridibus ± acutis virescenti-submarginatis (affloccosis) differt / Folia inferior longissima". Source: Naturalis Biodiversity Center in Leiden (L), retrieved and downloaded from Naturalis' [biportal](#).

and he was accused of the endless splitting of species by his contemporaries. His 'microspecies' were mockingly called 'Jordanianas' or 'Jordanias'; 'Jordanons' is a term that is still in use (Stace 1989). Many Jordanons receive reappraisal again

recently after their reproduction biology became clear. Often, Jordan's microspecies turn out to be pure lines which are stabilised by autogamy (e.g. in *Draba* L. sect. *Erophila* Rchb. and *Polygonum* L.) or apomixis (*Hieracium*).

One of the *Hieracium* species published in [Boreau's Flora \(1857, p. 399\)](#) is *H. festinum* Jord. ex Boreau. The lectotype of this species, collected in the Departement Cher (Centre-Val de Loire) and cultivated in Jordan's garden, is kept in Boreau's herbarium in the Muséum d'histoire naturelle d'Angers (ANG). It was selected and depicted by [Gottschlich et al. \(2011\)](#) in a paper dealing with the typification of all names of *Hieracium* species collected by Jordan and Boreau. Zahn, the leading historical representative of the Central European school of hieraciology ([Haveman 2013a](#)), initially included *H. festinum* as a subspecies of *H. vulgatum* Fr. ([Zahn 1921](#)), but later he transferred this subspecies (with dozens of other taxa) to *Hieracium lachenalii* Suter ([Zahn 1930–1935](#)). When Van Soest started his revisional work on the Dutch *Hieracium* species (see for a short introduction: [Haveman 2013b](#)) and consulted Zahn for a determination of Dutch herbarium material, a part of the material was returned as '*Hieracium vulgatum* subsp. *festinum* J. ex. Bor.' ([van Soest 1926, 1929](#)).

The Dutch material of *Hieracium lachenalii* subsp. *festinum* (Boreau) Zahn in the herbarium of Naturalis Biodiversity Center in Leiden (L) can be divided in two groups: the first group, which is mainly found in the southern half of the country, consists of plants with oblong-lanceolate leaves with a more or less rounded base and the second group, which has a more northern distribution pattern, of plants with attenuate linear-lanceolate leaves. Well developed specimens of the latter form are very conspicuous because of the almost perpendicular teeth on the stem-leaves and the long, forward-curved teeth on the ground-leaves. In the most vigorous specimens the stem leaves have up to four free teeth in the petioles. In combination with the narrow leaves it makes the plant easy to recognise. Besides, Van Soest mentioned another notable character, viz. the long slender glands on the involucre bracts ([van Soest 1926: 178](#)).

Following Van Soest and Zahn, we identified the material of the northern form as *Hieracium festinum* and it was preserved under this name in the herbarium of the first author. Because *H. festinum* is one of the more common and readily recognisable species of the section *Vulgata* (cf. [Haveman 2012](#)), this northern form became for us the 'normal' *H. festinum* and material of this 'northern *festinum*' was not even collected. However, in 2003 we collected material of a to us unknown *Hieracium* species in the 'Voetbrugbosje' near De Lutte, Province of Overijssel. The material was sent to Günter Gottschlich (Tübingen, Germany), who identified the plants as *H. lachenalii* subsp. *festinum*. Although the plants have clearly broader rosette-leaves than we knew from *H. festinum*, with very small teeth, as well as large outward curved teeth at the stem leaves, we had no reason to doubt Gottschlich's identification and we concluded that the shape and dentation of the leaves of *H. festinum* are rather variable.

However, serious doubt on the identity of our 'northern *festinum*' arose when the first author bought a copy of [Boreau's Flora \(1857\)](#). After translation of the original description of *Hieracium festinum*, he concluded that his herbarium material of the 'northern *festinum*' does not fit very well with the description in Boreau's Flora and neither with the one given by [Zahn \(1930–1935\)](#). [Boreau \(1857\)](#) described *H. festinum* as having lanceolate leaves, peduncles with short eglandular hairs, and glandular hairs on the green involucre bracts which are shorter than the width of the bracts. This concurs with the glandular hairs on the involucre and the indumentum on the peduncles in the type material as depicted by [Gottschlich et al. \(2011\)](#). The material of our 'northern *festinum*' has linear-elliptic leaves and long glandular hairs on the peduncles and the involucre, which is, furthermore, dark green instead of green. These differences were also noted by Zahn. In the herbarium of Naturalis in Leiden (L), material of the 'northern *festinum*' from Oldebroek (north-

ern part of the Veluwe, Province of Gelderland, [L.3446958](#), collected in 1927) was separated by Zahn as *H. vulgatum* Fr. subsp. *festinum* J. ex. Bor. var. *genuinum* Sudre forma *latisquamum* Zahn (in sched.) with the following comment ([Fig. 1](#)):

"*A typo squamis in latoribus atroviridibus ± acutis virescenti-submarginatis (afloccosis) differt / Folia inferior longissima*" [differs from the type by broader, more or less acute, dark green involucre bracts with green margins (without stellate hairs) / Lower leaves very long]

Above all, the name and rank given by Zahn show the enormous complexity of the taxonomy and nomenclature of *Hieracium* in the early 20th century, and mentioning it here is by no means meant as a formal description of the name. According to [Boreau \(1857\)](#), *Hieracium festinum* has dentate or dentate-serrate ('dentées') rosette leaves, and this fits with the dentation of the leaves in the type material ([Gottschlich et al. 2011](#)) as well as the leaves in the plant from the Voetbrugbosje, which has been identified as 'true' *H. festinum*. We asked Gottschlich again for advice, and after studying several photos of the 'northern *festinum*' from the collection in L, he concluded that the material doesn't match any known species from Germany. This leads to the conclusion that our 'northern *festinum*' is a new and hitherto overlooked taxon, which apparently has a regional distribution area in the northern part of the Netherlands. This new taxon is supposed to be a polyploid obligate apomict, as all but one *Hieracium* species in the Netherlands ([Haveman 2013a](#)), and supposedly a triploid like most typical species from the section *Vulgata* ([Chrtek et al. 2007](#), [Chrtek et al. 2009](#), [Tyler & Jönsson 2009](#)). We describe it here as a new species, *Hieracium doryphorum*, in line with the northern school of hieraciology ([Haveman 2013a](#)). For the terminology (parts of the plants, shapes, lengths, and numbers) we follow [Shaw \(2020\)](#).

***Hieracium doryphorum* Haveman & De Ronde, nov. spec.**
— [Fig. 2 & 3](#).

This species belongs to *Hieracium* sect. *Vulgata* (Griseb.) Willk. & Lange.

Holotype: L, *Haveman NS185/2*, R. Haveman, I. de Ronde & T. van Heusden, 5 juni 2019. "NL, Dr., Havelte, militair terrein Havelte West, net voor ingang van terrein, 210.134-533.776. Grazige zoom op oude wal" [NL, (Province of) Drenthe, Havelte, military area Havelte West, just before entrance of the area, 210.134-533.776 (= 52.78846° N, 6.20449° E). Grassy woodland fringe on old bank] — [Fig. 2](#) (habitus) and [3](#) (detail of the inflorescence).

Isotypes: Herb. R. Haveman, *Haveman NS185/1*, [3](#), and [4](#).

Rosette forming erect hemicryptophyte, (25–)35–55(–65) cm from the base to the accladium. Stem green, suffused with red in the lower part, with numerous long pale eglandular hairs at the base, becoming few to occasional upwards, but here with a short dark base, stem in the upper half with increasing stellate hairs and occasional to scattered fine short (up to 0.5 mm long) glandular hairs. Basal leaves green, sometimes the outer suffused with red at the abaxial side, (3–)4–6(–11), forming a rosette, narrowly elliptical-oblancheolate (4.0:1–5.5:1), the outer leaves sometimes oblancheolate, (up to) 8–12(–14) × (1.2–)1.5–2.0(–2.2) cm; base attenuate; apex acute; outer leaves denticulate to dentate, the inner ones aquiline-mammiform with forward pointing lower teeth, in exceptional cases with free teeth in the petiole ([Fig. 4](#));



Fig. 2. Holotype of *Hieracium doryphorum* Haveman & De Ronde, nov. spec. Photo: R. Haveman.



Fig. 3. Detail of the inflorescence of the holotype of *Hieracium doryphorum* Haveman & De Ronde, nov. spec. Left the peduncle, right the involucre. Photo: R. Haveman.

teeth along 80–90(–95)% of the margin; abaxial side of leaves with few medium (c. 1 mm) eglandular hairs especially towards the edges and occasional stellate hairs, adaxial side with few medium eglandular hairs, without stellate hairs; midrib with numerous medium to long (up to 2 mm) eglandular hairs; petiole with numerous-dense long (up to 5 mm) white wavy eglandular hairs. Stem leaves 2–5(–6), narrowly elliptical to linear-elliptic, attenuate base and (narrowly) acute apex, the middle ones with conspicuous aquiline-mammiform teeth along the lower 60% of the leaf margin, the upper leaf often (strongly) reduced, bract-like. Inflorescence c. 35% of the total height of the plant, rather narrowly cymose-corymbose with (3–)5–7(–9) straight to sometimes slightly arcuate branches which overtop the terminal flower, the lowest (8–)10–14 cm, often with a long lowered branch; capitula (5–)9–23(–31); accladium short, 7–12 mm. Peduncles with dense stellate hairs and numerous dark glandular hairs of different lengths (short to medium) with a dark head, the longest \pm as long as the diameter of the peduncle. Involucral bracts (8–)9–10 mm acute, outer dark green with numerous up to 0.8 mm long dark glandular hairs with dark heads, the inner light green with few glandular hairs; stellate and eglandular hairs absent. Ligulae glabrous tipped or sometimes with ciliae (as in the type). Styles discoloured. Receptacle pits shortly-dentate. Flowering time: (last week of May to) June.

Chromosome number unknown. Probably apomictic.

Etymology — The epithet *doryphorum*, which can be translated as 'spear-bearing', refers to the attenuated linear-lanceolate leaves. Doryphoros (Δορυφόρος), a statue depicting a male spear-bearer made by Polykleitos between 450–440 BC, is one of the best known Greek statues of classic antiquity. The original was lost and is known only from later Roman bronze and marble copies.

Distribution — *Hieracium doryphorum* is only known from the northern part of the Netherlands (Fig. 5), with concentrations at and around the Hondsrug in the Province of Drenthe and at the northern Veluwe in the Province of Gelderland. The species was found as north as the Wadden Island of Terschelling (T. van Heusden, 2019) and as south as Kootwijk, in the central part of the Veluwe.

Ecology — As virtually all members of section *Vulgata*, *Hieracium doryphorum* is a species of light woodlands and semi-shaded road verges. The species prefers nutrient poor, acidic and dry sands, and it is mainly found in landscapes formed in the Saalien (Riss or Wolstonian) glacial period. The type material is collected on an old (wooded) bank, like several other specimens in the herbarium of the first author. Of the 11 vegetation relevés with this species in our private vegetation databases, 6 are reported to be made at old banks in the edge of woodlands, indicating the preference of the species for such habitats. Typical species



Fig. 4. Extreme material of *Hieracium doryphorum* Haveman & De Ronde, nov. spec., from 't Harde, Province of Gelderland. Photo: R. Haveman.

Legenda

Physical-geographical regions

- Dune region
- Marine clay region
- Fluvial clay region
- Fen region
- Pleistocene sand region
- Colline region
- Urban

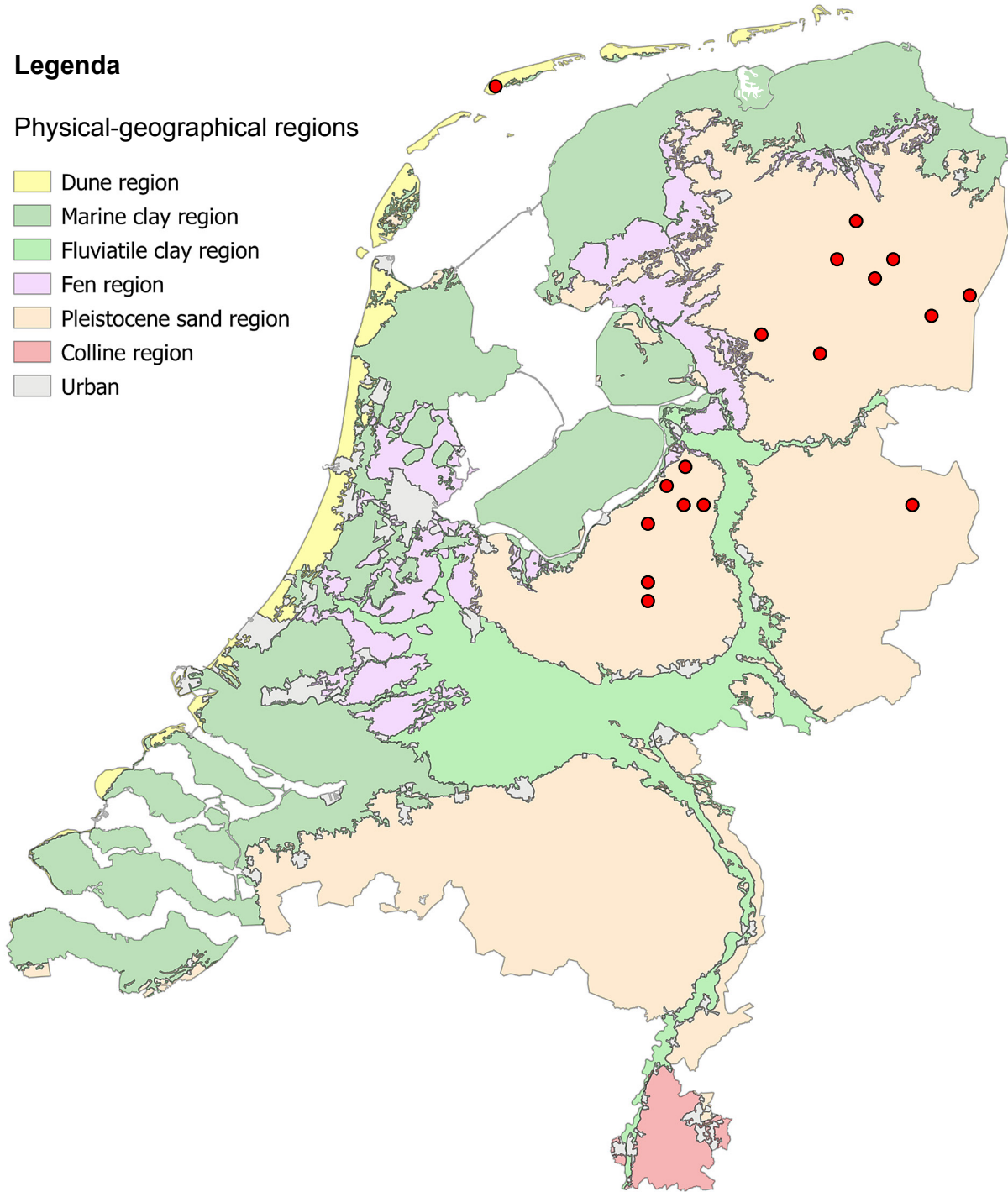


Fig. 5. Known distribution of *Hieracium doryphorum* Haveman & De Ronde. Background map: Physiogeographical regions. Source: [Publieke Dienstverlening Op de Kaart \(PDOK\)](#).

that accompany *H. doryphorum* are *Agrostis capillaris* L., *Holcus mollis* L., *Avenella flexuosa* (L.) Drejer, *Festuca filiformis* Pourr., species of *Hieracium* sect. *Tridentata* (Fr.) Arv.-Touv., *Pseudoscleropodium purum* (Hedw.) M.Fleisch., and *Polytrichum formosum* Hedw. Phytosociologically, the vegetation in which *H. doryphorum* grows can be assigned to the Melampyro-Holcetea class and the Melampyrion pratensis alliance (Klauck 1992, Weeda & Haveman 2017).

Identification — In its distribution area, the species is not easily confused with any other species, due to the narrow leaves which are often conspicuously dentated, combined with the dense

dark glandular hairs and the absence of stellate hairs on the phyllaries. However, as described above, *Hieracium festinum* can have a similar appearance. This species differs mainly by its broader leaves with shorter teeth, and shorter glandular hairs on the phyllaries. When *H. doryphorum* grows on nutrient poor soil, the dentation of the leaves may be less conspicuous; in such plants the indumentum of the phyllaries is conclusive for the identification of the species.

The Nordic species *Hieracium barbareaefolium* (Lönnr. ex Dahlst.) Johanss. has somewhat similar leaves, but has shorter glandular hairs on the peduncles and phyllaries.

Exemplary herbarium specimens of *Hieracium doryphorum*

The herbarium acronym L denotes the herbarium of Naturalis Biodiversity Center at Leiden, see [Thiers \(2019+\)](#); 'Herb. R. Haveman' refers to the first author's private herbarium.

Netherlands

Herb. R. Haveman — Province of Drenthe: *R. Haveman 062905*, 2006, Oudemolen (239.111-564.032); *R. Haveman & I. de Ronde NS200*, 2019, south of Assen (231.637-550.729). — Province of Gelderland: *R. Haveman 737*, 1992, Kootwijkerzand; *R. Haveman 1118*, 1994, south of Nunspeet (182-484); *R. Haveman, 2750*, 2004, northeast of Kootwijk (181.9-466.8); *R. Haveman 070531*, 2007, between Epe and 't Harde (190.6-488.6); *R. Haveman & I. de Ronde NS191*, 2019, between Epe and 't Harde (191.080-487.572); *R. Haveman & I. de Ronde NS192*, 2019, between Epe and 't Harde (191.132-487.413); *R. Haveman & I. de Ronde NS194*, 2019, between Epe and 't Harde (191.680-485.991).

L — Province of Groningen: *S.E. de Jongh s.n., s.d.*, Ter Apel ([L.3446935](#)). — Province of Drenthe, *Unio excursion 1933*, Hoogeveen (L7.21.42) ([L.3446945](#), [L.3446946](#)); *Unio excursion 1938*, Gasselte (J7.56.31) ([L.3446939](#)); *Siertsema s.n.*, 1942, Havelte (K6.47.12) ([L.3450554](#), [L.3450555](#)); *Siertsema 3928*, 1933, Havelte (K6.57.13) ([L.3450556](#)); *E.J. Dijkhuis s.n.*, 2013, Gees (240.874-529.647) ([L.2072875](#)). — Province of Overijssel: *M. & G. Kruseman s.n.*, 1927, Hengelo ([L.3446934](#)). — Province of Gelderland: *J.L. van Soest 533*, 1927, Oldebroek ([L.3446958](#), see [Fig. 1](#)); *J.L. van Soest 12191*, 1939, 't Harde (M6.22.43) ([L.3446961](#)).

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