

SHORT COMMUNICATION

Two new species of *Rubus* sect. *Corylifolii* Lindl. (Rosaceae) from the east of the Netherlands

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Key words

Rubus nemoripetens
Rubus adenacanthus
Rubus drenthicus

Abstract – Two new species of *Rubus* section *Corylifolii* Lindl. series *Ferociores* A. Beek, *Rubus nemoripetens* Meijer, Troelstra & A. Beek and *R. adenacanthus* Troelstra, Meijer & A. Beek, are described. The distribution area of both species includes the eastern and central sand areas in the Netherlands (mainly in the Provinces of Overijssel and Gelderland).

Samenvatting – Twee nieuwe soorten van het genus *Rubus* uit de sectie *Corylifolii* Lindley serie *Ferociores* A. Beek worden beschreven: *Rubus nemoripetens* Meijer, Troelstra & A. Beek en *R. adenacanthus* Troelstra, Meijer & A. Beek, die beide vooral in de provincie Overijssel en het noorden van Gelderland voorkomen.

Rubus nemoripetens lijkt in eerste instantie op een slappe *R. drenthicus* A. Beek & Meijer en werd daar dan ook mee verward. Hij wijkt daarvan echter constant af door de volgende kenmerken: bladloot minder fors (tot 5 mm dik) en vrijwel klierloos of met verspreide klieren en soms een enkele klierstekel; bladsteel weinig behaard en soms met een enkele klier; bladeren (vrijwel) alle 3-tallig. Bloeiwijze met regelmatige afstaande stekels, minder sterk beklierd. Kelk vrijwel onbestekeld. Bloemkroon meestal wit. Meeldraden langer dan de stijlen. *Rubus nemoripetens* kan ook worden verward met een slappe 3-tallige *R. ferocior* H. E. Weber. Deze laatste wijkt af door de volgende kenmerken: bladloot sterk ongelijk bestekeld en met veel rode klieren; topblaadje meestal convex; kroonbladen rozerood evenals de stijlen.

Rubus adenacanthus wijkt af van *R. nemoripetens* door de duidelijke aanwezigheid van klierstekels op bladloot en bloeias; 4–5-tallige bladeren aan de bladloot, met convexe blaadjes; van *R. ferocior* door een meestal korter toegespitst topblaadje, door minder naar voren gerichte, deels zelfs terug gerichte bladtanding; bleekroze tot witte bloemen (bij *R. ferocior* rozerood) en grauwe in plaats van donker bruinrode klieren; van *R. drenthicus* door de volgende kenmerken: bladloot (vrijwel) kaal, dunner (tot 5 mm dik), met ten minste enige, maar vaak talrijke klierstekels; bladeren bol, duidelijk, op de nerven min of meer kamvormig behaard; bladtanding periodisch met vrij brede tanden; topblaadje korter gesteeld (20–33%), met een afgeronde of zwak uitgerande voet; bloeitak, bloeias, zijtakken en bloemsteeltjes alle met klierstekels; vruchtbodem kaal.

Lokaal komt rond Holten een vorm voor die in hoofdzaak drietallig is, wel vaak met aanzet tot vijftalligheid door diepe insnijdingen van de zijblaadjes, geen of weinig klierstekels, compacte bloeiwijze met bleekroze bloemen, bladloot laag boogvormig. Het materiaal maakt geen erg homogene indruk; sommige exemplaren naderen in uiterlijk *Rubus adenacanthus*.

Verder wordt een sleutel gegeven tot de soorten van de serie *Ferociores* in Nederland.

Published on 13 August 2019

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INTRODUCTION

During the mapping for the checklist of the Dutch brambles (Van de Beek et al. 2014) several new taxa of *Rubus* were discovered, especially of the section *Corylifolii* Lindl. Though some of these were described in the same issue as the checklist (Van de Beek 2014), other taxa required more research in order to establish their identity and structure. Problematic in this regard was a group of plants which are similar to, but not conspecific with *Rubus drenthicus* A. Beek & Meijer (1990), occurring in the eastern part of the Netherlands, mainly in the Province of Overijssel and the north of the Province of Gelderland. Most of the plants differ from *R. drenthicus* by consistently 3-nate leaves and less glands. However, in almost the same region plants are found with 5-nate leaves, many glandular acicles and prickles, and convex leaves. After more fieldwork and new collections, it became clear that two clearly distinct species can be distinguished in this group, apart from apparently local biotypes, and next to *R. drenthicus*. Such local biotypes are a common feature of the section *Corylifolii*. Now the taxonomic status of the biotypes has been clarified, it is time to publish the well characterised and established ones as two new species.

MATERIAL AND METHODS

Between 1990 and 2012, herbarium material of both new species was collected in the framework of the checklist of Dutch *Rubus* species (Van de Beek et al. 2014). After it became clear that the plants did not belong to a known or already described species, field studies intensified and plants were collected systematically. On the basis of morphological characters, two large groups of specimens could be identified, which are described here as new species.

***Rubus nemoripetens* Meijer, Troelstra & A. Beek, nov. spec.**
— Fig. 1, 2, 3, 4, 5 & 6

Series *Ferociores* A. Beek

Holotype: HFN, K. Meijer 3264, 'Markelo, Markelose berg, in bosrand, 34.12.35, 10 juli 2004', 2 sheets.

The epithet 'wood searching' was chosen because *R. nemoripetens*, in contrast to most other *Corylifolii*, grows in woodlands and scrub edges.

Characteristic species with 3-foliolate leaves and slender patent prickles. Stem almost eglandular; anthers and ovaria pilose; stamens longer than the styles.

Primocane prostrate, diameter 3–5 (–6) mm, bluntly or sharply angular, hardly to slightly hairy, sometimes with 1–5 stipitate glands and scattered acicular glands; prickles (10–)15–20 (–30) per internode, patent, straight or slightly curved, sometimes clearly curved, (1–)2–5 (–7) mm long. Stipules linear, 8–14 mm long, with stipitate glands and long hairs. Petiole 7–10 cm, longer than the lateral leaflets, slightly hairy, sometimes becoming almost glabrous, with 6–20 straight or slightly curved or occasionally more strongly curved prickles, and sometimes with a stipitate gland. Leaves 3-foliolate, or rarely pedate 5-foliolate, adaxially with long hairs, abaxially hairy to the touch on the veins. Serrature fine, not or

barely periodical with straight or slightly recurved teeth, 1–1.5 mm deep. Terminal leaflet 50–90 (–105) mm long, from a cordate or emarginated base, ovate or obovate, gradually or rather abruptly acuminate; width (71–)79–95 (–118) % of the length. Length of the petiole (17–)20–35 % of the length of the leaflet.

Flowering branch (bluntly) angular, thinly to moderately pilose, with 4–10 (–12) glands per internodium. Prickles 0–25 per internodium, 2–4 mm long. Inflorescence rather large, rounded, often rather high leafy. Peduncles strongly ascendent, sometimes fasciculate, the longest with 1–8 flowers. Pedicels (5–)10–30 mm long, with 5–12 straight, 1–3.5 mm long pricklets, densely hairy and with many long ([0.3–]0.5–0.8 mm) greyish brown glands. Sepals initially reflexed, clasping later, grey, tomentose and pilose, densely glandular, with long stipitate glands and often some pricklets. Petals white or sometime pinkish, narrowly ovate, 10–12 mm long, 4–5 mm large. Filaments longer than the styles. Anthers hairy. Styles yellowish green or light brownish. Carpels with a few or more hairs. Receptacle glabrous. July – August.

Initially, *Rubus nemoripetens* was confused with weak forms of *R. drenthicus*. However, *R. nemoripetens* differs from the latter species consistently by the following characteristics:

Primocane weaker (diameter up to 5 (–6) mm) and almost eglandular or with scattered glands; petiole slightly pilose and only sometimes with few stipitate glands; leaves (almost) all 3-foliolate inflorescence with regular patent prickles, less glandular; sepals almost inaculeolate; flowers usually white; filaments longer than the styles.

Rubus nemoripetens can also be confused with weak plants of *R. ferocior* H.E. Weber (1977: 190; for a full description see Weber 1979). The latter species differs by its primocane with very unequal prickles and many red stipitate glands, usually convex leaflets, and reddish pink petals and styles.

Ecology — Open places in woodlands, wood fringes and wooded banks.

Distribution — The Netherlands: Regionally common in the Province of Overijssel and adjoining Gelderland; in the Province of Flevoland in the Kuinderbos.

Representative specimens

Netherlands

HFN — K. Meijer 2641, Markelo, Herikerberg in wegberm Monte bello, 34.13.34, 30 juli 2000; K. Meijer 3369, Rietmolen, Hoonesweg, wegranden bosrand, 34.35.53, 3 augustus 2005; K. Meijer 3265, Markelo, Markelose berg, in bos langs zandpad, 34.13.31, 10 juli 2004; K. Meijer 803, Wapenveld, in rand bos langs weg, 27.25.32, 18 juli 1988; K. Meijer 802, Hattum, Wapenveld, in bosrand, 27.15.52, 18 juli 1988; K. Meijer 3695, Haaksbergen, in bosrand bij Langelo, 34.36.51, 19 juli 2014; K. Meijer 4101, Elspeet in boswal langs weg, 27.51.14, 1 augustus 2016.

Herb. A. S. Troelstra — A. S. Troelstra 12-R001, eikenbosje, bijna op de hoek van de Ommerweg beneden Hellendoorn, bij Camping De Paddenstoel, 226.661/491.432, 16 juni 2012; 12-R008, Elsenervoorveld ten Z. van Rijssen, 231.884/476.677, 19 juni 2012; 12-R010, hoek van de weg vanaf Hotel Rijsserberg ten Z. van Rijssen, langs het spoor, 232.466/478.908, 19 juni 2012; 12-R011, open berm naast gemengd bos, Rijsserberg, bij Rijssen, 232.569/478.106, 19 juni 2012; 02-R004, Landgoed Ampsen, rand eikenbos, 34.22.51, 1 juli 2002; 07-R004, rand loofbos, landgoed Velde bij Warnsveld, 33.37.44, 12 juni 2007; 07-R006, rand loofbos landgoed Weldam ten Z. van Goor, 34.14.54, 12 juni 2007; 89-R097, excursie met A. van Beek en K. Meijer, padrand in loofbos, Kuinderbos bij Kuinre, 16.41, 6 juli 1989; 96-R004, rand gemengd bos, 't Hassink bij Epse [Gorssel], 33.17.52, 27 juli 1996.

L — S. E. de Jongh s.n., Markelose Berg, 3 juli 1965, L.3275884 (sub nomine *R. drenthicus*); Van Soest 11406 (L 123), Lochemseberg, achter huis, N.7.32.33, L.3275622 (sub nomine *R. drenthicus*); Van Soest 11407, N.7.42.13, straatweg Lochem-Barchem, 16 juni 1937, L.3275620 (sub nomine *R. ferocior*);



Fig. 1. The two herbarium sheets of the holotype of *Rubus nemoripetens* Meijer, Troelstra & A. Beek (K. Meijer 3264, HFN). Photos: K. Meijer, Herbarium Friscum.



Fig. 2. A leaf (left) and an inflorescence (right) of *Rubus nemoripetens* Meijer, Troelstra & A. Beek growing on a wooded bank along a road near Elspeet (Province of Gelderland), RD 183479 (km grid 27.51.14). Photos: K. Meijer, 1 September 2016.

Van Soest 11408, N 7.31.44, Paaschberg bij Lochem, 19 juni 1937, L.3275705/6 (sub nomine *R. ferocior* H.E.Weber); F.M. Muller 9149,

hoog eikenbos, l. van weg Losser-Oldenzaal, 11.07.1970, L.3275887 (sub nomine *R. drenthicus*).



Fig. 3. Tapestry of *Rubus nemoripetens* Meijer, Troelstra & A. Beek on the forest floor of a wood near Barchem, east of Zwiepse Weg, along the 'Bosrand', RD 227460. Photo: A.S. Troelstra, 18 July 2016.



Fig. 4. Detail of the margin of a leaflet of *Rubus nemoripetens* Meijer, Troelstra & A. Beek (A.S. Troelstra 12-R011, Herb. A.S. Troelstra) collected on 19 June 2012 at an open roadside bordering a mixed forest, Rijsserberg near Rijssen (Province of Overijssel), RD 232478. Photo: A.S. Troelstra.



Fig. 5. Above and below: Details of a primocane of *Rubus nemoripetens* Meijer, Troelstra & A. Beek (A.S. Troelstra 12-R008, Herb. A.S. Troelstra) collected on 19 June 2012 at the Elsenvoorveld south of Rijssen (Province of Overijssel), RD 231476. Photos: A.S. Troelstra.



Fig. 6. Detail of an inflorescens of *Rubus nemoripetens* Meijer, Troelstra & A. Beek (A.S. Troelstra 07-R006, Herb. A.S. Troelstra) collected on 12 June 2007 at the margin of a deciduous forest, Weldam Estate south of Goor (Province of Overijssel), RD 238470. Photo: A.S. Troelstra.

***Rubus adenacanthus* Troelstra, Meijer & A. Beek, nov. spec.** — Fig. 7, 8, 9, 10, 11, 12, 13 & 14

Series *Ferociores* A.Beek

Holotype: L, A.S. Troelstra 16-R029, 'wegberm bij Wegdammerhoek onder Goor, km 238,225-470,076, 22.06.2016'. 4 sheets.

The epithet 'with glandular prickles' was chosen because of the conspicuous gland-tipped pricklets of the species.

Primocane prostrate, dark purple at sunny places, diameter 4–6(–7) mm, glabrous or with a few hairs. Prickles (8–)15–25 (→50) per internodium, from a 2–3(–4) mm large base very abruptly attenuated, compressed, straight, patent or slightly reflexed, (3–)4–7 mm long, intermixed with a few to many pricklets, and gland tipped acicles in variable numbers. Petiole 5–13 cm long, longer than the basal leaflets, moderately hairy with appressed and patent hairs, with (8–)10–20(–22) slightly reflexed or somewhat recurved prickles, intermixed with pricklets and glandular acicles. Leaves pedate 4–5-nate (with 4-nate leaves the lateral leaflet often deeply lobate), convex, adaxially thinly pilose, abaxially (rather) densely covered with straight hairs, somewhat pectinate on the veins. Serrature periodical,

with large, rounded, partly reflexed, and usually short mucronate teeth, 1–1.5 mm deep. Terminal leaflet from a rounded or slightly emarginated base large obovate or almost circular, short acuminate, width 75–84 % of the length; length of the petiolule 20–33(–39) % of the length of the leaflet; basal leaflets sessile or with a 1–2 mm long petiolule.

Flowering branch angular, rather densely appressed and patent pilose, with many stipitate glands and dark tipped glandular acicles and prickles, and 7–23 slightly (2–)3–4.5 mm reflexed prickles. Inflorescence irregular, sometimes compact with short branches and pedicels, other times with patent to strongly ascendant longer branches which often end in 2–3 short stalked flowers, in the upper part without leaves, or with a few small simple leaves. Lower leaves 3-foliolate, adaxially rather densely hairy, abaxially densely hairy, sometimes grey tomentose. Prickles light yellow or on very sunny places with a purple base. Pedicels 10–30 mm long, densely tomentose and hirsute, with 3–15 (congesting near the base of the calyx) very slender up to 2–3 mm long, patent or slightly reflexed, and with some 0.5–1 mm long glandular acicles exceeding the hairs, sometimes with transitions to the often numerous stipitate glands. Sepals erect to clasping, greyish tomentose with white margins, without prickles or with some fine prickles at the base, more or less provided with fine gland-tipped acicles and stipitate glands. Petals white of pale pink, elliptical. Filaments as long as or somewhat longer than the green or red based styles. Anthers hairy. Carpels

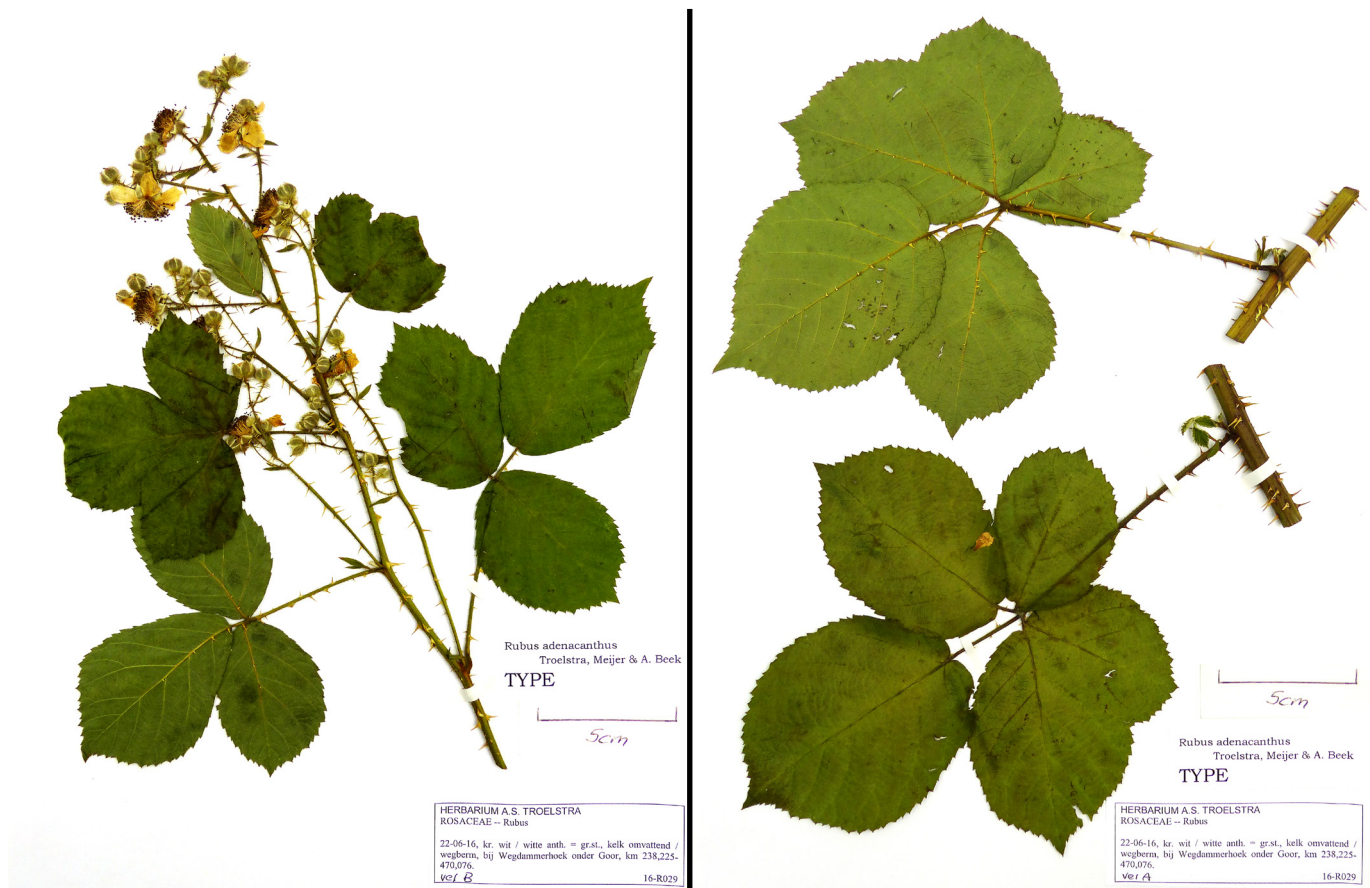


Fig. 7. The two herbarium sheets of the holotype of *Rubus adenacanthus* Meijer, Troelstra & A. Beek (A. S. Troelstra 16-R029, L). Photos: A. S. Troelstra.



Fig. 8. Primocane of *Rubus adenacanthus* Meijer, Troelstra & A. Beek of a plant growing under trees along the Hengelosche Weg near Ruurlo (Province of Gelderland), RD 226454. Photo: A. S. Troelstra, 18 July 2016.

glabrous or with a few hairs. Receptacle glabrous. *Rubus adenacanthus* differs from *R. nemoripetens* by the presence of glandular acicles and prickles on the primocane and the axis of the inflorescence, by 4–5-foliolate leaves with convex leaflets. It can be distinguished from *R. ferocior* by its more rounded, more broadly ovate to almost circular terminal leaflets, by its leaf serrature with partly reflexed, broader, rounded and usually shorter mucronate teeth, by its white or pale pink instead of reddish pink flowers, and by its greyish brown instead of dark reddish

brown glands. *Rubus adenacanthus* can be distinguished from *R. drenthicus* by the following characteristics: primocane weaker (up to 6(–7) mm diameter), (almost) glabrous, with at least some glandular acicles always present, but usually frequent; leaves convex, below noticeably hairy, more or less pectinate on the veins; serrature periodical, with moderately large teeth; terminal leaflets shorter stalked (20–33%), with a rounded or weakly emarginate base; flowering stems, petioles, and peduncles all with gland-tipped pricklets and acicles; receptacle glabrous.



Fig. 9. Leaf of *Rubus adenacanthus* Meijer, Troelstra & A. Beek of a plant growing under trees along the Hengelosche Weg near Ruurlo (Province of Gelderland), RD 226454. Photo: A. S. Troelstra, 18 July 2016.



Fig. 10. Detail of the margin of a leaflet of *Rubus adenacanthus* Meijer, Troelstra & A. Beek (A.S. Troelstra 04-R044, Herb. A.S. Troelstra) collected on 19 July 2004 under deciduous trees at the corner of the Westernmatenweg and Reutumerweg near Tubbergen (Province of Overijssel), RD 252489. Photo: A. S. Troelstra.

Ecology — Roadsides; along ditches, usually near wood fringes or wooded banks, seldom in fully open situations.

Distribution — The Netherlands: In the Province of Overijssel; in the Province of Gelderland in the northern Achterhoek and also west of the River IJssel in the region of Arnhem and near Elspeet; in the Province of Flevoland in the Kuinderbos.

Germany: One locality (Neudersum) in the District of Emsland, Lower Saxony, northeast of the area in the Netherlands.



Fig. 11. Inflorescence of *Rubus adenacanthus* Meijer, Troelstra & A. Beek of a plant growing next to the Postweg in Oldenzaal (Province of Overijssel) near an overpass over the motorway A1. Photo: A. van de Beek, 17 July 2014.



Fig. 12. Detail of a primocane of *Rubus adenacanthus* Meijer, Troelstra & A. Beek of the holotype of *Rubus adenacanthus* Meijer, Troelstra & A. Beek (A.S. Troelstra 16-R029, L). Photo: A.S. Troelstra.



Fig. 13. Detail of the flowering stem of the holotype of *Rubus adenacanthus* Meijer, Troelstra & A. Beek (A.S. Troelstra 16-R029, L). Photo: A.S. Troelstra.



Fig. 14. Detail of the inflorescens of the holotype of *Rubus adenacanthus* Meijer, Troelstra & A. Beek (A. S. Troelstra 16-R029, L). Photo: A. S. Troelstra.

Representative specimens

Netherlands

Herb. A.S. Troelstra — A.S. Troelstra 04-R044, wegrand hoek Westermatenweg en Reutumerweg bij Tubbergen, km 252,33-489,97, 19 juli 2004; 03-R044, walletje bij Markelose Berg, km 230,190-471,877, 23 juni 2003; 15-R064, wegberm onder eiken, Luttkerveldweg bij Markelo, km 229,739-473,372, 12 augustus 2015; 92-R011, zonnig talud langs Kanaalstraat Enschede, km 255-472, 18 juli 1992; 16-R017, berm bij Lochem, km 225,441-462,817, 21 juni 2016; 14-R020, berm ten zuiden van Hengelo, m 251,601-471,898, 28 juni 2014; 14-R013, wegberm bij Tweekelo, km 253,396-471,618, 28 juni 2014; 16-R061, berm fietspad Hengelosche Weg bij Ruurlo, km 226,386-454,955, 18 juli 2016.

L — F.M. Muller 10923, N-zijde spoorlijn z. van Rijnbrug bij Driel, 18.06.1974, L.3275888/89 (sub nomine *R. drenthicus*); R.J. Bijlsma S 415, Rheden, zuidkant spoorlijn t.h.v. Geref. Kerk (IVON 40.15.35), 24.7.1982, WAG.1215419/20 (sub nomine *R. drenthicus*); R.J. Bijlsma S 416, Rheden-Dieren, langs spoorlijn (IVON 40.15.35), 24.07.1982, WAG.1215421 (sub nomine *R. drenthicus*); A. van de Beek 9896, Wierden, Hoge Hexel, Veldkampszijweg, 08.07.1998, L.4219718/19/20 (sub nomine *R. drenthicus*); A. van de Beek 9840, Rheden, weg naar De Steeg, 29.06.1998,

L.4219726/27/28; A.S. Troelstra 16-R029, wegberm bij Wegdammerhoek onder Goor, km 238,225-470,076, 22 juni 2016.

HFN — K. Meijer 4102, Elspeet, langs heide in bos, 27.51.13, 1 augustus 2016; K. Meijer 623, Den Ham, in boswal en in slootkant, 28.13.11, 29 juli 1986; K. Meijer 510, Kuinre, Kuinderbos achter oude haven in oude boswal, 16.41.24, 2 juli 1986; K. Meijer 544, Station Wierden, op stationsterrein, 28.34.42, 5 juli 1986.

Herb. Haveman — R. Haveman & I. de Ronde NS114, Artillerieschietkamp Oldebroek, Doornspijkse Heide, langs P-plaats bij "De Knobbel", 190,764-488,627, bosrand, hier massaal, 1.8.2018.

Germany

HFN: K. Meijer 2639, Neudersum, Herzogstrasse, in boswal, 26 juli 2000.

A few plants from the region of Holten in the Province of Overijssel are similar, but do not fully correspond to the normal *Rubus adenacanthus*. They seem to belong to another, local taxon, which is, besides its local distribution, not homogeneous. It differs from *R. adenacanthus* especially by the low arching stems, the mainly 3-foliate leaves, with deeply lobate lateral leaflets, the absence or the presence of at most a few glandular acicles, and

by having a compact inflorescence with pale pink flowers. Some samples approach to *R. adenacanthus*.

KEY TO THE *FEROCIORES* IN THE NETHERLANDS

Because the number of species of *Ferociores* in the Netherlands has increased substantially since the publication of the checklist (Van de Beek et al. 2014), a key to its species is given in which apart from the species already mentioned in this article, the recently published *Rubus psilander* A.Beek (2017: 68) is also included.

1. Petals pinkish red; stipitate glands pale to dark red 2
1. Petals white or pale pink; stipitate glands dull brownish 3
2. Anthers glabrous; leaves flat *Rubus psilander*
2. Anthers hairy; leaves conspicuously convex *Rubus ferocior*
3. Most leaves 3-foliolate; primocane weakly glandular; no gland tipped acicles *Rubus nemoripetens*
3. Most leaves 5-foliolate; primocane strongly glandular; glandular acicles present or not 4
4. Primocane and inflorescence with clear transitions between glands and bigger prickles, provided with gland tipped acicles and prickles; leaves especially in the inflorescence moderately to densely hairy; serrature periodical, moderately large; receptacle glabrous *Rubus adenacanthus*
4. Primocane without clear transitions between glands and prickles, (almost) without gland tipped acicles; leaves downside little hairy; serrature fine, not periodical; receptacle with long hairs *Rubus drenthicus*

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