

SHORT COMMUNICATION

The series of the discoloured blackberries (*Rubus* L., Rosaceae)

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Key words

Rubus
series
Porphyri

Abstract – In this short note the infrageneric structure of the discoloured blackberries is explained and a new *Rubus* series, the *Porphyri*, is described.

Samenvatting – In deze korte notitie wordt de infragenerische structuur van de discolore bramen uiteengezet en wordt een nieuwe *Rubus*-serie, de *Porphyri*, beschreven.

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The subdivision of *Rubus* L. subgenus *Rubus* is complicated, especially on the level of series. These are often considered to be merely pragmatic artificial congregates without real taxonomic value. For some series that may be true, such as the *Apiculati* (Focke) R.Keller (1922: 764), but other groups have a clear natural base, such as the *Suberecti* (Lindl.) Focke (1877: 76) and the *Sprengeliani* Focke (1877: 241). The borders are not always clear, but the core of these series consists of taxa with an evident genetic relationship.

Such a phylogenetic base can also be found within the group of discoloured taxa of *Rubus*. In this group are two clusters of diploid, sexual plants, which are centred around, respectively *R. ulmifolius* Schott (1818: 42) and *R. aetnicus* Weston (1770: 257). These species often produce (almost) infertile hybrids. There are also two clusters of triploids in the discoloured group. One of these have genetic input from *R. ulmifolius* and the other one from *R. aetnicus*. However, most discoloured blackberries belong to a cluster of apogamous tetraploids in a reticulate relationship with influence of *R. ulmifolius*. Finally, there is a cluster of taxa which obviously have their origin in hybridization of *R. aetnicus* with *R. ulmifolius*. The ploidy level of the latter cluster and its internal relationship requires more research, especially because of the occurrence of direct hybrids of *R. ulmifolius* and *R. aetnicus*, which can be very similar to the normal fertile species.

This short paper will be a base for the taxonomic classification of the discoloured *Rubus* taxa and an invitation for further investigations.

Sudre (1908–13) already distinguished, based on morphological features only, five of these clusters of discoloured blackberries, that he gave the rank of subsections. Only the triploids of the *Porphyri* (see below) were distributed among several subsections, but in the case of *R. flaccidus* P.J.Müll. (1858: 134) with explicit doubt on its taxonomic position.

In line with present current usage, Sudre's subsections are conceived as series. The clusters mentioned above refer to the following series:

1. **Series *Tephrocaulon*** Boulay (1877: 12).
= series *Gypsocaulon* (Sudre) Juz. (1941: 20).

Type species: *Rubus rusticanus* Mercier (1861: 279; = *R. ulmifolius* Schott).

Characteristics — Diploid; primocanes pruinose, purple-brown, with equal strong prickles, eglandular; leaflets small, coriaceous,

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Fig. 1. A primocane of a plant of *Rubus dahmsianus* G.Loos in the experimental bramble garden in Veenendaal (Province of Utrecht, the Netherlands). The plant has been transplanted from the type location Burgsteinfurt (North Rhine-Westphalia, Germany). Photo: Bram van de Beek, 26 juni 2020.

often obovate and short mucronate, adaxially (almost) glabrous; inflorescences pyramidal to cylindric, with only a few leaves at the base; petals usually deep pink with a somewhat purple shine, broad ovate to suborbicular.

This series consists of *Rubus ulmifolius* and its eastern counterpart *R. creticus* L. (1756: 15; = *R. sanctus* Schreber 1766: 15), which sometimes is conceived as a subspecies of *R. ulmifolius* (*R. ulmifolius* subsp. *anatolicus* Focke 1886: 335).

2. Series *Poiretiani* Tratt. (1823: 44).

≡ series *Tomentosi* Focke (1877: 225; series *Argyrophylli* A.Beek 2016: 46).

Type species: *Rubus tomentosus* Willd. (1799: 1083); non Borkhausen (1794: 108). — (See ICN art. 48, Turland et al. 2018; van de Beek & Domina 2021).

Characteristics — Diploid; primocanes not or hardly pruinose, green or reddish, with usually unequal slender sharply reflexed or hooked prickles and often some stipitate glands; leaves, especially in the inflorescence, often with adaxially stellate hairs; inflorescence with hooked prickles on the axis and many thin prickles on

the peduncles and pedicels; flowers white or with a yellow shine.

This series consists of *Rubus aetnicus*, a species with a large variability. The position of *R. canescens* DC (1815: 545), which has been found only at the Col de Madeleine near Vinadio in North-West Italy, is not precisely clear. The species is diploid, but it differs substantially from *R. aetnicus* (see van de Beek & Domina 2021). Maybe *R. ulmifolius* – which is also found in Vinadio, see a specimen of Reichenbach fil., Flora pedemontana 1843, 4 Aug, in W – participated in its origin. In that case it should rather be placed into the series *Subtomentosi* Sudre ex Bouvet (1907: 41, 95).

3. Series *Candicans* Focke (1877: 154).

Type species: *Rubus candicans* Weihe ex Rchb. (1832: 601).

Characteristics — Triploid; primocane furrowed, leaflets usually short stalked, the lower ones often 0–3 mm; inflorescence with long ascending, usually low divided, peduncles and thin pedicels, not forming cymes.

The plants of this series are related to *Rubus aetnicus* and originate from hybridization of that species with other species,



Fig. 2. An inflorescence of a plant of *Rubus dahmsianus* G.Loos in the experimental bramble garden in Veenendaal (Province of Utrecht, the Netherlands). The plant has been transplanted from the type location Burgsteinfurt (North Rhine-Westphalia, Germany). Photo: Bram van de Beek, 26 juni 2020.

probably especially from the subsection *Rubus*. Groups of taxa around *R. montanus* Libert ex Lej. (1813: 317) and *R. grabowskii* Weihe ex Günth. & al. (1827: 14) are the core of this series. These taxa have few, inconspicuous morphological differences that are consistent over large distribution areas. The precise status of these taxa is still a matter of present research. Next to these groups there are better distinct taxa, e.g., *R. phyllostachys* P.J.Müll. (1858: 133).

Note — The name *Rubus candicans* is legitimate and not identical with *R. silesiacus* Weihe (1829: 53), as Weber (1986) states, because Reichenbach (1832: 601) does not refer to a publication of the latter, which he does when it is about a published name, but only mentions its name, obviously referring to a specimen; he also does not enlist it at the beginning after the name, where he uses to enlist valid synonyms, but at the end where he mentions collections with provisional names. Even if this argumentation would not be accepted, the name *Candicans* is legitimate because of ICN art. 48 (Turland et al. 2018). In that case the author of the name of the type species would not be Reichenbach, but Focke (1877: 54).

4. Series *Porphyri* A.Beek, nova series

Type species: *Rubus dahmsianus* G.Loos (2010: 127). — Fig. 1, 2, 3 & 4.

Characteristics — Triploid; primocane with flat or slightly concave sides, often purple brown red; leaves adaxially opaque shiny; central leaflet usually (rather) long stalked, obovate to elliptic, rather abruptly short to moderately mucronate; petiolule of the lower leaflets 3–6 mm; inflorescence pyramidal or cylindric, with leaves only at the base; petals white to deep purple pink.

This series consists of plants that originated from genetic interaction between *Rubus ulmifolius* and other taxa. The plants have not been distinguished as a separate series until now. They are less different from the more common tetraploids of the series *Piletocaulon* than the *Candicantes*, but once they have been observed, their identity can well be distinguished. Moreover, and this is the decisive fact: they are triploid. For consistency it is at hand to conceive them as a separate series, parallel to the *Candicantes*.

The most characteristic species is *Rubus dahmsianus* with its purple pink flowers and purple stem, which are similar to *R. ulmifolius*.



Fig. 3. Detail of an inflorescence of a plant of *Rubus dahmsianus* G.Loos in the experimental bramble garden in Veenendaal (Province of Utrecht, the Netherlands). The plant has been transplanted from the type location Burgsteinfurt (North Rhine-Westphalia, Germany). Photo: Bram van de Beek, 1 juni 2021.

Because attention to the taxa of this series has been only recent, it might be that more taxa turn out to belong to it.

5. Series *Piletocaulon* Boulay (1877: 22).

Type species: *Rubus procerus* Boul. (1864: 7).

Characteristics — Tetraploid; primocane with flat or slightly concave sides; petiolule of the lower leaflets usually 3–6 mm; inflorescence often pyramidal; peduncles cymous, usually divided above their middle.

This series forms the majority of the discolourous blackberries. The taxa of this series are apogamous tetraploids with a reticulate relationship.

6. Series *Subtomentosi* Sudre ex Bouvet (1907: 41, 95).

Type species: *Rubus arduennensis* Lib. ex Lej. (1813: 317).

Characteristics — Plants usually lower and smaller than those of the series *Piletocaulon*; leaves short stalked, sometimes

adaxially with some stellate hairs.

This is a group of plants that combine characteristics of *Rubus aetnicus* and *R. ulmifolius*. Usually the influence of the former is dominant. Cytological research on this group is still limited, so that ploidy levels must be left open for the moment.

Rubus collinus DC (1815: 545), the (almost) infertile hybrid of *R. aetnicus* and *R. ulmifolius*, must be excluded from this series. The series must be limited to fertile plants that have their own distribution as a distinct taxon.

Van de Beek (1974) designated *Rubus arduennensis* as type, because he based his decision on Sudre (1908–13), who mentions this taxon as the only species belonging to the *Subtomentosi*. It is also one of the species that Bouvet (1907) mentions for the *Subtomentosi*. It might be that the series *Subtomentosi* is monotypic after all, since preliminary results of new taxonomic investigations reveal that the other species in this series differ considerably from *R. arduennensis*. If these results are confirmed, it might have consequences for the nomenclature of the series of the other taxa that are attributed to it presently.



Fig. 4. A flower of a plant of *Rubus dahmsianus* G.Loos in the experimental bramble garden in Veenendaal (Province of Utrecht, the Netherlands). The plant has been transplanted from the type location Burgsteinfurt (North Rhine-Westphalia, Germany). Photo: Bram van de Beek, 18 juni 2018.

A CHALLENGE

This short paper is intended to challenge further taxonomic, cytological, and molecular research into the interesting group of discoloured blackberries. Because its taxa have different ploidy levels and distinct morphological features, such investigations may be more promising than for most other series in subgenus *Rubus*.

REFERENCES

- Borkhausen MB. 1794. Von Hrn. Doctor und Assessor Borkhausen d.d. Darmstadt I Decbr. 1793. Ann. Bot. 9: 108–109.
- Boulay N. 1864. Ronces Vosgennies, livraison 1. By the author, Saint-Dié. Exsiccata with printed labels.
- Boulay N. 1877. Diagnoses des espèces ou formes de *Rubus* distribuées par l'Association rubologique. Association rubologique, Lille.
- Bouvet G. 1907. Matériaux pour l'étude des *Rubus* de l'Anjou. Bull. Soc. Études Sci. Angers 36: 1–108.
- De Candolle AP. 1815. Flore Française, ed. 3, vol. 6. Desray, Paris.
- Focke WO. 1877. Synopsis ruborum Germaniae: Die deutschen Brombeerarten ausführlich beschrieben und erläutert. C. Ed. Müllers's Verlagsbuchhandlung, Bremen.
- Focke WO. 1886. Die Rubi Siciliens. *Abh. Naturwiss. Vereins Bremen* 9: 335–338.
- Günther CC, Schummel TE. 1827. Schedae Centuriae Plantarum Silesiacarum Exsiccatarum. Neuyenfind, Wratislaviae.
- Juzepczuk SV. 1941. *Rubus* L. In: Komarov VL (ed.), *Flora SSSR*, Vol. 10. Nauka, Leningrad. [in Russian; English translation: *Flora of the USSR*, vol. 10: 5–58. Jerusalem: Israel Program for Scientific Translations].
- Keller R. 1922. *Rubus* L. In: Hégi G, *Illustrierte Flora von Mittel-Europa*. Ed. I, Band IV, 2. Hälfte: 759–805. J.F. Lehmann, München.
- Lejeune ALS. 1813. Flore des environs de Spa 2. Duvivier, Liège.
- Linnaeus C. 1756. *Flora Palestina, dissertation of B. J. Strand*. Höjer, Uppsala.
- Loos GH. 2010. Taxonomische Neukombinationen zur Flora Mittel- und Osteuropas, insbesondere Nordrhein-Westfalens. *Jahrb. Bochumer Bot. Vereins* 1: 114–133. (Also available as online version).
- Mercier E. 1861. *Monographie des espèces du genre Rubus des environs de Genève [Rubi Genevenses]*. In: Reuter GF (ed.), *Catalogue des Plantes Vasculaires qui croissent naturellement aux environs de Genève*, ed. 2: 257–295. Kesemann, Genève.
- Müller PJ. 1858. Beschreibung der in der Umgegend von Weissenburg wildwachsenden Arten der Gattung *Rubus*. *Flora* 41: 129–140, 149–157, 163–174, 177–185.
- Reichenbach HGL. 1832. *Flora Germanica excursoria* 2. Cnoblauch, Lipsiae (Leipzig). (*Rubus* on p. 599–609).
- Schott HW. 1818. Auszüge aus den Berichten und Briefe der auf befehl Sr. Majestät des Kaisers nach Brasilien abgeschickten österreichischen Naturforscher an den Direktor des k.k. Hof-Naturkabinette Herrn Karl von Schreibers als Referenten des wissenschaftlichen Anteiles der Expedition. *Erneuerte Vaterl. Blätt. Oesterr. Kaiserstaat* 11: 1–4, 5–6, 37–40, 41–44, 61–64, 65–67. (*Rubus ulmifolius* on p. 42).
- Schreber JCD. 1766 [1765]. *Icones et descriptions plantarum minus cognitarum*. Decas I.J.J. Curt, Halae (Halle).
- Sudre H. 1908–13. *Rubi europae vel monographia iconibus illustrate rubuorum Europae*. Lhomme, Paris.
- Trattinnick L. 1823. *Rosacearum monographia* 3. Heubner, Vindobonae

- (Vienna). (*Rubus* series *Poiretiani* on p. 44).
- Turland NJ, Wiersema JH, Barrie FR, Greuter W, Hawksworth DL, Herendeen PS, Knapp S, Kusber W-H, Li D-Z, Marhold K, May TW, McNeill J, Monro AM, Prado J, Price MJ, Smith GF (eds.). 2018. International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017. *Regnum Veg.* 159. Koeltz Botanical Books, Glashütten. (<https://doi.org/10.12705/Code.2018>).
- van de Beek A. 1974. Die Brombeeren des geldrischen Distriktes innerhalb der Flora der Niederlande. *Meded. Bot. Mus. Herb. Rijks Univ. Utrecht* 415: 1–195.
- van de Beek A. 2016. Validations of the *Rubus* taxa in Tournefort's *Institutiones* and their Corollarium in later literature. *Adansonia* 38: 33–51. (<https://doi.org/10.5252/a2016n1a4>).
- van de Beek A, Domina G. 2021. *Rubus aetnicus* Cupani ex Weston and *R. canescens* DC. (Rosaceae): an analysis. *Nordic J. Bot.* 2021: e03288. (<https://doi.org/10.1111/njb.03288>).
- Weber HE. 1986. Zur Nomenklatur und Verbreitung der von K. E. A. Weihe aufgestellten Taxa der Gattung *Rubus* L. (Rosaceae). *Bot. Jahrb. Syst.* 106: 293–335.
- Weihe KEA. 1829. *Dispositio Ruborum Silesiae*. In: Wimmer F, Grabowski H, *Flora Silesiae* 2: 51–56. Korn, Vratislava (Breslau).
- Weston R. 1770. *Botanicus universalis et hortulanus* 1. Bell, London.
- Willdenow CL. 1799. *Species plantarum*, ed. 4, vol. 2 (part 2). G.C. Nauk, Berolini.