



On *Rubus ulmifolius* (Rosaceae) and related taxa

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Abstract

Nomenclature issues in the genus *Rubus* are discussed. In particular, *R. ulmifolius* and six related names, *R. creticus*, *R. sanctus*, *R. parviflorus*, *R. vulgaris*, *R. non-spinosus*, and *R. inermis*, are discussed. Further support is provided for the suggestions that these seven names are used for only one species. The names *R. creticus*, *R. sanctus* and *R. parviflorus* are homotypic, being *R. sanctus* and *R. parviflorus* illegitimate. A lectotype is designated for *R. non-spinosus* from an image of Barrelier. An epitype is selected for *R. vulgaris* from a modern specimen collected in Italy and preserved at L.

Key words: lectotype, neotype, nomenclature, *Rubus*, synonyms, taxonomy

Introduction

The genus *Rubus* Linnaeus (1753: 492) (*Rubeae* Dumort., Rosaceae Juss.) is spread over all continents (except Antarctica) and is found in most climatic regions (Müller 1859, Weber 1995). The genus is a highly complex one, particularly the subgenus *Rubus* (blackberries), with polyploidy, hybridisation and apparently frequent facultative apomixis, thus leading to great variation in the subgenus and making species classification one of the grand challenges of systematic botany (Weber 1995, Zieliński 2004, Potter *et al.* 2007). Depending on which classification you follow, historic or modern, the number of *Rubus* species may vary from 250 to 750 or up to 1000 worldwide (Focke 1877, 1902, Weber 1995). Blackberries are perennial plants that form thickets of biennial spiny (usually) stems (canes), which grow in length in the first year and develop flowering laterals in the second year.

Rubus ulmifolius Schott (1818a: 42) (subg. *Rubus*) is the most common blackberry in the south-west of Europe. This species is one of the few diploid taxa of the subgenus *Rubus* in Europe (Crane & Darlington 1927, Thompson 1995), with great variability and many hybrids (Sennen, 1928, 1936, Monasterio-Huelin & Weber 1996, Monasterio-Huelin 1998). It is distributed in Europe and North Africa (Great Britain, Ireland, The Netherlands, Germany, Luxembourg, Belgium, France, Switzerland, Liechtenstein, Slovenia, Croatia, Herzegovina, Italy, Spain, Portugal, Morocco, northern Tunisia and Algeria, Canary Islands, Azores) and introduced to other parts of Central Europe, Denmark, south Sweden, Greece, Israel and some other eastern Mediterranean regions; North and South America, South Africa, Australia, and New Zealand (POWO 2021, WFO 2021).

In this genus, names like *R. creticus* Linnaeus (1756: 21), *R. sanctus* Schreber (1766: 15), *R. parviflorus* Weston (1770: 258), *R. vulgaris* Vries bis (1779: 196), *R. non-spinosus* Ortega (1784: 524), and *R. inermis* Pourret (1788: 326), have been currently discussed and typified (see, e.g., Van de Beek 1979, 2016, Van de Beek & Widrlechner 2021). However, the nomenclature of *R. ulmifolius* is a matter of debate. This is undesirable for such a common species, because it creates instability, even more so because also its taxonomy is not yet established. Therefore, Van de Beek (2016) and Van de Beek & Widrlechner (2021) suggested to submit a proposal for conservation of the name *R. ulmifolius*. Such a submission requires a good preparation. The present article aims to provide this, and is one more step for our contribution to *Rubus* nomenclature.

Materials and methods

The protologues of *R. ulmifolius*, and of names which have been related to it, published before its publication date (1818), were consulted. Other literature which serves to settle their identity was investigated as well. The designation of the types is based on the analysis of the respective protologues, the examination of relevant literature and on the study of the original material. Herbarium acronyms are cited according to Thiers (2021 [continuously updated]), some of which are available as virtual herbaria on-line. The names are arranged in the chronological order of effective publication dates after the current accepted name *R. ulmifolius*.

Typification of the names

Rubus ulmifolius Schott (1818a: 42)

Lectotype (designated by Weber 1986: 216): In sepibus maritimis Hispaniae, sine dat., *Schott s.n.* (W). Ind. Loc: Mountains of Gibraltar.

The name *Rubus ulmifolius* was published twice by Heinrich Wilhelm Schott, first in the *Väterländische Blätter für die österreichische Kaiserstaat* (Schott 1818a: 42) and subsequently in *Isis* (Schott 1818b: 821). It was typified by Weber (1986) from a specimen preserved at W. There is no doubt about its identity, it is the discolour blackberry, i.e. a blackberry with abaxially white tomentose leaves, with strongly pruinose stems and small leaves, which is the most common species in South-West Europe.

As a diploid taxon it has a large variability in contrast to the apogamous taxa which form the bulk of *Rubus* species in Europe. Because earlier botanists were not aware of this difference they dealt with the variations of *R. ulmifolius* in the same way as with the apogamous taxa. This resulted in a large number of related taxa, sometimes ordered as infraspecific taxa. Sudre (1908–1913) recognized 8 subspecies, 20 microgenera (an unfortunate word for an infraspecific rank!) and 94 varieties. Next to these many synonyms are listed. Most of these do not have real taxonomic value. Monasterio-Huelin & Weber (1996) reduced the number of infraspecific taxa to 4 varieties. *Rubus ulmifolius* has also many hybrids, often with unknown other parents.

Before Focke (1877) recuperated the name *R. ulmifolius* most authors used other, later names for the species, e.g. *R. discolor* Weihe & Nees (1824: 46) or *R. rusticanus* Mercier (1861: 279), but since Focke's publication it has been in common use.

There is no doubt about the identity of the type. It consists of both an inflorescence and a piece of a primocane. On the label is written 'In sepibus maritimis Hispaniae' which corresponds well with the locality in the protologue: 'in montosis Gibraltariae', or at least does not contradict it.

Rubus creticus Tournefort ex Linnaeus (1756: 15)

Lectotype (designated by Van de Beek 2016: 46): Greece, Crete, *Tournefort 6073* (P-TRF, 2-D code P00680425).

Rubus sanctus Schreber (1766: 15), nom. superfl. (Art. 52.3, Turland *et al.* 2018)

Rubus parviflorus Weston (1770: 258), nom. superfl. (Art. 52.3)

A problem for the nomenclatural stability of *R. ulmifolius* is its relation with *R. creticus* Linnaeus (1756: 15). The name is validated from a description published by Tournefort (1703). The discussion starts with a debate on validity. Goldman (2019) argues that *R. creticus* is not validly published because Linnaeus remarks 'nondum vero determinatas, litteris cursivis'. Goldman interprets this so that Linnaeus does not accept the names in italics. The phrase is confusing, indeed. However, it means that the names were not identified before, so that they are new names. The same confusion might be the cause that none of the names in italics from *Flora Palaestina* are treated as valid by Jarvis (2007).

The same taxon was published again as *R. sanctus* Schreber (1766: 15) and as *R. parviflorus* Weston (1770: 258). The publication of *R. parviflorus* is based on the description by Tournefort and thus this name is homotypic with *R. creticus*. Because Schreber based his description on a plant at M (see Van de Beek 2016) Monasterio-Huelin & Weber (1996) indicated this as the "holotype" of *R. sanctus*, but because Schreber included an illustration in the protologue the specimen at M should rather be treated as lectotype. However, because Schreber included the phrase name (or nomen specificum legitimum) "Rubus creticus, triphylo, flore parvo" of Tournefort (1703: 43) which is the validating description of *R. creticus*, is *R. sanctus* an illegitimate name under Art. 52.3 (Turland *et al.* 2018) and a superfluous homonym of the latter. So *R. creticus*, *R. sanctus* and *R. parviflorus* are homotypic.

Some batologists argue that *R. ulmifolius* and *R. creticus* are subspecies of the same species (Focke 1902: 504 [as *R. ulmifolius* ssp. *anatolicus* Focke]; Sudre 1908-1913: 76; Juzepczuk 1941: 24; Parsa 1948: 105; Van de Beek 2016: 46). None of these authors has drawn the conclusion that according to the rules *R. ulmifolius* should be an infraspecific taxon of *R. sanctus*, probably because of the popularity of the former. Moreover, *R. ulmifolius* will become a subspecies of *R. creticus*. This will lead to new combinations if *R. ulmifolius* is divided in smaller unities as some authors have done, and to numerous new hybrid formulas because *R. ulmifolius* crosses frequently with other species.

Rubus vulgaris Tournefort ex Vries bis (1779: 196)

Lectotype (designated by Van de Beek (2016: 36): [illustration] “*Rubus*” in Matthioli in *Commentarii secundo aucti* (1559: 507). Ind. Loc: not indicated.

Epitype (designated here): Italy, Valgrisanche (Aosta), ca. 900 m, 03 Jul 1961, *Van Ooststroom* 22933 (L, 2-D code L.1907626) (Fig. 1).



FIGURE 1. Epitype of *Rubus vulgaris* J.de Vries bis (L, 2-D code L.1907626). Image courtesy of the herbarium L, reproduced with permission.

Another name which is relevant for the nomenclature of *R. ulmifolius* is *R. vulgaris* J.de Vries bis (1779: 196). Matzke-Hajek (2016) argued that this name would be not validly published because it is not in a scientific publication and the text is only a translation of Valmont de Bomare (1765) which does not use binary nomenclature consistently and

consequently is not validly published. However, De Vries presents his book as a scientific commentary on Martinet's catechism, and moreover, though it is recommended to not publish in popular papers or books (*ICN* Art. 30A.4, Turland *et al.* 2018), it is not forbidden, and a translation of an invalidly published text does not cause that also this translation is invalid if accepted by the author who uses it; many invalidly published texts serve as validating description by later authors. *Rubus vulgaris* is validly published as such. It is also clear that neither De Vries (who refers to Tournefort and to Duhamel [1768] in his book) nor Valmont thought out the name *R. vulgaris* themselves but adapted to common use, as many authors of that time refer to *R. vulgaris* Bauh. (see Bauhin 1623: 479).

The type of *R. vulgaris* was designated by Van de Beek (2016: 36) and it is an illustration published in the Matthioli's *Commentarii secundo aucti* (1559: 507). Though this picture is not very precise, it can, because of the strong prickles and rigid inflorescences, hardly be anything else than *R. ulmifolius*, the most common blackberry in Italy where Matthioli lived. However, the drawing does not give precise details so that it is not of a quality to identify it without knowing the broader context. Consequently, for a precise identification of this name an epitype is selected according to *ICN* Art. 9.9 (see Turland *et al.* 2018). This material, a complete specimen, with leaves and well-developed flowers (Fig. 1), clearly represents the traditional concept (e.g., J. de Vries bis 1779: 196) and current use and application of *R. vulgaris* as a synonym of *R. ulmifolius* (Van de Beek 2016).

***Rubus non-spinosus* Ortega (1784: 524)**

Lectotype (designated here): [icon] “*Rubus non spinosus, mai. fruct. nigr.*” in Barrelier (1714: ic. 395) (Fig. 2). Ind. Loc: not indicated.

Ortega, in volume 6 of Quer's *Flora Española* (1784: 524) published the name *Rubus non-spinosus*. In the index of the volume he lists the species in the Linnaean binary form. Obviously he considered these as the formal names of the plants. He added as author ‘*Barr.*’, which refers to Barrelier (1714). Because he also refers to p. 223 of his own volume the text about the taxon on that page is included in the protologue. He cites both Barrelier (1714: “Obs. 1373. Icon. 353”) and Tournefort (1700: 614), so that both are part of the protologue. No specimen of Barrelier could be found, only an image (Barrelier 1714: icon 353 [recte 395]) (Fig. 2). On the other hand, in the herbarium of Tournefort is a good specimen of a thornless form of *R. ulmifolius* (Tournefort 6078 [at P-TRF]) (Fig. 3) but revised as *R. fruticosus* var. *inermis* (see this taxon below). However, this material was not cited in the protologue and neither can it be treated as original material used by Ortega to describe his species. We have not found any original material of this name in the herbaria consulted (e.g., BM, E, H, P, MA). Thus, the Barrelier's illustration “*Rubus non spinosus, mai, fruct. nigr.*” (1714: 395) cited by Ortega (without the abbreviations) in the protologue of *R. non-spinosus* is designated as the lectotype of the name. This drawing illustrates a complete plant, with leaves, flowers and fruits, without prickles, and matches with the traditional concept and current use of the name as a thornless form of *R. ulmifolius*.

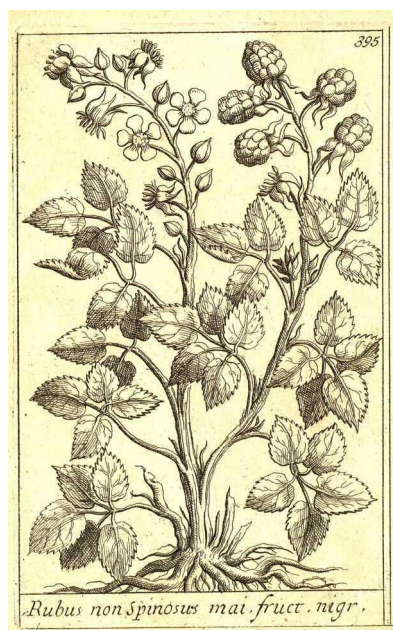


FIGURE 2. Lectotype of *Rubus non-spinosus* Ortega, [icon] “*Rubus non spinosus, mai. fruct. nigr.*” in Barrelier (1714: ic. 395).



FIGURE 3. Lectotype of *Rubus fruticosus* var. *inermis* Weston (P, Tournefort 6078, P-TRF). Image courtesy of the herbarium P, reproduced with permission.

***Rubus inermis* Pourret (1788: 326)**

Lectotype (designated by Van de Beek 1979: 206): *Pourret 3168* (MAF-POURR). Ind. Loc: near Barcelona. (Fig. 6)

Van de Beek (1979) argued that *R. inermis* Pourret (1788: 326) is identical with *R. ulmifolius*. Because this name is earlier than *R. ulmifolius* it would be the correct name of the species. Monasterio-Huelin & Weber (1996) doubted the identity of both and claimed that *R. inermis* might be a hybrid of *R. ulmifolius*. The lectotype of *R. inermis* Pourret, published in Van de Beek (1979: 206), *Pourret 3168* (MAF-POURR), looks like a normal *R. ulmifolius* without prickles, but hybrids can sometimes be very similar. However, the type does not show reduced fertility. This is confirmed by two other specimens of Pourret which were found after the publication of the type.

Another specimen (probably a duplicate of the lectotype) was found at P (with barcode P02521232, image available at <http://mediaphoto.mnhn.fr/media/1441338624753ZJhEBLGDlQxlEGfy>). It consists of two unarmed inflorescences, with leaves and flowers, and clearly has young fruits that are not defective. At the base the sheet is annotated with “*Rubus inermis*” by Pourret, and also contains a label annotated as “*Rubus inermis* P. / Caule fruticoso sub-rotundo. / Folis ternatis subtus tomentosus / an Canadensis. [handwritten by Pourret] / Pourret scripsit. [handwritten by Spach] / à Barcelona [handwritten by Pourret]”.

The best specimen is preserved in the Salvador herbarium at BC (BC-Salvador 3833). It consists of both an inflorescence and a young primocane with leaves (Fig. 4). It looks like a normal *R. ulmifolius* without prickles. The Salvador family was a lineage of apothecaries who settled in Barcelona from the early 17th to the mid-19th century. The Salvador herbarium is the oldest and best-documented pre-Linnaean one in Spain. Its labels bear pre-Linnaean names used in the works of Tournefort, Bauhin, Lobel, Dodoens, Magnol or Clusius, among others (Ibáñez *et al.* 2006, 2008). Around 1782, the collection was revised for the first time by Pierre André Pourret (1754–1818), a French clergyman who lived in exile in Spain at Santiago de Compostela from 1789 until his death (Timbal-Lagrave 1875, Colmeiro 1891). Pourret added the Linnaean names of the species to the labels of the collection (Camarasa 1989, 2007) and, in some cases, took out duplicates for his own herbarium (Bolòs 1946), now conserved in MAF as an independent historical collection (Gutiérrez-Bustillo & Navarro Aranda 1989). Some specimens in MAF-POURRET coming from the Salvador herbarium are among the most interesting in this collection. They can be easily recognized through the word “Salv” on the label, indicating a new pre-Linnaean description and thus a new taxon proposed by Joan Salvador. Moreover, Pourret published some taxa in his *Chloris Narbonensis* (Pourret 1788) as new species under the Linnaean system. Also, he sent some of these specimens to Lamarck in Paris and to Willdenow in Berlin and they are now preserved in the P and B-W herbaria (Bonnet 1916).

All three samples of Pourret’s plant show an unarmed, but for the rest normal *R. ulmifolius*. Van de Beek (1979, 2016) thought it was collected in a natural habitat, because Pourret in his protologue does not refer to a garden. However, on the label of the specimen in the Salvador collection is written: ‘In hortis colitur’ (handwritten by Salvador). Salvador also wrote ‘Romaguera de St. Francisc.’ Because this sample is not different from the other ones, these too, may have been collected in gardens of monasteries. The so called St. Francis blackberry is often bred in Franciscan monastery gardens because of its unarmed character. This plant was already known to early authors such as Tournefort (1700) and Barrelier (1714) and validated on the level of a variety by Weston: *R. fruticosus* var. *inermis* Weston (1770: 258). The lectotype of this name was designated by Van de Beek (2016) from a specimen preserved at P (*Tournefort 6078*, P-TRF) (Fig. 3).

The name *R. inermis* was used once again by Willdenow (1809: 549). It is not based on a specimen of Pourret, but on another sample in B-W: BW09891010 (image available at <https://herbarium.bgbm.org/object/BW09891010>), from a plant in the hortus of Berlin, and so heterotypic with *R. inermis* Pourr., and consequently as a later homonym illegitimate. Monasterio-Huelin & Weber (1996) identified it as *R. ulmifolius* var. *anoplosthyrsus* Sudre (1909: 70) so as conspecific with *R. ulmifolius*. Van de Beek & Widrlechner (2021) accepted the identification by Monasterio-Huelin and Weber [Lectotype: B(BW09891010) (selected by Monasterio-Huelin & Weber 1996: 316, pro holotype)]. However, the specimen is somewhat different from the samples of Pourret and Tournefort: it has usually 3-foliolate leaves of which the lower ones are often abaxially greenish grey (not white), with a more irregular serrature with long mucrons, small (almost) sessile lateral leaflets, ovate central leaflets, and often stipules with a large base.

In the herbarium of Jussieu are three specimens of *R. inermis*. At one of the sheets (P-JUSS 14325) is a mixture of various species, partially with influence of *R. caesius* Linnaeus (1753: 493). The specimens on the other two sheets are more useful. One (P-JUSS 14333) looks like the specimens of Pourret and Tournefort, the other one (P-JUSS 14326) is similar to Willdenow’s plant. The labels do not provide further information, so that their origin is unknown. Later collections from the hortus in Paris are similar to the Willdenow plant (‘Cult. Paris. 10 sept. 1905’, P02972716; *Delacourt s.n.*, cult. Paris, 29.08.1901, P04173016; *Delacourt s.n.*, cult. ornament, Paris, 07.1895, P04181928 and P04181929).

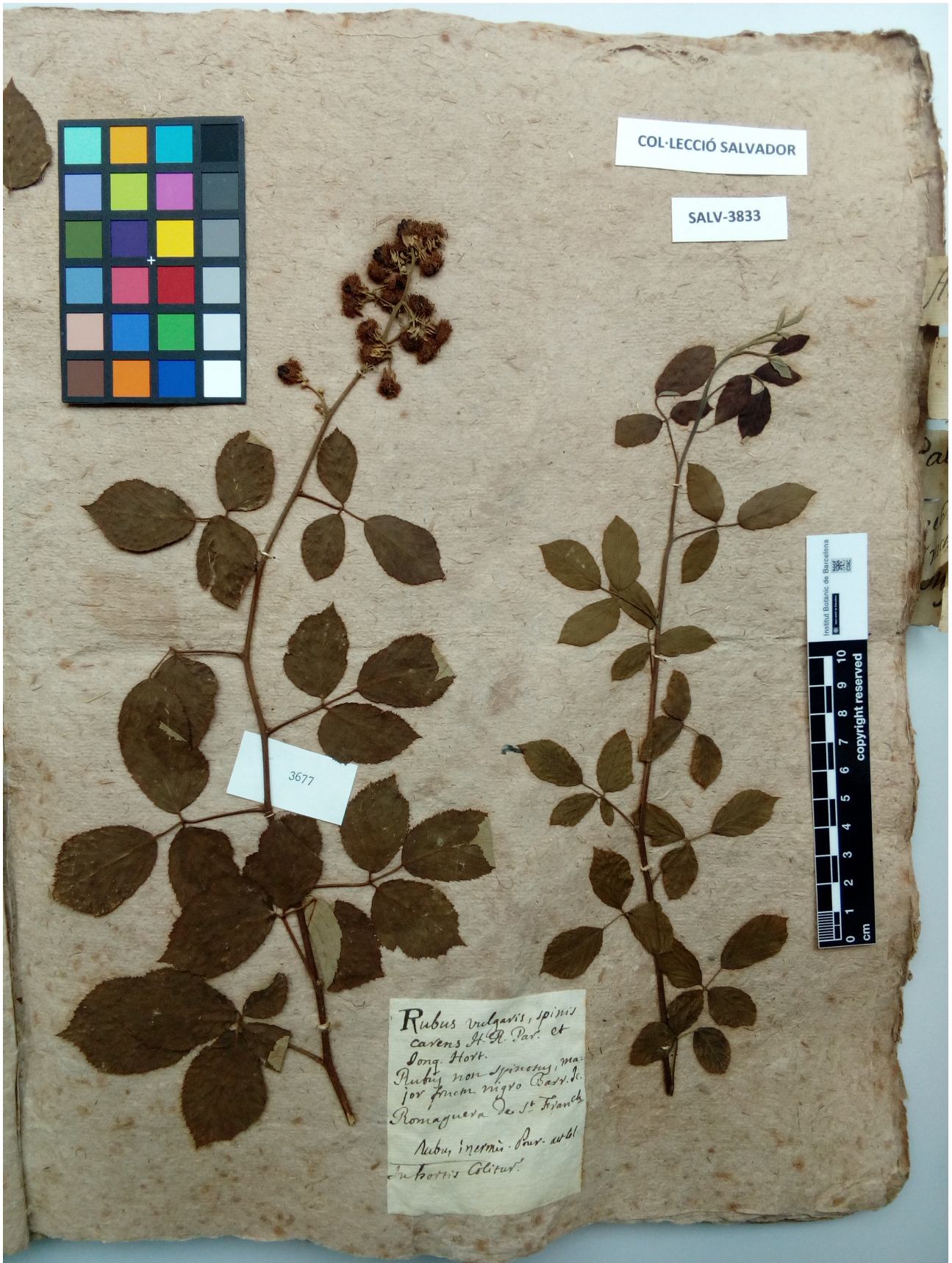


FIGURE 4. Specimen of *Rubus inermis* Pourret preserved in the Salvador herbarium at BC (BC-Salvador 3833). Image courtesy of the herbarium BC, reproduced with permission.

So it seems that the form of Pourret was bred in gardens in Spain, the form of Willdenow in Berlin, and both forms also bred in Paris. Crane & Darlington (1927) researched the genetics of some *Rubus* taxa. They also checked what they called *R. ulmifolius* var. *inermis*. Though the specimen that they published in their paper is poor it seems to be a *R. inermis* Pourr., with the better developed higher leaf with stalked lateral leaflets, lateral leaflets of normal size and an obovate central leaflet. The chromosome number is 14, as with *R. ulmifolius*. Michal Sochor (Olomouc) was so kind to check a sample of the Willdenow form, which is cultivated in the *Rubus* garden in Veenendaal (The Netherlands). This one is tetraploid.

In sum, as far as conclusions can be drawn from present information, it appears that *R. inermis* Pourret (= *R. fruticosus* var. *inermis* Weston) is an unarmed form of the diploid *R. ulmifolius*, while *R. inermis* Willd. is another, tetraploid taxon. Its precise status must be subject of further research.

Thunberg (1813: 7) published once again a *R. inermis*. The lectotype of this name was designated by Van de Beek & Widrlechner (2021: 82) from a specimen kept at UPS (UPS-THUNB 12270) (Fig. 5). This material is identical, though heterotypic, with *R. inermis* Pourret (1788: 326).

Both Willdenow and Thunberg related their plants to North America, where *R. inermis* is not found (Van de Beek & Widrlechner 2021). The confusion may be caused by a comparison with *R. canadensis* Linnaeus (1753: 494), which was already made by Pourret on his label ('an *canadensis*' – maybe *canadensis*?). Linnaeus (1753: 494) mentions that species as unarmed and this may have caused the suggestion that unarmed blackberries come from America.



FIGURE 5. Lectotype of *Rubus inermis* Thunberg (UPS-THUNB 12270). Image courtesy of the herbarium UPS, reproduced with permission.



FIGURE 6. Lectotype of *Rubus inermis* Pourret (Pourret 3168, MAF-POURR). Image courtesy of the herbarium MAF, reproduced with permission.

Final conclusion

According to our study and as was mentioned by Van de Beek (1979, 2016) and Van de Beek & Widrlechner (2021), the names *R. creticus*, *R. sanctus*, *R. parviflorus*, *R. vulgaris*, *R. non-spinosus*, and *R. inermis* have priority over *R. ulmifolius*. Keeping to the priority rules within the group of *R. ulmifolius* will cause changes of names and status. This is undesirable for such a common species with so many references in literature and many (possible) type specimens of the abundant infraspecific taxa of *R. ulmifolius* in herbaria. Much confusion will be created if the name *R. ulmifolius* will be displaced. Next to this it may influence taxonomic decisions in order to save names, e.g. the rejection of the identity of *R. inermis* and *R. ulmifolius* by Monasterio-Huelin & Weber (1996). This is even more undesirable. So it will be better to submit a proposal of conservation of *R. ulmifolius*, the most stable name in the field which has been in common use for more than a century.

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