



Typification of two names in the genus *Ranunculus* (Ranunculaceae)

P. PABLO FERRER-GALLEGO^{1,4*} & LLORENÇ SÁEZ^{2,3,5}

¹ Servicio de Vida Silvestre y Red Natura 2000, Centro para la Investigación y la Experimentación Forestal (CIEF), Generalitat Valenciana, Avda. Comarques del País Valencià 114, E-46930 Quart de Poblet, Valencia, Spain.

² Systematics and Evolution of Vascular Plants (UAB) – Associated Unit to CSIC by IBB, Botànica, Facultat de Biociències, Universitat Autònoma de Barcelona, E-8193 Bellaterra, Barcelona, Spain.

³ Societat d'Història Natural de les Illes Balears, c/ Margarida Xirgu 16, E-07003 Palma de Mallorca, Illes Balears, Spain.

⁴ ✉ flora.cief@gva.es; <https://orcid.org/0000-0001-7595-9302>

⁵ ✉ Gymnesicum@yahoo.es; <https://orcid.org/0000-0003-4551-2432>

*Author for correspondence

Abstract

The typification of the names *Ranunculus chaerophyllos* var. *balearicus* and *R. weyleri* is discussed. These two names are lectotypified using specimens preserved at COI.

Keywords: Balearic Islands, buttercups, Heinrich Moritz Willkomm, lectotype, nomenclature, taxonomy, type

Introduction

Ranunculus Linnaeus (1753: 548) (buttercups) represents the largest genus within Ranunculaceae Juss., comprising ca. 600 species and is distributed on all continents (Tamura 1995, Hörandl *et al.* 2005, Paun *et al.* 2005, Emadzade *et al.* 2010, Hörandl & Emadzade 2012). This genus shows a considerable species diversity and degree of endemism in the Mediterranean region, with c. 160 species, c. 78 of them being endemic to the region (Greuter *et al.* 1989).

In Balearic Islands (Spain) the genus has 19 native taxa (at species and subspecies level) two of which are endemic to this archipelago: *Ranunculus weyleri* Marès ex Willkomm (1876: 131) and *R. paludosus* subsp. *barceloi* (Grau 1984: 54) L. Sáez, Rosselló & N. Torres (1997: 88) [\equiv *R. chaerophyllos* var. *balearicus* Barceló (1879: 12)] (Cook *et al.* 1986). *Ranunculus chaerophyllos* var. *balearicus*, also treated by several authors as *Ranunculus barceloi* Grau [replacement name] (see Grau & López González 1986), was described from Mallorca and Formentera islands (Barceló 1879-1881). However, Grau (1984) and Grau & López González (1986) restricted the taxonomic concept of this taxon to Majorcan plants and excluded the Pytiusic plants from the distribution area (Rosselló *et al.* 1997). The latter authors provided the evidence for the recognition of the taxon described by Barceló (1879-1881) at subspecies level within *R. paludosus* Poiret (1789: 184). The recognition of *R. paludosus* subsp. *barceloi* is currently accepted by Hörandl & Raab-Straube (2015), who consider it endemic to Mallorca and the western Balearic Islands (Eivissa and Formentera) (see Sáez *et al.* 2017). Two cytotypes have been detected in this Balearic buttercup ($2n = 32$ and 16). Populations from the eastern Balearics (Mallorca) were tetraploid and this ploidy level agrees with that reported by Grau (1988) from an unspecified source. In contrast, populations from the western Balearics (Eivissa and Formentera) were diploid (Castro & Rosselló 2007). The morphological uniformity and the identical chromosomal morphology strongly suggest that the tetraploid plants arose recently through autopolyploidy from diploid ancestors, with insufficient time for subsequent morphological differentiation (Castro & Rosselló 2007).

Ranunculus weyleri is narrow endemic to mountain areas of Mallorca (Grau & López González 1986, Sáez *et al.* 2017). This species is currently threatened due to its reduced geographical distribution and disjunct, isolated populations (Cursach & Rita 2012). It was included as “Vulnerable” in the Spanish Catalog of Endangered Species (see Royal Decree 139/2011, of 4 February, available at <https://www.boe.es/buscar/pdf/2011/BOE-A-2011-3582-consolidado.pdf>).

From the nomenclatural point of view, the names *Ranunculus chaerophyllos* var. *balearicus* and *R. weyeri* lack type designation and are therefore investigated here. This contribution increases the number of designated types included in the *Index Balearicum*, a check-list of the vascular plants described from the Balearic Islands (Rosselló & Sáez 2000 2008, 2017, Ferrer-Gallego *et al.* 2019, 2020, 2021).

Materials and methods

This work is based on the analysis of the respective protologues, the examination of relevant literature and on the study of the specimens conserved in the herbaria B, BC, BCN, COI, G, K, LY, MA, MUP, P (acronyms are according to Thiers 2022 [continuously updated]). The typification strictly follows the International Code of Nomenclature for algae, fungi, and plants (Turland *et al.* 2018). The names are arranged in chronological order; the homotypic synonyms are indicated with the symbol \equiv . Currently accepted names are set in bold italics typeface.

Results and discussion

Ranunculus chaerophyllos var. *balearicus*

The protologue of *Ranunculus chaerophyllos* var. *balearicus* includes a description in Spanish «Nuestra planta tiene los segmentos de las hojas mas anchas que en el tipo, y las flores mas grandes; los sépalos marcados con 3 venas purpurinas, que desaparecen comunmente por la desecación. Fl. Marzo» [Our plant has broader leaf segments than in the type, and larger flowers; the sepals marked with 3 purplish veins, which commonly disappear due to desiccation. Fl. March], followed by the provenance “Mallorca: Pont-Gros cerca de Palma! Puig del Teix (Willk.)-Formentera La Mola, San Francisco! (v. v.)” (Barceló 1879-1881).

Grau (1984 : 54) published the name *Ranunculus barceloi* as a nomen novum or replacement name as “*Ranunculus barceloi* Grau, nom. et stat. nov. / Synonym: *Ranunculus chaerophyllos* L. var. *balearicus* Barceló & Combis, Flora de las Islas Baleares: 12. Palma (1879-1881). / non *Ranunculus balearicus* Freyn, Oesterr. Bot. Z. 26 : 158 (1876)». However, Grau does not include the type, only mentioned that: «Typus: Mallorca: Pont Gros cerca de Palma, WILLKOMM. Abb. 2, 3», but he did not mention the herbarium where it was held. The concrete indication “Abb. 2, 3” refers to two illustrations included on the pages 58 and 59 in the Grau’s work (1984). The drawing published on page 58 illustrates a plant with leaves and flowers, and a detail of a fruit, the caption of the figure is “Abb. 2: *Ranunculus barceloi*. Mallorca, leg. Garcias Font». On the other hand, on the page 59 includes a drawing of this species that illustrates several leaves, the figure caption is «Abb. 3: *Ranunculus barceloi*. Blattfolge kultivierter Pflanzen [sequence of leaves of cultivated plants]. Mallorca, Puerto de Soller, leg. E. Bayer».

Rosselló & Sáez (2000: 150) indicated that the type material was not traced at COI-Willk. In this sense, as mentioned in the protologue, Barceló (1879-1881) did not use specimens preserved in the herbarium sheets to describe this taxon, and it seems that it was only based on plants that grew in natura because it mentioned in the protologue “(v.v.)” [vidi vivam]. However, this comment may refer only to the provenance cited for «Formentera La Mola, San Francisco!».

Fortunately, there is a relevant specimen in the Willkomm herbarium at COI. The specimen barcoded COI00063757 is a complete plant, with leaves and flowers, collected by Willkomm in “Puig de Teix” (Mallorca) in 1873 (Fig. 1). The sheet bears an original label handwritten by Willkomm with a relevant diagnosis of the plant “(Herb. balear. n. 464.) / flabellatus Desf. var. / Herbarium Willkomm. / *Ranunculus chaerophyllos* L. / f. major, latiloba, grandiflora / Mallorca: Puig de Teix, in glareosis simmi cacu- / minis raro. / Legi d. 7 Majii 1873.”. This specimen matches with a gathering cited in the protologue as “Mallorca : [...] Puig del Teix (Willk.)”. Therefore, this specimen can be treated as a syntype of the name *Ranunculus chaerophyllos* var. *balearicus*.

We have not been able to locate any more original material attributable to *Ranunculus chaerophyllos* var. *balearicus* in the consulted herbaria (e.g., B, BC, BCN, G, K, LY, MA, MUP, P). Therefore, the specimen COI00063757 is selected as the lectotype of *Ranunculus chaerophyllos* var. *balearicus*. This material clearly represents the traditional concept and current use and application of the name (e.g., Marès & Vigineix 1880, Bolòs & Vigo 1984, Grau & López González 1986, Tutin & Cook 1993, Romo 1994).



FIGURE 1. Lectotype of *Ranunculus chaerophyllos* var. *balearicus* Barceló, COI (barcode COI00063757). Image reproduced with permission of the herbarium COI.



FIGURE 2. Lectotype of *Ranunculus weyleri* Marès ex Willk., COI (barcode COI00063923). Image reproduced with permission of the herbarium COI.

Ranunculus chaerophyllos var. *balearicus* Barceló (1879: 12) [replaced synonym]

≡ *R. barceloi* Grau (1984: 54) [nomen novum or replacement name]

≡ *R. macrophyllus* subsp. *barceloi* (Grau) Romo (1994: 110)

≡ ***R. paludosus*** subsp. ***barceloi*** (Grau) L. Sáez, Rosselló & N. Torres (1997: 88)

– *R. paludosus* subsp. *barceloi* (Grau) O. Bolòs & Vigo (1990: 820) [nom. inval., without basionym date]

Ind. loc.: “Mallorca: Pont-Gros cerca de Palma! Puig del Teix (Willk.)-Formentera La Mola, San Francisco! (v. v.)”

Type (lectotype designated here): [Spain]. Balearic Islands, Mallorca, Puig de Teix, in glareosis simmi cacuminis raro, 7 May 1873, *H.M. Willkomm* (*Herb. Balear n. 464*) (COI, barcode COI00063757) (Fig. 1).

Ranunculus weyleri

Marès (1865: 232) published the name “*Ranunculus weyleri*” without a description or diagnosis, mentioning only the name, as «Dans le spécimen que nous avons l’honneur de vous présenter, se trouve le *Ranunculus Weyleri*, nouvelle espèce que nous avons dédiée à notre ami M. Weyler, savant aussi modeste qu’instruit. Nous espérons vous offrir encore, à leur rang, quelques belles plantes inédites, dont les figures seront placées à la fin de notre catalogue». Therefore, this name was not validly published under the *Code* then in force. Paul Marès collect plants in the Balearic Islands in June 1850, April, May and June 1852, and March, April, and May 1855 (Barceló 1879).

Later, Willkomm (1876) published a Latin diagnosis and the provenance «801. *R. Weyleri* Marès in Bull. soc. bot. Fr. XII (1865) p. 232 – Mallorca: in fissuris rupium montis Puig de Torella ad alt. 1340 met. raro. d. 5 Maji nondum florens. Specimina florentia mecum communicavit cl. *Barcelò*», and this validated the name *Ranunculus weyleri*. Willkomm visited Mallorca and Menorca islands during March to May 1873 (Barceló 1879). Unfortunately, we have not been able to locate any original material of *Ranunculus weyleri* collected by Willkomm in any consulted herbaria (e.g., B, BM, K, COI).

According to Rosselló & Sáez (2000: 151) the type material has to be searched at COI-Willk. Certainly, there is a relevant specimen of *Ranunculus weyleri* in the Willkomm herbarium at COI, with barcode COI00063923. The sheet bears two plants, with leaves and flowers, and a handwritten label, annotated as “*Ranunculus Weyleri* / P. Marès / Puig de Torrealla (Mallorca) / Junio 1870” handwritten by Barceló, and «Leg. *Barcelò*» handwritten by Willkomm. We have been unable to locate any further original material in any consulted herbaria.

In conclusion, as the specimen COI00063923 matches with the protologue “Specimina florentia mecum communicavit cl. *Barcelò*”, and is a well-prepared and preserved specimen, it is selected as the lectotype of *Ranunculus weyleri*. This material shows relevant diagnostic characters (e.g., with patent hairs at base of stems and petioles, leaves usually 3-lobed to 3-sect, with the central lobe (or segment) cuneate, lobate or entire, ovate-elliptic, deeply 3-lobed, segments often stipitate, petioles not enlarged and sheathing at base, achenes 2–3 mm, smooth), and clearly matches with the traditional concept and current use and application of the name (e.g., Marès & Vigineix 1880, Bolòs & Vigo 1984, Grau & López González 1986, Tutin & Cook 1993).

Ranunculus weyleri Marès ex Willkomm (1876 : 131)

≡ *R. balbisii* subsp. *weyleri* (Marès ex Willkomm) Gandoger (1910: 12)

≡ *R. cymbalarifolius* subsp. *weyleri* (Marès ex Willk.) O. Bolòs & Vigo (1974: 65)

– *R. weyleri* Marès & Vigineix (1880: 5) [*nom. illeg.* Art. 52.1]

– *R. balbisii* subsp. *weyleri* (Marès ex Willk.) O. Bolòs & Font Quer (1962: 355), comb. superfl.

Ind. loc.: “Mallorca: in fissuris rupium montis Puig de Torella ad alt. 1340 met. raro. d. 5 Maji nondum florens. Specimina florentia mecum communicavit cl. *Barcelò*”

Type (lectotype designated here): [Spain]. Balearic Islands, Mallorca, Puig de Torrealla, *F. Barcelò s.n.* (COI, barcode COI00063923) (Fig. 2).

Remarks: Marès & Vigineix (1880: 5-6) published the name *Ranunculus weyleri*, but it is nomenclaturally superfluous according to Art. 52.1 of the *ICN*. These authors mentioned two gatherings “Vers le sommet du Puig Mayor vers le N., seulement en cette localité. (Bourgeau, Exsicc. n. 2728”, and “Majorque: Anfractuosités des rochers à pic du sommet extrême du Puig Mayor de Torellas, face nord. – En fleur le 17 juin 1850; - le 7 juillet 1852, la plupart des fleurs étaient passées”. Eugène Bourgeau visited and collected plants in Mallorca in May 1869 (Barceló, 1879).

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