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## *Rhagadiolus edulis* (Cichorieae, Compositae), a replacement name for *Lapsana rhagadiolus* L. or a name of a new taxon?

P. PABLO FERRER-GALLEGO<sup>1,3\*</sup> & MARÍA TALAVERA<sup>2,4</sup>

<sup>1</sup> 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, 46930 Quart de Poblet, Valencia, Spain

<sup>2</sup> Departamento de Biología Vegetal y Ecología. Universidad de Sevilla, Apdo. 1095, E-41080, Sevilla, Spain

<sup>3</sup> ✉ [flora.cief@gva.es](mailto:flora.cief@gva.es); <https://orcid.org/0000-0001-7595-9302>

<sup>4</sup> ✉ [mtalavera@us.es](mailto:mtalavera@us.es); <https://orcid.org/0000-0001-9445-2670>

\*Author for correspondence

### Abstract

*Rhagadiolus edulis* (Cichorieae, Compositae) can be treated either as a replacement name or as the name of a new taxon according to the International Code of Nomenclature for algae, fungi, and plants. Treating it as a replacement name would be nomenclaturally disruptive, whereas treating it as the name of a new taxon, confirmed by an appropriate typification, maintains current usage. Therefore, the nomenclatural type for the name *Rhagadiolus edulis* is discussed. The name is lectotypified by a specimen preserved in the Gaertner Herbarium at TUB.

**Keywords:** Asteraceae, Joseph Gaertner, Linnaeus, new name, nomenclature, original material, typification

### Introduction

*Rhagadiolus edulis* Gaertner (1791: 354) (Cichorieae Lam. & DC., Compositae Giseke) is native to the Mediterranean region and western Asia (Meikle 1979, Kilian *et al.* 2009+, Talavera & Talavera 2017, POWO 2023: <https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:241348-1#distributions>). According to recent molecular studies, *Rhagadiolus* Jussieu (1789: 168) (nom. cons. vs. *Rhagadiolus* Zinn (1757: 436)) is most closely related to *Lapsana* Linnaeus (1753: 811), and both genera cluster within the genus *Crepis* Linnaeus (1753: 805) s.l. (Enke & Gemeinholzer 2008). However, their generic status is best maintained, at least for the time being (Enke 2009).

*Rhagadiolus edulis* is the type of the genus *Rhagadiolus* ([https://naturalhistory2.si.edu/botany/codes-proposals/display\\_new.cfm](https://naturalhistory2.si.edu/botany/codes-proposals/display_new.cfm)). It has been traditionally and currently treated as a taxon distinct from the only congener, *R. stellatus* (Linnaeus 1753: 811) Gaertner (1791: 354) (see Willdenow 1803, Brotero 1804, Lamarck & Candolle 1805, Persoon 1807, Aiton 1812, Sprengel 1826, Reichenbach 1831, Nyman 1879, Battandier & Trabut 1889, Jahandiez & Maire 1934, Tremetsberger *et al.* 2005, Greuter 2006+, Samuel *et al.* 2006, Fennane *et al.* 2014, Tison *et al.* 2014, Talavera & Talavera 2017, Pignatti 2018, POWO 2023: <http://www.plantsoftheworldonline.org/>, WCV 2023: <http://wcvp.science.kew.org/>, WFO 2023, <http://worldfloraonline.org/search?query=Rhagadiolus+edulis>). However, it has also often been treated as a variety of *R. stellatus*; *R. stellatus* var. *edulis* (Gaertn.) Candolle (1838: 77) (Willkomm & Lange 1865, Halácsy 1902, Fiori & Paoletti 1904, Rouy 1908, Coutinho 1913, Hayek 1931, Rechinger 1944, Kupicha 1975), or as a subspecies, *R. stellatus* subsp. *edulis* (Gaertn.) Arcangeli (1894: 731) (Holmboe 1914, Bolòs & Vigo 1989). On the other hand, several authors treated *R. edulis* as a synonym of *R. stellatus* (Sell 1976). Descriptions and illustrations along with keys separating these two taxa can be found in Meikle (1979, 1985), Talavera (1987), and Talavera & Talavera (2017). As it was mentioned by Shaw (1999), an excellent article in *Taxon* (Meikle 1979) sets forth a strong argument for the recognition of *R. edulis* at specific level and explains the historical mistakes in identification that lead to its subsumption within *R. stellatus*. Both species (*R. edulis* and *R. stellatus*) are widespread in the Mediterranean region. However, there is no evidence of hybrids between the two species.

## Nomenclatural background

The Linnaean name *Lapsana rhagadiolus* Linnaeus (1753: 812) has traditionally and currently been treated in a large number of botanical works as the replaced synonym of *Rhagadiolus edulis*. However, according to the *Shenzhen Code*, *Rhagadiolus edulis* can be treated either as a replacement name or as the name of a new taxon. Treating it as a replacement name would be nomenclaturally disruptive (see below), whereas treating it as the name of a new taxon, confirmed by an appropriate typification, maintains current usage and stability of nomenclature.

*Rhagadiolus edulis* is not a replacement name as defined in Art. 6.11 or 6.12 of the *Shenzhen Code* and so Art. 6.13 must apply (“6.13. A name not explicitly proposed as a substitute for an earlier name and not covered by Art. 6.12 may be treated either as a replacement name or as the name of a new taxon if in the protologue both (a) a potential replaced synonym is cited and (b) all requirements for valid publication of the name of a new taxon are independently met. Decision on the status of such a name is to be based on predominant usage and is to be effected by means of appropriate type designation (Art. 9 and 10)”) (see Turland *et al.* 2018).

The protologue of *Rhagadiolus edulis* (Gaertner 1791) includes a polynomial “*Rhagadiolus edulis*, hieraciis affinis. Bauh hist. l.c.” cited from Bauhin (1623), the name “*Lapsana Rhagadiolus*. Linn. l.c.” cited from Linnaeus (1753), and a description “*Semina radii fere recta, tota glabra, apice fipinula incurva terminata. Sem. disci falcata, raris villis pubescentia aut lævia [...]*”). Therefore, in view of Gaertner’s protologue, Art. 6.12(a) does not apply, but both (a) and (b) of Art. 6.13 do apply. In conclusion, the name *Rhagadiolus edulis* is not a (obligate) replacement name of *Lapsana rhagadiolus*. Consequently “decision on the status of such a name is to be based on predominant usage and is to be effected by means of appropriate type designation (Art. 9)”.

*Lapsana rhagadiolus* must be certainly treated in current use as applying to the same species as *Rhagadiolus stellatus* (≡ *Lapsana stellata* Linnaeus (1753: 811) [lectotype designated by Meikle (1979: 138) from Herb. Linn. No. 960.3 (LINN)] (see Turland 1998). The specimen in the Linnaean herbarium, Herb. Linn. No. 330.3 (S-LINN) (“Herb. Alstroemerii”), labelled “*Lapsana rhagadiolus*” by Linnaeus, was chosen as the lectotype of the name *L. rhagadiolus* by Kupicha (1975: 688) (see also Meikle 1979). However, according to Turland (1998: 364), the specimen 330.3 (S-LINN) is not original material for the name because it lacks the *Species plantarum* number, in this case no. “4”, and therefore was a later addition to the herbarium (see Jarvis 2007: 612–613). In consequence, Turland (1998) designated as the lectotype of *Lapsana rhagadiolus* an original material preserved at LINN, the specimen Herb. Linn. No. 960.4 (LINN). Talavera & Talavera (2017: 956), assuming the lectotype is contrary to the protologue, proposed the specimen 330.3 (S-LINN) as the “neotype” for *Lapsana rhagadiolus*. However, the designated lectotype agrees with the statement “*foliis lyratis*” in the protologue and therefore cannot be superseded.

The specimen 960.4 (LINN) (image available at <https://linnean-online.org/9707/#?s=0&cv=0>) can be undoubtedly identified as belonging to *R. stellatus* (see Turland 1998, Jarvis 2007). This material show the inner phyllaries hispidulous or scabridulous dorsally towards apex, 8 phyllaries; fruits distinctly incurved, 1.5–2 cm long; basal leaves oblanceolate or narrowly obovate, subentire, dentate or pinnatifid, with close lateral lobes diminishing downwards to a short, indistinct petiole. This set of characters allows unambiguous assignment of the plant to *R. stellatus*. Therefore, the effective lectotypification published by Turland (1998) generates the synonymy of *Lapsana rhagadiolus* with *Lapsana stellata*.

The choice of *Rhagadiolus edulis* as the replacement name of *Lapsana rhagadiolus* is certainly disruptive because a proposal to conserve the name *Lapsana rhagadiolus* with a conserved type would be necessary. The lectotype of *Lapsana rhagadiolus* does not include the current use and concept of the name *Rhagadiolus edulis*. We consider that the best solution is to designate a type for the name *Rhagadiolus edulis* (see also Art. 6.13 Ex. 17). The argument by Turland (1998: 364) that “the present choice of type [LINN 960.4] is not disruptive as the specific epithet ‘*rhagadiolus*’ cannot in any case be used in *Rhagadiolus*” also reported in the Linnean Plant Name Typification Project entry for *Lapsana rhagadiolus* (available at <https://www.nhm.ac.uk/our-science/data/linnean-typification/search/>) clearly presumes that no inappropriate and disruptive typification had been carried out prior to 1998.

The aim of this paper is to preserve and maintain the traditional and current usage of the name *Rhagadiolus edulis*. Consequently, for the purpose of nomenclatural stability and to support the continued and well-established use of the name, we propose a nomenclatural type. With this proposal, we intend to maintain the name *Rhagadiolus edulis* in its present, established sense and circumscription.



**FIGURE 1.** Lectotype of *Rhagadiolus edulis* Gaertner at TUB, with QR code TUB011867. Image by courtesy of the Herbarium TUB, reproduced with permission.

## Materials and methods

The protologue of *Rhagadiolus edulis* was analyzed to identify original material (or lack thereof) pertinent to the typification of the name. The type selected has been carefully evaluated for the purpose of fixing the precise taxonomic application of the name. The herbaria acronyms are according to Thiers (2023 [continuously updated]).

## Typification of the name

The protologue of *Rhagadiolus edulis* (Gaertner 1791) is brief, and unfortunately this species was not illustrated by Gaertner in his work. Furthermore, the works cited by Gaertner in the protologue (Bauhin's *Pinax* and Linnaeus's *Species plantarum*) do not illustrate this species.

Fortunately, there is an original specimen attributable to *Rhagadiolus edulis* in the Gaertner Herbarium at TUB, with QR code TUB011867. The sheet bears a well-preserved plant, with leaves and inflorescences (flowers but no fruits), and an original label handwritten by Gaertner, annotated as “*Rhagadiolus / edulis* W. / Gäertner.” We have been unable to locate any further original material in the relevant consulted herbaria (e.g., B, BM, G, L, LINN, P, S, SBT, UPS).

In conclusion, the specimen preserved at TUB is designated as the lectotype of the name *Rhagadiolus edulis*. This specimen displays the relevant diagnostic characters of this species (e.g., inner phyllaries glabrous dorsally, 5–6 phyllaries; basal leaves lyrate-pinnatisect, with a large terminal lobe and small, remote, lateral lobes; petiole well-developed, often elongate), and it clearly represents the traditional concept (see e.g., Willdenow 1803, Brotero 1804, Lamarck & Candolle 1805, Persoon 1807, Aiton 1812, Sprengel 1826, Reichenbach 1831, Nyman 1879, Battandier & Trabut 1889, Jahandiez & Maire 1934) and current use and application of the name *Rhagadiolus edulis* (e.g., Meikle 1979, Fennane *et al.* 2014, Tison *et al.* 2014, Talavera & Talavera 2017, Pignatti 2018).

*Rhagadiolus edulis* Gaertner (1791: 354)

**Type (lectotype, designated here):** “*Rhagadiolus / edulis* W. / Gaertner”, (TUB, QR code TUB011867) (Fig. 1).

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