

## THE STRENGTH OF THE EPITYPE. A BRIEF NOTE ON *GAGEA GRANATELLII* (PARL.) PARL. AND *G. MAURITANICA* DURIEU (*LILIACEAE*)

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**ABSTRACT:** The lectotype of *Gagea granatellii* (Parl.) Parl. has been identified as the species to which the name *Gagea mauritanica* Durieu is generally applied. Thus, both names has been treated as conspecific in *Flora iberica*. However, an epitype was designated for *Gagea granatellii*, which breaks the conspecificity and allows the use of both names for different taxa. **Keywords:** nomenclature; *Shenzhen Code*; synonymy; typification.

**RESUMEN:** La fuerza del epitipo. Breve nota sobre *Gagea granatellii* (Parl.) Parl. y *G. mauritanica* Durieu (*Liliaceae*). El lectotipo de *Gagea granatellii* (Parl.) Parl. ha sido identificado como perteneciente a la especie a la que generalmente se aplica el nombre *Gagea mauritanica* Durieu. Así, ambos nombres han sido tratados como conespecíficos en *Flora iberica*. Sin embargo, se designó un epitipo para *Gagea granatellii*, lo que rompe la conespecificidad y permite el uso de ambos nombres para diferentes táxones. **Palabras clave:** nomenclatura; *Código de Shenzhen*; sinónimo; tipificación.

### INTRODUCTION AND DISCUSSION

We recently analyzed the complex typification of *Gagea lacaitae* A. Terracc. (*Liliaceae*) (FERRER, 2023). In this work we were able to study and analyze the nomenclatural types of the names of some of the species related to this taxonomic complex.

*Ornithogalum granatellii* Parl. (PARLATORE, 1839: 85, fig. s.n.), currently accepted as *Gagea granatellii* (Parl.) Parl., is a species, or a species complex (incl. *G. lacaitae* and *G. chabertii* A. Terracc.) distributed in the western Mediterranean area (incl. Sicily and Sardinia, and North Africa) (TISON, 1998, 2004, 2009; PERUZZI & al., 2011; PAVON & TISON, 2021; FERRER, 2023). It is a bulbous perennial plant, well-characterized by bearing very thick ageotropic roots, broad ribbon-like, bulb densely surrounded by recurved fibrous roots, thick basal leaves with duplicated central vascular bundles, cauline leaves with underground basis; incomplete ontogenic sequence including a very short (0–2 years) adult stage with an usually irregular, bulbiferous (immature plants with a cluster of suprabasal bulbils), immature-like inflorescence, plant flowering sporadically or not-flowering (PERUZZI & TISON, 2007; TISON & al., 2013).

A lectotype for the name *Gagea granatellii* was designated by PERUZZI & TISON (2007: 185, fig. 8), from an illustration published by Parlatores “*Ornithogalum Granatelli*, inchoavit G. Ghilardi” (PARLATORE, 1839). These authors mentioned that they were forced to select this drawing as the lectotype since none of the consulted herbaria (including FI) preserves any specimen that can be interpreted as original material.

In addition, these authors also selected an epitype for *G. granatellii* in order to avoid ambiguities in the application of the name “since this drawing is of average quality and does not show all the diagnostic features of the species” (PERUZZI & TISON, 2007: 185). The selected

epitype is a complete specimen collected by Parlatores in 1840 in Sicily, and preserved at G, an image of this specimen was reproduced by PERUZZI & TISON (2007: fig. 9).

According to LÓPEZ GONZÁLEZ (2013), the lectotype and epitype of *G. granatellii* are taxonomically distinct and currently belong to different species. Although the epitype certainly matches the current concept and use of the name *G. granatellii*, the lectotype could be identified, according to López González, as belonging to the traditional concept and current use of the name *G. mauritanica* Durieu. This identification seems to be fully confirmed by Parlatores’s own description of his species (pea-sized bulb, almost hidden by very thick sclerified fibers, stem about 5 cm, opposite floral leaves, tepals about 2 mm wide, and basal leaves 1(1.5) mm wide) and Parlatores’s assertion that *G. mauritanica* is a synonym of his *G. granatellii* “Alla mia specie deve riferirsi come sinonimo la *Gagea mauritanica* di Durieu, dal quale mi sono state favorite anche le piante secche” [To my species must refer as a synonym Durieu’s *Gagea mauritanica*, from which I also favored dry plants] (PARLATORE, 1857: 428-429).

In the case of the lectotype of *G. granatellii*, the drawing “*Ornithogalum Granatelli*, inchoavit G. Ghilardi” (PARLATORE, 1839) illustrates a bulb not densely surrounded by fibrous roots; a very relevant diagnostic feature to differentiate this species, e.g., vs. *G. mauritanica*, with bulb with ascending fibers but without densely surrounded fibers. However, the traditional concept and current use of the name *G. granatellii* is applied to a species with bulb densely surrounded by fibrous recurved roots (see RICHARDSON, 1980; MOLINA & al., 1998; TISON, 1998, 2009; PERUZZI & TISON, 2007; LÓPEZ GONZÁLEZ, 2013; PIGNATTI, 2018).

In this situation, if the lectotype and epitype of *G. granatellii* are taxonomically distinct, as indicated by LÓPEZ GONZÁLEZ (2013), the name *Gagea granatellii* has long been unambiguously applied to a species in a

sense that does not include its currently designated lectotype. In this sense, noting that the type of the name could be a specimen identifiable with *G. mauritanica*, conservation the current concept of the name *Gagea granatellii* to preserve the use of this name and nomenclatural stability “could be desirable”. However, an epitype of *Gagea granatellii* was designated by PERUZZI & TISON (2007), and the designated epitype creates a new scenario.

According to LÓPEZ GONZÁLEZ (2013), an option could be a proposal to conserve the previous use of the name or, alternatively, a proposal to reject the name *Gagea granatellii* under Art. 56 of the *Shenzhen Code* (TURLAND & al., 2018). López González considers at the same time that, since the lectotype is very different from the proposed epitype, the epitype must be rejected. Therefore, in the *Flora iberica*, the name *G. granatellii* is treated as a heterotypic synonym of *G. mauritanica*.

However, even if the lectotype and epitype of *G. granatellii* were taxonomically distinct (LÓPEZ GONZÁLEZ, 2013), or not (Tison and Peruzzi, pers. comm.) i.e., the epitype is conspecific with the type it supports; this epitype cannot be replaced (see MOSYAKIN & McNEILL, 2018; LENDEMER, 2020). Once an epitype is designated, it can only be displaced by conservation, or if it is shown that the type it supports is not the type of the name (Art. 9.20 & Note 8) (TURLAND & al., 2018). The epitype of *G. granatellii*, preserved at G herbarium, replace and not supplement the “icono”-lectotype, with new and better information content.

In the *Shenzhen Code* (TURLAND & al., 2018), two important provisions are relevant to the analysis of this case. In Art. 9.9, it is indicated that “An epitype is a specimen or illustration selected to serve as an interpretative type ...”, and in Art. 9.20 “The author who first designates (Art. 7.10, 7.11, and F.5.4) an epitype must be followed”. At this point it is pertinent to comment that only if the type that supports an epitype is displaced (lost, destroyed, or supersedable under Art. 9.19), an epitype ceases to be the element that determines the application of the name.

Thus, once an epitype has been designated in accordance with the provisions of the *Code*, the identity of the type it supports (in this case the lectotype) is totally irrelevant for the purpose of application of the name. But mistakes can be made and the final sentence of Art. 9.20 sets out how such a mistake can be rectified. By invoking the procedures of Art. 14 it states that this can be done to avoid an unfavorable nomenclatural change. Therefore, since the current type (the epitype) is the species to which the name *Gagea granatellii* is currently applied, there is no justification for applying Art. 14.9.

Finally, although the type being supported by an epitype must be “demonstrably ambiguous and cannot be critically identified for purposes of the precise application of the name to a taxon” (*ICN* Art. 9.9), even if there is evidence that this is demonstrable, which is hardly the case here, the *Code* does not provide that the

designated epitype does not still determine the application of the name.

In conclusion, although the lectotype of *G. granatellii* has been identified as *G. mauritanica*, and therefore both names could have been treated as conspecific, the epitype designated for *G. granatellii* breaks the conspecificity and allows the use of both names for different taxa.

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