

NOMENCLATURE

Typification of the Linnaean name *Myosotis nana* (Boraginaceae)Gabriele Galasso¹  & Federico Selvi² ¹ Sezione di Botanica, Museo di Storia Naturale di Milano, Corso Venezia 55, 20121 Milano, Italy² Department of Agriculture, Food, Environment and Forest Sciences, Laboratories of Botany, University of Florence, Piazzale delle Cascine 28, 50144 Firenze, Italy

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Abstract In this note we designate a lectotype and a supporting epitype for the Linnaean name *Myosotis nana* L., whose validity has been questioned by some authors. The name is shown to be validly published by Linnaeus and, as such, the correct basionym for *Eritrichium nanum* (L.) Schrad. ex Gaudin, a well-known European alpine plant.

Keywords Alpine flora; Boccone; Boraginaceae-Cynoglosseae; Linnaean names; typification

INTRODUCTION

The present contribution is part of an ongoing project, supported by the Italian Botanical Society, which aims at providing nomenclatural types for all the vascular plant taxa described from Italy and identify the corresponding *loci classici* (type localities), in order to improve their systematic knowledge and promote their conservation (Domina & al., 2012; Passalacqua & al., 2014; Peruzzi & al., 2015; Brundu & al., 2017). This article additionally contributes to ongoing studies in Boraginaceae by Italian botanists (Selvi & Cecchi, 2009), in particular members of the family *sensu lato* belonging to the Italian flora (Cecchi & Selvi, 2014, 2015).

One of these taxa is *Eritrichium nanum* (L.) Schrad. ex Gaudin, a well-known alpine plant in Boraginaceae subfamily Cynoglossoideae tribe Cynoglosseae (Chacón & al., 2016) and the only European member of the genus *Eritrichium* Schrad. ex Gaudin. It is a dwarf, pulvinate and densely hairy perennial plant with bright blue flowers that grows in rocky sites at elevations between 2500 (rarely 1900) and 3750 m a.s.l. (Selvi, 2018). This species represents a widespread polymorphic complex of closely related taxa including *E. aretioides* (Cham.) DC., *E. chamissonis* DC., *E. nanum* s.str. and *E. villosum* (Ledeb.) Bunge, and growing in the Alps and the Carpathians, the Caucasus, Inner Asia, North Siberia and in the Rocky Mountains from Alaska to Colorado (Zoller & al., 2002). According to European authors (e.g., Meusel & al., 1978; Aeschmann & al., 2004; Valdés, 2011; Selvi, 2018), *E. nanum* s.str. is endemic to Europe, while the other taxa of the complex occur in Asia and North America (see also Wight, 1902; Murray, 2013). Further studies are needed to address systematic uncertainties in this group, and typification of *E. nanum* is a first necessary step to this purpose. In fact, the name *Myosotis nana* has never been typified, and the validity of the basionym



Fig. 1. Page 13 of Linnaeus's *Flora alpina* (1756) with citation of *Myosotis nana* and reference to Boccone's plate 107 (see Fig. 2).

has not been recognized by a number of previous authors (e.g., Wight, 1902; Pignatti, 1982; Federov, 2001; Hilger & al., 2015; see also the note to the *M. nana* entry in IPNI). This problem is addressed in the present contribution.

■ TYPIIFICATION OF THE NAME

The name *Myosotis nana* was first published in 1756 by Linnaeus in the list of “PENTANDRIA, *Monogynia*” plants given on page 13 of *Flora alpina* (Linnaeus, 1756). It is generally accepted that Linnaeus was the only author of this book and the new plant names published in it, though Nicolaus N. Åmann defended this work as a thesis at the Uppsala Faculty of Medicine and his name also appears on the title page of the book (K. Gandhi, pers. comm. 2019). The plant is named in the following form: “*Myosotis nana* Bocc. T. 107. Italicis” (Fig. 1). There is no diagnosis, and for this reason the validity of this name has been questioned by some authors, who considered it as an abbreviated reference to the descriptive phrase name published by Paolo Silvio Boccone in his *Museo di piante rare della Sicilia ...* (Boccone, 1697), rather than publication of a new binomial (Art. 23.6(a) of the ICN, Turland & al., 2018; see remark by C. Jarvis in the IPNI entry to *M. nana* L.). In the complete edition of this book, the

polynomial “*Echium scorpioides, Alpinum, nanum, supinum*” appears on page 149 and, as a “caption” of a plant drawing, besides others, in the upper-right part of plate 107 (Fig. 2), with a slightly different polynomial: “*Echium Scorpioides, Alpinum, tomentosus* [sic!], *nanum, supinum*”.

The supposed non-validity of the Linnean name can explain why it does not appear among the taxa in the Linnean Typification Project and consequently is not treated in the contribution on the types of Linnean Boraginaceae (Cafferty & Jarvis, 2004).

Some authors (e.g., Pignatti, 1982; Federov, 2001) attribute the name to Carlo Allioni who validly published it in his *Auctuarium ad synopsis methodicam stirpium Horti Reg. Taurinensis* (Allioni, 1773: 9). This is a separate pre-print of a paper later published in the journal *Mélanges de Philosophie et de Mathématique de la Société Royale de Turin* (Allioni, 1774: 61), where there is a reference to page 149 and plate 107 in Boccone (1697), as well as a reproduction of the polynomial description of page 149. Other authors, instead, refer the name *Myosotis nana* to Dominique Villars (born Villar) who used it in his *Prospectus de l’histoire des plantes de Dauphiné* (Villars, 1779: 21), without any reference to Linnaeus (1756) or Boccone (1697). Although Villars provided a new description (“*Myosotis foliis tomentosus, seminum marginibus serrato-marginatis, invicem conjunctis*”), he did not intend to

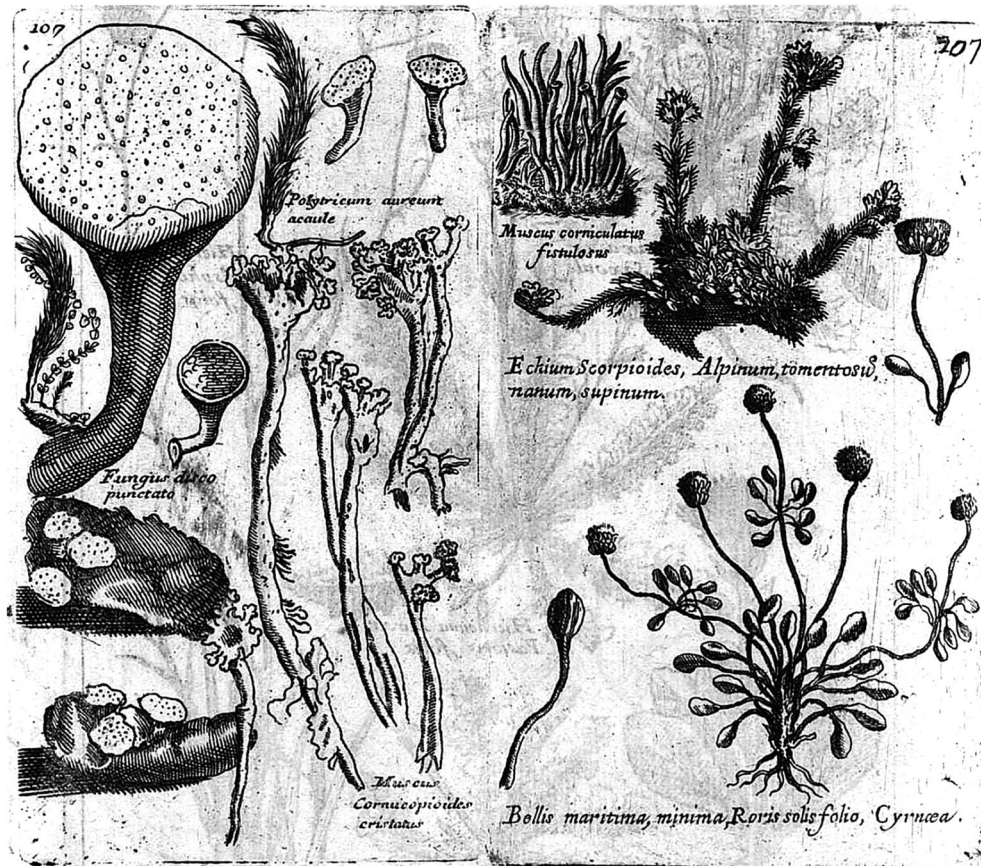


Fig. 2. Plate 107 of Boccone’s *Museo delle piante rare ...* (1697); the lectotype of *Myosotis nana* L. is at the upper right corner of the plate, described as “*Echium Scorpioides, Alpinum, tomentosus, nanum, supinum*”.

describe a new species, as shown by the lack of the asterisk that he used to mark the taxa that were newly described in his book (Villars, 1779: 15).

A clear opinion was expressed by Gandhi & Murray (2013) who concluded that the “correct authority [of *M. nana*] is Linnaeus, not Amman or Villars or Allioni”. This interpretation appears to be correct, though the name *Myosotis nana* Vill. was again mentioned as basonym for *Eritrichium nanum* in a recent paper (Hilger & al., 2015), due to the missing entry of Gandhi and Murray’s findings to IPNI (H.H. Hilger, pers. comm. 2019). In fact, Boccone’s drawing in the upper-right corner of plate 107 to which Linnaeus referred is sufficiently clear to show that the plant nicely corresponds to our current concept of “*Eritrichium nanum*”. The Latin terms of the polynomial (“*Alpinum, tomentosus, nanum, supinum*”) strongly corroborate this interpretation, as they describe very efficiently the distinctive morphology of the plant, and there is no other taxon of Boraginaceae in Europe corresponding to it. In addition, the plant is thoroughly described in an Italian text on page 149, where it is also added that it grows in “luoghi aspri, sassosi, ed in sito ove la neve rimane lungo tempo senza liquefarsi nel Monsenis” (on Moncenisio [Mont Cenis], in a rugged and rocky site where the snow remains for long time without melting). Habitat and site details leave no doubts about the identity of this plant, which is relatively common in the Western Alps, Italy, France and Switzerland. Furthermore, the words “*Myosotis nana*” by Linnaeus (1756: 13) form a true species name, rather than a mention of a generic name followed by the abbreviated phrase name by Boccone (1697), in which the word “*Myosotis*” does not appear. According to Arts. 38.1, 7.8, and Art. 7 Ex. 10 of the *ICN*, this Linnaean name is validated solely by the reference to the previously and effectively published diagnosis by Boccone (and not by a reproduction of such diagnosis) and is to be typified by an element selected from the entire context of Boccone’s material, either the book or herbarium collections, if existing. For this reason, the specimen of “*Myosotis* sp.” in the Linnean herbarium LINN 180.5, annotated as “*Echium scorpioides alpinum nanum* Bocc. mihi | e monte Centisio [sic!] Allion.” (<http://linnean-online.org/2045/>) and probably sent to Linnaeus by C. Allioni after the publication of *Flora alpina*, cannot be used for typification. Actually, no evidence exists about the presence of *Eritrichium nanum* collections in Boccone’s herbaria kept in the *Civica e A. Ursino Recupero* Libraries of Catania (Pulvirenti & al., 2017) and in the Naturalis Biodiversity Center in Leiden (the latter as part of the collection of Hieronymus van Beverningh; Costa & al., 2018). Although existence of this material cannot be excluded, the plant drawing in plate 107 is therefore the only suitable element to serve as lectotype at the present state of knowledge. However, this drawing is miniaturized and included among several other illustrations in the same plate, it does not show taxonomically important details such as flowers and fruits and appears of insufficient quality to serve as a reference for comparison with similar Asian taxa of *Eritrichium*. In the Boraginaceae, this case is comparable to that of *Cynoglossum montanum* L.,

which required the designation of an epitype in accordance with Art. 9.9 of the *ICN* (Selvi, 2008). The specimen in the Florence Herbarium (FI) here selected as epitype fits the current concept of *Eritrichium nanum*, matches the original geographical indication by Boccone (Moncenisio) and is a complete collection, hence allowing the examination of morphological details for systematic analyses.

***Eritrichium nanum* (L.) Schrad. ex Gaudin, Fl. Helv. 2: 57. 1828 ≡ *Myosotis nana* L., Fl. Alp.: 13. 1756 ≡ *Omphalodes nana* (L.) A.Gray in Proc. Amer. Acad. Arts 20: 263. 1885 – Lectotype (designated here):** [illustration] “*Echium, Scorpioides, Alpinum, tomentosus, nanum, supinum*” in Boccone, Museo di Pianta Rare della Sicilia, Malta, Corsica, Italia, Piemonte e Germania: [fig. in the upper-right corner of] pl. 107. 1697 – **Epitype (designated here):** “*Eritrichium nanum* Schrad., [France] Cenisio: al Lago Bianco, sotto il Malamot, 26 Luglio [Jul] 1894”, *E. Ferrari* 5027 (FI barcode FI018384!).

For images of the lectotype and epitype, see Figs. 2 and 3, respectively.



Fig. 3. Epitype of *Myosotis nana* L. from Mount Cenis (FI barcode FI018384; photo by Chiara Nepi).

■ AUTHOR CONTRIBUTIONS

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