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Lectotypification of *Campanula saxatilis*, *Phyteuma pinnatum* and *Verbascum arcturus*, Linnaean names of three taxa endemic to Crete

Abstract

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Three Linnaean plant names are lectotypified: *Campanula saxatilis* (*Campanulaceae*), *Phyteuma pinnatum* (now *Petromarula pinnata*, *Campanulaceae*) and *Verbascum arcturus* (*Scrophulariaceae*). The latter two species are endemic to the S Aegean island of Crete (Kriti), whereas *C. saxatilis* is endemic to Crete (subsp. *saxatilis*) and the islands of Kithira and Antikithira to the northwest (subsp. *cytherea*).

Key words: *Campanulaceae*, *Scrophulariaceae*, Greece, Kriti, lectotype, Linnaeus.

Introduction

The S Aegean island of Crete (Kriti), Greece, has a vascular flora of 1734 species, of which 159 (9.16 %) are endemic (Fielding & Turland 2005). A few of these endemic species had already been described during the pre-Linnaean period. Lack (1996) gave a thorough summary of the early botanical exploration of Crete. Linnaeus recognized some of these species and published names for them in his *Species Plantarum* (Linnaeus 1753): *Campanula saxatilis* L. (only subsp. *saxatilis* endemic, *Campanulaceae*); *Dianthus arboreus* L., nom. rej. (now *D. juniperinus* subsp. *bauhinorum* (Greuter) Turland, *Caryophyllaceae*); *Ebenus cretica* L. (*Leguminosae*); *Gnaphalium petiolatum* L. (now *Staehelina petiolata* (L.) Hilliard & B. L. Burtt, *Compositae*); *Melissa cretica* L. (now *Calamintha cretica* (L.) Lam. or *Satureja cretica* (L.) Briq., *Labiatae*); *Origanum dictamnus* L. (*Labiatae*); *Phyteuma pinnatum* L. (now *Petromarula pinnata* (L.) A. DC., *Campanulaceae*); *Sideritis syriaca* L. (only subsp. *syriaca* endemic, *Labiatae*); and *Verbascum arcturus* L. (*Scrophulariaceae*). These were followed three years later by *Verbascum spinosum* L. (*Scrophulariaceae*) in *Centuria II Plantarum* (Linnaeus 1756). All the above names have been effectively lectotypified except for *Campanula saxatilis*, *Phyteuma pinnatum* and *Verbascum arcturus*, which are lectotypified in the present paper. These three species are all chasmophytes of (mostly) calcareous cliffs and rocks. Colour photographs taken in the wild are provided by Jahn & Schönfelder (1995) and Fielding & Turland (2005).

Lectotypifications

In the following three headings, the currently accepted name is given in bold italics. The Linnaean protologues were scanned from an original copy of *Species Plantarum* in the library of the Missouri Botanical Garden.

1. *Campanula saxatilis* L., Sp. Pl. 1: 167. 1753.

Lectotypus (hic designatus): [icon] “*Traicheliu samat Bellid fol caruleum creticum*” [sic] in Boccone, *Mus. Piante*: ad t. 64. 1697 – Fig. 1.

Protologue: **24. CAMPANULA foliis obovatis crenatis, floribus al-*saxatilis*.
ternis nutantibus, capsulis quinquecarinatis. †**
Campanula cretica saxatilis, bellidis folio, magno flore.
Tournef. inst. 111. Barr. rar. 79. t. 813.
Trachelium saxatile, bellidis folio, caeruleum creticum.
Bocc. mus. 2. p. 76. t. 64.
Habitat in Cretae scopulis saxosis.

Linnaeus gave a new nomen specificum legitimum followed by the symbol “†” indicating “an imperfectly known species or some doubt or obscurity” (Stearn 1957: 162). He also cited two synonyms: one from Tournefort (1700) and Barrelier (1714, where “79” refers to the species number, whereas the page number is 9), and the other from Boccone (1697). No specimens relevant to *Campanula saxatilis* could be traced in any of the Linnaean herbaria (H, LINN, MW, S, SBT; abbreviations according to Holmgren & Holmgren 1998-). The cited Tournefort polynomial is not accompanied by an illustration, and it should be noted that the specimens in Tournefort’s herbarium (P) were never studied by Linnaeus so they cannot be relevant original material for Linnaean names (Turland & Jarvis 1997). The only two elements of original material for *C. saxatilis* are the copperplate illustrations by Barrelier and Boccone cited by Linnaeus, the former a mirror-image copy of the latter with some extra foliage added. Do they support current usage of the name? The only similar species in Crete is *C. tubulosa* Lam., which is also endemic and often chasmophytic, but that plant has oblong-ovate (vs. spatulate to oblanceolate) basal leaves and hirsute (vs. glabrous or sparsely pubescent) and usually blue-violet (vs. pale blue to sky-blue) corollas. There is also another subspecies of *C. saxatilis*: the Cretan taxon is subsp. *saxatilis*, whereas subsp. *cytherea* Rech. f. & Phitos (Phitos 1965: 483) is endemic to the islands of Kithira and Andikithira to the northwest of Crete. That taxon differs in having basal leaves usually oblanceolate (vs. usually



Fig. 1. Lectotype of *Campanula saxatilis* L. – Boccone, *Mus. Piante*: ad t. 64. 1697.

spatulate), corollas broadly tubular (vs. narrowly so) and calyx teeth almost obovate (vs. triangular-lanceolate). Boccone's illustration (Fig. 1) agrees in these characters with *C. saxatilis* subsp. *saxatilis* and the provenance is explicitly given as Crete, so it supports current usage well and is here designated as the lectotype. No epitype is needed as the lectotype is not "demonstrably ambiguous" (Greuter & al. 2000: Art. 9.7). Boccone's illustration was recently reproduced by Lack (1996: 195), who did not lectotypify the name. Previously Phitos (1965: 482) stated "Typus: Tournefort (non vidi)", but, as explained above, Tournefort's specimens are not relevant original material for Linnaean names.

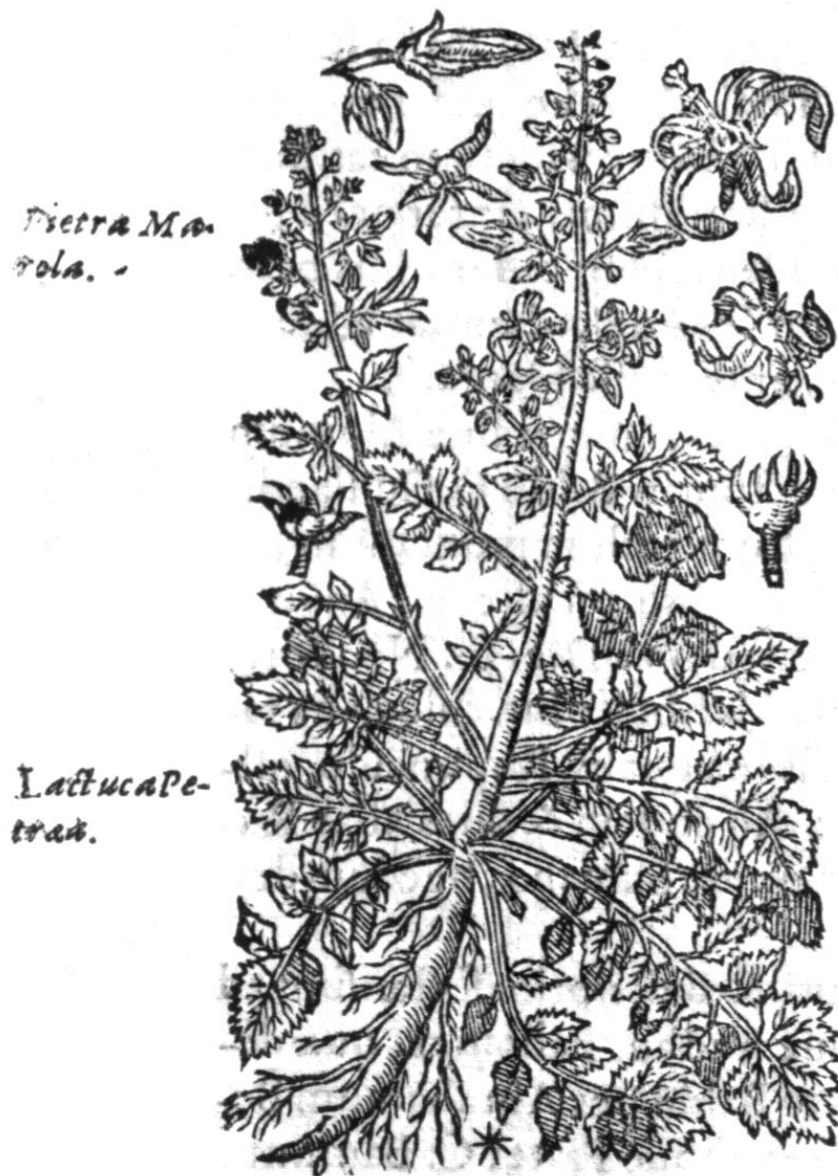


Fig. 2. Lectotype of *Phytolacca pinnatifida* L. – Bauhin & al., Hist. Pl. 2: 812. 1651.

2. *Phyteuma pinnatum* L., Sp. Pl. 1: 171. 1753 [“*pinnata*”] ≡ *Petromarula pinnata* (L.) A. DC., Monogr. Campan.: 209. 1830.

Lectotypus (hic designatus): [icon] “Pietra Marola” & “Lactuca Petraea” in Bauhin & al., Hist. Pl. 2: 812. 1651 – Fig. 2.

Protologue: **6. PHYTEUMA floribus sparsis, foliis pinnatis. *Roy. pinnata. lugdb. 248.***
Rapunculus creticus f. *Pyramidalis altera. Bauh. pin. 93.*
Rapunculus creticus, Petromarula. Bauh. hist. 2. p. 811.
t. 812.
Habitat in Creta.

Linnaeus gave a nomen specificum legitimum cited from Royen (1740) as well as two synonyms: one from Bauhin (1623) and one from Bauhin & al. (1651). Only the last of these is accompanied by an illustration. No specimens relevant to *Phyteuma pinnatum* could be traced in any of the Linnaean herbaria, nor in Adriaan van Royen’s herbarium in Leiden (L), nor in Joachim Burser’s herbarium in Uppsala (UPS). The only original element, and thus the obligate lectotype, is the woodcut illustration provided by Bauhin & al. (1651), which happens to be a good, if uncomplicated, depiction of what is obviously *Petromarula pinnata* as currently understood. Even without the explicitly stated provenance of Crete, there is nothing else with which the illustration could be confused. *Petromarula* Vent. ex R. Hedw. is a distinct, unispecific genus. No epitype is necessary.

As an incidental note, it is worth mentioning that Bauhin & al. (1651) provided text copied from Clusius (1601: ccxcix–cccxiii), who published four letters sent to him from Cydonia (now Haniá), Crete by Onorio Belli (1550–1604), a physician from Vicenza, Italy (see Baldacci & Saccardo 1900). In the first letter, dated 24 September 1593, Belli described the plant we now know as *Petromarula pinnata*, noted its habitats and life cycle, and quoted its Greek vernacular name *πετρομαρούλα* (*petromaroula*), which is a compound of *πέτρος* and *μαρούλα*, literally meaning “rock-lettuce”, and is the basis of the generic name later adopted by Hedwig (1806: 139) and Candolle (1830: 209). Belli also made an intriguing ethnobotanical observation: “Radix manducata, tum etiam caulis adhuc tener, venerem stimulare vulgo creditur: & ideo nomine obsceno *πετροκαυλί* vocatur.” This may be translated as: “The root chewed, while the stem is still tender, is commonly believed to stimulate sexual desire: and therefore it is called by the obscene name *petrokavlí*.” The Greek word *καυλί* is a slang term for penis; cf. the Latin *caulis* and the ancient Greek *καυλός*.

3. *Verbascum arcturus* L., Sp. Pl. 1: 178. 1753 ≡ *Celsia arcturus* (L.) Jacq., Hort. Bot. Vindob. 2: 53, t. 117. 1772.

Lectotypus (hic designatus): Herb. Burser XIII: 130 (UPS) – Fig. 3.

Protologue: ***Arcturus.* 5. VERBASCUM foliis lyrato-pinnatis.**
Verbascum humile creticum laciniatum. Bauh. pin. 240.
Verbascum bratticæ folio. Column. ecphr. 2. p. 81. t. 82.
Habitat in Creta.

Linnaeus gave a new nomen specificum legitimum followed by two synonyms: one from Bauhin (1623) and one from Colonna (1616), the latter accompanied by a copperplate illustration. Only one specimen relevant to *Verbascum arcturus* could be traced in the Linnaean herbaria: Herb. Linn. 774.2 (LINN) is annotated “*Arcturus*” and “HU” (Hortus Upsaliensis) by Linnaeus, but it lacks the species number (5) from Species Plantarum and is therefore almost certainly a post-1753 addition to the Linnaean herbarium (see Turland & Jarvis 1997). Therefore, it cannot be regarded as original material for the name. However, Linnaeus’s citing the polynomial from Bauhin’s Pinax provides a link to the specimen Herb. Burser XIII: 130 (UPS). Joachim Burser’s herbarium was arranged and labelled according to the Pinax and was cited in the introduction of the Species



Fig. 3. Lectotype of *Verbascum arcturus* L. – Herb. Burser XIII: 130 (UPS). – Scale bar: 5 cm.

Plantarum (7th unnumbered page) as one of the sources for that work. Linnaeus determined the Burser specimen as “*Verbascum arcturus*” in a manuscript (from c. 1748, at LINN) of determinations of Burser’s herbarium (Savage 1937: 43). Moreover, in his own copy of the Pinax (also at LINN), Linnaeus annotated the same polynomial with “*Verbascum arcturus*” (Savage 1937). Therefore, this specimen is undoubtedly original material. It consists of the upper part of a leafy shoot, terminating in an inflorescence, of what is certainly *V. arcturus* as currently understood. Murbeck (1925: 145-149), in his monograph of *Celsia* L., did not designate a lectotype for *V. arcturus*; later, Lack (1996: 194) noted Colonna’s illustration, but likewise did not designate a lectotype. Colonna’s illustration is a good likeness of a whole flowering plant of *V. arcturus*, but, obviously, the specimen makes a much better lectotype and is therefore here designated as such.

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