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## Types of names of taxa belonging to the *Centaurea cineraria* group (*Compositae*) described from Sicily

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**Abstract:** The group of *Centaurea* (sect. *Acrolophus*) *cineraria* (*Compositae*) in Sicily includes four currently accepted species plus four taxa that have been considered, with some doubt, as subspecies of one of them (*C. panormitana*). In total, discounting recombinations and replacement names, 11 names (seven specific, three varietal, one of a forma), all based on Sicilian material, were published by past authors for these eight taxa. Two of the names had their holotype indicated upon publication; two have been lectotypified previously; six (*C. busambarensis* var. *obtusiloba*, *C. cineraria* var. *soluntina*, *C. cineraria* var. *umbrosa*, *C. todaroi*, *C. todaroi* f. *seguenzae* and *C. ucrae*) are lectotypified here; and *C. panormitana* is neotypified. The whole group is extremely variable and the delimitation of most taxa is still uncertain. Pending further study, including the sampling of wild populations, no taxonomic reassessment is therefore attempted here, with one exception: the merger of *C. panormitana* subsp. *ucrae* with *C. panormitana* subsp. *panormitana*.

**Key words:** nomenclature, typification, Mediterranean flora, *Centaurea*, *Compositae*, *Asteraceae*, Italy, Sicily

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## Introduction

The group of *Centaurea* (sect. *Acrolophus*) *cineraria* L. (*Compositae*) comprises perennial chasmophytes growing in discrete populations in S Italy and Sicily, with few outliers in N and C Italy and Tunisia (see map in Hilpold & al. 2011). The group, or parts of it, have been the object of studies by Lacaita (1915), Cela-Renzoni & Viegi (1982) and, more recently, Raimondo & Bancheva (2004), Raimondo & al. (2004), Palla & al. (2005), Bancheva & al. (2006) and Hilpold & al. (2011). In Sicily, it comprises four currently accepted species: *C. busambarensis* Guss., *C. erycina* Raimondo & Bancheva, *C. panormitana* Lojac. and *C. saccensis* Raimondo & al. (Greuter 2008). Under *C. panormitana*, Greuter (2008) tentatively accepted four subspecies of uncertain value:

*C. panormitana* subsp. *seguenzae* (Lacaita) Greuter, subsp. *todaroi* (Lacaita) Greuter, subsp. *ucrae* (Lacaita) Greuter and subsp. *umbrosa* (Fiori) Greuter. By general editorial policy of Med-Checklist (Greuter 2008) in such cases, *C. panormitana* subsp. *panormitana* is not given formal recognition; besides, owing to the fact that no original material of *C. panormitana* has so far been traced (Aghababayan & al. 2008), it is uncertain to which of the described subspecies, if to any, the type of *C. panormitana* belongs.

The group is polymorphic in several characters, which explains the high number of taxa described in it. However, intra-populational variation is considerable, even at the classical localities of the described taxa. It is, therefore, difficult to draw clear-cut limits between these taxa. Their taxonomic position, mutual relationship, perhaps even

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their recognition as distinct units need to be reconsidered and, with one exception, are not being commented on here. Studies of natural populations, their structure and variability are under way. In order to yield conclusive results, these studies will depend on clarity with regard to the correct application of the names that have been published so far, particularly those dating from the 19<sup>th</sup> and early 20<sup>th</sup> centuries, proposed by Gussone, Lojacono-Pojero and Lacaita, for many of which no types had been designated so far; the exceptions being *Centaurea busambarensis*, typified by Cela Renzoni & Viegi (1982), and *C. busambarensis* var. *prostrata* Lojac., typified by Aghabayan & al. (2008). For convenience, holotypified and previously lectotypified names are included in the following enumeration, which is placed within the frame of the initiative “Italian Loci Classici Census” (Domina & al. 2012; Peruzzi & al. 2015), aimed at locating the original material of vascular plants described from Italy.

## Material and methods

Original material for the names of taxa of the *Centaurea cineraria* group described from Sicily was looked for in all relevant European herbaria, including B, BM, FI, G, K, NAP, PAL, PR, RO, W and WU (Herbarium acronyms according to Thiers [continuously updated]). A preliminary screening of the material was possible thanks to digital type images provided at JSTOR Global Plants (<http://plants.jstor.org>) and other online sources of such images.

Original material of the names of taxa described by Lacaita is found essentially at the Natural History Museum, London (BM), where Lacaita’s herbarium is kept. Gussone’s material is to be looked for primarily in his Sicilian herbarium in Naples (NAP), where it is kept as a separate collection. That of Lojacono is kept in the Herbarium Mediterraneum, Palermo (PAL).

## Results and Discussion

In total, discounting recombinations and replacement names, 11 names (seven specific, three varietal, one of a forma) based on material from Sicily are taken into account. For seven of them, the type is designated here: six names (*Centaurea busambarensis* var. *obtusiloba* Guss., *C. cineraria* var. *soluntina* Lojac., *C. umbrosa* Lacaita, *C. todaroi* Lacaita, *C. todaroi* f. *seguenzae* Lacaita and *C. ucraiae* Lacaita) are lectotypified; *C. panormitana* is neotypified.

The prevailing uncertainty over the appropriate delimitation of the taxa of the group is borne out by the fact that even the type specimens of some of their names bear conflicting identifications.

Looking at the types here designated, it is possible to draw with confidence at least one taxonomic conclusion: *Centaurea panormitana* is the same as the taxon up to

now generally known as *C. panormitana* subsp. *ucraiae*; the latter name, therefore, falls into the synonymy of *C. panormitana* subsp. *panormitana*. We also confirm the synonymy of *C. cineraria* var. *soluntina* with *C. panormitana* subsp. *todaroi*, which had been established previously on the basis of the respective descriptions and indications of provenance.

In the following enumeration, names currently considered to be correct appear in **bold italics**.

***Centaurea busambarensis*** Guss., Fl. Sicul. Syn. 2: 873. 1844–1845 ≡ *Centaurea cineraria* var. *busambarensis* (Guss.) Sommier in Nuovo Giorn. Bot. Ital., ser. 2, 1(2): 87. 1894 ≡ *Acosta busambarensis* (Guss.) Holub in Preslia 46: 226. 1974 ≡ *Centaurea cineraria* subsp. *busambarensis* (Guss.) Dostál in Bot. J. Linn. Soc. 71: 196. 1976. Ind. Loc.: “In saxosis calcareis montosis; Monti di Caltauro; Busambra (Gasp.)”. Lectotype (Cela Renzoni & Viegi 1983: 133): “Italy. Busambra, April 1824” [manu Gussone] (NAP!).

*Centaurea busambarensis* var. *obtusiloba* Guss., Fl. Sicul. Syn. 2: 873. 1844–1845 [= ***Centaurea busambarensis*** Guss.].

Ind. Loc.: “Dirupi sopra Isnello Guss. Heldr! (L. classic!) Vallata Reale (subtypica sub *Centaurea Parlatoris* var. *tomentosa* Ross. in Herb. Pan.!)”.

**Lectotype (designated here):** “*Centaurea Cineraria* L., in rupibus calcareis a Isnello. Giugno 1840, *Heldreich* [manu Heldreich] / *Busambarensis foliorum laciniis latis*, Junio, Julio 24 [manu Gussone]” (NAP!).

*Centaurea busambarensis* var. *prostrata* Lojac., Fl. Sicul. 2(1): 135. 1903 [= ***Centaurea busambarensis*** Guss.].

Ind. Loc.: “*Centaurea prostrata* Huet exsic. Sic. ann. 1855, *C. cinereo-humilis* Guss. exs. *C. Parlatoris* Herb. Pan. (p. partem) / Passo della Botte *Ross!* (sub *C. Parlatoris*) Scalonazzo *Lojac!*, Carbonara *Lojac!* dirupi d’Isnello ed in tutte le rupi elevatissime che sovrastano Montaspro”.

Lectotype (Aghabayan & al. 2008): “Giugno, *Centaurea parlatoris* b. *tomentosa* Guss. Isnello dirupi [manu Tineo] / non è la *C. parlatoris* [manu Lojacono, on sheet]” (PAL10796!).

*Centaurea cineraria* var. *soluntina* Lojac. in Naturalista Sicil. 3: 210. 1884 ≡ *Centaurea soluntina* (Lojac.) Tin. ex Lojac., Fl. Sicul. 2(1): 135. 1903 [= ***Centaurea panormitana*** subsp. *todaroi* (Lacaita) Greuter].

Ind. Loc.: “In rupibus calcareis maritimis boream spectantibus Catalfano Tin! Porc. M. L.” – No original material traced by Aghabayan & al. (2008).

Lectotype (designated here): “Addi 8 Giugno 1849 [manu Porcari], *Centaurea cinerea* b. *glabrata* Tin [manu Todaro], Raccolta da Donrei[?] a Catalfano [manu Porcari]”, ex herb. Porcari (PAL!).

*Centaurea erycina* Raimondo & Bancheva in Bocconea 17: 299. 2004.

Ind. Loc.: “San Giuliano Mt. Venus Castle (Erice village)”.

Holotype: Italy, Sicily, San Giuliano Mt, Venus’ castle (Erice village), 38°02'N, 12°35'E, 600 m a.s.l., carbonate rocks, 31 May 1990, *Raimondo & al. 0485* (PAL69493!; isotypes: B!, CAT!, G!, PAL!, RNG!, SEV!, SOM!).

*Centaurea panormitana* Lojac., Fl. Sicul. 2(1): 137. 1903.

Ind. Loc.: “a S. Martino via della Portella di S. Anna”.

**Neotype (designated here):** *Centaurea panormitana* Lojac. subsp. *panormitana*, Italy, Sicily, Monreale, Punta Mastrangelo, 38°03'52"N, 13°14'37"E, 850 m a.s.l., carbonate cliff facing the sea, 3 Aug 2015, *Domina* (PAL102714!; isoneotypes: B!, BM!, FI!, PAL-Gr!, RO!).

*Note* — No original material was traced by either Aghababayan & al. (2008) or ourselves. The first author searched for the plant at the locus classicus several times, alas in vain. The neotype here designated was collected in a close-by locality with identical soil, climatic conditions, altitude and exposure.

*Centaurea saccensis* Raimondo & al. in Bocconea 17: 293. 2004.

Ind. Loc.: “Tardara Gorge (near Sciacca Town)”.

Holotype: Italy, Sicily, Tardara Gorge (near Sciacca town), 37°37'01"N, 13°03'17"E, 100 m a.s.l., crevices of limestone rocks, 2 Jun 1990, *Raimondo & al. 0861* (PAL69494!; isotypes: B!, CAT!, G!, PAL!, RNG!, SEV!, SOM!).

*Centaurea todaroi* Lacaita in Nuovo Giorn. Bot. Ital. 22: 245. 1915 ≡ *Centaurea ucraiae* subsp. *todaroi* (Lacaita) Cela Renz. & Viegi in Atti Soc. Toscana Sci. Nat., Mem. Ser. B 89: 130. 1983 ≡ *Centaurea panormitana* subsp. *todaroi* (Lacaita) Greuter, Med-Checklist 2: 126. 2008.

Ind. Loc.: “Monte Catalfano presso Bagheria”.

**Lectotype (designated here):** “*Centaurea cinerea* Lam. dict. enc. 1, p. 669, In rupibus calcareis – Palermo a Catalfano, Aprili, n. 820, Legit *Todaro*” (BM001043179!; isolectotypes: FI!, PAL10711!).

*Centaurea todaroi* f. *seguenzae* Lacaita in Nuovo Giorn. Bot. Ital., ser. 2, 22: 246. 1915 ≡ *Centaurea todaroi* subsp. *seguenzae* (Lacaita) Giardina & Raimondo in Bocconea 20: 10, 393. 2007 ≡ *Centaurea panormitana* subsp. *seguenzae* (Lacaita) Greuter, Med-Checklist 2: 126. 2008.

Ind. Loc.: “Nasce al Capo Tindaro, dove la scoprì Seguenza e dove l’ho raccolta copiosamente”.

**Lectotype (designated here):** “*Centaurea Todari*, var. *Seguanzae* Lacaita, in N. G. Bot. It. April 1915, sea cliffs of Capo Tindaro, north coast of Sicily, legi 9 Jun 1907, CCL. [Manu Lacaita]” (BM1043166!).

*Centaurea ucraiae* Lacaita in Nuovo Giorn. Bot. Ital. 22: 244. 1915 ≡ *Centaurea panormitana* subsp. *ucraiae* (Lacaita) Greuter, Med-Checklist 2: 126. 2008 [= *Centaurea panormitana* Lojac. subsp. *panormitana*].

Ind. Loc.: “Nasce non molto copiosa al M. Pellegrino di Palermo dove l’ho raccolta sopra la Favorita. È indicata di Alcamo, Trapani, M. Cofani, Sciacca e delle isole di Favignana, Levanzo e Marettimo.”

**Lectotype (designated here):** “Herb. Lacaita, *Centaurea ucraia*, Palermo al Monte Pellegrino, ad rupes calcarea, in loco dicto “Valle del Porco”, 3 Jun [19]07 / *Centaurea ucraia* mihi, CCL 9566” (BM1043192!).

*Note* — Lacaita (1915) described two species from Monte Pellegrino, near Palermo, with different ecology: *Centaurea umbrosa*, exposed to sea moisture on the slope facing Mondello, and *C. ucraiae*, more thermophilous, on the slope facing inland, toward the Favorita park. The specimen here selected was used for the preparation of plate iv in Lacaita (1915).

*Centaurea umbrosa* Lacaita in Nuovo Giorn. Bot. Ital., ser. 2, 22: 246. 1915 [non Reut. 1856] ≡ *Centaurea cineraria* var. *umbrosa* Fiori, Nuova Fl. Ital. 2: 726. 1927 ≡ *Centaurea cineraria* subsp. *umbrosa* (Fiori) Pignatti in Giorn. Bot. Ital. 113: 366. 1980 ≡ *Centaurea ucraiae* subsp. *umbrosa* (Fiori) Cela Renz. & Viegi in Atti Soc. Toscana Sci. Nat., Mem. Ser. B 89: 128. 1983 ≡ *Centaurea panormitana* subsp. *umbrosa* (Fiori) Greuter, Med-Checklist 2: 126. 2008 ≡ *Centaurea tyrrhena* C. Brullo & al. in Peccenini & Domina, Loc. Class. Fl. Italia: 36. 2011.

Ind. Loc.: “L’ho raccolta ad oriente della città a Chirandà e ad occidente sulle rupi di Monte Gallo che cadono dalla Portella di Spartivento al lido del mare verso Sferracavallo. Cfr. Lojac. Pl. Sic. Rar., n. 592.”

**Lectotype (designated here):** *Centaurea umbrosa* (mihi), = *C. cinerea* Guss et Lojaccono, (an et Lam?), (Palermo) Chiarandà ad rupes umbrosa, 16 Nov [19]05, [*Lacaita*] 25 (BM1043173!).

*Note* — The lectotype specimen is from Chiarandà, a locality situated on Mt Grifone at a distance of c. 10 km from Mt Gallo and the close-by Mt Pellegrino, where also *Centaurea panormitana* subsp. *panormitana* grows. We have thought it preferable to select material that does not originate from a locality so close to a population of a different, related taxon.

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