



Further insights into the taxonomy of the *Silene nocturna* species complex (Caryophyllaceae): a systematic survey of the taxa from Sardinia and Corsica

GIANLUIGI BACCHETTA¹, ANGELINO CARTA², GUILHAN PARADIS³, CAROLE PIAZZA⁴, LORENZO PERUZZI^{2*}

¹Centro Conservazione Biodiversità (CCB), Dipartimento di Scienze della Vita e dell' Ambiente, Università degli Studi di Cagliari, Viale S. Ignazio da Laconi 11–13, I 09123 Cagliari, Italy

²Dipartimento di Biologia, Unità di Botanica, Università di Pisa, Via Luca Ghini 13, I 56126, Pisa, Italy; e-mail lorenzo.peruzzi@unipi.it

³cours Général Leclerc, F 20000, Ajaccio

⁴Conservatoire botanique national de Corse, Office de l' Environnement de la Corse, Avenue Jean Nicoli, F 20250 Corte

*Author for correspondence

Abstract

The taxonomy of *Silene nocturna* subsp. *boullui* (putatively endemic to W Corsica) and *S. valsecchiae* (putatively endemic to E Sardinia) is investigated, by means of morphometric and karyological analyses. Both taxa resulted diploid with $2n = 24$ chromosomes. On the basis of morphological results, we confirm the species rank for *S. valsecchiae*, and consider *S. nocturna* subsp. *boullui* as the priority name, at subspecies rank, for *S. nocturna* subsp. *capraria* (= *S. reflexa*).

Key words: Central Mediterranean, chromosome numbers, morphology, seeds, SEM, *Silene* sect. *Scorpioideae*

Introduction

Recent work on the *Silene nocturna* Linnaeus (1753: 416) complex in the Central Mediterranean area (Peruzzi & Carta 2013, Peruzzi *et al.* 2014a) showed the existence of three taxonomic units: *S. mutabilis* Linnaeus (1756: 16) [= *S. neglecta* Tenore (1826: 13)], *S. nocturna* subsp. *nocturna* and *S. nocturna* subsp. *capraria* (Sommier 1896: 113) Peruzzi & Carta (2013: 46) [= *S. reflexa* (Linnaeus 1753: 416) Aiton (1811: 86)]. However, as already pointed out by Peruzzi & Carta (2013), two further taxa from the Corso-Sardinian biogeographic province need investigation: *S. nocturna* subsp. *boullui* (Jordan ex Rouy & Foucaud 1896: 114) Gamisans in Gamisans & Jeanmonod (1993: 243), originally described from Corsica (see also Jeanmonod 2007, 2013), and *S. valsecchiae* Bocchieri (1988: 305), putative endemic to eastern Sardinia (Bacchetta *et al.* 2006a, 2006b, Arrigoni 2010, Pinna *et al.* 2013).

This paper is part of a broader project on the taxonomic study of the endemic Italian flora (Domina *et al.* 2012, Peruzzi *et al.* 2014b), which also led to several recent other publications on the genus *Silene* (Brullo *et al.* 2012, 2014, Peruzzi & Carta 2013, Peruzzi *et al.* 2014a). The aim of the present study is to provide data concerning morphology, seed micromorphology and karyology of these two taxa, in order to contribute to their correct taxonomic circumscription.

Material and Methods

Quantitative morphological investigations is performed on herbarium specimens of *S. nocturna* subsp. *boullui* and *S. valsecchiae*. The herbaria checked were CAG and PI (codes according to Thiers 2014). The following eight characters were examined: plant size (cm), flower number, inclination of the lowest flower's pedicel [from 0° (erect and addressed to peduncle upwards), to 180° (completely reflexed)], length of the lowest flower's pedicel (mm), calyx length (mm), carpophore length (mm), calyx teeth length and width (mm).

Silene nocturna Linnaeus (1753: 416) subsp. ***nocturna***

Type (lectotype designated by Ghafoor 1978: 91):—PENNSYLVANIA. [*Silene*] *nocturna* 4 HU [Horto Upsaliensis] [on verso:] e semine D. Kalmii ex America, Herb. Linn. No. 583.8 (LINN!).

Specimina visa (besides those listed in Peruzzi & Carta, 2013):—FRANCE. Corsica: Grotta di u banditu (Farinole), 12 June 2013, C. Piazza s.n. (PI!, three sheets).

Silene nocturna L. subsp. ***boullui*** (Jord. ex Rouy & Foucaud) Gamisans in Gamisans & Jeanmonod (1993: 243)

Bas.:—*Silene mirabilis* Rouy & Foucaud (1896: 114) subsp. *boullui* Jord. ex Rouy & Foucaud (1896: 114)

Type:—not designated. Described from “Corse: Rogliano; Bonifacio à la Trinité (Revelière); îles Sanguinaires et la Parata près Ajaccio (Boullu in herb. Rouy).”. In Herbarium Rouy at LY no specimens which could be considered as original material for this name are conserved (M. Thiébaud, pers. comm.).

= *Cucubalus reflexus* Linnaeus (1753: 416)

Type (lectotype designated by Talavera in Cafferty & Jarvis, 2004: 1051):—Herb. Linn. No. 582.22 (LINN!)

≡ *Silene reflexa* (L.) Aiton (1811: 86)

= *Silene capraria* Sommier (1898: 113) ≡ *Silene nocturna* subsp. *capraria* (Sommier) Peruzzi & Carta (2013: 46), *syn. nov.*

Type (lectotype designated by Foggi *et al.* 2001: 13):—ITALY. **Tuscany:** Insula Capraria (Capraja), Punta del Trattoio, 6 April 1896, Sommier s.n. (FI!).

Specimina visa (besides those listed in Peruzzi & Carta, 2013):—FRANCE. Corsica: Mezzu Mare (Îles Sanguinaires), Ajaccio, 7 May 2013, G. Paradis s.n. (PI!, five sheets).

Silene valsecchiae Bocchieri (1988: 305)

Type:—ITALY. **Sardinia:** Isola Serpentara, a SE della casa diruta, 11 May 1986, E. Bocchieri s.n. (holotype CAG!).

Specimina visa:—ITALY. **Sardinia:** Isola dei Cavoli, Cala Is Cascias, 15 May 2005, R. Angius, G. Bacchetta *et al.* Podda s.n. (CAG!); Isola Serpentara, settore sud-orientale, 7 April 2006, G. Bacchetta, G. Fenu, G. Iiriti *et al.* Podda s.n. (CAG!, two sheets); Isola di Serpentara, settore centrale, 13 May 2013, G. Bacchetta s.n. (CAG!, three sheets).

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