Salvatore Brullo, Fabio Scelsi & Giovanni Spampinato

Silene calabra (Caryophyllaceae), a new species from S. Italy

Abstract

Brullo, S., Scelsi, F. & Spampinato, G.: *Silene calabra (Caryophyllaceae),* a new species from S. Italy. – Bocconea 5: 517-522. 1997. – ISSN 1120-4060.

Silene calabra, a species new to science found growing on cliffs of the Ionian slope of Mt Aspromonte (S. Calabria), is described and illustrated. Its relationships with other taxa of the *S. italica* group are discussed.

In the frame of a taxonomic investigation of the S. Italian flora, some populations of *Silene* found growing on the Ionian slope of Mt Aspromonte (S. Calabria) were examined. They were found to belong to *S.* sect. *Siphonomorpha* Otth and to be closely related to *Silene italica* (L.) Pers. According to Jeanmonod (1984, 1985), the species group of *S. italica* is a complex one, in which taxon differentiation resulted from geographical isolation as well as ecological adaptation. The studied populations, in particular, which are confined to rocky habitats, were found to differ from all previously known taxa in a number of morphological characters of leaves, inflorescence, and flowers. They are therefore treated as a new species, probably restricted to a few xeric localities of S. Calabria.

Silene calabra Brullo, Scelsi & Spamp., **sp. nova** – Typus: [S. Italy, Prov. Reggio Calabria] "Aspromonte, rupi di Pentadattilo", 8 May 1989, *Brullo, Signorello & Spampinato* (CAT; isotypi: CAT, FI, PAL). – Fig. 1-3.

Planta perennis, pilosa, surculis lignosis, caespitosis, ramosis. Folia surculorum perhiemantia, rosulata, sub anthesi viridia, spathulata vel orbiculato-spathulata, 20-100 × 8-35 mm, apiculata, dense pubescentia, margine integro plus minusve undulato. Folia caulina gradatim reducta, anguste spathulata vel anguste triangularia, in axillis saepe fasciculis foliorum praedita. Caules erecti, solitarii, 20-60 cm alti, pubescentes, internodiis 3-8 (11) cm longis. Inflorescentia (3-)5-12(-20)-flora paniculata, laxa, asymmetrica, 4-15 cm longa, saepe viscida, ramis ascendentibus dichasium 1-3-florum gerentibus, inferioribus 1-2 ad nodos solitariis, superioribus binis oppositis. Bracteae florales lineares vel lineari-lanceolatae. Flores erecti vel sub anthesi inclinati. Calyx (15-)17-21 mm longus, basi umbilicatus, 10-nervius, viridis, partim purpureo-suffusus, glanduloso-pube-

scens, dentibus subacutis vel acutis, margine angusto albo hyalino breviter ciliato cinctis. Petala 18-20 mm longa, lamina alba vel rosea, saturatius venosa, antice profunde biloba, squamis coronulae ovato-subrotundatis 1-1.5 mm longis, ungue 12-14 mm longo e calyce

Fig. 1. *Silene calabra,* general habit.

per 1-3 mm exserto, auriculis binis glabris vel subglabris irregulariter serrulatis. Stamina 10, filamentis filiformibus albis, antheris viridibus c. 2.8 mm longis. Ovarium viride, glabrum, c. 6 mm longum, stylis 3 filiformibus. Capsula oblongo-ovoidea, 11-15 mm longa, anthophoro piloso 6-8 mm longo suffulta. Semina c. 1.5 mm longa, ovato-reniformia, fusca, a latere compressa, dorso leviter caniculata, papillis apiculatis tecta.

Specimina visa. – S. Italy, Aspromonte, cliffs of Pentadattilo, 8 May 1989, *Brullo & al.* (CAT, FI, PAL); ibid., 5 Jun 1989, *Scelsi & Spampinato* (CAT); ibid., 18 Jun 1992, *Scelsi & Spampinato* (CAT); ibid., 15 Jul 1992 *Brullo & Spampinato* (CAT); ibid., 4 May 1993, *Brullo & al.* (CAT); Bova, cliffs by the castle, 8 May 1989, *Brullo & al.* (CAT); San Carlo, cliffs above the village, 4 May 1993, *Brullo & al.* (CAT):

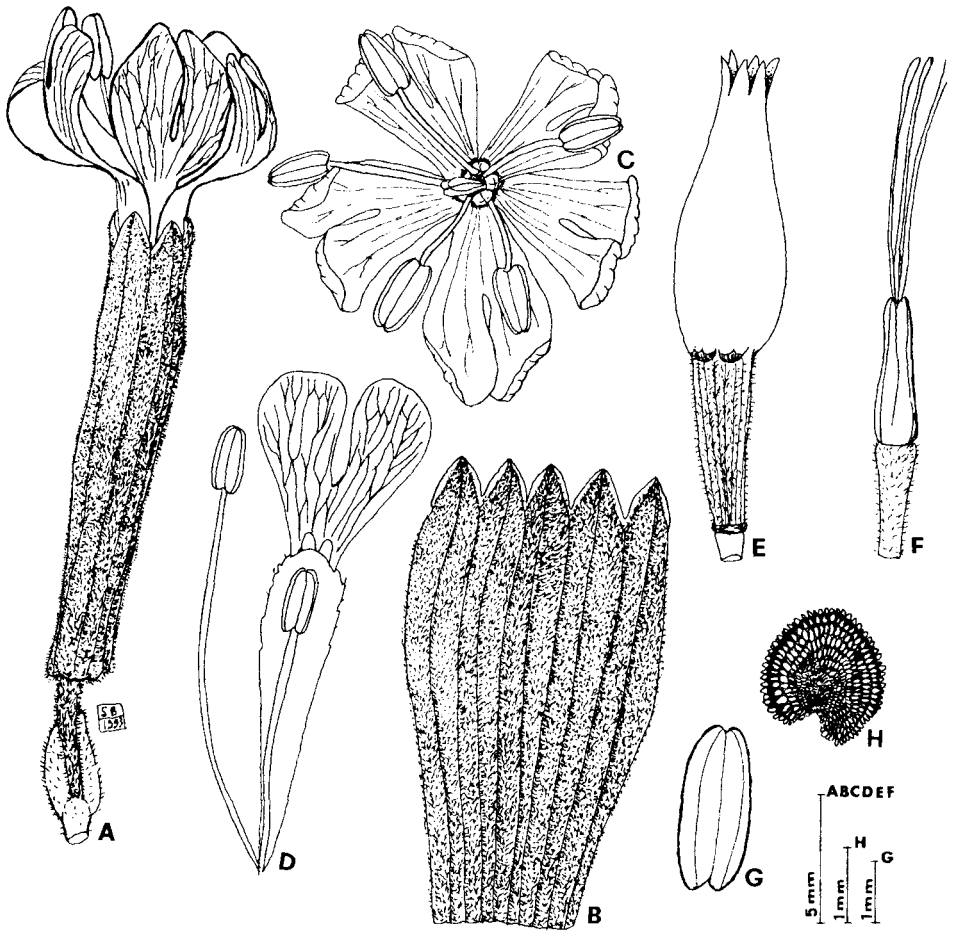

Fig. 2. *Silene calabra.* – A, flower in lateral view; B, calyx slit open and spread out; C, flower viewed from above; D, petal and stamens; E, capsule and anthophore; F, pistil; G, anther; H, seed.

Ecology. – *Silene calabra*, which known from three localities of the Ionian slope of Mt Aspromonte at 100-800 m a.s.l., is confined to conglomerate, calcarenite and limestone cliff habitats. The area has the most xeric climate of all of Southern Calabria, which influences markedly its chasmophilous vegetation, which is quite different from that found elsewhere in S. Italy and Sicily. In fact, *S. calabra* characterizes a peculiar, floristically quite poor xerophilous plant community, which from a phytosociological point of view can be included in the order *Asplenietalia glandulosi*, belonging to the class *Asplenietea rupestris*.

Taxonomic relationships. – *Silene calabra* clearly belongs to *S.* sect. *Siphonomorpha*, showing close relationships mainly with taxa of the *Silene italica* group. That group is characterized by a woody, more or less branched stock, basal leaves arranged in rosettes, a paniculate inflorescence with opposite and more or less viscid branches, an umbilicate calyx, and deeply bifid petals with ovate lobes. *S. calabra* differs from the other species of the group in some important features, e.g. the persisting basal leaf rosettes and the well developed, ovate-roundish coronal scales. From *S. italica* s. str. in particular, *S. calabra* differs in its spathulate to suborbicular-spathulate, apiculate, up to 35 mm wide basal leaves; asymmetric, often non-viscid inflorescence; the narrow and shortly ciliate hyaline margin of its calyx teeth; the glabrous or sparsely ciliate auricles of its petals; and the anthophore that is shorter than the capsule; whereas in *S. italica* the basal leaves are elliptic-spathulate, acuminate, up to 17 mm wide; the symmetric inflorescence is always viscid; the hyaline border of the calyx teeth is wide and long-ciliate; the petals have densely ciliate auricles and coronal scales lacking or rudimentary; and the anthophore about equals the capsule.

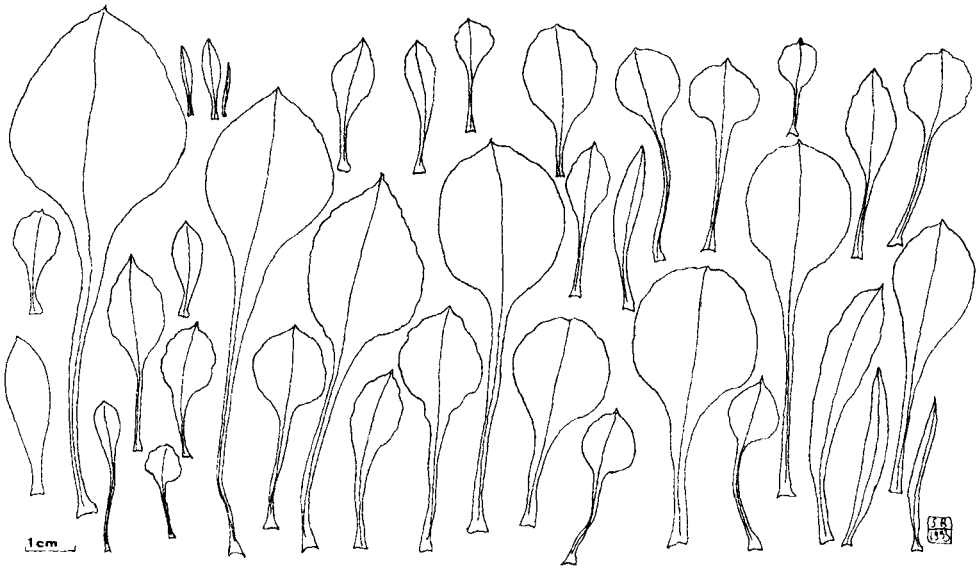

Fig. 3. Leaves of *Silene calabra*, in outline.

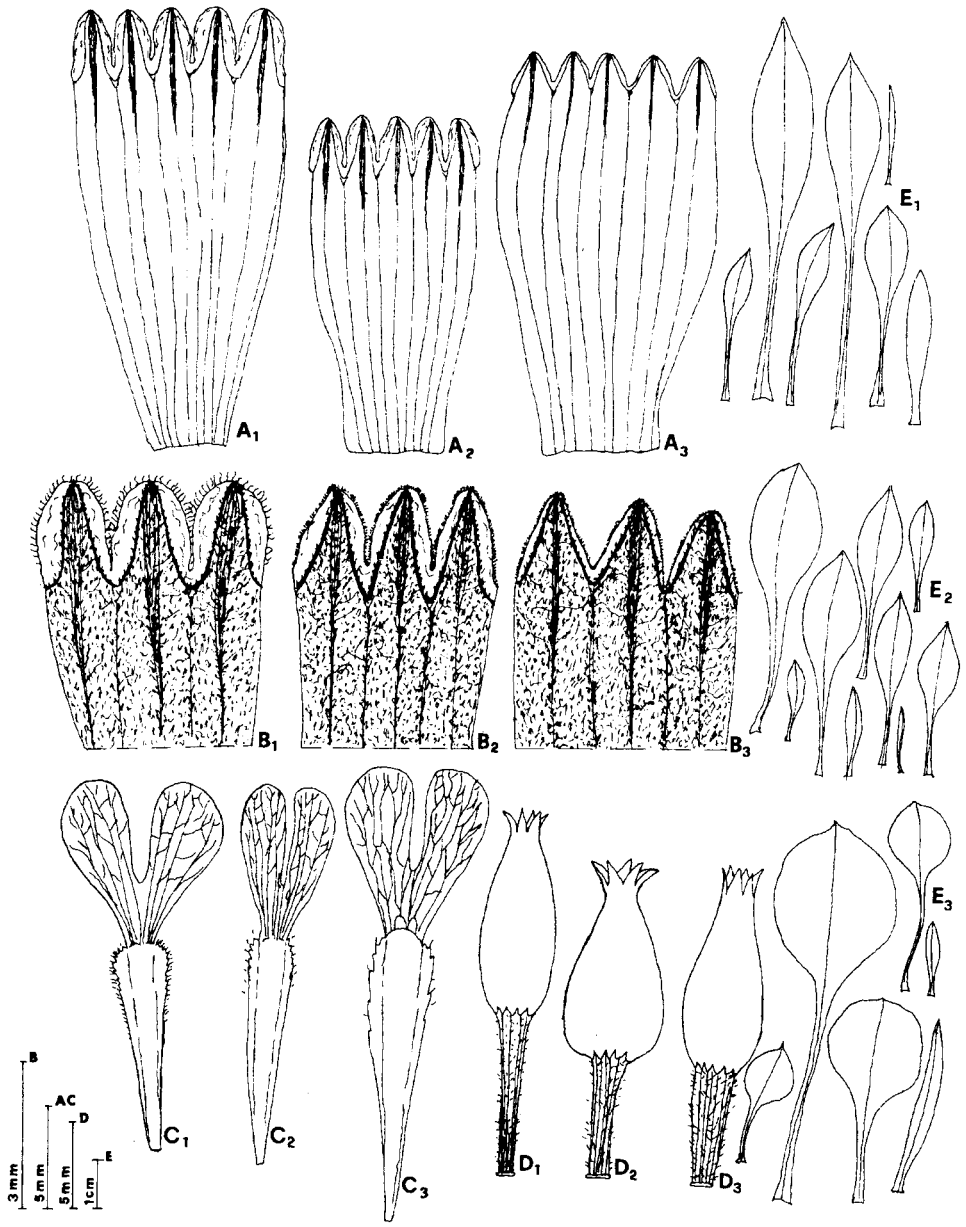

Fig. 4. Morfological differences between *Silene italica* (1), *S. sicula* (2), and *S. calabra* (3). – A, calyx slit open and spread out; B, detail thereof, with 3 calyx lobes; C, petal; D, capsule and anthophore; E, leaves in outline.

Silene calabra seems to be closely related also to *S. sicula* Ucria, with which it shares the dense basal leaf rosette, asymmetric few-flowered inflorescence, the anthophore that is shorter than the capsule, and the narrow and shortly ciliate margin of the calyx teeth, but which differs in some important features: *S. sicula* has elliptic to elliptic-spathulate, 2-15 mm wide basal leaves that are withered at anthesis, a shorter calyx, petals with a shorter claw and lacking coronal scales, and an ovate-conical capsule. Also by its ecological preferences *S. calabra*, being a true chasmophyte, is quite different from the two other species: *S. italica* and *S. sicula* are frequent in garigue, maquis, woodland, and pulvinate shrub communities.

In its habit and ecology *S. calabra* is, on the other hand, somewhat similar to *S. cintrana* Rothm. from Portugal and *S. tyrrhenia* Jeanm. & Bocquet from the northern Tyrrhenian area. All three are chasmophytes with a very restricted distribution, have a more or less contracted inflorescence and persisting dense rosettes of wide, spathulate leaves. Their well developed woody stock and specialization for rocky habitats make them appear as very old taxa with a relict distribution, whereas their more widespread relatives with a broader ecological range, such as *S. sicula*, *S. longicilia* (Brot.) Otth and mainly *S. italica*, likely arose from the above-cited taxa or their common ancestor (Jeanmonod 1984, 1985, Jeanmonod & Bocquet 1983).

From the chorological point of view, *Silene calabra* is sympatric with *S. sicula*, which is widespread in Calabria and Sicily, but allopatric with respect to *S. italica* which, according to Jeanmonod (1984), does not occur at all on the Calabrian territory (see, however, Greuter 1995 for a critical opinion on the taxonomic status of *S. sicula*).

Acknowledgements

Financial support by the Ministero dell'Università e della Ricerca Scientifica (40 %) and the Consiglio Nazionale della Ricerca (Progetto Strategico Calabria, subject No. 7) is gratefully acknowledged.

References

Greuter, W. 1995: Studies in Greek *Caryophylloideae: Agrostemma, Silene,* and *Vaccaria*. – Willdenowia **25:** 105-142.

Jeanmonod, D. 1984: Révision de la section *Siphonomorpha* Otth du genre *Silene* L. *(Caryophyllaceae)* en Méditerranée occidentale. III: aggrégat *italica* et espèces affines. – Candollea **39:** 549-639.

– 1985: Révision de la section *Siphonomorpha* Otth du genre *Silene* L. *(Caryophyllaceae)* en Méditerranée occidentale. V: Synthèse. – Candollea **40:** 35-56.

– & Bocquet, G. 1983: *Silene tyrrhenia* Jeanmonod & Bocquet sp. nov. *(Caryophyllaceae)* – une nouvelle espèce bien connue. – Candollea **38:** 297-308.

Addresses of the authors:
Prof. S. Brullo & Dr F. Scelsi, Dipartimento di Botanica, Università di Catania, Via A. Longo 19, I-95125 Catania, Italy.
Dr G. Spampinato, Dipartimento di Agrochimica e Agrobiologia, Università di Reggio Calabria, Piazza S. Francesco 4, I-89100 Gallina, Italy.