Crassula campestris (Eckl. & Zeyh.) Endl. (Crassulaceae), a new record for the Italian flora

Authors: Brullo, Salvatore, Campo, Giovanni, Marcenò, Cosimo, Romano, Salvatore, and Siracusa, Giuseppe

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SALVATORE BRULLO, GIOVANNI CAMPO, COSIMO MARCENÒ, SALVATORE ROMANO & GIUSEPPE SIRACUSA

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Abstract

Brullo, S., Campo, G., Marcenò, C., Romano, S. & Siracusa, G.: *Crassula campestris* (Eckl. & Zeyh.) Endl. *(Crassulaceae)*, a new record for the Italian flora. – Willdenowia 28: 53-58. 1998. – ISSN 0511-9618.

Crassula campestris, a species widespread in S Africa, was discovered in Sicily near Palermo, which is a new record for the Italian flora. A description and illustration of *C. campestris* is provided and the species is compared with *C. tillaea* and *C. basaltica*, the two other *Crassula* species in Sicily.

In the course of a floristic investigation in N Sicily some populations of a peculiar *Crassula* species were found in 1990 and recollected in 1996. According to the literature (Bolòs & Vigo 1984, Webb & Akeroyd 1993, Fernandes 1997) these specimens were identified as *C. campestris* (Eckl. & Zeyh.) Endl., which is widespread in S Africa (Fernandes 1978, Toelken 1985). Up to now, this species had been recorded in the Mediterranean area only from some localities in Spain (Vigo & Terradas 1969, Cardona & al. 1976, Franquesa 1985, Velayos & al. 1990, Mateo Sanz & Aguilella Palasi 1990, Fernandez 1997). The occurrence of *C. campestris* in Sicily thus represents a new record for the Italian flora.

Crassula campestris (Eckl. & Zeyh.) Endl. in Walpers, Repert. Bot. Syst. 2: 253. 1843. – Fig. 1
≡ *Tetraphyle campestre* Eckl. & Zeyh., Enum. Pl. Afric. Austral. 3: 294. 1837.
Type: Cape, Swartkops River, *Ecklon & Zeyher 1873* (FI, G, K, S, SAM, TCD, fide Toelken 1985)
= *Crassula pentandra* subsp. *catalaunica* Vigo & Terradas in Acta Geobot. Barcinon. 4: 21. 1969.

Description
Annual herb, with erect to ascending branches, 2-8(12) cm high, glabrous greenish-yellow to purplish-green. Stem simple to branched, with apex sometimes curved. Leaves fleshy, lanceolate to lanceolate-subulate, 3-6 × 1-2 mm, bluntly acute, sessile, smooth, opposite, abruptly constricted at the base, connate, the fused portion 0.25 mm wide. Inflorescence thyrsoid with flowers arranged in sessile or subsessile dichasia. Bracts 1.5-2 mm long, fleshy, ovate-lanceolate, apiculate. Flowers 5-merous, subsessile or shortly pedicellate. Calyx ovoid, with lobes narrowly triangular to lanceola-

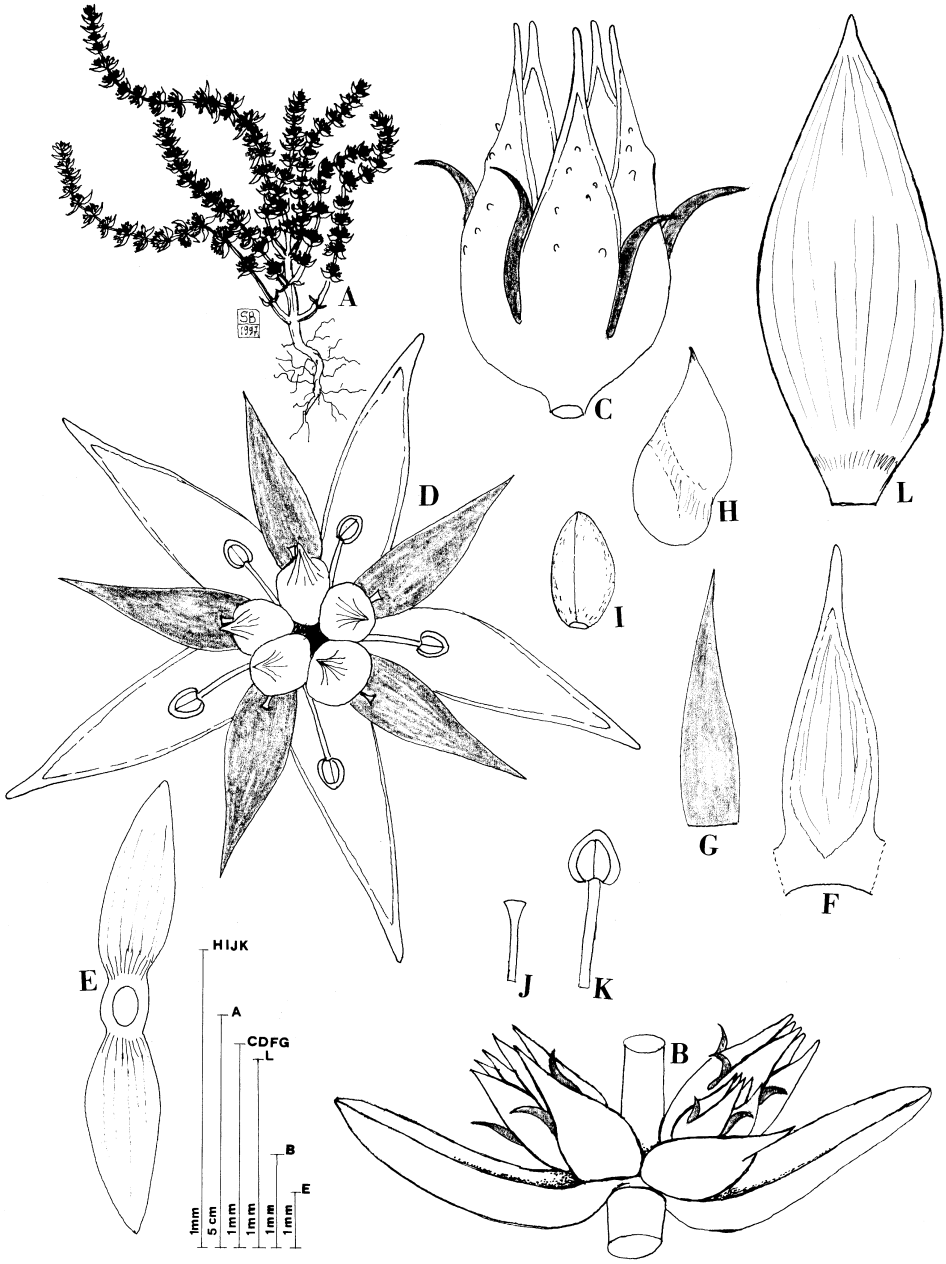

Fig. 1. *Crassula campestris* (Eckl. & Zeyh.) Endl. – A: habit; B: detail of the inflorescence; C: closed flower; D: opened flower; E: leaves; F: sepal; G: petal; H: follicle; I: seed; J: epipetalous nectarial squama; K: stamen; L: bract.

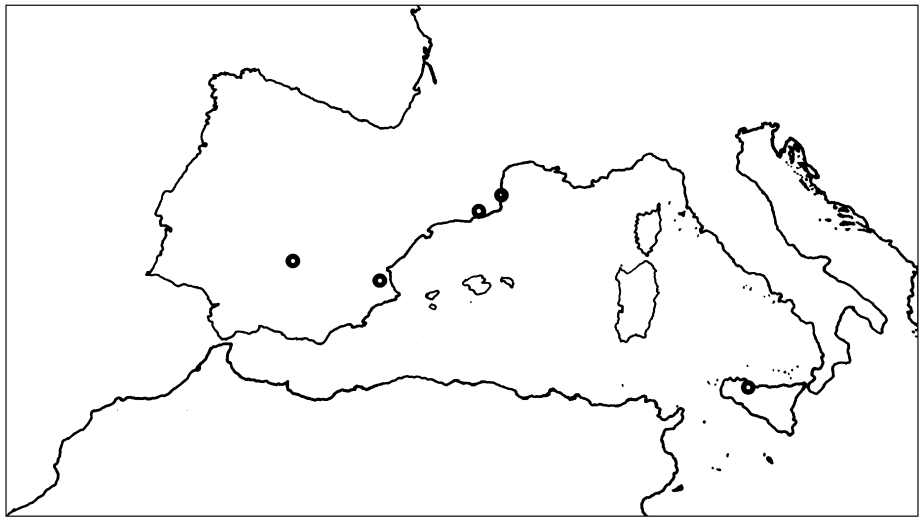

Fig. 2. Geographical distribution of *Crassula campestris* in the Mediterranean area.

te, 1.5-1.8 mm long, fleshy, green, often dorsally lightly tuberculate, fused at the base 0.2-0.3 mm high, bordered by a narrow hyaline margin, acute and drawn into an awn. Petals triangular-lanceolate, free or rarely shortly connate, violet-purplish, 0.7-1.2 mm long, acuminate, recurved above, protruding laterally between the sepals. Stamens 5, 0.4-0.6 mm long, filaments white to purplish, anthers 0.15 mm long, ovoid, yellow to purplish yellow. Epipetalous nectarial squamae 0.2-0.3 mm long, subcuneate below the apex. Carpels 5, erect, with a short style. Follicle yellowish with two seeds lightly striate, brown, ellipsoid, 0.3 × 0.2 mm.

Specimina visa
SICILY: Pendici nord-orientali di Monte Catalfano, in contrada Vignazza (Bagheria), 10.5.1990, *Marcenò* (PAL); ibid., 24.6.1996, *Marcenò, Romano & Campo* (B, CAT, FI, PAL).

Ecology and distribution
Crassula campestris was collected on the NE slope of Mount Catalfano near Palermo (N Sicily), where it grows along the shoulder of paths near the sea on sandy soils mixed with minute calcareous debris. In this man-made habitat, *C. campestris* is a member of an ephemeral community characterized by numerous microphytes, such as *Trifolium suffocatum* L., *Crassula tillaea* Lest.-Garl., *Campanula erinus* L., *Centaurium pulchellum* Sw., *Tuberaria guttata* (L.) Fourr., *Vulpia ciliata* Dumort., *Valantia muralis* L., *Galium divaricatum* Lam. and *Oglifa gallica* (L.) Chrtek & Holub. Phytosociologically, this vegetation is comparable with the Polycarpo-Crassuletum campestris association of the Tuberarietea guttatae described by Franquesa (1995) from Cap de Creus in Spain. Presently, the Sicilian record represents the easternmost locality of this species (Fig. 2). According to Greuter & al. (1986) and Webb & Akeroyd (1993), *C. campestris* must be considered in the Mediterranean area as a xenophyte, which – in view of its scattered distribution – is probably naturalized for a long time.

Identification
Crassula campestris belongs to *C.* sect. *Glomeratae* Haw. due to its herbaceous annual habitat, the sessile, connate leaves, the thyrsoid inflorescence with several contracted dichasia subten-

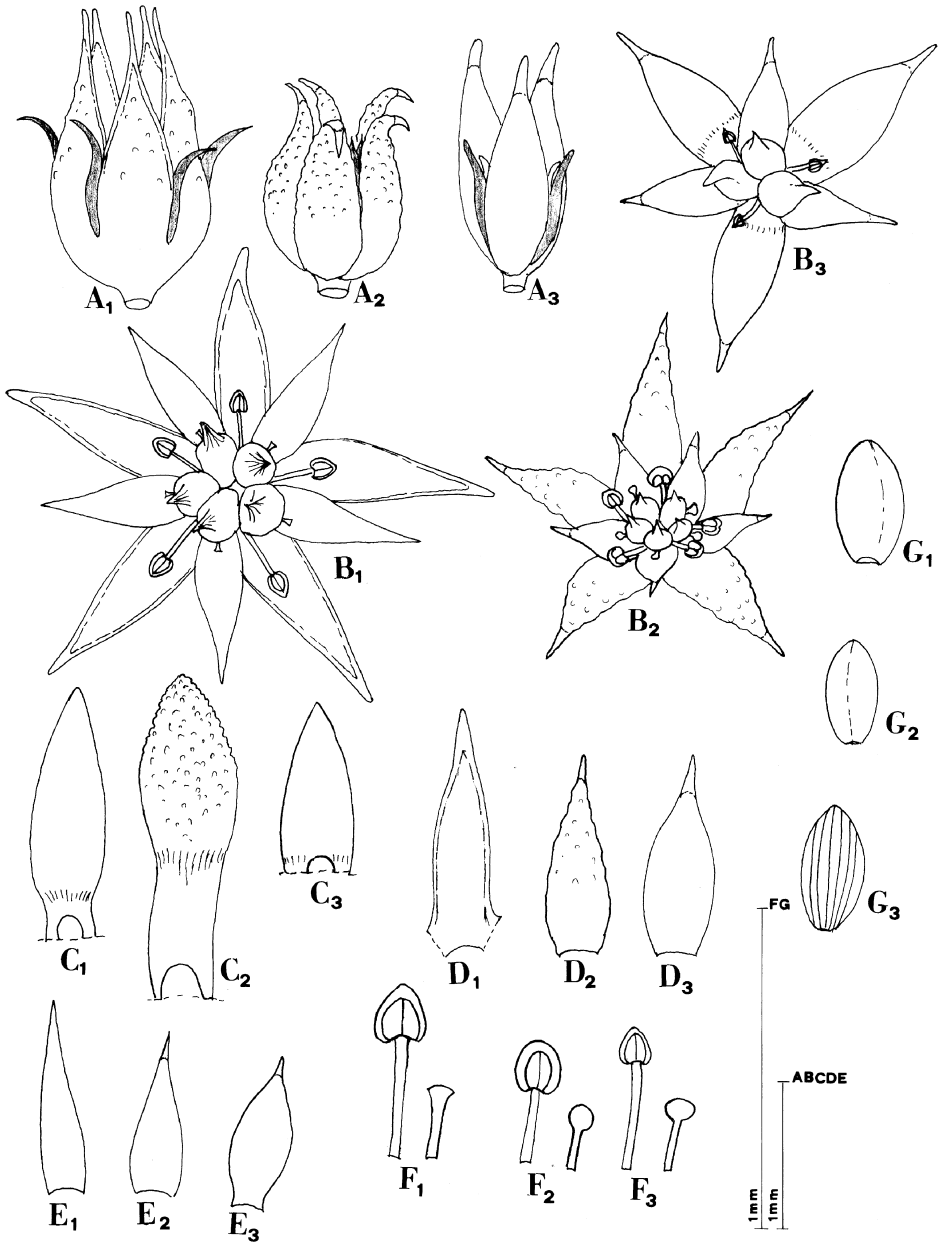

Fig. 3. Morphological differences between *Crassula campestris* (A_1-G_1), *C. basaltica* (A_2-G_2) and *C. tillaea* (A_2-G_3). – A: closed flower, B: opened flower; C: leaf; D: sepal; E: petal; F: stamen and epipetalous nectarial squama; G: seed.

ded by leaf-like bracts, the calyx longer than the corolla and 0.1-0.15 mm long anthers (Toelken 1977). Within the section it can be grouped together with, among others, *C. tillaea* Lester-Garland and *C. basaltica* Brullo & Siracusa, which both occur in the Mediterranean area.

The closest resemblance is with *C. basaltica* (Fig. 3), which is also characterized by 5-merous flowers and fleshy leaves. From this species *C. campestris*, however, differs markedly by the following features: its leaves being green to purplish-green, sessile, smooth, abruptly constricted at the base, lanceolate to lanceolate-subulate, connate at the base for 0.25 mm *versus* glaucous-green, petiolate, papillose-verrucose, gradually constricted towards base, spathulate-lanceolate, connate at the base for 0.1-0.2 mm (Fig. 3C); its calyx being ovoid, with narrowly triangular to lanceolate, 1.5-1.8 mm long, often dorsally lightly tuberculate lobes fused at the base and bordered by a narrow hyaline margin *versus* urceolate, with ovate-lanceolate, 1.2-1.3 mm long, above papillose, free lobes without hyaline margin (Fig. 3A-B, D); the petals being triangular-lanceolate, 0.7-1.2 mm long, curved above, protruding laterally between the sepals *versus* lanceolate, 0.6-0.7 mm long, erect and included (Fig. 3A-B, E); the stamens being 0.4-0.6 mm long, the anthers ovate, yellow to yellow-purplish and the epipetalous nectarial squamae subcuneate at the apex *versus* the stamens 0.3-0.4 mm long, the anthers suborbicular and purplish and the epipetalous nectarial squamae suborbicular at the apex (Fig. 3F); the seeds being slightly striate, 0.3 mm long *versus* smooth and 0.25 mm long (Fig. 3G).

Crassula campestris also resembles *C. tillaea* but differs in both leaf shape and flower features (Fig. 3). The latter species can easily be recognized by the triangular-lanceolate, non-fleshy leaves, which are 2-2.4 mm long and connate for 0.5-0.6 mm, the 3-4-merous flowers, cylindrical calyx with ovate-lanceolate, free and up to 1.5 mm long sepals, the ovate-lanceolate and apiculate petals, only 0.1 mm long anthers, transversely elliptical epipetalous nectarial squamae and the minutely striate seeds.

The Sicilian *Crassula* species can be keyed out as follows:

1. Flowers usually 3-merous (rarely 4-merous); leaves not fleshy, connate for 0.5-0.6 mm; anthers 0.1 mm long; nectarial squamae absent or, if present, transversely elliptical at the apex; seeds minutely striate . . . . . *C. tillaea*
– Flowers 5-merous; leaves fleshy, slightly tuberculate, connate for 0.1-0.25 mm; anthers 0.15 mm long; nectarial squamae present, suborbicular or subcuneate at the apex; seeds smooth or slightly striate 2
2. Leaves smooth, lanceolate to lanceolate-subulate, abruptly throttled at the base; calyx ovoid, 1.5-1.8 mm long with lobes fused at the base; petals 0.7-1.2 mm long, protruding laterally; anthers ovate; nectarial squamae subcuneate at the apex . . . . . *C. campestris*
– Leaves papillose-verrucose, spathulate-lanceolate, petiolate, gradually restricted towards the base; calyx urceolate, 1.2-1.3 mm long with free lobes; petals 0.6-0.7 mm long, included; anthers suborbicular, nectarial squamae suborbicular at the apex . . . . . *C. basaltica*

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Addresses of the authors:
Prof. S. Brullo & Dr G. Siracusa, Dipartimento di Botanica, Università di Catania, Via A. Longo, 19, I-95125 Catania, Italy; fax: +39 95 441209.
Dr G. Campo, Prof. G. C. Marcenò & Dr S. Romano, Dipartimento di Scienze Botaniche, Università di Palermo, Via Archirafi, 38, I-90123 Palermo, Italy; fax +39 91 6176089.