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Sedum annuum subsp. *gussonei* Brullo & Spampinato subsp. nov. (*Crassulaceae*) from S Italy

Abstract

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The populations of *S. annuum* from S Calabria are described as a new subspecies, namely subsp. *gussonei*. This occurs on siliceous rocky places of the mountain belt, where it is a member of ephemeral communities rich in acidophilous microphytes.

Introduction

In this work, the populations of *Sedum annuum* L. occurring in the Aspromonte massif (Calabria, S Italy), are examined. *Sedum annuum* is a typical arctic-alpine element with two principal distribution centres (Fig. 1), one septentrional comprising Fennoscandia, Iceland and S Greenland and a second, meridional, related to the mountains of S Europe from Spain to Caucasus (cfr. Meusel & al. 1965). Concerning the overall variability of *S. annuum,* Webb & al. (1993) have emphasized that the northern populations of Fennoscandia show a biennial habit, while a perennial variant, named var. *perdurans* Murb., occurs sporadically in the Balkan and Carpathian populations.

The Italian populations of this species, circumscribed to alpine and N Apennine range, belong to subsp. *annuum*, and are geographically well isolated from the Calabrian ones (Fiori 1925; Pignatti 1982). Probably as a consequence of this isolation, these last populations have been involved in an autonomous speciation processes leading to a significant differentiation.

The differences regard the habit, the size and the shape of sepals, petals and seeds, which allow to treat these populations as a distinct subspecies of *S. annuum* L. named in honour of Joanne Gussone author of some floras regarding the Sicily and S Italy.

Results

Sedum annuum L. subsp. ***gussonei*** Brullo & Spampinato subsp. nov. (Fig. 2)

Holotype: Calabria, Aspromonte, Serro Luncari presso Montalto, 21.6.2000, Brullo & Giusso (CAT).

A tipo differt caule dense foliis tecto, sepalis inaequalibus, 2-3,5 mm longis, petalis 3,5-

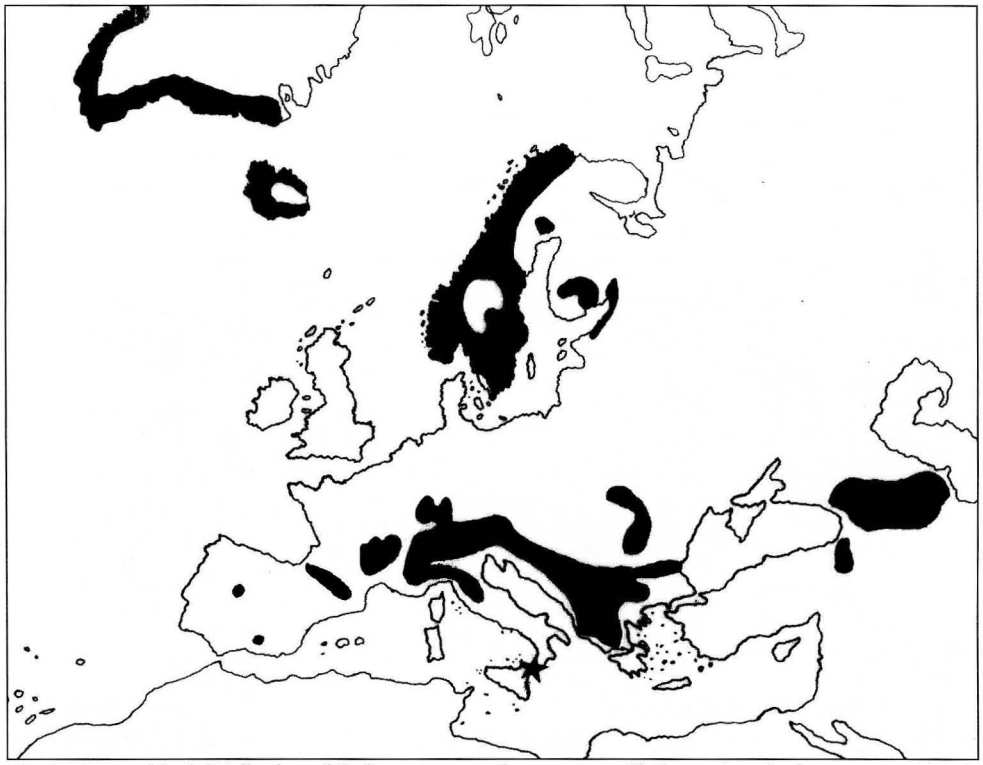

Fig. 1. Geographical distribution of *Sedum annuum* subsp. *annuum* (dark areas) and subsp. *gussonei* (star).

3,8 mm longis, aureis, rubescentibus apice, seminibus brunneo-rubescentibus, obtusis apice.

Plant annual, glabrous, purplish. Stem 5-8 cm long, branched from the base, with erect to ascending branches densely covered by leaves. Leaves 4-5 mm long, elliptical to oblong, thick with a whitish short spur. Flowers 5-merous, subsessile in lax flexuous cime arranged; sepals unequal, elliptical, basally connatae, thick, green, 2-3,5 mm long; petals lanceolate, 3,5-3,8 mm long, golden-yellow tinged with reddish at apex, one and half longer than sepals; stamens 10, shorter than sepals; anther yellow, oblong, 0,7-0,8 x 0,4; nectarial scales 0,6-0,7 mm long. Follicles pale-brown, stellate-patent, 3 mm long. Seeds ellipsoidal, brown-reddish, obtuse at apex, 0,7-0,8 mm long, with testa reticulate.

Specimina visa: Calabria, Aspromonte, Serro Luncari presso Montalto, 31.5.1999, Brullo & Spampinato (CAT); Tre Limiti 2.6.1999, Brullo & Spampinato (CAT); Monte Alto di Aspromonte, 8.7.1906, Martelli (FI); In pascuis aridis Saggio Sibilla, infra Monten Alto, 28.6.1856, Huet du Pavillon 319, (FI).

Ecology and distribution

Sedum annuum subsp. *gussonei* is endemic to the mountain belt of Aspromonte at 1500-

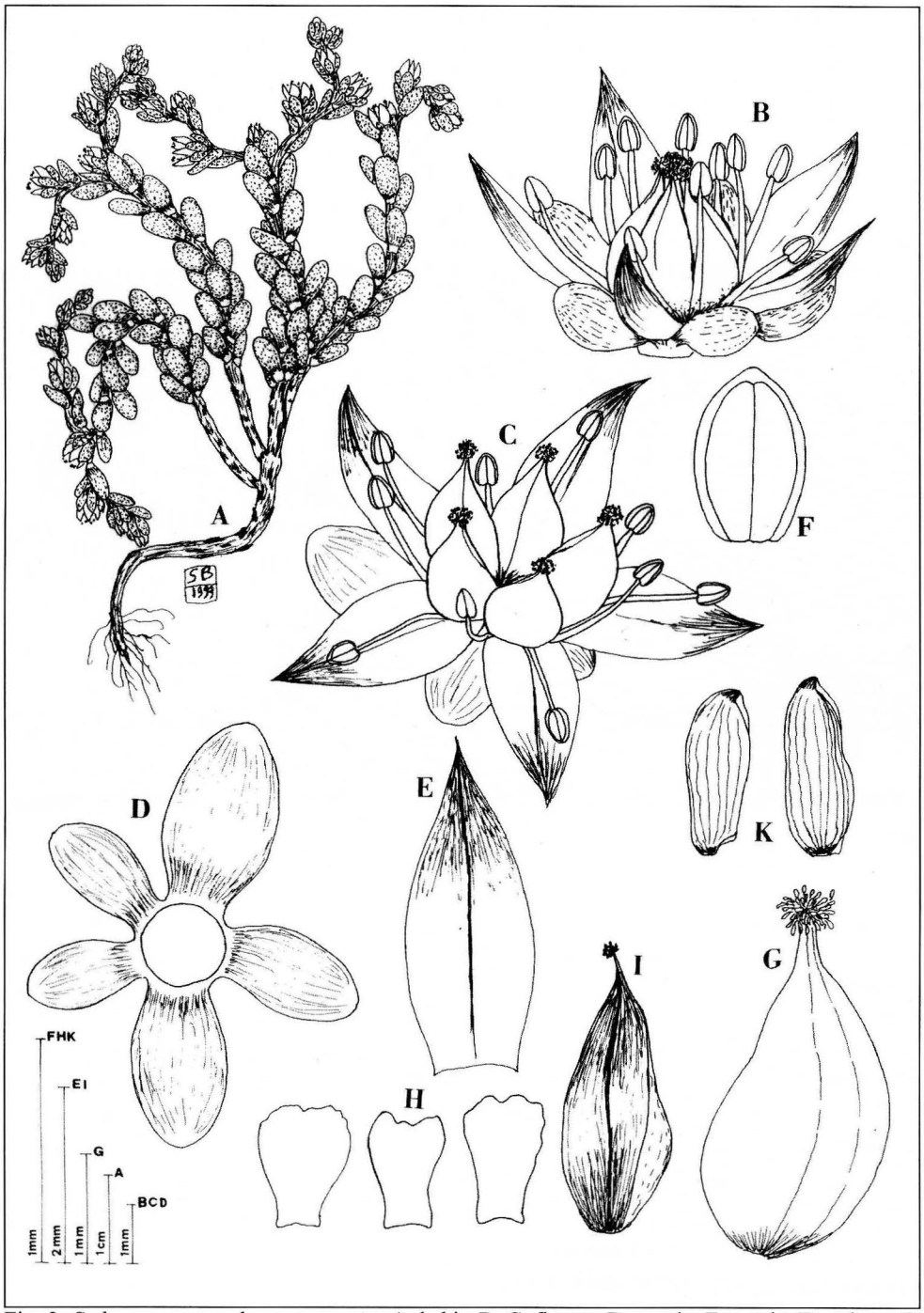

Fig. 2. *Sedum annuum* subsp. *gussonei*. - A. habit; B. C. flower; D. sepals; E. petals; F. anthers; G. pistil; H. nectarial scales; I. follicle.

1700 m of altitude, where it is very rare and localized. It occurs on siliceous rocky ledges, where it is a member of an ephemeral plant community belonging to *Tuberarietea guttatae,* rich in acidophilous microphytes. According to Brullo & al. (2001) this taxon differentiates a particular association proposed as *Sclerantho-Sedetum annui,* referring to *Sclerantho-Myosotidion incrassatae*, orophilous alliance of *Tuberarietalia guttatae.* This name must be so modified in *Sclerantho-Sedetum gussonei* Brullo, Scelsi & Spampinato 2001 corr.

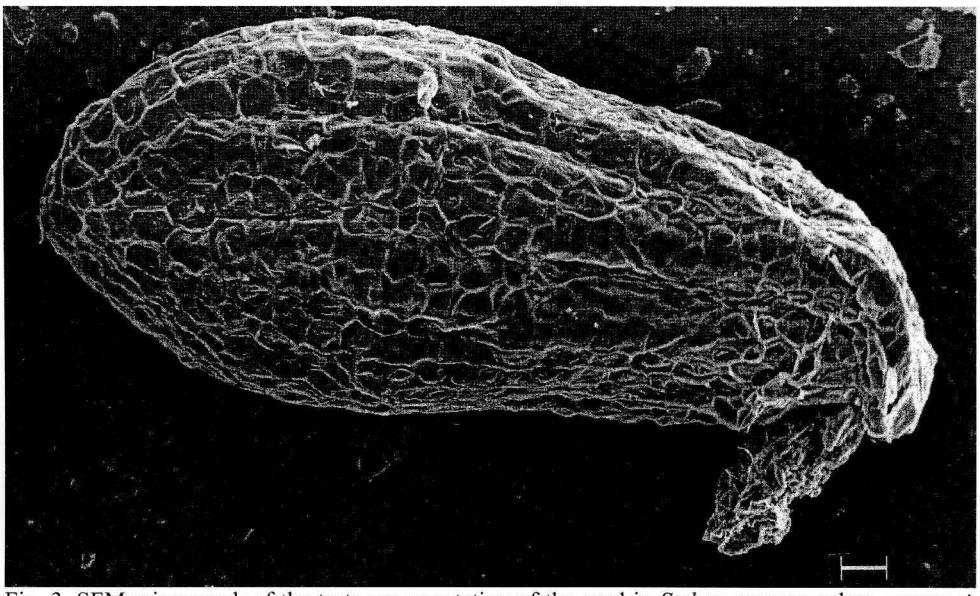

Fig. 3. SEM micrograph of the testa ornamentation of the seed in *Sedum annuum* subsp. *gussonei.* Scale bar: 30 μm.

Taxonomic remarks

According to Hart (1991) *Sedum annuum* belongs to *S.* sect. *Sedum* ser. *Alpestria* Berger, which is characterized by the following trends: plant glabrous, testa reticulate, sepals basally connatae and petals yellow. These features occur also in the subsp. *gussonei,* and in particular the testa of seed (Fig. 3) is similar to that one of subsp. *annuum* (Hart & Berendsen 1980).

Morphological investigation highlights that the Calabrian plants are well differentiated from the typical ones of *Sedum annuum.* The differences involve the habit as well as the size and the shape of sepals, petals and seeds, which are enough important to treat its as a distinct subspecies. In particularl, *S. annuum* subsp. *gussonei* shows stems densely covered by leaves, sepals unequal, 2-3,5 mm long, petals 3,5-3,8 mm long, golden-yellow tinged with reddish at apex, seeds brown-reddish, obtuse at apex, while *Sedum annuum* subsp. *annuum* is characterized by stems laxly covered by leaves, sepals equal, 2-2,5 mm long, petals yellow, 2,5-3,5 mm long and seeds pale-brown, acute at apex.

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