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Erysimum brulloi (*Brassicaceae*), a new species from the Aeolian Archipelago (Sicily)

Abstract

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Erysimum brulloi from the Aeolian Archipelago (Sicily) is described and illustrated. This new species occurs in the Alicudi island, where it grows in the abandoned fields and degraded maquis. From the taxonomic point of view, it is closer to *E. metlesicsii,* from which it differs in several morphological characters and ecological requirements.

Key words: *Erysimum brulloi*, Alicudi, flora.

Introduction

The genus *Erysimum* in Europe and in the Mediterranean region is represented by 106 species (Ball 1964; Blanca & al.1992; Greuter & al.1986), 14 of them are known from Italy (Polatschek 1974, 1982). In Sicily, according to Lojacono (1888), Polatschek (1982) and Giardina & al. (2007) are present: *E. bonannianum, E. etnense and E. metlesicsii. E. crassistylum*, common in S Italy, was reported from Messina and Taormina, but its occurrence there should be now confirmed (Giardina & al. 2007). During field investigation on the flora and vegetation of the Aeolian islands, a peculiar population of an *Erysimum* sp. was found. From both literature data and herbarium observations, it is distinct from species to now known from Sicily and Italian territories. Therefore, it is described as a new species named *Erysimum brulloi*.

Materials and methods

This study was carried out on numerous specimens collected in the *locus classicus*, as well as on living plants cultivated in the Botanical Garden of Catania. Besides, Herbarium materials of *Erysimum* sp. pl. from Sicily and Italian peninsula held in CAT (Herbarium of the Department of Botany of the University of Catania), and PAL (Herbarium Mediterraneum Panormitanum) were also examined.

Results

Erysimum brulloi G. Ferro, **sp. nov.** (Figs. 1, 2)

Diagnosis: *Planta viridis suffruticosa, pilis bifidis tectra, pluricaulis, alta 30-60 cm, in fructu usque ad 110 cm alta. Scapi angulosi tetragoni e basi ramosi. Folia integra lanceolato-linearia, pilosa 3-10(12) cm longa, 2-5(9) mm lata, nervata, breviter petiolata, racemus compositus multiflorus. Flores non odorantes; pedicelli tetragoni superne, 2,2-5 × 1-1,3 mm, ad angulum 40°-45° patentes. Sepala pilosa dorsaliter, exteriora basi gibbosa, lato margine hyalino, rotundata apice (9,5-12 × 2,5 mm); interiora subtili margine hyalino, apice cucullato (9,5-12 × 2 mm); petala lutea (15-23 longa), ungue glabro (9-12 mm longo); lembo spathulato, glabro (6-10,5 × 5-8 mm). Stamina exteriora 9,5-11 mm longa, filamento 6-7,2 × 0,5 mm, anthera 4-5 × 1 mm, stamina interiora 11,5-12,6 mm longa, filamento 8,5-9,5 × 0,8 mm, anthera* 3.2-4 × 0.8 mm*, stylus linearis, pilosus 2-2,5 mm longo, stigma lobatum; siliqua quadrangularis pilosa, 4-8 cm × 1-2 mm parallela ad axem.*

***Holotype*:** Alicudi, Aeolian islands, Sicily, cultivated specimen, 20-V-2009, *G. Ferro & S. Pezzino* (CAT).

Paratypes: Alicudi, Aeolian islands, Sicily, near Montagnole, 9-VI-2006, *G. Ferro & S. Pezzino* (CAT, PAL), Alicudi, near Filo dell'Arpa, 9-VI-2006, *G. Ferro & S. Pezzino* (CAT); Alicudi near Church of S. Bartolo, 9- VI- 2006, *G. Ferro & S.Pezzino* (CAT).

Description: Perennial, woody below, with basally branched rootstocks, hairy with bifid dorsifixed hairs. Stem erect with several prostrate-ascending lateral branches densely leafy. Leaves green, linear to linear-oblanceolate, 3-10(12) cm long, 2-5(9) mm wide, acute at apex, prominent midrib in the lower side, shortly petiolate. Raceme paniculate, many-flowered, with tetragonal peduncle, 2.2-5 × 1-1.3 mm. Sepals dorsally hairy, the outers gibbous below, 9.5-12 × 2,5 mm, with hyaline margin and rounded apex, the inners 9.5-12 × 2 mm with narrow hyaline margin and cucullate apex. Petals 15-23 mm long, with claw glabrous, 9-12 mm long, 1.5-2 mm wide above and 0.5-0.7 mm wide below, limb bright yellow, spathulate, 6-10.5 × 5-8 mm, glabrous, evidently nerved. Outer stamens 9.5-11 mm long, with filament sparsely hairy, 6-7.2 × 0.5 mm, anther 4-5 × 1 mm. Inner stamens 11.5-12.6 mm long, with filament sparsely hairy, 8.5-9.5 × 0.8 mm, anther 3.2-4 × 0.8 mm. Pistil hairy**,** 9.5-11.5(12) mm long, with style linear and stigma lobate-papillose. Siliqua tetragonal, slightly flattened, hairy, 4-8 cm long, 1-2 mm wide, parallel with inflorescence axis; peduncle 5-10 mm long, 0.5 mm wide, slightly curved, hairy, forming an angle of 40°-45° with the inflorescence axis, gradually thickened above. Seeds oblong, flat, shiny, 2-2.5 × 1 mm, pale brown, sulcate in the middle, winged at margin, with wider wing in the distal part (Fig.1 & 2).

Etymology: Species named after Prof. Salvatore Brullo, botanist at the University of Catania.

Fig.1. *Erysimum brulloi* Ferro. A: habit; B: branch with fruits; C: fruit peduncle; D: seeds.

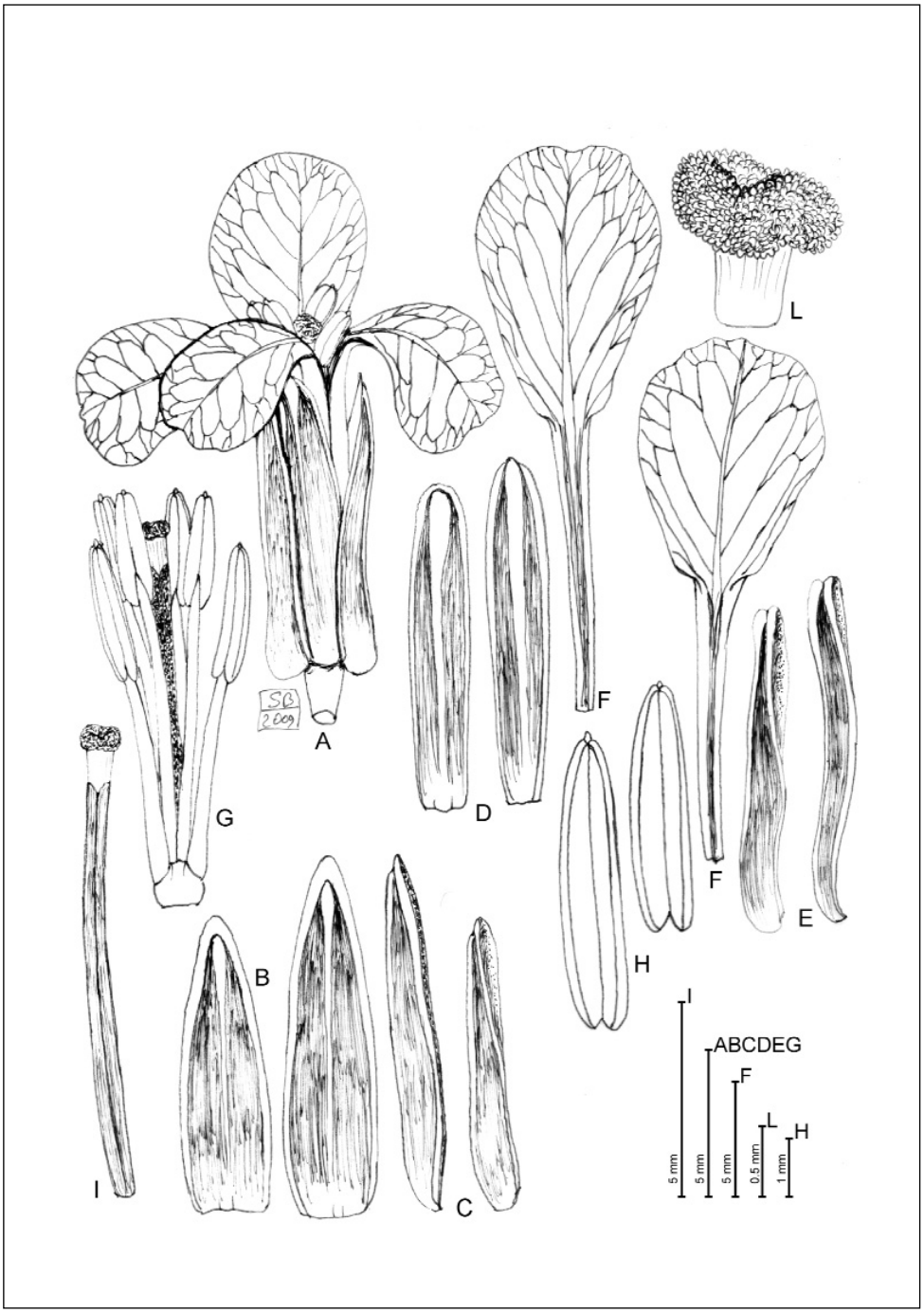

Fig. 2. *Erysimum brulloi* Ferro. A: flower; B-C: external sepals; D-E: internal sepals; F: petals; G: stamens and pistil; H: anthers; I: pistil; L: stigma.

Distribution: This new species was found in the island of Alicudi, in hilly areas between 300 and 400 m a.s.l. and near the Mount Filo dell'Arpa (600-650 m a.s.l.).

Habitat: *E. brulloi* occurs in sites characterized by a thermo-mediterranean bioclimat with ombrotypes from the higher-dry to the lower-subhumid. It often occurs in litosoils originated from andesitic lava. It is a member of plant communities linked to abandoned fields belonging to *Echio-Galactition tomentosae* O. Bòlos & Molinier 1969 and degraded maquis and garigues of *Cisto-Ericion* Horvatic 1958.

Phenology: Flowerings period ranges from May to June. Fruits ripen from June to July.

Conservation status: *E. brulloi* is so far known confined to Alicudi only, in several localities SE facing and in palins near the Montagnola and the Mount Filo dell'Arpa. Its spreading is limited by repeated fire and the return in cultivation of some abandoned fields. On the basis of these data the inclusion of this species in the regional plant red list can be proposed.

Taxonomic remarks

Erysimum brulloi was previously misidentified by Gussone (1834) and Lojacono (1888) as *E. lanceolatum* DC., by Di Benedetto (1973) as *E. sylvestre* (Crantz) Scop. and reported by Giardina & al. (2007) as *E. bonannianum* C. Presl. On the basis of morphological investigations on living materials and herbarium specimens *E. brulloi* is closely related to *E. metlesicsii*, from which it differs in chamaephytic habit, stem not striated, petals not turning pale and shorter and thinner siliqua arranged almost parallel to the scape (not biennal hemicriptophytic, stem striated, petals turning pale and longer and thicker siliqua not parallel to the scape in *E. metlesicsii,* respectively). Other differences regard the ecology because *E. brulloi* occurs only on vulcanities where *E. metlesicsii* is linked to limestones or marls. Besides, it differs from *E. bonannianum* in the main branch architecture and fruiting peduncle longer and thinner.

Representative specimens

E. bonannianum C. Presl **- Sicily:** Madonie, 3-IX-1972, *S. Brullo* (CAT); Madonie, 27-IV-1983, *S. Brullo* (CAT); Quacella, Madonie,13-VII-1973*, S. Brullo* (CAT); Monte S. Salvatore, 15-VII-1981*, S. Brullo* (CAT); Monte S. Salvatore, 27-VII-1979, *S. Brullo* (CAT)*;* Rocca Busambra, Corleone,16-VI-1980, *S. Brullo* (CAT); Isnello, 30-V-1973, *S. Brullo* (CAT); Monte Cammarata, s.d. (PAL); Madonie, s.d. (PAL); S. Stefano Quisquina, 7-VI-1985, *Ottonello* (PAL); Portella Colla, Madonie, 2-V-2001, *Certa & al*. (PAL); Scala del Mezzagno, s.d., *Todaro* (PAL); Madonie, s.d., *Minà* (PAL); Monte S. Salvatore, 3-VI-1990, *Raimondo & al.* (PAL)*;* Monte Cammarata*,* 19-V-1991*, G. Giardina* (PAL).

E. etnense Jordan - **Sicily:** Monte Polverello, 31-V-1981, *S. Brullo* (CAT); S. Domenico Vittoria, 20-VII-1982, *S. Brullo* (CAT); Valle del Flascio, Floresta, 30-VI-1975, *S. Brullo* (CAT); Pineta di Linguaglossa, 31-V-1981, *S. Brullo* (CAT); Monti Silvestri, Etna, 3-VI-1983, *S. Brullo* (CAT); Piano Provenzano, Etna, 3-VI,1983*, S. Brullo* (CAT); Monte Maletto, Etna, 21-V-1983, *S. Brullo* (CAT); Rifugio Citelli, Etna, 3-VI-1983, *S. Brullo* (CAT).

E. metlesicsii Polatschek - **Sicily:** Casteltermini, 9-IV 1988, *Brullo & al.* (CAT)*;* Milena, 9-IV-1988, *S. Brullo & al.* (CAT); *ibidem*, 25-V-1989, *Minissale & al.* (CAT); Montedoro, 12-VI-2006, *G. Ferro & al*. (CAT); Monte Conca, 19-IV-1999, *Galesi R.* (CAT).

E. crassistylum C. Presl - **Italy:** Pentimele, Reggio Calabria, 10-VI-2006, *Spampinato* (herb. Ferro).

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