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# Limonium melancholicum Brullo, Marcenò & Romano (Plumbaginaceae), a new species from Sicily

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## RÉSUMÉ

BRULLO, S., C. MARCENÒ & S. ROMANO (1996). *Limonium melancholicum* Brullo, Marcenò & Romano (Plumbaginaceae), une espèce nouvelle de Sicile. *Candollea* 51: 99-102. En anglais, résumés français et anglais.

Décrite et illustrée comme nouvelle pour la science, *Limonium melancholicum* Brullo, Marcenò & Romano est une espèce de la côte rocheuse de la Sicile occidentale. Ses affinités taxonomiques, sa caryologie et son rôle phytosociologique sont examinés. Une nouvelle association, *Crithmo-Limonietum melancholici* Brullo, Marcenò & Romano, est proposée.

## ABSTRACT

BRULLO, S., C. MARCENÒ & S. ROMANO (1996). *Limonium melancholicum* Brullo, Marcenò & Romano (Plumbaginaceae), a new species from Sicily. *Candollea* 51: 99-102. In English, French and English abstracts.

*Limonium melancholicum* Brullo, Marcenò & Romano, from the rocky coast of W Sicily, is described and illustrated as a species new to science. Its taxonomical relationships, caryology and phytosociological rôle are examined. A new association, *Crithmo-Limonietum melancholici* Brullo, Marcenò & Romano, is proposed.

**KEY-WORDS:** Taxonomy — Flora — Sicily — *Limonium melancholicum* — Phytosociology — *Crithmo-Limonietum melancholici*

## Introduction

According to PIGNATTI (1971), BRULLO (1980, 1988), BRULLO & PAVONE (1981), RAIMONDO & PIGNATTI (1986), RAIMONDO (1993), the genus *Limonium* in Sicily is represented by numerous species (ca. 45) well characterized from cytotaxonomical point of view. Further investigations allowed to spot a very localized population morphologically well distinct from all other known species. Therefore, it is proposed as a species new to science: *Limonium melancholicum* Brullo, Marcenò & Romano.

## Material and methods

The caryological investigation was carried out on plants cultivated in the Botanical Garden of Palermo, originating from seeds collected at the type locality. Standard methods described earlier were used (BRULLO & PAVONE, 1981).

### Description

#### ***Limonium melancholicum* Brullo, Marcenò & Romano, spec. nova (Fig. 1)**

**Typus:** SICILY, litorale roccioso presso Capo San Marco (Sciacca), 12.10.1992, Marcenò s.n. (holotypus: CAT; isotypi: CAT, PAL).

*Planta perennis, 15-40(-50) cm alta, caule ramoso, valde lignoso, 2-7 cm longo. Folia viridia, glabra, suberecta vel erecto-patentia, lineari-spathulata, uninervia, 2-7 cm longa, 5-7(-10) mm lata, apice rotundato, leviter revoluta margine, anthesi plerumque viridia. Scapi glabri, teres, erecti, ramis sterilibus subnullis vel paucis. Panicula ramosa, pyramidata, plus minusve contracta, spicis pedunculatis, 1-3 cm longis. Spiculae 2-4 florum, 5-7 per 1 cm. Bractea externa ovato-cuneiformis, obtusa, 2-2.2 × 1.8-1.9 mm, angusto margine hyalino. Bractea media oblongo-elliptica, hyalina, 2.3-2.5 × 1.4-1.5 mm, bicarenata, rotundata apice. Bractea interna oblongo-elliptica, recta, 4.5-5 × 2.4-2.5 mm, rotundata apice, lato margine hyalino, 5-nervia. Calyx 5-5.5 mm longus, limbo tubum subaequilongum, ex bractea interna longe exsertus, lobis ovato-rotundatis 0.5-0.7 × 0.8-0.9 mm. Corolla lilacina, 8 mm longa, petalo apice retuso. Chromosomatum numerus 2n = 27.*

*Other specimens examined.* — SICILY: Litorale roccioso presso Capo San Marco (Sciacca), 1.5.1993, Brullo & Siracusa s.n. (CAT); ibid., esemplare coltivato, 8.8.1993, Brullo s.n. (CAT).

### Ecology

*Limonium melancholicum* occurs only on a short stretch of coast near Sciacca (W. Sicily), where it grows prevalently on sandstones. It is a very rare species linked to rocky places near the sea, which characterizes a halophilous community. This vegetation, phytosociologically belonging to the class *Crithmo-Limonietea* Br.-Bl. 1947, is proposed as *Crithmo-Limonietum melancholici* ass. nov. (holotype: rel. 8, Table 1). In this association occur several perennial halophytes, typical of the Mediterranean rocky coast (cf. BARTOLO & BRULLO, 1993), viz. *Crithmum maritimum*, *Lotus cytisoides*, *Plantago macrorhiza*, *Daucus gingidium*, *Reichardia picroides* var. *maritima*, etc.

From the floristical and physiognomical point of view, this association shows more correlations with some associations of *Crithmo-Limonietea* occurring in other Sicilian localities with a punctiform distribution, as *Limonietum minutiflori*, *Limonietum tauromenitani* and *Limonietum jonici*. These last associations, however, differ from *Crithmo-Limonietum melancholici* in the ecology, since they are linked to limestone or basalts of territories characterized by more mesic climatic conditions, as well as in the occurrence of an endemic *Limonium* species with a vicariant rôle (cf. BARTOLO & BRULLO, 1993).

### Taxonomical relationships

From the morphological point of view, *Limonium melancholicum* belongs to *L. minutiflorum* group, characterized by spatulate leaves, sterile branches absent or few, inflorescence more or less pyramidate, with 4-8 spikelets per cm, inner bract rect. In Sicily this group is represented by species geographically well localized, often with a punctiform distribution, and growing always on coastal rocks (BRULLO, 1980). They are: *Limonium minutiflorum* (Guss.) O. Kuntze, *L. lojaconoi* Brullo, *L. furnarii* Brullo, *L. tauromenitanum* Brullo, *L. ionicum* Brullo. Among these *L. melancholicum*, mainly for its habit, is closely related to *L. minutiflorum*, endemic of Aeolian islands and Milazzo (NE Sicily); but the two species result well distinguished in several morphological characters. In particular, *L. minutiflorum* shows leaves oblanceolate-spatulate, glaucous, 1-3 veined, up to 11 mm wide, panicle laxe and long branched, spikes with 3-5 spikelets per cm, inner bract 3.8-4 mm long,



Fig. 1. — *Limonium melancholicum* Brullo, Marcenò & Romano (from type locality).  
 A, habit; B, leaves; C, spike; D, spikelet; E, outer bract; F, middle bract; G, inner bract; H, calyx; I, calyx lobes; L, petal and stamen; M, chromosomes.

|  |    |    |    |    |    |    |    |    |
|--|----|----|----|----|----|----|----|----|
| Number of relevé .....   | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| Surface (mq) .....   | 5  | 5  | 10 | 15 | 10 | 5  | 5  | 10 |
| Cover (%) .....  | 60 | 40 | 50 | 60 | 40 | 40 | 60 | 70 |
| Char. Association  |    |    |    |    |    |    |    |    |
| <i>Limonium melancholicum</i> Brullo & al. ....                                      | 2  | 1  | 2  | 2  | 2  | 2  | 2  | 2  |
| Char. Alliance and Class   |    |    |    |    |    |    |    |    |
| <i>Crithmum maritimum</i> L. ....  | 3  | 3  | 2  | 3  | 2  | 1  | 2  | 3  |
| <i>Lotus cytisoides</i> L. ....  | 2  | 1  | 1  | 2  | 1  | +  | 2  | 2  |
| <i>Reichardia picroides</i> (L.) Roth var. <i>maritima</i> ç<br>(Boiss.) Fiori ..... | 2  | 1  | 1  | 1  | 1  | 1  | 2  | 2  |
| <i>Plantago macrorrhiza</i> Poir. ....   | .  | 1  | 2  | 2  | +  | 2  | 2  | 3  |
| <i>Daucus gingidium</i> L. ....  | 1  | +  | .  | .  | +  | 1  | +  | 1  |
| <i>Allium commutatum</i> Guss. ....  | .  | .  | .  | .  | .  | +  | .  | +  |
| <i>Thymelaea hirsuta</i> L. ....   | .  | 1  | .  | .  | 1  | .  | .  | .  |
| Other species  |    |    |    |    |    |    |    |    |
| <i>Hypochoeris laevigata</i> C. P. & G. ....   | 1  | +  | +  | +  | .  | .  | 1  | +  |
| <i>Carlina sicula</i> Ten. ....  | 2  | 1  | +  | .  | .  | +  | +  | .  |
| <i>Plantago serraria</i> L. ....   | +  | 1  | +  | +  | .  | +  | .  | +  |
| <i>Dactylis hispanica</i> Roth .....   | 1  | .  | +  | 1  | 1  | +  | .  | .  |
| <i>Asparagus acutifolius</i> L. ....   | 1  | 1  | .  | .  | .  | .  | +  | .  |
| <i>Pallenis spinosa</i> (L.) Cass. ....  | 1  | 1  | .  | .  | .  | .  | +  | .  |
| <i>Inula crithmoides</i> L. ....   | .  | .  | .  | .  | 1  | +  | 2  | 1  |
| <i>Suaeda vera</i> Forssk. ....  | .  | .  | .  | +  | .  | .  | .  | .  |

Table 1. — *Crithmo-Limonietum melancholici* Brullo, Marcernó & Romano, ass. nov.

outer bract acute, calyx 4.5-5 mm long; while *L. melancholicum* has leaves linear-spathulate, green, 1-veined, up to 7 mm wide, panicle quite compact and short branched, spikes with 5-7 spikelets per cm, inner bract 4.5-5 mm long, outer bract obtuse, calyx 5-5.5 mm long. Besides, they result differentiated from the caryological point of view too. In fact, *L. minutiflorum* is triploid with the aneuploid number  $2n = 26$  (BRULLO & PAVONE, 1981), while *L. melancholicum*, although it is triploid too, has an euploid number  $2n = 27$ .

On the whole, *L. melancholicum*, as well as other taxa belonging to *L. minutiflorum* group, can be considered as endemic with a quite recent origin. They probably arose from geographical isolation, which favoured the speciation processes within the various populations.

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