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A plant that Linnaeus forgot: taxonomic revision of *Rhodalsine* (*Caryophyllaceae*)

Abstract: The mainly Mediterranean genus *Rhodalsine* (*Caryophyllaceae*) is revised and a single species, *R. geniculata*, is recognized, distributed from the Canary Islands in the west to Somalia in the east. The history of the taxon, which was known already during the 17th century but entirely overlooked by Linnaeus, is outlined. Variation and taxonomy are discussed and illustrations and a distribution map are provided. Many names are placed in synonymy and most of the names are typified, including six lectotypes designated here.

Key words: Caryophyllaceae, Mediterranean region, Minuartia, nomenclature, Rhodalsine, Sperguleae, taxonomy, typification

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Introduction

According to the results presented in several recent phylogenetic studies (for a summary, see Kool & Thulin 2017), there is good evidence for the view that *Minuartia* subg. *Rhodalsine* (J. Gay) Graebn. is a member of the tribe *Sperguleae* and sister to *Spergula* L. and *Spergularia* (Pers.) J. Presl & C. Presl. This mainly Mediterranean subgenus therefore needs to be removed from the polyphyletic *Minuartia* L. (Dillenberger & Kader 2014) and treated as a genus of its own. No comprehensive overview of the group has been presented since Williams (1898), who treated it as the genus *Rhodalsine* J. Gay with two species and several varieties. Since then many other names have been associated with the group and its now fairly complex taxonomy and nomenclature is the subject of the present paper.

The first illustrations of members of *Rhodalsine* were published by Boccone (1674), as “*Alsine maritima longius radicata, Herniariae foliis*”, from Sicily. Two forms were described and illustrated, one main form with leaves of the same shape and size as *Herniaria* L., and one more narrow-leaved form called “*Alsine maritima altera angustis foliis*”. Material from Sicily is preserved in the Boccone herbarium in P (Bonnet 1883).

Despite Boccone’s illustrations and the mention of the plant many times in the pre-Linnaean literature (e.g. Morison 1680: 552), it was completely overlooked by Linnaeus, presumably as he did not have access to any herbarium material and therefore could not study it properly. Forsskål collected a member of *Rhodalsine* in Egypt 1761–1762, but misidentified it as *Cherleria sedoides* L. (Forsskål 1775) and his material is now lost (Christensen 1922; Hepper & Friis 1994). Not until Poiret (1789) de-

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scribed Arenaria geniculata Poir. from Algeria did a member of the group first get a valid binomial.

Gay (1845) coined the name Rhodalsine and made the combination R. procumbens (Vahl) J. Gay, based on Arenaria procumbens Vahl (Vahl 1791). However, R. procumbens, the type of Rhodalsine, was nomenclaturally superfluous when published, and is therefore illegitimate, as Arenaria geniculata, the name with priority, was cited in synonymy.

Graebner (in Ascherson & Graebner 1918) treated the group as Minuartia subg. Rhodalsine, and since then it has mostly been seen as part of Minuartia. According to McNeill & Bassett (1974), the number of species in the subgenus is four or five. However, during the last decades Rhodalsine has, to some extent, come back into use again at the generic level (for details, see Kool & Thulin 2013).

In the analysis presented by Kool & Thulin (2017), three samples of Minuartia subg. Rhodalsine were included, representing M. geniculata (Poir.) Thell. from the Mediterranean region (Spain), M. platyphylla (J. Gay ex Christ) McNeill from the Canary Islands (Lanzarote) and M. vestita (Baker) McNeill from Somalia. In the resulting phylogeny, the three samples formed a strongly supported clade and within this clade the samples of M. platyphylla and M. vestita were weakly supported as sisters. When here revising the group, as Rhodalsine, we argue for the recognition of a single variable species in this genus.

Material and methods

Herbarium material and/or images from the following herbaria have been studied: BM, BORD, C, FI, H, K, MA, MPU, O, P, P-Desf, P-LA, PRC, S, TO and UPS. The material studied comprises a representative sample from all parts of the area of distribution, roughly 300 collections in total. As far as possible, the names have been typified, and all type material cited has been seen, either during personal visits to herbaria or as digital images. The distribution map is based almost entirely on information from herbarium labels, but in a few cases also on reliable literature sources, such as Fiori (1923) and Phitos (1997).

Taxonomy


Note — According to Poiret (in Lamarcq 1804), he collected Arenaria geniculata “dans les environs de la Calle”. “La Calle” is a former French name for Annaba in NE Algeria.


Note — Pl, Presl (1826) in the protologue of Arenaria rosea var. spathulata C. Presl, Fl. Sicul.: 165. 1826. – Lectotype (designated here): Sicily, “in arenis maritimis ad Panormum”, 1817, Presl s.n. (PRC [PRC450927 digital image]).
Description — Stems from a usually ± woody taproot, prostrate to ascending or suberect, 10–70 cm long, often much branched, sparsely to densely pubescent with glandular hairs 0.2–1(–1.5) mm long, particularly in the upper part. Leaves sessile or almost sessile, linear to obovate or lanceolate to narrow, 1.5–10 cm long, obscurely 1–3-veined, to densely pubescent with glandular hairs, with prominent midrib abaxially, apex acute to obtuse. Flowers in terminal and axillary lax cymes; bracts similar to leaves but smaller; pedicel 3–25 mm long, erect to spreading, slender, glandular pubescent. Sepals lanceolate to narrowly ovate, 2.5–5 mm long, obscurely 1–3-veined, particularly inner sepals with ± wide scarious margin, glandular pubescent abaxially, apex obtuse to subacute.
Petals broadly elliptic to ovate, slightly shorter to slightly longer than sepalas, apex obtuse to subacute. Stamens shorter than petals; filaments slender, glabrous; anthers yellow, oblong, 0.5 – 0.8 mm long. Styles 1 – 2 mm long. Capsule ovoid-oblong, about as long as sepalas, thin-walled, splitting to base into 3 boat-shaped valves. Seeds dark brown, shiny, 0.5 – 0.8 mm in diam., shallowly channelled on back, faces narrowly reticulate with radiating, elongate cells with sinuate margins. – Fig. 1 & 2.

Distribution and ecology — Rhodalsine geniculata is known from Portugal, Spain (including the Canary Islands, Melilla and the Balearic Islands), Gibraltar, Italy (including Sardinia, Sicily, Pantellaria and Linosa), Malta, Greece, Cyprus, Morocco, Algeria, Tunisia, Libya, Egypt and Somalia (Fig. 3). It occurs in sandy, stony or rocky places from near sea level up to 2050 m. In most of its range it is found at elevations below 600 – 700 m and rocky places from near sea level up to 2050 m. In most of North Africa that only a single variable specie, Rhodalsine geniculata (or Minuartia geniculata), can be recognized (e.g. Meikle 1977; Ghafoor 1978; Jalas & Suominen 1983; Favarger & Montserrat 1990; M. webbii as “annual to perennial” and M. platyphylla as having ovate to suborbicular leaves in contrast to the “narrower-leaved Mediterranean species M. geniculata”. In Morocco a distinction is currently made between a more broad-leaved Rhodalsine (Minuartia) senneniana with longer hairs and a narrow-leaved R. geniculata with shorter hairs (Ouyahya 1999; Fennane & Ibn Tattou 2005). However, the variation seen in the Canary Islands and Morocco is part of a continuous variation across the whole area of distribution.

Minuartia vestita in Somalia was first associated with Rhodalsine by McNeill (1962), who stated it to be a “distinct species”, but no particular characteristics were mentioned. Today a much richer material from Somalia is available and, according to our investigations, M. vestita falls entirely within the variation of Rhodalsine geniculata.

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