



Allium canariense (Amaryllidaceae), a species endemic to the Canary Islands

NIKOLAI FRIESEN^{1*}, TOBIAS HERDEN¹ & PETER SCHOENFELDER²

¹Botanical Garden, University of Osnabrueck, Albrechtstrasse 29, 49076 Osnabrueck, Germany;

e-mail: friesen@biologie.uni-osnabrueck.de

²Reiterweg 15a, D-93080 Pentling, Germany

*author for correspondence

Abstract

A revision of the *Allium* species of the section *Molium* in the Canary Islands is presented. As part of the phylogenetic revision of the Eurasian representatives of the subgenus *Amerallium* we found large disagreements in the nomenclature and taxonomy of *Allium roseum* in the floristic publications on the flora of the Canary Islands. At least four species of the section *Molium* are mentioned for the flora of the Canary Islands: *Allium roseum*, *A. subvillosum*, *A. subhirsutum* and *A. trifoliatum*. To learn more about the phylogenetic relationships within a group of closely related species of the section *Molium*, we used maximum parsimony and Bayesian analyses of combined nuclear (ITS—internal transcribed and ETS—external transcribed spacers of rRNA genes) and three chloroplast (*rpl32-trnL* and *trnL-trnF* intergenic spacers and *rps16* intron) datasets of 7 taxa. For comparison of the relationships of *A. canariense* populations between the islands we used the ISSR method. We found that only one species of the section *Molium* occurs in the Canary Islands—the endemic species *Allium canariense*, closely related to *Allium subvillosum*. Independence of this new species has been confirmed by morphological and molecular features. Discussion on phylogeny, origin and geographic distribution is provided.

Key words: *Molium*, phylogeny, ITS, ETS, *rpl32-trnL*, *trnL-trnF*, *rps16*, divergence time

Introduction

As part of the phylogenetic revision of the Eurasian representatives of *Allium* Linnaeus (1753: 294) subgenus *Amerallium* Traub (1968: 159) we found large disagreements in the nomenclature and taxonomy of *Allium roseum* Linnaeus (1753: 296) in the floristic publications on the flora of the Canary Islands. Ten *Allium* species were identified by Acebes Ginovés *et al.* (2009), at least four of them belong to the section *Molium* G. Don ex Koch (1837: 715): *Allium roseum*, *A. subvillosum* Salzm. ex Schult. & Schult.f. in Roemer & Schultes (1830: 1104), *A. trifoliatum* Cirillo (1788: 11) and *A. subhirsutum* Linnaeus (1753: 295). In the first classic flora by Webb & Berthelot (1848), two species were listed: *Allium roseum* and *A. trifoliatum*. (The latter was sometimes subsequently treated as a variety of *Allium subhirsutum*). The description of *Allium subvillosum* β *canariense* Regel (1875: 249) was overlooked by all the following authors, except Wilde-Duyfjes (1976) and listed as such in the recent “Flora de Gran Canaria” (<http://www.jardincanario.org/busqueda-de-la-flora-de-gran-canaria>) as a synonym for *Allium subhirsutum* L. subsp. *subvillosum* (Salzm. ex Schult. & Schult.f.) Duyfjes (1976: 137).

Pitard & Proust (1908) and Lindinger (1926) mentioned only *Allium roseum* and *Allium trifoliatum*, while *Allium trifoliatum* subsp. *obtusitepalum* Sventenius (1960: 3) was described from the small island Alegranza, later recombined under a different species: *Allium subhirsutum* subsp. *obtusitepalum* (Svent.) Kunkel (1971: 55). Eriksson *et al.* (1974) listed *Allium roseum*, *A. subhirsutum* and *A. trifoliatum* subsp. *obtusitepalum*, but Wilde-Duyfjes (1976) indicated for the first time that *Allium roseum* is not indigenous to the Canary Islands and included all accessions of *A. roseum* auct. non L. as well as *A. subvillosum* β *canariense* into *A. subhirsutum* subsp. *subvillosum*. In the 2. and 3. edition of “Flora of Macaronesia: checklist of vascular plants” by Hansen & Sunding (1979, 1985) *Allium roseum*, *A. subhirsutum* with subsp. *subvillosum* and subsp. *obtusitepalum* were accepted, while in the 4th edition (Hansen & Sunding 1993) *A. subvillosum* was accepted at species level. Kunkel *et al.* (1992) mentioned *Allium roseum* and *A. subhirsutum* subsp. *obtusitepalum*, and Hohenester & Welss (1993) *A. roseum*, *A. trifoliatum* and *A. subhirsutum*. In all three editions of the “Lista de especies silvestres de Canarias” by Acebes Ginovés *et al.* (2001; 2004; 2009) three species are listed: