



On the true identity of the plants recently referred to *Sedum nevadense* (Crassulaceae) in Abruzzo (Italy)

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Abstract

Sedum nevadense was always believed to be an Iberian-Moroccan endemic with a segregated population in France, but it was recently reported for Abruzzo (Italy). To enhance our knowledge of this population that appears particularly isolated from the main distribution, specific studies were carried out that allowed its recognition as significantly different from the Iberian and north African populations from the morphological and ecological points of view. We here describe this population as a new narrow endemic species, namely *Sedum aquilanum* belonging to *Sedum* series *Subrosea*. This population is at high extinction risk due to both the small number of plants and its close proximity to areas that are affected by anthropogenic activities having a very high environmental impact.

Keywords: central Italy, endemic, *Sedum aquilanum*, *Sedum* series *Subrosea*, taxonomy

Introduction

The Euro-Mediterranean species of the genus *Sedum* Linnaeus (1753: 430) were grouped into series, whereby each one represented a putatively monophyletic, biologically isolated group ('t Hart 1991). Among these, *Sedum* series *Subrosea* 't Hart (1991: 59) is characterised by the unusual nature of its ecological requirements, needing of moist soil at least during the vegetative period.

Sedum series *Subrosea* originally included *S. lagascae* Pau (1895: 53), *S. nevadense* Cosson (1852: 163) and *S. villosum* Linnaeus (1753: 432), which are characterised as “Densely glandular-pubescent annual” and “Petals free [...]. Stamens 10, with red anthers” ('t Hart, 1991). However, some of these characters are not always noticed, as the known taxa can be glabrous (*S. nevadense*), others are biennales or perennials (*S. villosum*), others only have five stamens [*S. pentandrum* (DC. in Lamarck & Candolle 1815: 6) Boreau (1849: n. 779)] or have yellow anthers as *S. nevadense*, *S. villosum* subsp. *glandulosum* (Moris 1827: 20) Fournier (1936: 459). Subsequently, *S. maireanum* Sennen in Sennen & Mauricio (1933: 43) was also included (Castroviejo & Velayos 1997, Jalas *et al.* 1999). Among other authors, Maire (1976) recognized four subspecies and varieties under *S. villosum*, while more recently, *S. pentandrum* has been re-evaluated (Tison & de Foucault 2014). Today, there are four to five taxa usually accepted within *Sedum* series *Subrosea* (see e.g. Pignatti 1982, 't Hart & Bleij, 2003), depending on the systematic value attributed to *S. glandulosum*. These taxa are distributed in northern Africa, between Morocco (Maire 1976) and Algeria (Quézel & Santa 1962), in Europe, from the Iberian peninsula up to Russia (Borisova 1939, Webb *et al.* 1993, Jalas *et al.* 1999, Marhold 2006 onwards), and also in Greenland and North America (Clausen 1975).

The main centre of diversity is generically reported as “western” by 't Hart (1991), and this probably stands for the Iberian peninsula, where there are many taxa of the series, albeit Italy is also an important diversity centre with very localised endemics. *Sedum* series *Subrosea* has been the subject of some taxonomic and nomenclatural studies over the years, but these have been limited to one or a few taxa, or to specific areas (Amich Garcia *et al.* 1981, Fernandes 1984, Lániz 1985, Castroviejo & Velayos 1995, 1997, Gallo 2001, Arrigoni 2006, Vargas & García 2008) However, only the name *S. villosum* has been typified ('t Hart & Jarvis 1993). Finally this series has peculiar character-states that are identifiable as apomorphic ('t Hart 1991) for the genus *Sedum*, such as sepals fused at the base, seeds costate with crowned apex, and the presence of a glandular indumentum, at least in majority of the taxa.