



Sedum spiralifolium (Crassulaceae): a new species from Anhui Province, China

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Abstract

A new species of *Sedum*, *S. spiralifolium* from Anhui Province, eastern China is described and illustrated. Our molecular systematics results (based on nuclear ITS and plastid *trnL-trnF*) and morphological analyses indicate that this new species is closest to *S. sarmentosum*. It differs from *S. sarmentosum* by having linear-lanceolate leaves, earlier flowering and twisted upper leaves at the top of its sterile shoots.

Keywords: China, Crassulaceae, molecular systematics, new species

Introduction

Sedum Linnaeus (1753:430) is the largest genus in the family Crassulaceae, including approximately 430 species with the center of diversity in eastern Asia (Thiede and Eggli 2007). *Sedum* sect. *Sedum* includes more than 60 species mainly distributed in Asia and Europe, out of which approximately 49 species (34 endemic) occur in China (Fu *et al.* 2001). There are more than 20 species of sect. *Sedum* in Anhui Province (Zheng *et al.* 1994), most of which have fleshy stems, small flowers, and quite variable habitus of leaves and sepals. However, it is difficult to distinguish them from each other only based on their macro-morphological features (Jin *et al.* 2010, Wu *et al.* 2013). Instead, their micro-morphological characters, such as pollen morphology (Zheng 1997), leaf epidermis morphology (Zheng & Gong 1999), stem anatomy (Zheng *et al.* 2001) and seed morphology (Jin *et al.* 2008) have proven to be good taxonomic characters.

During our field work in the Fourth National Survey on Chinese Material Medical Resources, an unusual population of *Sedum* was discovered in Shucheng County, Anhui Province. Macro-morphological character studies indicated that plants of this population, morphologically, are somewhat similar to *Sedum sarmentosum* Bunge (1833:114) with verticillate leaves and small yellow petals (Figure 3). An integrative taxonomy of this entity was performed, including observation of gross morphological characters, habit, phenology, stem anatomical features and molecular systematics based on ITS and *trnL-trnF* sequence data. All lines of evidence indicate that this little known species represent a new species.

Materials and method

Materials

Seven species, including *S. sarmentosum* Bunge, *S. lineare* Thunb. (1784:430) (for illustration, see Rao 1996:623), *S. onychopetalum* Fröd. (1933:199), *S. polytrichoides* Hemsl. (1887:286), *S. bulbiferum* Makino (1903:145), *S. emarginatum* Migo (1937:224) and the new species were collected from fields in eastern China (Table 1). The fresh leaves collected in fields were dried in silica gel for molecular examination. Voucher specimens are deposited in the Herbarium of Anhui University of Chinese Medicine (ACM).

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