



A taxonomic study of *Sedum* series *Rupestris* (Crassulaceae) naturalized in North America

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Abstract

Sedum rupestre L. and its close relatives (*Sedum* series *Rupestris*) are native to Europe. Adventive populations in North America were studied both in the field and the herbaria. Our results exclude *S. rupestre* L. and include recognition of two additional taxa on the continent, which are distinguished with keys and illustrations: *Sedum forsterianum* documented as a naturalized species in the United States, from Washington, and in British Columbia, Canada and *Sedum thartii*, naturalized in Colorado, Maine, Ohio, Oregon, Washington and Ontario, Canada. A lectotype is established for *S. forsterianum*.

Key words: Alien, stonecrop, typification

Introduction

The genus *Sedum* Linnaeus (1753: 430) is widespread in Europe, Africa, Asia and America and includes roughly 400 to 475 taxa according to the most recent authors (Eggl *et al.* 1995, 't Hart & Bleij 2003, Thiede & Eggl 2007, Ohba 2009).

Berger (1930) devised an infrafamilial classification of the Crassulaceae. Within the genus *Sedum* he recognised “Sektion 17” (*Sedum* proper, his “*Seda genuina*”) and, inside it, several “Reihen” or series. The “Reihe” 20 group of *Sedum* is now known as *Sedum* series *Rupestris* (Berger 1930: 456), a monophyletic and well delimited group endemic to the Euro-Mediterranean region, including 17 among species, subspecies and natural hybrids (Hart 't 1994, Hart 't & Bleij 2003, Gallo 2009, 2012). *Sedum* series *Rupestris* is well known in North American gardens, where it escapes locally and has established wild populations in nine states and provinces (Ohba 2009). These reports are discussed below. Members of the series are unknown in Mexico (Meyrán García & López Chávez 2003) whereas *S. reflexum* L. (1755: 463) was reported as naturalized in New Zealand (Healy, 1959; Given, 1984) and *S. thartii* L.P. Hebert (1983: 211) in Argentina (Oggero *et al.* 2013, Arana *et al.*, in press).

North American reports of *Sedum* series *Rupestris* all refer to *S. rupestre* L. (1753: 431; syn. *S. reflexum*). Ohba (2009) reported it was introduced in Quebec, Georgia, Illinois, Indiana, Maine, Massachusetts, New Jersey, New York, and Ohio, on rock ledges at elevations below 2000 m (likely a typographical error for 200 m). Ohba (2009) also mentioned ephemeral escapes or waifs from Prince Edward Island and Ontario. Previously, Britton & Rose (1905), Britton & Brown (1947) and Mitchell & Tucker (1997) noted *S. rupestre* (as *S. reflexum*) escaped from gardens in Massachusetts and New York. Clausen (1975: 554 and 579) cited *S. rupestre* (as *S. reflexum*) among the taxa naturalized in eastern North America, dating back to 1876, while the first cultivated record goes back to 1816 (Gray 1876); Clausen (1975: 577) also discussed *S. rupestre*, but only as a cultivated species. We treat *S. reflexum* as a synonym of *S. rupestre*, following 't Hart & Jarvis (1993). Finally, Haines & Vining (1998) and Haines (2011) cite *S. ochroleucum* Chaix (1786: 325) as a local garden escape.

Members of *Sedum* series *Rupestris* are distinguished by subtle characters that often are not preserved well in the herbaria. In addition, the taxonomic conclusions in recent European literature on the complex have not been widely applied to naturalized populations in North America (e.g., Gallo 2009, 2012, 2013, 2014).

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Appendix. Selected herbarium vouchers

Sedum forsterianum Sm. in Sowerby

CANADA. **British Columbia**: Fraser Valley, West Vancouver, Caulfeild Park, southeast facing rocky area at ocean side, 2001 Jun 15, *Kennedy & Ganders* 5435 (UBC, V217117). Vancouver Island, Woodhus Slough, between Oyster River and Salmon Point, 200 m east of Salmon Point Pub, 2008 Jun 12, *Brears* (UBC, V227083). Quadra Island, Quathiaski Cove, north of old ferry road landing, 2003 Jun 04, *Lomer* 4832 (UBC, V231403). Vancouver Island, 10 Km due southeast of Campbell River, Salmon Point, ca. 350 m due southeast of marina, 2010 Jul 11, *Lomer* 7372 (UBC, V234760). Haida Gwaii (Queen Charlotte Island) Graham Island, Skidegate, breakwater along Skidegate Inlet, Highway 33 below 5th Street, 2004 Aug 26, *Cheney* (UBC, V227088). Vancouver Island, Duncan, island highway past Duncan, 48°47'00" N, 123°42'00" W, Jul 15 1978, *Ceska A.*, *Ceska O.* & *Roemer H.L.* 010012 (UBC, V189130). UNITED STATES. **Washington**: King Co., dry weedy roadside, 1.2 air km WNW of Tradition Lake, Issaquah, 55 m, 6 Jun 2014, *Zika* 26602 (WTU). Mason Co., S shore of Hood Canal, Route 106 about 3 miles E of Union, common naturalized weed, dry roadsides and steep loose gravel slopes, 3 m, 4 Jul 2010, *Zika* 25108 (CWG, DAO, MO, NY, UBC, UC, WS, WTU).