

## SAGINA CAESPITOSA (ALSINACEAE) IN COLORADO, U.S.A.

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### ABSTRACT

*Sagina caespitosa* (J. Vahl) Lange in H.J. Rink is reported for the first time in the United States from the Rocky Mountains of Colorado.

### RESUMEN

*Sagina caespitosa* (J. Vahl) Lange in H.J. Rink se encuentra por la primera vez en Los Estados Unidos en los Montañas Rocosas de Colorado.

In this note, we report *Sagina caespitosa* (J. Vahl) Lange in H.J. Rink for Colorado and the United States. Otherwise, *S. caespitosa* occurs in North America in Greenland, Manitoba, Newfoundland, Labrador, Nunavut, and Quebec (Crow 2005).

According to the Flora of North America (Crow 2005), two species of *Sagina* occur in Colorado, namely *S. saginoides* and *S. procumbens*. For many years, we assumed that our only native species was the common *S. saginoides*. Erling Porsild visited in 1950 and the senior author took him, as he has Eilif Dahl, Eric Hultén and other European field botanists, on excursions to 14000-foot Mount Evans, the site of many significant alpine or arctic disjuncts (Weber 1965, 1991). Since then, the authors have repeatedly collected *Sagina* there and at similar sites. Recently, Wendy Dathan, Porsild's biographer (manuscript in preparation), sent me a copy of the page in his field notebook where he mentioned collecting *Sagina caespitosa* and how thrilled he was, since he had not seen it since Hudson Bay and Greenland. To Porsild should go the credit for the discovery.

*Sagina caespitosa* has been considered an Amphiatlantic species; however, in Colorado it is locally abundant on high mountain summits from 12000–13500 ft (3700–4100 m) altitude, on frost boils and well-developed gravelly moss tundra. Throughout the remainder of its range, *S. caespitosa* is not known to grow at elevations greater than 1500 ft (450 m).

A report of *S. nivalis* (Lindblom) Fries from Colorado by Rydberg (1906, p. 130) was overlooked until recently. Rydberg's report was erroneous, based on a Harry Patterson collection which is here assigned to *S. caespitosa*. *S. nivalis*, being a species of the American arctic, might also be expected in Colorado, but thus far it has not been detected; however, *S. nivalis* does occur in a few localities in Montana.

In the *Flora of North America* (Crow 2005), *Sagina saginoides* (L.) H. Karsten was described as "Plants perennial, tufted or becoming caespitose in alpine habitats." This is incorrect and all collections of *S. caespitosa* at Herbarium COLO were annotated as *S. saginoides*. In the field, *S. caespitosa* is easily distinguished by its tightly massed, button-like form. Plants are also characterized by short shoots lacking internodes, by stiffly erect pedicels, by plump, purplish sepals, and by petals equaling or slightly exceeding the calyx. It occurs on mature gravelly tundra usually at very high altitudes. The shoots can hardly be separated to make less bulky herbarium specimens.

*Sagina nivalis* (Lindblom) Fries might be expected to occur in Colorado, since it is a western American arctic species that reaches northern Montana. It differs from *S. caespitosa* by being 4-merous with petals shorter than the sepals, and by not being densely caespitose because of the lack of secondary shoots.

*Sagina saginoides* (L.) Fenzl is a very weak, often somewhat procumbent plant with obvious internodes, filiform pedicels and pale white sepals. Its habitat is not special, occurring on wet sand or mud, and it generally occurs at lower altitudes.

Voucher collections of *S. caespitosa*, Herbarium COLO: **COLORADO. Boulder Co.:** sandy seepage area between the two uppermost Green Lakes, T1N R754W Sec. 13, Green Lakes Valley N of Kiowa Peak, 11,500–12000 ft, Boulder watershed, 21 Jul 1953, *Weber & Dahl*; N slopes of Kiowa Peak Green Lakes Valley, 11,400–1200 ft, 1 Jul 1972, *Komarkova s.n.*; summit of South Arapahoe Peak on its southeast ridge, 13300 ft, 10 Jul 1972, *Komarkova s.n.* **Clear Creek Co.:** high mountains, vicinity of Gray's Peak, 23 Aug 1892 (as *S. nivalis*), *H.N. Patterson s.n.* [the collection cited by Rydberg (1906)] [on the specimen at F, an inked note says "halfway up"]; Summit Lake, Mount Evans, 12,800 ft, 5 Aug 1950, *Weber 5927*, 15 Aug 1950, *Weber, Porsild, & Holmen 5927, 11135, 22868*; 31 Jul 1954, *Weber & Dahl 8937*; 16 Aug 2006, *Weber 19505*; 16 Aug 2006, *Weber 19505*; 25 Aug 2007, *Weber & Wittmann 19514, 19515*; saddle between Mts. Evans and Epaulet, 13590 ft, 6 Aug 1998, *Weber & Wittmann 19403*. **El Paso Co.:** Pikes Peak, along auto highway, ca. 13,000 ft, 7 Aug 1932, *Penland, Wershing, & Hartwell 789 (COCO)*. **Larimer Co.:** Rocky Mt. Nat. Park. Trail Ridge, on terrace S of Iceberg Lake, 12000 ft, on bare wet humus around frost scars, 10 Jul 1961, *Willard 61131*; S flank of Sundance Mountain, on terrace with *Koenigia*, in wet humus of hummocks, 19 Jul 1960, *Willard 608*; N side of Hagues Peak, 13300 ft, in wet gravels of a very late snow accumulation area, 7 Aug 1961, *Willard 61185*. **Park Co.:** Mosquito Range, along stream N of Leavick Tarn, SSE of Peerless Mt. summit, 12320 ft, 30 Jul 1991, *Tonnessen & Roy 020*; Mosquito Pass, saturated area below snow-bed beside the jeep road, 30 Jul 2007, *Weber & Wittmann 19527*.

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