

***SOLIDAGO JEJUNIFOLIA* (ASTERACEAE: ASTEREAEE)
IN IOWA, MISSOURI, AND NEBRASKA**

JOHN C. SEMPLE

Department of Biology
University of Waterloo
Waterloo, Ontario Canada N2L 3G1
jcsemp@uwaterloo.ca

ABSTRACT

The occurrence of *Solidago jejunifolia* in Iowa, Missouri, and Nebraska is documented. The primary range of the species is in Minnesota, Wisconsin, and northern Michigan.

Solidago jejunifolia Steele (Asteraceae: Astereae) was included in a multivariate study of *S. speciosa* Nutt. complex of *S.* subsect. *Squarrosae* A. Gray (Semple et al. 2017). The species was treated as a synonym of *S. speciosa* var. *speciosa* in Flora North America (Semple & Cook 2006) but was subsequently recognized as distinct species (Semple 2016 frequently updated). The *S. speciosa* complex also includes *S. pallida* (Porter) Rydb. and *S. rigidiuscula* (Torr. & A. Gray) Porter. All four species were found to be statistically different in the multivariate study that included all 14 species of subsect. *Squarrosae*. The range of distribution of *S. jejunifolia* was included in Semple et al. (2017; Fig. 7). With the exception of the three collections discussed below all other collections of *S. jejunifolia* occur in southeastern Manitoba, Canada (Semple et al. 2013), western and central Minnesota, western Wisconsin, and two disjunct areas of northern Michigan. The occurrence of *S. jejunifolia* in Iowa, Missouri, and Nebraska has not been previously documented. The species was not listed as occurring in these three states by Semple and Cook (2006) or Yatskievich (2006).

Three specimens from Iowa, Missouri, and Nebraska were included in the multivariate analysis of the *Solidago speciosa* complex (Semple et al. 2017) and were placed a posteriori into the *S. jejunifolia* group with 83% probability (*Shimek s.n.*, MO; 17% to *S. rigidiuscula*), 98% probability (*Harris s.n.*, MO; 2% to *S. rigidiuscula*), and 97% probability (*Semple & Brouillet 7360*, WAT; 1% each to *S. rigidiuscula* and *S. speciosa*). All three collections had lower stem leaves with long thin petiolar bases and were collected in early to mid September. In the analysis, these specimens were compared with 66 other collections of *S. jejunifolia*, *S. pallida*, *S. rigidiuscula*, and *S. speciosa*.

Specimen Data: USA. Iowa. Muscatine Co.: 7 mi NW of Muscatine, at schoolhouse, old prairie sand dune, 18 Aug 1925, *Shimek s.n.* (MO). **Missouri.** Atchison Co.: ca. 2.5 mi SE of Hamburg, Star School Hill Prairie Natural Area, on E side of US-275, open loess hill prairie at top of steep bluff slope, scattered plants, T66N R42W S02 NW4 of SE4, 1 Sep 2003, *Harris s.n.* (MO). **Nebraska.** Nemaha Co.: US-136, 7 mi. W of Auburn, grassy roadcut through ridge, sandy soil, *Cassia*, *Liatris*, *Eupatorium*, etc., 12 Sep 1983, *Semple & Brouillet 7360* (WAT: duplicates to MO, MT, and RM distributed as *Solidago speciosa* var. *angustata* T. & G.).

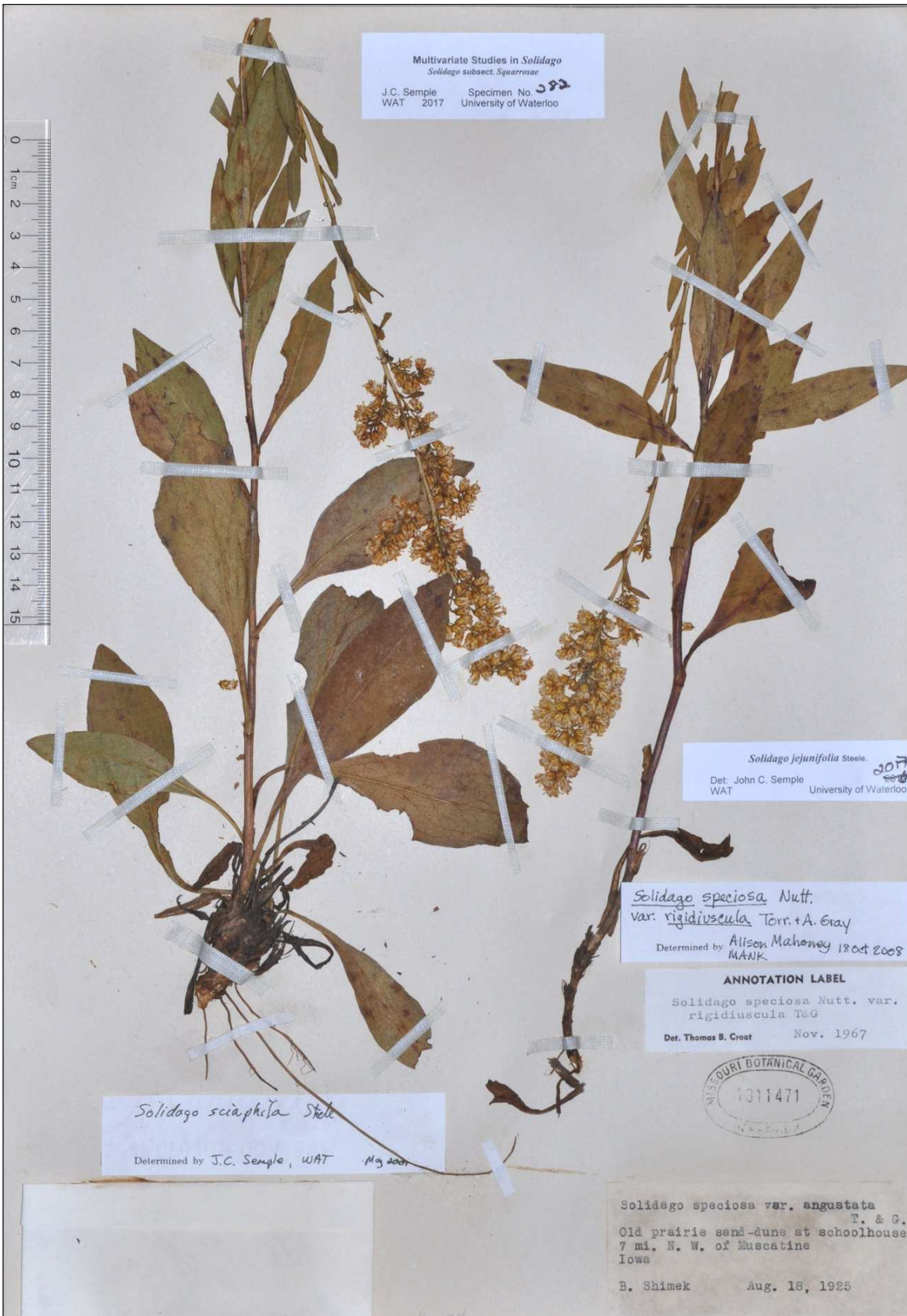


Figure 1. Morphology of *Solidago jejunifolia*: Shimek s.n. (MO) from Muscatine Co., Iowa.



Figure 2. Morphology of *Solidago jejunifolia*: Harris s.n. (MO) from Atchison Co., Missouri.

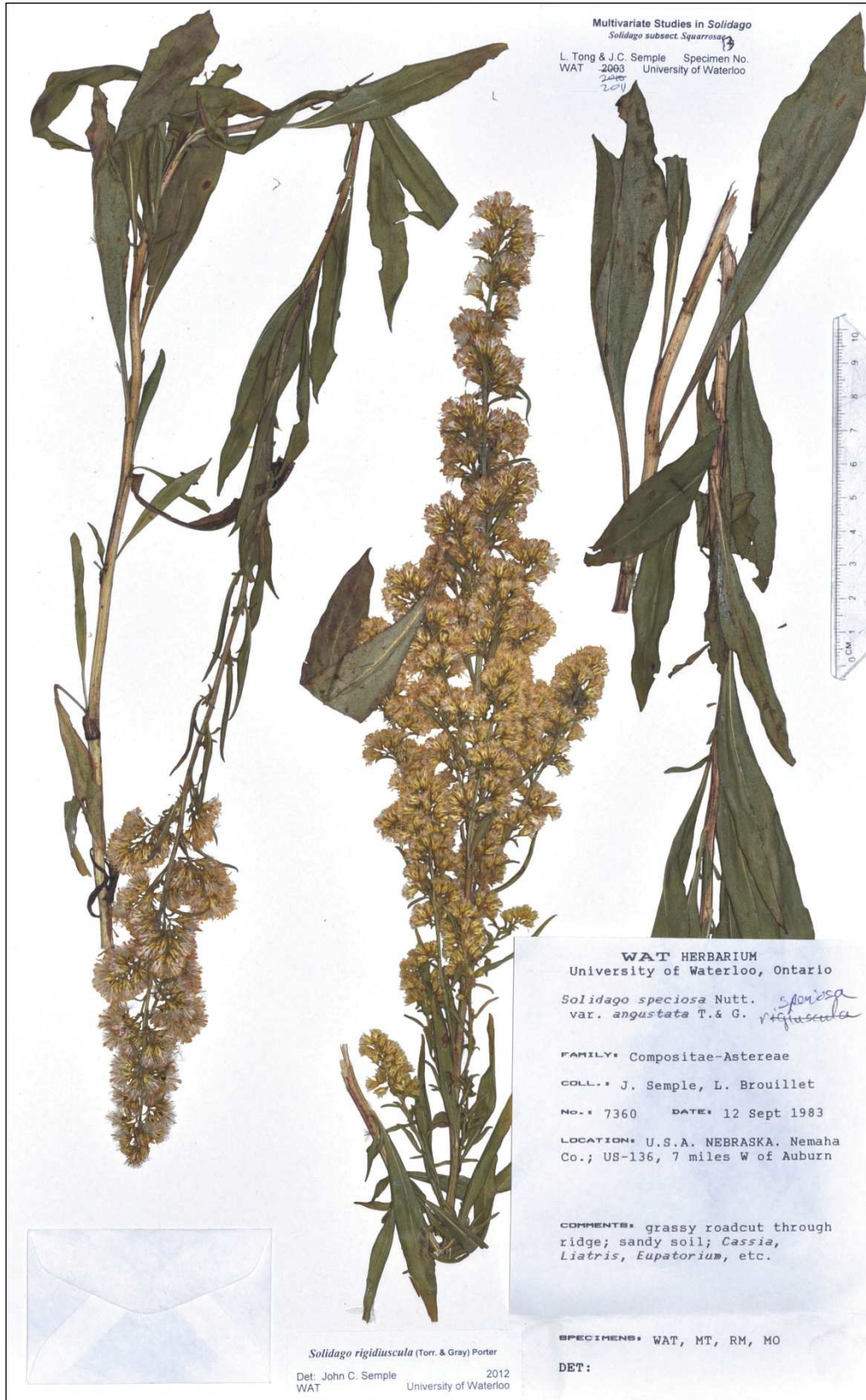


Figure 3. Morphology of *Solidago jejunifolia*: Semple & Brouillet 7360 (WAT) from Nemaha Co., Nebraska.

ACKNOWLEDGEMENTS

This work was supported by a Natural Sciences and Engineering Research Council of Canada Discovery Grants to the first author. Joan Venn is thanked for her curatorial assistance with loans. The following herbaria are thanked for loaning specimens of *Solidago* subsect. *Squarrosae* and giving permission to dissect heads: LSU, MIN, MO, MT, NCU, NY, and WAT. Andrew Lam assisted in recording location data.

LITERATURE CITED

- Semple, J.C. 2016 (frequently updated). Classification and Illustrations of Goldenrods. <<https://waterloo.ca/astereae-lab/research/goldenrods/classification-and-illustrations>>
- Semple, J.C., L. Tong, and A. Chong. 2017. Multivariate studies of *Solidago* subsect. *Squarrosae*. I. The *Solidago speciosa* complex (Asteraceae: Astereae). *Phytoneuron* 2017-18: 1–23.
- Semple, J.C. and R.E. Cook. 2006. *Solidago* Linnaeus. Pp. 107–166, in *Flora North America* Editorial Committee (eds.). *Flora of North America*, Vol. 20. Asteraceae, Part 2. Astereae and Senecioneae. Oxford Univ. Press, New York.
- Semple, J.C., L. Tong, B.A. Ford, and C.E. Punter. 2012. *Solidago jejunifolia* new to Manitoba and Canada. *Phytoneuron* 2012-112: 1–5.
- Yatskievych, G. 2006. Steyermark's *Flora of Missouri*. Vol. 2. Missouri Bot. Garden Press, St. Louis.