

## OCCURRENCE OF *SOLIDAGO CANADENSIS* VAR. *HARGERI* IN TENNESSEE

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### ABSTRACT

Fernald recognized *Solidago canadensis* var. *hargeri* in 1915 and gave its range as mostly in the New England area. By the time the 8<sup>th</sup> edition of Gray's Manual was published, he had extended the range to Tennessee, but subsequent workers concerned with the Tennessee flora have never mentioned this taxon. A collection by Gattinger in the Gray Herbarium and additional collections and chromosome counts provided here support the inclusion of *S. canadensis* var. *hargeri* as part of the Tennessee flora.

The *Solidago canadensis* L. complex is one of the most confusing complexes in *Solidago*. Most of the treatments of this complex have been by botanists in the Midwest, Northeast, and adjacent Canada, where this complex is well developed and its members are hard to separate. The complex is not as confusing in Tennessee once *S. gigantea* Ait. and *S. rupestris* Raf. are separated out. The remaining plants have traditionally been treated as a single species, but Fernald (1950) indicated that both *S. altissima* L. and *S. canadensis* var. *hargeri* Fern. occur in Tennessee. Croat (1972) also gives Tennessee for his range of var. *hargeri*, presumably copying Fernald's range in Gray's Manual. Other authors dealing with the flora of Tennessee have never mentioned var. *hargeri*.

Melville and Morton (1982) treated the *Solidago canadensis* complex in Ontario, concluding, using breeding studies, chromosome counts, and morphology, that both *S. altissima* and *S. canadensis* var. *hargeri* should be considered good taxa in Ontario. This paper and the earlier one by Croat probably convinced Cronquist (1991) to finally accept var. *hargeri*. He still considered *S. altissima* best treated as *S. canadensis* var. *scabra* Torr. & Gray but did not give a separate range for each of the varieties. Semple and Cook (2006) accepted both *S. altissima* and *S. canadensis* var. *hargeri*, with the range for var. *hargeri* only extending into Kentucky. By the time their treatment was published, chromosome numbers for each taxon were known — *Solidago altissima* is either tetraploid ( $2n = 36$ ) or hexaploid ( $2n = 54$ ), while *S. canadensis* var. *hargeri* is diploid ( $2n = 18$ ). A multivariate morphometric study by Semple et al. (2015) of the *S. altissima* complex and *S. canadensis* further supports the acceptance of var. *hargeri*. However, they point out the problem of separating some specimens of var. *hargeri* from *S. altissima* var. *gilvocanescens* (Rydb.) Semple where the ranges overlap. The var. *gilvocanescens*, mostly from the Great Plains, is not found in Tennessee. Throughout this time, publications dealing with the flora of Tennessee, such as the most recently published Guide to the Vascular Plants of Tennessee (2014), only considered *S. altissima* (synonym = *S. canadensis* var. *scabra*) as occurring in Tennessee.

The Gray Herbarium staff was kind enough to verify that a specimen there annotated as var. *hargeri* from Tennessee was collected by Gattinger in Nashville. Additional collections and chromosome counts by the author also support the occurrence of var. *hargeri* in Tennessee. The Tennessee counties where *S. canadensis* var. *hargeri* has been found are all close to Kentucky and make the Tennessee sites a reasonable range extension.

The following chromosome counts and specimens document *S. canadensis* var. *hargeri* as part of the flora of Tennessee.

**Chromosome counts of  $n = 9_{II}$**

**Tennessee. Claiborne Co.:** Tazewell, moist field next to creek, 15 Aug 1968, *Morton* 2925, 2926A&B, and 2926-1A&B (NY).

**Herbarium specimens**

**Tennessee. Claiborne Co.:** Tazewell, moist field next to creek, 15 Aug 1968, *Morton* 2924 (NY); Tazewell, moist field along Russell Creek, 16 Aug 2016, *Morton* 9491 (TENN, UCHT); Davidson Co.: Nashville, 1885, *Gattinger* (GH).

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