

The Rayless Plants of *Senecio sylvaticus* in Sweden

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The discovery of discoid plants of *Senecio sylvaticus* L. in two localities in Sweden is presented. This is the first record of the absence of ray florets in this species. Except for the absence of ray florets, no obvious difference was found so far between discoid and radiate plants of *S. sylvaticus*. The loss of ray florets could be considered as highly stable trait here, because all the progeny of mother plants had invariably discoid heads. There is still no considerable reason for any taxonomic treatment of these discoid plants.

Key words: Compositae, discoid plants, ray florets, *Senecio sylvaticus*, Sweden.

Introduction

An absence of ray florets within many genera (e.g. *Eupatorium* L.), species (e.g. *Tanacetum vulgare* L.) and infraspecific taxa as subspecies [e.g. *Aster tripolium* subsp. *pannonicus* (Jacq.) Soó], variety [e.g. *Grindelia squarosa* var. *nuda* (Wood) Gray] or form (e.g. *Aster umbellatus* f. *discoideus* Vict.) is very common in the family Compositae.

There are many examples of discoid plants in the genus *Senecio* L. as well. Following taxa possess only discoid capitula: *S. mikanioides* Otto, *S. thapsoides* DC., *S. persoonii* De Not., *S. boissieri* DC., *S. papposus* subsp. *wagneri* (Degen) Cufod. (CHATER & WALTERS, 1976), *S. dubius* Ledeb., *S. massaicus* Maire (ALEXANDER, 1979), *S. faberi* var. *discoideus* Lauener & D. K. Ferguson (LAUENER, 1976), *S. diversipinnus* var. *discoideus* C. Jeffrey & Y. L. Chen (JEFFREY & CHEN, 1984), *S. vulgaris* L. subsp. *vulgaris* var. *vulgaris* (COMES, 1995). The common occurrence of rayless plants (prevalent) together with rayed plants within one taxon is noted in *S. chaluireauii* Humbert, *S. pygmaeus* DC., *S. flavus* Sch. Bip.

(ALEXANDER, 1979), *S. indecorus* Greene (CRONQUIST, 1963), *S. cacaliaster* Lam. (CHATER & WALTERS, 1976). The rare occurrence of rayless plants was recorded in *S. smallii* Britton (CRONQUIST, 1963) and rare, rayless plants within radiate species at the rank of a form are for example *S. erraticus* f. *discoideus* Holzfluss, *S. brachychaetus* f. *calvus* Fiori, *S. aurantiacus* f. *flocculosus* DC., *S. erucifolius* f. *discoideus* DC., *S. rupester* f. *flosculosus* DC., *S. vernalis* f. *discoideus* Zabel and *S. viscosus* f. *discoides* Beckh. (HEGI, 1987).

The taxonomic treatment of discoid plants in Compositae is somewhat confused, thanks to many synonyms of forms and varieties. Recently, only the absence of ray florets is not the trait adequate for describing new taxa and many discoid plants appearing within radiate taxa are left without any name.

Nevertheless, the absence of ray florets is used as one of the traits for groupings within the genus *Senecio* (e.g. JEFFREY et al., 1977; JEFFREY & CHEN, 1984), so that a significance of this feature is not as low as it could seem.

Results and discussion

As far as I am aware the absence of ray florets in *Senecio sylvaticus* L. has not been reported yet. I have found discoid plants of this species in 2000 in two localities: 1) Sweden, road from Bor to Värnamo, c. 200 m from highway, roadside near forest, alt. c. 200 m s. m., 11 August 2000 and 2) Sweden, Stenshuvud National Park, mount Fornborg (near Hällevik), eastern shrubby and stony hillside, alt. c. 70 m s. m., 11 August 2000. The first population (locality 1) was formed by three plants all lacking ray florets. Only a single rayless plant was found inside the obviously fully radiate population of *S. sylvaticus* in the locality 2.

The upper parts with flowering capitula of plants from the locality A were removed to let the achenes mature and the mature achenes of the plant from locality B were collected. Seed maturation and subsequent cultivation took place in the Czech Republic (in Kostelec nad Orlicí, Eastern Bohemia). Plants were cultivated in 2001 and in 2002 and the surviving plants in both cases flowered 15 weeks after germinating (i.e. 25 June 2001 and 20 May 2002 respectively). In total, 16 plants of origin from the locality A and 4 plants of origin from the locality B were obtained in 2001 and 5 plants of the former origin were obtained in 2002. All cultivated plants invariably lacked ray florets.

Senecio sylvaticus L. is a tetraploid ($2n = 40$), and strongly self-compatible species (e.g. GRAUMANN & GOTTSBERGER 1988 and pers. obs.). Further crossing experiments will be necessary to confirm exactly a genetic base of the loss of ray florets in this species.

Karyological and morphological observations of plants did not reveal any other differences between rayed and rayless plants. Herbarium specimens are deposited in PR (11572A, 11572B) and PRC herbaria (the Czech Republic).

A very limited amount of discovered rayless plants, indeterminate fate of these annual plants, scarcity of information about their possible geographical distribution in Sweden and relatively

low taxonomic significance of the loss of ray florets are the main reasons against taxonomic treatment as variety or form.

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