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Salsola collina Pall., New to Iowa¹

By WILLIAM SCHAPAUUGH

In October, 1957, a specimen of *Salsola* was collected in Ames, Story County, Iowa, on the Chicago and Northwestern Railroad right-of-way embankment at the Sixth Street underpass. This new plant appeared distinct from the various varieties of the well-known *Salsola kali* L., and search in the Iowa State College herbarium failed to reveal other specimens. Subsequent examination of specimens of *Salsola* in the herbarium of the State University of Iowa likewise revealed no specimens of this species from Iowa. There seems to be no previous published reports of any species of *Salsola* other than *S. kali* from the state of Iowa.

BASIS OF IDENTIFICATION

On the basis of earlier American reports, and Eurasian literature as available, the plant was identified as *Salsola collina* Pall. Brief descriptions of this species have been provided by several earlier American workers, Moore (6), Cory (1), and Gleason (3).

REPORTS FROM THE UNITED STATES

From existing information it seems that *Salsola collina* has been reported in only two other states, i.e. Minnesota and Colorado.

Review of the specimens from U. S. National Museum, State University of Iowa, Gray Herbarium, New York Botanical Garden, and University of California indicates that the plant has been collected in four localities, two in Colorado, one in Minnesota, and the present one in Iowa, viz:

- Minnesota. John W. Moore, 10151; Sept. 12, 1937; new sandy road grade in the city of South St. Paul, Dakota County. GH, UC, IA, ISC, US.
- Colorado. V. L. Cory, 35864; Sept. 3, 1940; moderately sloping hillside and along terraces at Cheyenne Wells, Cheyenne County. GH.
William A. Weber, 8966; Oct. 1, 1954; along roadside in Clear Creek Canyon between Golden and Central City. NY, UC.
- Iowa. William Schapaugh, 25; October 15, 1957; Chicago and Northwestern Railroad right-of-way embankment at the Sixth Street underpass in the city of Ames, Story County. ISC.

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The method of introduction of this species is not known. There is little evidence that it is permanently established and spreading widely.

OCURRENCE IN OLD WORLD

References concerning *Salsola collina* are scanty and apparently there is little known about the species.

Engler (2) reports various forms of *S. collina* from southern Russia and the vicinity of the Ural Mountains to northern Russia and North China. The plant is occasionally found in middle Europe. Hegi (4) cites *S. collina* from Bavaria and southwestern Germany but indicates it to be indigenous to Siberia and the Himalayan region. Kotob et al. (5) in a Russian flora report that *S. collina* grows



INFLORESCENCE OF
SALSOLA COLLINA



FRUIT EXTERIOR OF
SALSOLA COLLINA



FRUIT EXTERIOR OF
SALSOLA KALI



BRACTS OF
SALSOLA COLLINA



BRACTS OF
SALSOLA KALI

on the plains and that it must be eradicated. According to this author the species is unable to mature fruit in higher regions.

DESCRIPTION

Annual, 30-50 cm. in height, minutely pubescent, much branched. Stems erect and spreading, green and white striped. Leaves lanceolate, terminating in a weak spine, also striped. Flowers mainly at branch tips. Fruits in the lower portions of the plant with nut-like enclosures. Fruiting calyx margined but wingless.

This species differs from *Salsola kali* in the following specific characters: (a) more virgate growth habit, (b) leaves and bracts less spiny, (c) wingless calyx segments, and (d) nut-like enclosures of the fruits toward the base of the plant.

Because the original description of *Salsola collina* by Pallas (7) may now be obtained from only a few sources, it is reproduced below:

S. annua erecto-patula, foliis alternis mucronatis carinatis striatisque, calycibus fructiferis submarginatis.

Planta annua, saepe sesquipedali major, late in globum sparsa, parum succulenta, tota glabra, minus rigida et sicca praecedente. Radix subsimplex, attenuata, radiculis lateralibus.

Caulis e radice simplex, striatus, lineisque alternis viridibus et albidis vel roseis pictus, uti et rami.

Rami ab imo alterni, virgati, subdivisi, patuli, alterne foliosi et in extremis floriferi.

Folia ubique ternata, stipulis minimis, omnia basi latiuscula, dein subulata, carinata, debiliusque spina terminata, lineis itidem viridibus et albidis in longitudinem ductis versicoloria.

Flores inter sinus foliorum solitarii, sessiles, fere absconditi. Calyces fructus inter folia itidem latentes, subturbinati, supra truncati et vix marginati, bracteis nullis.

* * * *

Hanc speciem tantummodo observavi in tractu collium cotaceorum inter Rhyminum et Samarum fl. a jugo Uralensi descendentium, secundum vias et ad ripas ac fossas frequentissima itinerantium comes. Licet autem summa ejus appareat cum *S. tamariscina* similitudo, tamen quoniam adeo localis sit et magis borealem stationem occupet, dein quod omnibus partibus major et vegetior, foliisque mucronatis et defecta bractearum in semine distinguatur, ut varietatem transire illam non possum. Est autem in dictis locis adeo copiosa, ut alibi *S. kali* et aequae a procellis autumnalis abrepta glomeratim per plana

volvitur. Solum, non salitum ut videtur, occupat, neque ideo cineres in scoriam confluunt et ad sodam conficiendam non servit.

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