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THE GENUS RUMEX IN IOWA

R. I. CRATTY

The genus *Rumex* includes about 140 species, commonly known as Docks or Sorrels, and is best represented in the North Temperate Zone, a few occurring in South America, South Africa and Australia.

The plants of this genus are mostly herbs, only a few being shrubby or arborescent. A few species occurring in the United States are of some economic value, while several are noxious weeds. Among these, *Rumex Patientia* and *R. obtusifolius* are frequent escapes, especially from German gardens where they have been cultivated for greens. *R. scutatus* the French Sorrel is sometimes grown for the same purpose, and *R. abyssinica*, the Spinach-Rhubarb, — the leaves said to be eaten as Spinach, and the leaf-stalks as Rhubarb, has been introduced as a kitchen-garden vegetable by the United States Department of Agriculture. *R. acetosa* the Garden Sorrel, with thin, light green, long-petioled leaves is sparingly naturalized in this country, but no Iowa specimen has yet come to the writer's notice. It is occasionally grown in gardens for its radical leaves which are used as spring greens, the Large Bellville being one cultivated variety. *R. hymeosepalus* of our southwest and northern Mexico, commonly called *Canaignre*, is of some economic value on account of the tannic acid contained in its roots which is said to tan quickly, making the leather soft and tough, and imparting an inimitable orange color to all goods treated with it.

Two of Iowa's noxious weeds belong to the genus *R. acetosella*, the Sheep Sorrel, and *R. crispus*, the Curly Dock; *R. mexicanus* and *R. altissimus* are sometimes objectionable weeds in pastures or meadows, but are not especially difficult to eradicate. *R. venosus* said to be poisonous to stock, comes near our western border. It has large valves almost an inch in diameter, entire and broadly cordatae with a deep sinus and of a bright rose color when in mature fruit.

Besides the articles in our manuals on the genus, the monograph of the North American species by Dr. William Trelease¹ will be found very useful in studying these plants.

¹ *The Species of Rumex, Occuring North of Mexico*, Third Annual Report of the Missouri Botanical Garden, 1892, pp. 73-98, with 21 plates.

About 23 species of the genus occur in the United States, and 17 in the region covered by the Illustrated Flora and Gray's Manual, while 9 are represented in the State College Herbarium as occurring in Iowa.

Like so many groups of plants the genus *Rumex* draws many of its specific characters from the mature fruit, therefore this is often necessary to make a correct determination.

Our Docks are all herbaceous, 6 inches to 5 or 6 feet tall, the flowers greenish, styles 3, stamens 6, sepals 6, the outer 3 remaining small and inconspicuous in fruit, the inner 3 called valves, or sometimes calyx wings or perianth lobes, enlarging in fruit, and enclosing the triangular akene, usually one or more valves bearing a tubercle.

The citations given in this paper include only those Iowa specimens represented in the State College Herbarium. Besides these nine, two others, *R. occidentalis* and *R. sanguineus* have been reported from Webster county but these are probably errors in determination.

KEY TO IOWA SPECIES

- Flowers dioecious, leaves acid, the lower halberd-shaped
1. *R. acetosella*
- Flowers perfect or polygamo-dioecious, leaves not acid or only slightly so
- Valves not spinulose-toothed
- Usually but one valve bearing a tubercle
- Valves 8-9 mm. broad, reniform, lvs. dark green
2. *R. Patientia*
- Valves 5-6 mm. broad, deltate-ovoid, lvs. light green
3. *R. altissimus*
- Usually all three valves bearing tubercles
- Pedicils filiform, 1-2 times as long as the valves
- Valves 6 mm. long, blunt at apex 4. *R. Britannica*
- Valves not over 4 mm. long, acute at apex
- Leaves wavy margined, dark green
5. *R. crispus*
- Leaves flat, light green 6. *R. mexicanus*
- Pedicils clavate, 2-3 times as long as valves
7. *R. verticillatus*
- Valves spinulose-toothed
- Perennial, leaves ovate-heartshaped 8. *R. obtusifolius*
- Perennial, leaves ovate-heart-shaped

Annual, leaves lance-linear, valves bristle-form

9. *R. persicarioides*

1. *Rumex acetosella* L. Sp. Pl. 338, 1753. Field or Sheep Sorrel. A low dioecious plant 6-12 inches high with linear-lanceolate, or near the base, halberd-shaped leaves, the ovate valves scarcely enlarging in fruit. This is one of our unlawful weeds, and spreads rapidly by running rootstalks, as well as by seed. A native of Eurasia and now widely introduced throughout the world.

Dubuque county, *Pammel & Trenk*; Winneshiek Co., *Goddard*; Waukon, *Cratty*; Indianola, *Jaques*; Ackley, *Gough*; Oskaloosa, *Bowdle*; Decorah, *Holway*; Steamboat Rock, *Miss King*; Morning Sun, *Carver*; Dubuque, *Pammel*; Ontario, *Hodson*; Ames, *Harriet Pammel*; Fayette, *Fink*; Decatur Co., *Anderson*; Madrid, *Jacobson*; Winterset *Carver*.

2. *Rumex Patientia* L. Sp. Pl. 333, 1753. Patience Dock. A coarse species with ovate-oblong, or lanceolate leaves which are broadest above the middle, the root leaves sometimes 2 to 3 feet long, the valves of the fruit entire or nearly so, larger than those of any other species occurring in the state, and one of them bearing a small tubercle, or only a midrib thickened at the base. Introduced from Europe and now widely scattered over the world.

Fayette *Fink*; Postville, *Pammel, Orr & Wilson*; Winneshiek Co., *Goddard*; Decatur Co., *Anderson*, 2 sheets; Emmet Co., *Wolden*, 2 sheets.

3. *Rumex altissimus* Wood, Class Book 447, 1853. Tall or Peach-leaved Dock, closely resembles No. 6 with which it is often confounded, but is easily distinguished when in mature fruit by its single tubercle. It ranges from Conn. to Neb., Md. and Texas.

Fayette, *Fink*, 3 sheets; Armstrong, *Cratty*; Ames, *Ball & Combs*; Dubuque, *Pammel*; Postville, *Pammel & Orr*; Marshalltown, *Pammel*; Charles City, *Webster*; Ames, *Harriet Pammel*; Algona, *Cratty*; Osceola, *Stewart*; The Ledges Boone Co., *Pammel*; Waukon Junction, *Pammel*; McGregor, *Pammel*.

4. *Rumex Britanica* L. Sp. Pl. 334, 1753. Great Water Dock. A stout species 4-6 ft. tall, the broad valves irregularly denticulate, each bearing a tubercle. It is common in wet places from Newfoundland to New Jersey, and west to Minnesota and Kansas.

Kossuth Co., *Pammel and Cratty*; Dubuque, *Pammel*; Forest City, *Pammel*; Fayette, *Fink*; Worth Co., *Pammel*; Mason City, *Pammel*.

5. *Rumex crispus* L. Sp. Pl. 335, 1753. A noxious weed, a native of Eurasia and now introduced throughout the civilized world. The leaves are dark green, with curled margins, the long tap root yellow inside. It is a bad weed in pastures and meadows.

Altoona, *Watson*; Ames, *Ball and Combs* and several other collectors; Winneshiek Co., *Goddard*; Des Moines, *Bakke*; Dubuque, *Pammel*; Fayette, *Fink*; North McGregor, *Pammel*; Decorah, *Holway*; Emmet Co., *Cratty*.

6. *Rumex mexicanus* Meisn. D. C. Prod. 14:45, 1856. Pale Dock. This species is a pale green, or glaucous-leaved plant with dark red akenes, the side slightly concave. It ranges from Labrador to British Columbia and south to Texas and Mexico. This is the *R. salicifolius* of our earlier manuals, not of Weinmann.

Dubuque Co., *Pammel and Trenk*; Green Island, *Pammel*; Winneshiek, *Goddard*; West Bend, *Cratty*; Ames, *Harriet Pammel*; Lawler, *Rolfs*; Indianola, *Pammel*; Creston, *Stewart*; Rockwell City, *Cratty*; Hamburg, *Pammel*.

7. *Rumex verticillatus* L. Sp. Pl. 334, 1753. Swamp Dock, a rather tall species occurring in swamps from Vermont and Quebec to Iowa and southward. Probably rare in this region.

Wild Cat Den, Muscatine Co., *Ball*.

8. *Rumex obtusifolius* L. Sp. Pl. 335, 1753. Broad Leaved or Bitter Dock. Introduced throughout the United States and the West Indies; a native of Eurasia. It is readily distinguished from No. 2 which it resembles in foliage by its spinulose-toothed valves.

Council Bluffs, *Pammel*; Decatur Co., *Anderson*; Ames, *White*; Decorah, *Holway*; Lisbon, *Stein*.

9. *Rumex persicarioides* L. Sp. Pl. 335, 1753. Golden Dock. This is our only annual species, and is common throughout the northern and western United States. It has been confounded in some of our manuals with *R. maritimus* L. of the Old World. It is especially common in the marshes in the northern part of the State.

Belmond, *Pammel*; Fort Dodge, *Blumer*; Emmet Co., *Wolden*; Lake Mills, *Pammel*; Onawa, *Pammel*; Fremont Co., *Anderson*; Armstrong, *Cratty and Pammel*; Marathon, *Pammel*; Hamburg, *Pammel*.

IOWA STATE COLLEGE.