

A TAXONOMIC STUDY OF THE ILLINOIS SPECIES OF RUMEX

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Introduction.—The most recent monograph of the North American species of Rumex was written by Rechinger¹ in 1937 in which he treated forty-seven North American species. Other authors, including Trelease,² and St. John,³ have also published articles on this genus. Rechinger has done much to elucidate the species concept of Rumex by adding to the number of known species. For example, *R. salicifolius* Weinm. has been divided into several distinct species, namely *R. crassus* Rech. f., *R. californicus* Rech. f., *R. utahensis* Rech. f. *R. salicifolius* Weinm. and with other related species, has been compounded into the subsection Salicifolii.

Another important item of his clarification concerns *R. persicarioides* L. Most authors have designated the range of this species as extending from Quebec to North Carolina, Ontario to Illinois, and westward. This distribution, however, should be referred to a closely related species, namely *R. fueginus* Philippi. Philippi described this plant in 1894 as being a species distinct from *R. persicarioides* L. Subsequently St. John in 1915 thought *R. fueginus* to be a variety of *R. maritimus* and described it as *R. maritimus* var. *fueginus*. After extended study, Rechinger in writing his

monograph on Rumex, discovered that *R. maritimus* occurs only in Europe and Asia and should not be included as a North American species; therefore, he treated the plant as *R. fueginus* Philippi. *R. persicarioides* L. has a limited distribution which includes eastern Canada and Massachusetts. It differs from *R. fueginus* mainly in that the tubercles are spherical and not narrowed into the midrib of the valves. *R. fueginus* is widely distributed throughout North America except for the southeastern part of the United States.

During the present study I have found ten species of Rumex occurring in Illinois. Five (*R. altissimus* Wood, *R. crispus* L., *R. obtusifolius* L., *R. acetosella* L. and *R. verticillatus* L.) are more or less ubiquitous throughout the state. *R. britannica* L., *R. fueginus* Philippi, and *R. hostatulus* Baldw. apud Elliott are uncommon in Illinois. *R. triangulivalvis* (Danser) Rech. f. which closely resembles *R. altissimus* and differs from it chiefly in the smaller size of the valves and in the narrower leaves is reported from Illinois for the first time. I have only seen one Illinois specimen.

I have recorded three imperfect specimens of *R. patientia* L., two of which have only the valve and stem characters, and the other in which there are only

¹ Field Mus. Nat. Hist. Publ. Bot. Ser. 17: 1-151. 1937.

² Revision of American species of Rumex occurring north of Mexico, Missouri Botanical Garden. Third Ann. Report. St. Louis 1893.

³ *R. persicarioides* and its allies, Rhodora 17: 73. 1915.

leaves and flowers present. However, they are authentic specimens. According to its recorded geographic distribution *R. patientia* is slightly out of range because it occurs in its northern boundaries in upper Michigan, extending to Missouri and westward.

R. mexicanus Meisn., as well as *R. salicifolius* Weinm., have been erroneously recorded for Illinois; however, the former inhabits Mexico and New Mexico and the latter California and Mexico. Both species have been confounded with *R. altissimus* which differs from *R. salicifolius* in the larger size of the valves, wider leaves and smaller tubercles in proportion to the size of the valves. It differs from *R. mexicanus* in the same respects except the last named distinction.

Many authors, including Gray and

Small, have indicated that *R. altissimus* has one tubercle, or some of the valves have an abortive tubercle in addition (Deam). In the numerous specimens examined, I have observed at least twelve in which there are three more or less unequally sized tubercles and a few plants in which the valves contain three equally sized tubercles.

There has been one hybrid recorded for Illinois, namely *R. crispus* × *obtusifolius*, which is found only infrequently.

I am indebted to Dr. G. N. Jones for aid and advice in writing this paper. I should also like to express my appreciation to Dr. P. C. Standley, Curator of the Herbarium of the Field Museum, for the privilege of studying the specimens of Rumex that are in that institution.

Key to Illinois Species of Rumex

1. Leaves hastately lobed, sometimes linear or lanceolate; plant with acid juice; flowers dioecious or polygamous; rhizome horizontal; valves without tubercles, roseate. (Sorrel)
 2. Valves 1 mm. wide, not larger than the nutlets, and without distinct venation.....1. *R. acetosella*
 2. Valves 3-4 mm. wide, distinctly larger than the nutlets and with distinct venation.....2. *R. hastatulus*
1. Leaves never hastately lobed, not markedly acid; flowers androgynous; roots stout; valves usually with 1-3 tubercles. (Dock)
 2. Valves entire, erose or merely denticulate.
 3. Tubercles 1-3, when 3 mostly unequal in size or seldom with all tubercles equal; pedicels with a distinct tumid joint; leaves flat, not crisped, lanceolate to ovate-lanceolate, tapering toward the base, pale green.....3. *R. altissimus*
 3. Tubercles usually 3, occasionally only 1, or rarely absent.
 4. Pedicels curved or flexuous, usually not more than twice the length of the valves; leaves dark green.
 5. Pedicels with a tumid joint, tubercles less than 1½ times as long as broad; lateral veins of the leaf-blades forming acute angles with the midvein.
 6. Valves 3-4 mm. long; leaves flat, linear to lanceolate, tapering toward the base.....4. *R. triangulivalvis*
 6. Valves usually much larger; leaves more or less crisped.
 7. Leaves rather narrow, strongly crisped, gradually narrowed towards the base; valves 4-5 mm. long, tubercle usually 3.....5. *R. crispus*
 7. Leaves broader, often broadest below the middle, suddenly narrowed towards the base, truncate or cordate, less crisped; valves larger, tubercles absent or 1, smaller in proportion to the size of the valves.....6. *R. patientia*
 5. Pedicels without a joint or only obscurely jointed; tubercles longer than broad, lateral veins of the leaf blades forming almost a right angle with the mid-vein.....7. *R. britannica*
 4. Pedicels deflexed, not flexuous, 2-3 times the length of the valves; leaves flat, pale green.....8. *R. verticillatus*
 2. Valves with spinulose teeth.
 3. Lower leaves broad, cordate at base, the upper narrower, lanceolate; valves 5-6 mm. long, usually only 1 tubercle bearing; pedicels slender, 2½ times the length of the valves; perennial.....9. *R. obtusifolius*
 3. All leaves linear-lanceolate, more or less truncate at the base; valves usually 2 mm. long, slightly broader than the tubercles, the teeth long fine and bristle-like, all bearing tubercles; pedicels seldom more than twice the length of the valve; annual.....10. *R. fuginus*

List of Species

1. *R. acetosella* L. (Sheep sorrel) Fig. 1. Fields and waste grounds; nat. from Eur. and Eurasia; May-July; Roadside, Glenwood (O. E. Lansing, Jr. 1405). Sandy roadside, Waukegan (F. C. Gates 3063). I. C. Track, Havana (F. C. Gates 3606). Meadow, U. of I., Urbana (30849). Sand ridge, S. of oakwoods, Chicago (Agnes Chase 1350). Champaign Co. (17739). Sand, Hyde Pk., Chicago (Agnes Chase 1366). Sandy prairie, Ravenswood, Chicago (Agnes Chase). In sand, Chicago (A. Chase 1350, 1366).

2. *R. hastatus* Baldw. apud Elliott. Fig. 2. Sandy soil; May-July. (*R. hastatus* Baldw. apud Elliott), (*R. englemanni* Meisn.), (*R. orbiculatus* A. Gray), (*R. hastatus* Muhl.). Sandy barrens, East Alton, Madison Co. (F. E. McDonald FM). Dry hill by French Village (H. Eggert FM). Dry sandy soil, East Alton Madison Co. (F. E. McDonald FM). 17th and Jackson aves., North Chicago (O. C. Durham FM). Sandy barrens, near East Alton (F. E. McDonald).
3. *R. altissimus* Wood (Pale dock; Peach leaved dock). Fig. 3. Alluvial soil; June. (*R. britannica* L.). Barnyard near Wady Petra (Virginius H. Chase 1530). Vermillion Co. (Seymour and Butts 1438). Olney (Robert Ridgeway 1003). Along I and M canal near Western Ave. (W. S. Moffatt 384). Wet meadows, Rose Hill (L. N. Johnson 14183). Olney (Robt. Ridgway 1004). Margin of Desplaines River, Riverside (O. E. Lansing, Jr. 1414). Bank of Desplaines River (Moffatt 1706). Greathouse Creepi Bridge, Mount Carmel (J. Schneck). Alluvial soil, banks of Thorn Creek, Thornton (O. E. Lansing, Jr. 1357).
4. *R. triangulivalvis* (Danser) Rech. f. Sandy soil; June. (*R. triangulivalvis* Rech. f.), (*R. salicifolius* Weinm. subsp. *triangulivalvis* Danser), (*R. mexicanus* sensu Fernald, non Meisn.). Common along Great Western Railway, Forest Park (Frank R. Filck 13 FM).
5. *R. crispus* L. (Curley dock or yellow dock) Fig. 4. Fields and waste grounds; nat. from Eur.; May-June. (*R. elongatus* Guss. in part). Waste grounds, Peoria (E. F. McDonald). Streets, Wheaton (W. S. Moffatt). Waste ground near Wady Petra (Virginius H. Chase). Streets and waste grounds, DuPage Co. (W. S. Moffatt 644). In *Carex* assoc. at foot of bluff, Waukegan (Frank C. Gates 3095). Lake Matanzas, Mason Co. (F. C. Gates 3722). Hocheiger's farm (J. Schneck). Wet grounds, Englewood (E. J. Hill), Athens (E. Hall FM). Bowmanville, Chicago (F. C. Gates 769).
6. *R. patientia* L. (Patience dock) Fig. 5. Rich open soil; nat. from Eurasia; May-June. Cold swamps, Spring Mills, Woodford Co. (F. E. McDonald). Dry roadside, N. W. of Wady Petra (V. H. Chase 70). Spontaneous from gardens, Augusta (S. B. Mead FM).
7. *R. britannica* L. (Great water dock) Fig. 6. Wet ground, Aug.-Sept. (*R. orbicularis* Gray), (*R. britannicus aquaticus* Pursh.), (*R. acutus* Hook.), (*R. sanguineus* Hook.), Slough, Algonquin (Wm. A. Nason). Wet ground, Hegenisch (E. J. Hill 92). Wet soil, Skokie Marsh, w. of Ravinia (Earl E. Sherff FM). Fountaindale (Herb. M. S. Bebb FM), Ringwood (Dr. Geo. Vasey FM), Peoria Co. (Dr. J. T. Stewart FM).
8. *R. verticillatus* L. (Swamp dock) Fig. 7. Wet ground; June-July. Back water swamp of Spoon River near Wady Petra (Virginius H. Chase 618). Ditch, W. of Wheaton (W. S. Moffatt 643). Shallow water, W. of Lombard (Moffatt). "Greenswale," DuPage Co. (Moffatt). Bernadotte, Fulton Co. (H. S. Pepoon). Muddy bank of Desplaines River, Riverside (Moffatt). Stagnant stream, Bowmanville, Chicago (Agnes Chase). Cypress Pond, Mt. Carmel (J. Schneck).
9. *R. obtusifolius* L. (Bitter dock or blunthead dock) Fig. 8. Fields and roadsides; nat. from Eur.; July-Aug. (*R. crispatus* Michx.), (*R. sanguineus* L.). Waste places, Peoria (E. W. McDonald). Wet ground, Anna (A. B. Seymour 3136½), Chicago (17748). In road in front of my home (J. Schneck). My barn yard, Mt. Carmel (J. Schneck). Shady waste places, near Waldron (E. J. Hill 186). Waste places, Peoria (F. E. McDonald). Carbondale (A. B. Seymour 31361). Moist soil, Union Co. (Geo. D. Fuller and Ralph Fisher 180 FM). Jackson Co. (G. H. French FM).
10. *R. fueginus* Philippi Fig. 9. Swamps, humid sand and shady places. (*R. maritimus* Meisn. apud), (*R. maritimus* L. var. *fueginus* Dusen.), (*R. persicarioides* Pursh. in part). Woodstock (Geo. Vasey). Woodstock (Frederick Brendel). Mascoutah (W. Welsch). Ringwood (Dr. Vasey FM). Cahokia (H. Eggert FM).