PRELIMINARY REPORTS ON THE FLORA OF WISCONSIN. XXVII. LENTIBULARIACEAE

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The aquatic species of *Utricularia*, the only representative of this family in Wisconsin, are characterized by bladders which function as traps to catch small animal life. In the terrestrial species these bladders are usually rudimentary or lacking. The Wisconsin species of the Bladderworts may be identified by the arrangement of the bladders and the leaves as well as by the floral characters. The scales on the flowering scapes and the bracts which subtend the flowers also show characters which assist in identification.

The maps of distribution included in this report are compiled from collections in the herbaria of the University of Wisconsin, the University of Minnesota, the Milwaukee Public Museum, the Gray Herbarium, The Field Museum of Natural History, Mr. S. C. Wadmond of Delavan, Wisconsin, and Mr. Newton T. Bobb of Northland College, Ashland, Wisconsin.

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A. Plants without bladders or very rarely with rudimentary, beaked, bladder; terrestrial on sand, mud or sphagnum bogs; a single stalk bearing a few flowers at the top; the bract subtending the flowers connate (Fig. 2), or with an inner pair of lateral bracts (Fig. 6).

B. Bract subtending the flower connate; pedicels long, extending beyond the bract; a number of vertical stems along a creeping stem; leaves with a few small spineless lobes; flower purple, single and resupinate. ................. *U. resupinata*.

BB. Bract subtending the flowers tapering to a sessile base and with an inner pair of lateral bracts; pedicels very short, not extending beyond the bracts; leaves entire, rarely seen; flowers yellow, one to five, not resupinate, spur of the corolla pendant and shorter than the lower lip. ................. *U. cornuta*.
AA. Plants bladder-bearing, but the bladder-bearing portion sometimes lost in collecting; aquatic; the bract subtending the flowers peltate (Fig. 5), cordate-sessile (Fig. 3), or tapering to a sessile base (Fig. 4).

C. Leaves absent, the bladders borne directly on the tips of the lesser stems which are whorled; scape scales absent; bracts peltate; corolla purple; pedicels erect in fruit. ... *U. purpurea.*

CC. Leaves present, the bladders borne on the same or separate stems from the leaves; stems not whorled; scape scales lacking or cordate-sessile, bracts cordate-sessile or tapering to a sessile base; corolla yellow; pedicels erect or recurved in fruit.

D. Ultimate segments of the leaves linear with the tip long-tapering from a definite point on the segment, flattened, midrib present in the ultimate segments; leaf segments dichotomously to trichotomously divided; scape scales and bracts cordate-sessile.

E. Bladders on separate stems from the flattened leaves (Fig. 1); leaves profusely denticulate-spinose (under a lens); spur of corolla appressed to and almost as long as the lower lip; pedicels ascending in fruit. ... *U. intermedia.*

EE. Bladders on flattened leaves; segments denticulate only at the tip or occasionally at the sides; spur of corolla short, almost lacking; pedicels recurving in fruit. ... *U. minor.*

DD. Ultimate segments of the leaves tapering the entire length of the segment, capillary although sometimes appearing flattened when pressed, midrib absent; leaflets pinnately or irregularly divided, dichotomous or single at the base; scape scales lacking or cordate-sessile; bracts cordate-sessile or tapering to a sessile base.

F. Plant stout; flowering scape more than 10 cm. high; the branches long, 3 dm. to over a meter in length, free floating except sometimes attached at one end; leaves dichotomous at the base, pinnately divided; bladders abundant; scapes stout, scaleless or with cordate-sessile scales, bearing 2-20 flowers; pedicels recurved in the fruit.

G. Leaf segments bristly serrulate with elongate spines (under higher magnifications); no cleistogamous flowers present; scapes 6-20 flowered with 1-5 cordate-sessile scales; bracts cordate-sessile. ... *U. vulgaris var. americana*

GG. Leaves spineless except for the tips of the segments; cleistogamous flowers present at the base of the scape and scattered along the stems; scapes 2-5 flowered, lacking scales; bracts tapering to a sessile base. ... *U. geminiscapa*

FF. Plant slender; flowering scape less than 10 cm. high; the bladder-bearing branches very short, a few cm. long; creeping over mud in shallow water; bladders sparse; leaves single at the base, sparingly and irregularly divided; scapes very slender, bearing one or two flowers; bracts clasping and tapering to a sessile base (Fig. 4); pedicels ascending in fruit. ... *U. gibba*
1. U. intermedia showing parts used in key x1

2. Connate bract of U. resupinata x8

3. Cordate-sessile scale of U. intermedia x8

4. Bract of U. gibba clasping and tapering to a sessile base x8

5. Deltate bract of U. purpurea x8

6. Bract of U. cornuta tapering to a sessile base and with an inner pair of lateral bracts x8
UTRICULARIA RESUPINATA B. D. Greene (Fig. 7, dots) Collected mainly in the northwestern part of the state.

UTRICULARIA CORNUTA Michx. (Fig. 9) Common across the northern part of the state and ranging down along Lake Michigan. One collection in Juneau County near Lyndon Station by J. J. Davis, June 27, 1936.

UTRICULARIA PURPUREA Walt. (Fig. 7, cross) Collected but once in the state in Upper Holly Lake¹ near Stone Lake, Sawyer County, September 4, 1931 by J. H. Steenis (No. 1044, No. 744).

UTRICULARIA INTERMEDIA Hayne. (Fig. 11) Common throughout the state except in the Driftless Area where the drainage is too complete for Utricularia except along the river bottoms which have not been much collected.

UTRICULARIA MINOR L. (Fig. 8, dots) Rare, in the northern part of the state and southward near Lake Michigan.

UTRICULARIA VULGARIS L. var. AMERICANA Gray. (Fig. 12) The commonest species throughout the state.

UTRICULARIA GEMINISCAPA Benj. U. clandestina of Gray’s Manual. (Fig. 8, cross) Collected but once in the state in pools in marshes near Sayner, Vilas County, by R. Hoffman, August 25, 1916. The specimen on which this report is based is in the Gray Herbarium.

UTRICULARIA GIBBA L. (Fig. 10) Collected in the northwestern sand barren lakes, at the Dells of the Wisconsin River, in the Fox River valley, and in Langlade County. One collection was made in 1894 in Lake Wingra, Dane County, by L. S. Cheney but this station is doubtless now extinct.

¹ For a discussion of Upper Holly Lake see Fassett, Rhodora xxxvi. 350-351 (1934).