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ADDITIONS TO THE FLORA OF SPRINGFIELD, MASSACHUSETTS

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THE flora of Springfield (Massachusetts) is unusually interesting for a combination of reasons. In the first place, it has already been worked over considerably by Mr. Luman Andrews and others, who have given us what they call a "preliminary list."¹ This list is a great encouragement for further work.

Moreover, the flora of Springfield represents an extension of that of the coastal plain, which dwindles rapidly northward from that point in the Connecticut Valley. Several species, like *Scleria reticularis* Michx., are found here, which otherwise stick very closely to the coastal plain.

The Springfield list also includes an interesting variety, from *Psilocarya scirpoides* Torr. to *Pogonia verticillata* (Willd.) Nutt. The habitats are equally diverse, ranging from sandy wastes and pond shores to rich woods and somewhat limy soil. Perhaps such a wide variety is not often met in so small an area, but within the limits of Springfield the sandy plain makes a transition to rich woods, which appear like islands in it, and predominate northward and eastward.

Finally the flora of Springfield is of special interest because the city is growing rapidly. Natural habitats are constantly being obliterated. I am informed that the habitats of some of the rarest species are in imminent danger of becoming the sites of apartment houses.

¹ Catalogue of the Flowering Plants and Ferns of Springfield, Massachusetts, by Luman Andrews and a Committee of the Springfield Botanical Society, Preface, p. 7.

Botanical exploration of this city ought to be pushed with vigor before it is too late. Otherwise in a few years, rare and significant species may become exterminated, never having been discovered there.

Mr. Andrews, who did the greatest part of the work of preparing the published list, expressed the hope that additions would be made subsequently. In September 1925, I spent one day in the region of Water Shop Pond. Last summer (1926), I spent two days exploring the eastern outskirts of the city, because Mrs. Grace P. Johnson, Director of the Springfield Museum of Natural History, informed me that that part of the city was one of those least known botanically. In these trips, I picked up several species which had not previously been collected in the city, and consequently are not listed in the Flora. To list all of the new stations found would make this article too lengthy. But the species new to Springfield, the more important new stations, and a few notes, may be of interest to others.

I wish to acknowledge the kindness of Mr. C. A. Weatherby in advising me and going over many of the determinations.

In the following paragraphs, I have marked all species not included in the list above mentioned with an asterisk, thus *. Species which are reported from a new locality and were known to occur in only one locality when the list was published, I have marked with a dagger, thus †.

This article deals principally with sand plain habitats, ponds, and pond-shores. Dimmock Pond was one of the first ponds visited. Here, unknown to me, Mr. C. A. Weatherby had found *Utricularia geminiscapa* Benj.* (*U. clandestina* Nutt.), in a slough north of the pond on July 23, 1923. That was the first time it had been found in Springfield. Here he had found also *Menyanthes trifoliata* L.† In the "Catalogue," this is recorded as "rare," which means as defined in the Preface that only one station is known.¹ Dimmock Pond is a new station. Well up on the shore in dry sand was another species new to the known flora of Springfield—a *Panicum*, which Mr. Weatherby identifies as *P. sphaerocarpon* Ell.* (No. G353).² Close to the water's edge in sand was *Juncus pelocarpus* Mey. (No. G385).†† The only station for this recorded in the Catalogue is Red House Crossing Pond.

¹ L. c., p. 6.

² The numbers refer to specimens collected by the author.

† Specimen in the Herbarium of the Springfield Museum of Natural History.

While riding along the shore of Water Shop Pond, I was attracted to a crater-like depression which contained a bog with a mass of *Ilex* and *Cephalanthus*. There, on top of *Sphagnum*, barely in the water and shaded by the *Cephalanthus* was an abundance of *Utricularia geminiscapa* Benj.,†‡ again (No. 524). Here the plants were fruiting well, enabling me to make a good collection of specimens. Now that it has been found in two localities rather widely separated, perhaps further careful search will reveal it in still more places.

In an attempt to cover a large territory, only a very few minutes were allotted to Loon Pond. But in the turf close to the shore was discovered a little mat of *Eleocharis tenuis* (Willd.) Schultes.*† (No. G366). Not far away on the shore, *Juncus pelocarpus* Mey.†‡ appeared again (No. G384). Washed up on the shore were lying some strange-looking basal rosettes of some plant without inflorescences, but with terete leaves. Not suspecting at the time what it was, I gathered a few of these sterile specimens. They subsequently proved to be *Sagittaria teres* Wats.*† (No. G345). A species adhering so strictly to the coastal plain was scarcely to be expected in so remote an inland extension. But Professor M. L. Fernald has confirmed the determination. What further interesting discoveries will the pond reveal in the future?

The pond on the North Branch of Mill River is evidently quite new. It is not shown on any map that I have seen. The river has been damned up to form a pond for an angler's club. Aquatic species seem scarcely to have gotten a start as yet. But *Juncus pelocarpus* Mey.†‡ is there already (No. G386). *Cornus Amomum* Mill.,* which has not previously been known to Springfield, was growing near the shore. (No. G442). Likewise, *Vaccinium corymbosum* L.,*† new to Springfield, was growing here (No. G447). On a bank above the pond was a fine growth of *Lycopodium clavatum* L., var. *megastachyon* Fernald & Bissell* (No. 616).

At this pond, and at the South Branch of Mill River (as will be noted below), there are signs of the soil undergoing a transition from the acidity of the sand plain to a sweet soil such as is very marked in the town of Wilbraham, next to the eastward from Springfield. The tributaries of both branches of Mill River rise, for the most part, in the Wilbraham Mountains, which accounts for the quality of the soil along their courses. Here, on the North Branch, the alkaline tendency was evidenced by the presence of such species as *Pedi-*

cularis lanceolata Michx. and *Solidago patula* Muhl.* (No. 583). The latter was thriving in good quantity in a meadow close by.

Along Parker Street, close to the road, I came upon one sickly clump of *Juniperus communis* L., var. *depressa* Pursh*† (No. G332). As this land is being boomed for house lots, probably this species will soon be exterminated there,—the only place it is known to grow in the City.

In the angle formed by the junction of Parker Street and Wilbraham Road, there is an outcrop of red sandstone. The soil is very reddish. Here in an open field were vast quantities of *Juncus secundus* Beauv.* (No. 587).

Another outcrop of red sandstone appears on the shore of Venturer's Pond. *Juncus pelocarpus* Mey.† was growing in the sand here near the water's edge. (No. 461). On the west side, the pond is somewhat muddy. In the mud, *Brasenia Schreberi* Gmel.† was growing and fruiting abundantly, in water that was scarcely a foot deep (No. 469).

Almost between Venturer's and Bass Ponds, along Plumtree Road, a very few plants of *Sericocarpus linifolius* (L.) BSP.† appeared. (No. 548). This is another station in Springfield for a coastal plain species listed as "rare."

Bass Pond is lined along the east shore by all sizes of fragments of reddish rock and a steep bank. In this habitat, grew *Thelypteris marginalis* (L.) Nieuwl.‡ (No. G329). (*Aspidium marginale* (L.) Sw.) For a long time, it has been known that this species grew or had grown in Springfield, but the locality was no longer known.¹ In the sand on another part of the shore was the omnipresent *Juncus pelocarpus* Mey.†† (No. G383). In the thicket which lined the shore marking the high water line, were again *Vaccinium corymbosum* L.*‡ (No. G448) and *Cornus Amomum* Mill.*‡ (No. G440).

The most productive locality which I visited was the Mill Pond of the South Branch of Mill River. For the third time, I collected *Cornus Amomum* Mill (No. G441)*‡. From a row boat, I reached a dense growth of *Sparganium americanum* Nutt.†† (Nos. G333, G334). Associated with it, in deep muck, was a growth of *Potentilla palustris* (L.) Scop.†† (No. G324). This species was found on the shore of Water Shop Pond in 1878, but no one knows just where.² The Mill

¹ Catalogue, p. 15.

² Catalogue, p. 109.

Pond is a new locality, and the only one known exactly. The habitat on Water Shop Pond may have been destroyed, or for other reasons, it may not now grow there. Springfield seems to be the only known station for this species in the Connecticut Valley in Massachusetts.

This Pond yielded also *Potamogeton natans* L. (No. G341)*† and *Ceratophyllum demersum* L.*† (No. G414). In the deeper water (about 5 feet) were discovered several clumps of *Potamogeton obtusifolius* Mertens & Koch*† (No. G342). Only one specimen could be found with fruit, but Prof. Fernald has examined it and confirmed the determination. This species is further evidence of a transition in the constitution of the soil in the eastern part of Springfield from acid to alkaline.

It will be noted from the above that *Juncus pelocarpus* Mey., a typical species of the coastal plain, reported in the "Catalogue" from only one locality, occurs again and again. The only ponds which the author visited where he failed to find this plant were Water Shop Pond and the Mill Pond of South Branch. Probably it occurs there also. Red House Crossing Pond was the one locality previously known. The author found it at the following: Venturer's, North Branch, Dimmock, Loon, and Bass Ponds.

Other collectors have made a number of additions to the flora of Springfield, since the publication of the Catalogue. With the permission of Mrs. Johnson, who has kindly given me the data, I publish herewith those additions.

The following were collected by Dr. Walter H. Chapin:

Polypodium vulgare L., Mill Dam, Sixteen Acres.

Thelypteris Phegopteris (L.) Slosson,* (*Phegopteris polypodioides* Fée), near McKnight Glen beside New England R. R.

Allium vineale L.,* Alexander Lot, corner State and Elliott Streets.

Carya alba (L.) K. Koch, edge of woods near Rimmon Avenue.

Carya ovalis (Wang.) Sargent (*C. microcarpa* Nutt. of Gray's Manual, ed. 7), var. *odorata* Sargent,* Oak Grove Cemetery.

Betula lutea Michx.,* edge of woods near Rimmon Avenue.

Acer platanoides L.,* Locust Street Extension.

Convolvulus arvensis L.,* waste land, Albany Street.

Orobanche uniflora L.,* near Old Mill Dam, South Branch.

Lonicera Morrowi Gray,* Locust Street Extension.

Reseda alba L.* was collected by Mrs. Grace P. Johnson, west of the Museum of Natural History.

Pogonia verticillata (Willd.) Nutt. was collected in Springfield Cemetery, in 1847, by Mr. Charles Goodrich.

Viola sagittata Ait., var. *ovata* (Nutt.) T. & G. (*V. fimbriatula* Smith) was collected in 1868 in Springfield Cemetery by the same collector.

Mr. C. A. Weatherby has made the following addition beside those mentioned above.

Rubus allegheniensis Porter,* dry woods near Dimmock Pond.

In all this article lists 24 species or varieties not previously reported in Springfield; and one or more new localities for 7 species, previously known from only one station in Springfield.

NORTH AMHERST, MASSACHUSETTS.

CONCERNING DILEPYRUM

KENNETH K. MACKENZIE

IN an article in RHODORA (29: 158) Mrs. Chase takes exception to Mr. Farwell's use of *Dilepyrum* for *Brachyelytrum*. We are informed by her that Michaux's first species (*D. aristosum*) is a mystery which "has not been identified." However, it may be pointed out that its habitat is given by Michaux as "in umbrosis sylvis Georgiae et Carolinae" and his description commences "*D. universe pubens*." His description applies to the grass appearing in our manuals as *Brachyelytrum erectum* (Schreb.) Beauv., and I am sure that Mrs. Chase cannot produce from the very large grass collection at Washington any other species of grass from Georgia or Carolina, to which the description does apply. Fortunately, for our purposes, grasses with one-flowered spikelets "*universe pubens*" are very few in number in our flora.

Brachyelytrum is a grass which I have rather disliked to collect, because the spikelets have a habit of breaking up when the material is at all mature. When this breaking up takes place, the two glumes remain attached to the pedicel and the rest of the spikelet breaks off. This is the condition in which one gets this grass very frequently. It is especially evident when one deals with unmounted herbarium material. Then many specimens will show numerous broken-off spikelets and the very natural thing to do is to study these. Assuming that Michaux had the species in this condition, it is easy to see that he (or Richard) made up his description from the lemma and palet of



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