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GETTING ACQUAINTED  
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MENDON PONDS PARK

FOREWORD

This booklet has been prepared to help the visitor enjoy and understand the natural beauties of Mendon Ponds Park. It contains a collection of articles written by qualified members of the Rochester Academy of Science, and is one of a series of similar booklets on natural science subjects as exemplified in the environs of Rochester, New York.

Drawings by VERA K. BOARDMAN, F.R.A.S.

Aerial photographs by MARTIN R. WAHL

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## PREFACE

The contents of this booklet have been carefully prepared by the Rochester Academy of Science in order to bring to its readers a simple and interesting history of the unusual and attractive natural features found within Mendon Ponds Park.

This park is outstanding for its unique topographical structures and for its many geological formations. A complete permanent record of its naturalistic features will prove of high educational value as a source of reference not only to students but to everyone interested in the rich beauty of the out of doors. The Monroe County Parks Department realizes the great significance of Mendon Ponds Park as a segment of the overall park system . . . the material as compiled in this booklet will serve as a further incentive to safeguard and to preserve Mendon Ponds Park in its natural state.

The members of the Rochester Academy of Science and all of those who have worked on the project are to be highly complimented for the many hours they have devoted to producing a booklet of such high technical value. It will remain a testimonial to them in the performance of an everlasting service.

WILBUR E. WRIGHT  
*Director of Parks*

Rochester, N.Y.  
May, 1965

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## INTRODUCTION

Mendon Ponds Park is located about 10 miles south east of the center of Rochester on land lying in both Pittsford and Mendon townships. The original 1,650 acres was opened to the public in 1928 as the largest park in the Monroe County Park System. Additional farm land has recently been added and will be developed in the future to provide a golf course and other recreational facilities.

The first inhabitants of the Mendon Ponds area were members of an early race of Indians. These aborigines were hunters and fishermen who came from the northwest and gradually spread out over eastern North America. They were followed in time, by more sophisticated Indians who developed organized tribal government, the art of pottery making, and the use of bow and arrow. One of their trails (probably the best preserved Indian trail in the state) lies along the top of the esker east of Kennedy's bog. It is still a lovely walk.

The warlike Seneca Indians, largest nation of the Iroquois Confederacy, developed in this area between the years 1200 and 1300 A.D. The Senecas hunted and fished in these hills and streams until the white fur traders and finally the white settlers moved in. The first of these settlers was Joshua Lillie, who purchased and cleared land here in 1817. His grave is just inside the park boundary on Wilmarth Road.

Hundred Acre Pond is a popular bathing spot, particularly for children. It has been stocked with

large mouth bass, and the fishing is reportedly fairly good. Picnicking is a favorite summer pastime for families and groups. But the best ways to fully appreciate the park are to visit the Nature Center, walk the swamp nature trail, and try others of the 13 beautiful miles of trails along the steep-sided eskers, through the deep kettles, and beside the glistening ponds.

## MENDON PONDS PARK NATURE PRESERVE

Donald R. Yeager, Director of Interpretive  
Nature Education  
Monroe County Parks Dept.

Mendon Ponds Park is one of ten parks administered by the Monroe County Parks Department. It is the responsibility of the Park Department to preserve these areas in their natural state where they exist wild. Therefore at Mendon Ponds they have set aside a nature preserve of 550 acres in the southern portion.

Because of its unusual and varied natural features this area has been the subject of many professional papers by various authors and thoroughly studied by students of glacial geology, botany, ecology and archeology.

Much emphasis has been placed upon permanent Interpretive Nature Education installations in this park. Because of its success, nature programs and trails are now being presented in other Monroe County parks.

The Parks Department has developed a Nature Center where casual visitors and organized groups are welcome. There is plenty of parking space. A variety of exhibits is on display in this building.

The Nature Center contains seasonal exhibits of mounted specimens such as water fowl, predatory birds, song birds and mammals common to the area. The glacial geology of the park is interpreted by several exhibits explaining the unusual features, including "kames", "eskers" and "kettle-holes" in detail.

Other exhibits tell the story of prehistoric man's early occupation of this park. Exhibits related to

the later historical period concern the conflict between Seneca Indians and the French.

Bird feeding programs are in effect throughout the four seasons. It is a delightful experience for the winter hiker to visit a feeding station, scoop up a handful of sunflower seeds, and watch the chickadees swoop down to feed out-of-hand.

Six miles of nature and hiking trails exist in the Nature Preserve. There is at least one "self-guiding" nature trail for group, individual or family enjoyment. Self-teaching aids ranging from simple plant labels to elaborate glass-enclosed panels are installed along the trail. They interpret bird life, lichen and moss colonies, nesting sites, beaver populations, tree growth, animal tracks and a host of other features.

The most popular trail is the "Swamp Trail". It is about one half mile long and takes an hour or less to negotiate. It is not a difficult trail, but walking shoes are recommended when hiking this, and all other park trails.

Trails wind over glacial terrain, cross swamps, invade hardwood and coniferous forest, and follow the shores of spring-fed lakelets and beaver ponds. Hikers on the trails encounter wild-flowers of the fields, swamps and woodland. All of the common mammals of eastern North America are present except for otter, bear, and wildcat. Amphibians, turtles and reptiles are present. **THERE ARE NO POISONOUS REPTILES IN THIS PARK.** It is **POSITIVELY FORBIDDEN** to remove anything, dead or alive, from any County Park.

**"TAKE NOTHING BUT PICTURES AND INSPIRATION AND LEAVE ONLY FOOTPRINTS AND GOODWILL".**

Domestic animals and pets are FORBIDDEN in the Nature Preserve.

Throughout the year, a staff of naturalists provides Interpretive Nature Education programs which are free to the public. Such programs concern leadership in nature education, tree identification, and glacial geology.

A naturalist is on duty at the Nature Center every day except Monday. He is there to serve you and answer your questions. Visit him often, for he can tell you of new wild-life visitors and occurrences in the Nature Preserve, to make your visit more enjoyable.

While you are hiking the nature trails take time to stop and reflect on the natural setting that has been preserved for you. As you look over the glacial hills and ponds in Mendon Ponds Park you should now have a somewhat deeper insight into the patterns of nature. *YOU* are one of the most important parts of this pattern, for man's preservation or wise use of the land and what it produces, is a main controlling factor affecting all life, here and everywhere. There is indeed a dramatic pattern involving the rocks, soil, plants, animals and weather. Perhaps now you know that there is more to a tree or an animal than meets the eye, for all things in nature's pattern are related in one way or another.

## THE GEOLOGY OF THE MENDON PONDS AREA

David E. Jensen, F.R.A.S.

The shape of the land in the Mendon Ponds Park area includes a unique and interesting variety of glacial features that were developed when New York State was being held in "cold storage" during the late stages of the Ice Age about 10,000 years ago. These glacial land forms include kames, kettles, and eskers.

The Ice Age began hundreds of thousands of years ago when great accumulations of snow began to build up in Quebec and Labrador. As this mass of snow piled up it compacted into ice and spread forth in all directions as a great sheet of ice, and became a continental glacier.

One large lobe of this ice sheet spread fanwise southward to cover most of New York State and moved into northeastern Pennsylvania. Very little is known about the thickness of the glacier, but in the Mendon Ponds area, it was well over 1,000 feet thick at times.

After the ice sheet reached the Pennsylvania region, climatic changes took place with a gradual warming trend. The forward advance of the ice halted and, as slow melting took place, the southern edge of the glacier began to recede northward.

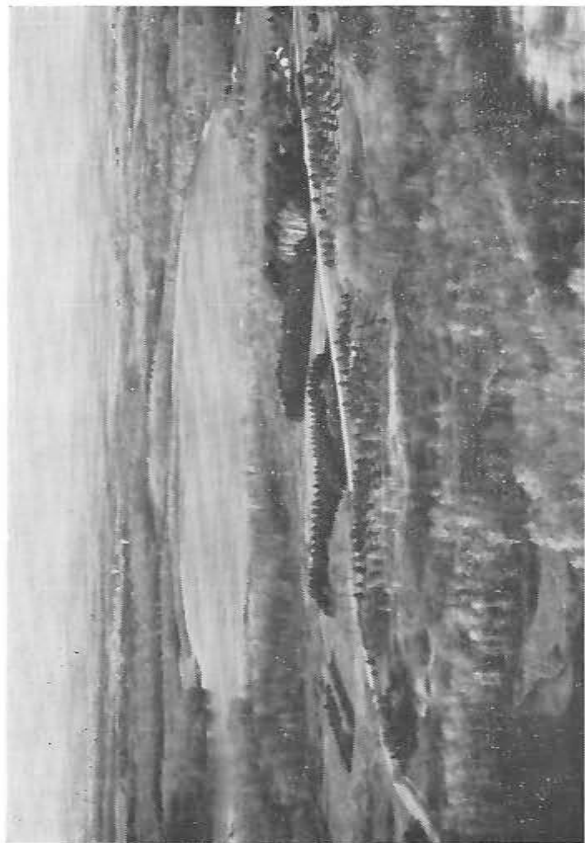
As the glacier withdrew northward, glacial meltwaters merged with northward flowing streams to form large inland lakes between the edge of the glacier on the north, and the highlands of the south. The warming trend of the waning ice age was not continuous. After a long warm period during which the ice front retreated northward, there would be

a long period of time when climatic temperatures would be relatively stable and the glacier would stagnate. Then another warming trend would follow and the ice front would withdraw northward again. This cycle was repeated several times. Occasionally there would be a reversal of the warming trend and the ice front would move southward before coming to rest and a further retreat.

A succession of glacial lakes that formed along the southern margin of the glacier have been identified through elevations of their terraces, beach deposits, channel outlets and deltas. Eight of these glacial lakes have been recognized in the Rochester area.

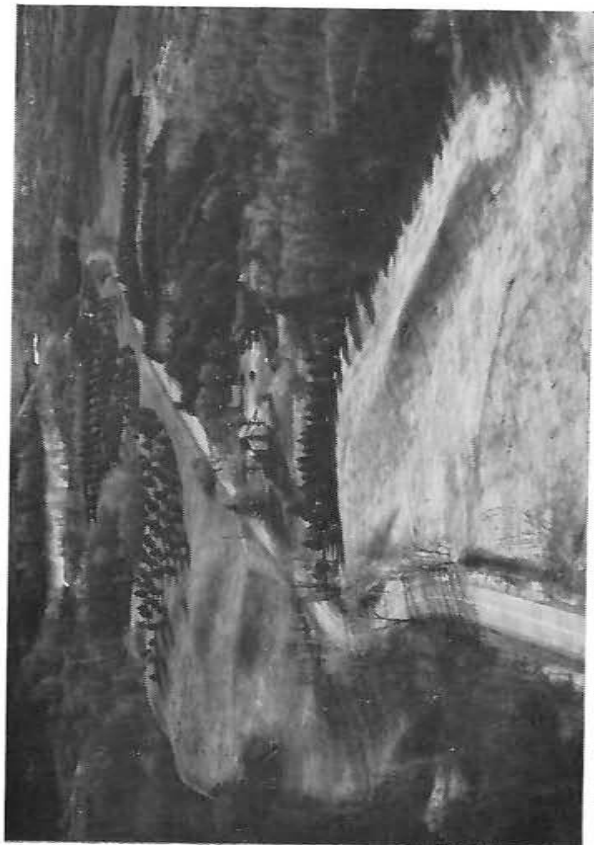
As a glacier moves over the land, it acts like a giant bulldozer, scraping loose rock and soil from the bed rock. The ice at the margin of the glacier becomes heavily charged with this rock debris which is ground and crushed as the glacier moves along. Large boulders become broken into small cobbles and gravel. Their sharp edges become abraded and rounded. Glacial cobbles and gravel are typically sub-angular with rounded edges, while stones along a stream or lake shore are more rounded. Small stones are pulverized by a glacier and are converted into silt and clay, called "rock flour".

At times this accumulation of rock debris becomes too great for the glacier to move it ahead. The ice sheet then rides over the pile of debris, shaping it into a long oval hill, oriented in the direction of movement of the glacier. These "whale-back" mounds are called "drumlins". There are over 10,000 drumlins in New York State, with the greatest concentration around Palmyra and Clyde. These drumlins are sometimes a mile long and have rather



*View looking North towards Hundred Acre Pond, Round Pond and Lost Pond in foreground, surrounded by Kames, and separated by Tamarack and sedge bog.*





*Kame topography along Douglas Road, looking South, Park Headquarters in center, Round Pond in background.*

steep north ends and more gradual slopes at the southern ends.

There are no drumlins in the Park area though there are several fine ones nearby including Methodist Hill on the east side of West Henrietta Road about  $3\frac{1}{2}$  miles south of the Barge Canal.

It is possible that drumlins may underlie some of the kame hills. The elongated hill east of Deep Pond may have a drumlin base on which glacial streams dropped their sand, gravel and clay.

When the ice last began to melt and retreat northward, its load of rock debris was either dumped in the water of the ice margin lakes or carried by glacial streams into the lakes. At one stage, the ice front came to a temporary rest a short distance north of the present park area, and a large glacial lake, Lake Warren II extended from the southern edge of the ice south to the Bristol Hills.

Streams flowing from a rapidly melting glacier often become torrential and have great carrying power. The rock debris, freed from the melting ice, is dropped into the rushing waters, carried a short way, and dumped in piles on the bottom of the ice margin lake. These piles, called "kames", are conical hills or short ridges consisting of irregularly stratified deposits of gravel and sand. The structure of a kame is well shown in a gravel pit in a large kame just north of the Park, southwest of where Clover Street passes over the New York State Thruway. The gravel in the Park area consists of red Medina sandstone and gray limestone from rock outcrops of the Rochester region with many pebbles of granite and gneiss from Canada.

Some glacial streams flow in deep crevasses or in tunnels in the margin of the glacier. If the stream

channels are narrow and the rock load too great for the stream to carry, the stream channel will become plugged with the rock debris. Long sinuous ridges, often resembling railroad embankments will result. These ridges of glacial gravel, usually coarse and poorly sorted, are called "eskers".

There are two fine eskers in the Park. One is on the west side beginning near the kame gravel pit mentioned above, and extending in an irregular ridge southward to an outwash fan west of Deep Pond.

The other esker lies east of Douglas Road and ends in an outwash fan at Woodchuck Hollow. Both eskers are very irregular in form, and are so surrounded by kames, that they are not easy to recognize.

There are many ponds and hollows in the Park area. A few of these, like the Devil's Bathtub, occupy deep basins. These ponds and hollows are called "kettles", and contribute to the "kame and kettle" topography which is so well exhibited in the Park area.

When a glacier melts, large blocks of ice break off from the ice front. If the glacier fronts on an open sea, these ice blocks become icebergs and float away. When these ice blocks drop off into a shallow lake, they have no place to go and become stranded. The glacial streams continue to pour their loads of rock debris into the lake. This debris may surround and sometimes cover the huge blocks of ice. The stranded ice blocks gradually melt and the surrounding and overlying rock debris slumps, forming basin-shaped depressions called "kettles". The Devil's Bathtub is a classic example of a kettle, one of the best examples in the world.

## FLOWERS OF WOODS AND FIELDS

Bernard E. Harkness, F.R.A.S.

Plant Taxonomist

Monroe County Parks Dept.

In this section we follow the growth and flowering of the more noticeable plants in Mendon Ponds Park from spring to fall. Come early or late in the season, there is always much of interest to observe. Sometimes soil and weather conspire to upset our "official" calendar, but the following discussion will guide you in finding and knowing the flowers in woods and field.

### EARLY SPRING

After the first warm days of the year have melted the snowbanks, you will feel like making a trip to the park to see what may be stirring. Even in February, if it is unseasonably spring-like, twisted hoods in mottled bronze and green will be pushing out of the muck in wet woods areas, scarcely to be recognized as the flowers of *Skunk Cabbage*. The stout hood protects an inner tongue-like stalk on which the small flowers attract early flies, which, by distributing pollen, enable the plant to produce the hard, green, conical fruits that you can find late in summer. During the spring the plant expands the lush green leaves which seem to fill the swampy woods.

Now, before the rush of spring growth starts up, is the time to look for over-winter rosettes. In the fall many plants of various relationships produce around a center point



*Skunk  
Cabbage*



Common  
Mullein



Shadbush



Hepatica



Virginia  
Spring  
Beauty



Rue  
Anemone



Marsh  
Marigold

a ring of leaves which stay green under snow cover all winter. The roots may be fine and stringy or thick and fleshy but all send up later in the spring or summer a flowering stalk in the center of the ring of leaves. Flowering and seeding may end the life of the plant although some kinds will repeat the performance year after year. On dry hillsides look for the grey-green, furry rosettes of *Common Mullein* which is called *Flannel-plant* in Europe. Return in summer to see its tall yellow flower spikes.

#### APRIL (SOMETIMES)

The first flush of spring flowers comes when the trees of the woodlands are still bare of leaves, but when white flowers on *Shadbush* are showing all through the upland woods. Underneath them search for *Hepatica*, a plant with leathery over-wintering leaves now pushing forth the conspicuously hairy buds of its white, bluish or pinkish flowers ahead of the new leaves. A carpeter of the ground early in the season is the pink-veined white flower of *Virginia Spring Beauty* which grows only a few inches high and has but two narrow leaves to the stem. Also a delicate woods plant, is the *Rue Anemone* with pure white flowers on wiry stems and with leaves made up of several rounded leaflets. The wet places in the woods are suddenly yellow with the golden flowers of *Marsh Marigold* whose good-sized round leaves at this season are the "cowslip greens", relished by many folks. A misty yellow haze appears also in the leafless

swamp at this time from the small, round clusters of flowers along the branches of *Spice Bush*.

#### EARLY MAY

Now it is *Trillium* time. Everything, leaves and flower parts, by threes is the watchword. *Wake Robin* is the dull red one but the *Large White Trillium* is the one that seems to grow everywhere, so long as it is not picked, that is, because the three leaves high up the stem must be left to furnish food to the bulb for next year. Closer to the ground are the *Two-leaved False Solomon's-Seals*, or *Canada Mayflower* very abundant in some areas, sending up short stems of fragrant creamy-white flowers. On the steeper hillsides from a ring of small gray-green leaves a sticky hairy stalk bears the branched flower-stems with tiny white flowers of *Early Saxifrage*.

#### LATE MAY

Now with warmer weather the whole park breaks into life. Leaves of the oaks are the size of a mouse's ear, the traditional sign for the end of frosts. The woodland plants hasten into bloom as if to share the sunlight before the full grown leaves of the trees overhead absorb it all. *Jack-in-the-Pulpits*—the fanciful name for the folded over hood and upright flower-bearing projection—are easily found since, with their three-part leaves, they may stand two feet high. *Crinkleroots*, too, stand well above the dead leaves of the forest floor to show their spray of white flowers



Spice Bush



Trilliums



Canada  
Mayflower



Early  
Saxifrage



Jack-in-  
Pulpit



Crinkleroot



Mitrewort



False  
Mitrewort



Blue Cohosh



Mayapple



Early  
Meadowrue



Bristly  
Buttercup

and well-toothed green leaves. A tinier plant is the *Mitrewort* with leaves at the ground. Watch for it on a mossy bank and then look closely at the tiny flowers on a long stem to see that they are as finely cut as a snowflake. *False Mitrewort* is a coarser plant with a clump of hairy leaves, the flowers are on six inch stalks and have small white petals, the color coming from a lot of fluffy stamens, sometimes orange, sometimes yellow. With greenish-bronze flowers, hence not too conspicuous, *Blue Cohosh* is rather abundant in undisturbed woods; later bright blue fruits appear in better contrast to dark green, round leaflets, many to a stalk. Usually in a considerable colony, since it travels underground each year, *Mayapple's* waxy white-petaled flower, with golden contrasting center parts, nods partly hidden by two flat umbrella-leaves that have a pattern of deep slashes. *Early Meadowrue* is a rather common woodland plant but it adds little color as the flowers look to be just a cluster of greenish stamens hovering over the delicate foliage. The *Bristly Buttercup* is a low, almost creeping, plant with hairy finely cut leaves and a few of its bright orange flowers open at a time. You will find it along the paths as it seems to like the more open areas. Along the paths, too, but at the top of the ridges grows *Wild Columbine* with flowers in the bright combination of red and yellow and with five long spurs. The foliage is made up of several round leaflets, a compound leaf, as many of the spring-flowering plants

have. *White Baneberry* and *Red Baneberry* cannot be told apart very easily now when in flower. Both will be in the deeper woods, the flowers are white bunches of many small individual ones; the leaves are large and made up of many irregularly toothed leaflets. Look for the shiny red berries later of *Red Baneberry* or the dull white ones with a dark spot at the tip which gives the name of *Doll's Eyes* to the *White Baneberry*. Both should be left alone as they are poisonous.

Still in the bountiful month of May deep in the hollows of the hills where leaves have accumulated and built up a good depth of soil there are large patches of the heart-shaped leaves of *Wild Ginger*, now hiding the brownish-red flowers whose three petals curve backwards. Also appreciative of the richer spots in the woods is a plant with several leaves in a ladder arrangement and tight to the stem; its flowers, hanging bells, pale yellow in color—one or other of the *Bellworts*. Over wide areas of the hillsides you will find a scattering of single-bladed leaves, green with brown mottlings, with only an occasional stem bearing a nodding flower, yellow inside and bronzy outside the bell, to indicate a mature plant of the *Yellow Adder's Tongue*. *Violets* will be here and there during May, the *Downy Yellow* in the upland woods, the *Marsh Blue* in the wetter spots along with one or more of the tiny white ones. *Wild Geranium* will keep you company along the paths, it has dissected leaves and five lavender-purple petals making



Columbine



Baneberries



Wild Ginger



Bellworts



Yellow  
Adder's  
Tongue



Violets



Wild  
Geranium



Wood Rush

a round flower outline. Broad, glossy, grass-like leaves and a cluster of flowers showing mostly yellowish stamens distinguish the *Wood Rush*. Along the paths by the pond margins in some few spots there will be the *Golden Ragwort* with its leaves cut in a ragged fashion but topped with bright gold daisies, several to the stem. From the base of the plant you will find rounded leaves often showing purplish undersides.

The open fields now in May before the growth of grasses hide them, show great areas of gray leaves topped by stems of the same color bearing dull white puffs of flowers which are the *Ladies' Tobacco* or *Pussy's Toes*.



Golden  
Ragwort



Pussy's Toes



Golden  
Alexanders



Va. Water-  
leaf

#### JUNE

In much the same wet areas with Golden Ragwort but flowering a little later is *Golden Alexanders*, several groups of tiny yellow flowers in flat heads on stalks two feet or less high. Its leaves are of toothed leaflets twice divided in threes. In the shade of trees where there is good soil, *Virginia Waterleaf* may spread over a good bit of ground. Though its flowers are slightly tinted lavender your eye may be mostly taken by the coarsely cut leaves which are silvery-mottled as if by water stains. *Marsh Skullcap* is a small blue



Marsh  
Skullcap

flower, tubular with two lips extended, on a leafy stem and to be found along the wetter sections of the trails. *Harebell* or *Bluebell* will be in the clearings of the upper trails on somewhat dry banks showing clear blue, wide open bells which seem to dance on wiry stems. Its leaves are of two sorts: narrow, thin ones on the flower stems and small round ones from the base of the plant. In the dryer sections of the woods there are patches of plants somewhat resembling ferns but distinguishable in June by stems of flowers, yellowish and tubular with spreading lips. This plant is called *Lousewort*, or more elegantly, *Wood Betony*. In the fields two plants brought over from Europe have found room to expand vigorously. On the dryer roadsides and fields *Butter-and-Eggs* or *Yellow Toadflax* sends up its pleasing combined yellow and orange flowers which are tubular, spurred and two-lipped. Its leaves are narrow and light green in color; it usually makes a clump with several flower stems and if mowed off it recovers to flower again in the fall. In the wet meadows *Tall Buttercup* fairly makes them golden with a multitude of five or more petalled flowers above the deep green much-cut leaves. Where fertility has been exhausted in the fields and on newly scraped roadsides the European weeds, *Orange Hawkweed* and *King Devil* or, as often called, the *Red* and *Yellow Devil's Paintbrushes* spread themselves over great areas. The bristly hairy leaves and the bright tufts of flowers identify



Bluebell



Lousewort



Butter-and-  
Eggs



Tall  
Buttercup



Hawkweed  
or  
Devil's  
Paintbrush

these colorful invaders. In the woodlands is a native cousin, not at all aggressive, the *Rattlesnake Weed* which has very decorative red-veined leaves flat to the ground from the center of which we have now its fluffy orange flowers on slender stems.



*Rattlesnake  
Weed*



*New Jersey  
Tea*



*Marsh  
St.  
Johnswort*



*Spreading  
Dogbane*

### JULY

A small shrub adds interest to the trails through this month. *New Jersey Tea* is rather plentiful along the tops of the hills, a low, dense bush flowering in clusters of small white flowers. Along the paths near the ponds *Marsh St. Johnswort* is showing its yellow flowers with their abundant golden stamens. Along the ridges *Spreading Dogbane* is rather plentiful. It is a neat appearing plant with smooth stems and opposite leaves with the small pink flowers, many to a branching stem, on plants two or three feet high. On the sandy open areas of the hilltops, *Butterfly Weed* is one of the most colorful plants in July. It bears a cluster of brilliant orange-yellow florets close together at the top of a twelve-inch hairy stem. Upper leaves are alternate, lower ones opposite, dull green and coarsely hairy. Several of the *Tick Trefoils* are scattered through the park, distinguished by varying



*Butterfly  
Weed*



*Tick Trefoil*

patterns of leaves-in-threes and tiny pinkish sweet-pea-like flowers on long stems. These are followed by the notched pods that stick like ticks to your clothes on fall walks. *Heal-all* or *Self-heal* makes its medicinal offer along almost all of the paths except the highest and driest. The plant makes mats on the ground, although the lilac and white two-lipped flowers are on upright stems of six inches or so.

### AUGUST

The heat of August brings the crowds to the beach area at Hundred Acre Pond, but time may be found for retracing your steps about the trails you explored in the spring. In moist areas and at the edge of the woods there should be many blue spikes of *Great Lobelia*. Along the bases of the banks and in the ditches, *Boneset* with its roughened narrowed leaves opposite on the stem and set tightly to it will be showing flat heads of fluffy off-white flowers. *White Snakeroot*, though detrimental to our health if taken in milk after cows have pastured on it, is harmless if left in the open woodlands where it often seeds in abundantly. It may be recognized by its loosely separated clusters of clean white flowers, and the opposite leaves wide toward the base and long pointed with irregular margins. On the dryer banks in more acid soils where there is less competition from other plants—the *False Foxglove* with sticky hairs over practically the whole plant has funnel-like yellow-to-bronze flowers and finely-cut, ferny leaves on stalks



*Heal-all*



*Great  
Lobelia*



*Boneset*



*White  
Snakeroot*



*False  
Foxglove*

two feet or more high. The fields are not without color—the yellow given prominence by the petals surrounding the brown center cone of *Black-eyed Susan*. Along with this European immigrant we have the soft lavender shadings of *Wild Bergamot* whose square stems and opposite leaves as well as the flower, divided into an upper and lower lip and widely spread apart,—mark it as one of the mint family. Another traveller from Europe common in the fields is *Moth-Mullein* whose rather dainty round yellow flowers face outward from a tall stem clothed with arrow-shaped leaves.



*Black-eyed  
Susan*



*Wild  
Bergamot*



*Moth  
Mullein*



*Goldenrod*

#### SEPTEMBER

When *Goldenrod* appears in the fields the rest of the interesting fall flowers soon follow. *Silverrod*, where the gold has become a creamy-white, grows from one to two feet high—a long wand of flowers on open wooded hillsides. Some sixteen other species of goldenrod have been collected in Mendon Ponds Park, ranging from the boggy woods to the open fields and roadsides. Compare the different forms that distinguish the different kinds.

Asters are another complex group in the fall. *New England Aster* of the roadsides, one of the showiest, is hairy-leaved and



*Silverrod*



*New  
England  
Aster*

stemmed, with mostly deep purple flowers on tall stalks. *Big-leaf Aster* with white flowers is common in the moister wooded areas. Similarly white in flower is the *White Wood Aster* of the upland areas.

Other plants to look for include *Turtle-head* with its curious chalk white flowers swollen into an animal shape, several on a two-feet-or-more high stem with opposite leaves, growing mostly in the wet spots. *Horse Balm* or *Richweed* is frequently found in undisturbed soil deep in the woods where its ragged flowers in much-cut yellowish parts still reveal the two-lipped pattern of the mints, which its coarse leaves also confirm by a citronella odor. The swampy areas are pink with the flat tops of an Indian's namesake, *Joe Pye Weed*.



*Big-leaf  
Aster*



*White Wood  
Aster*



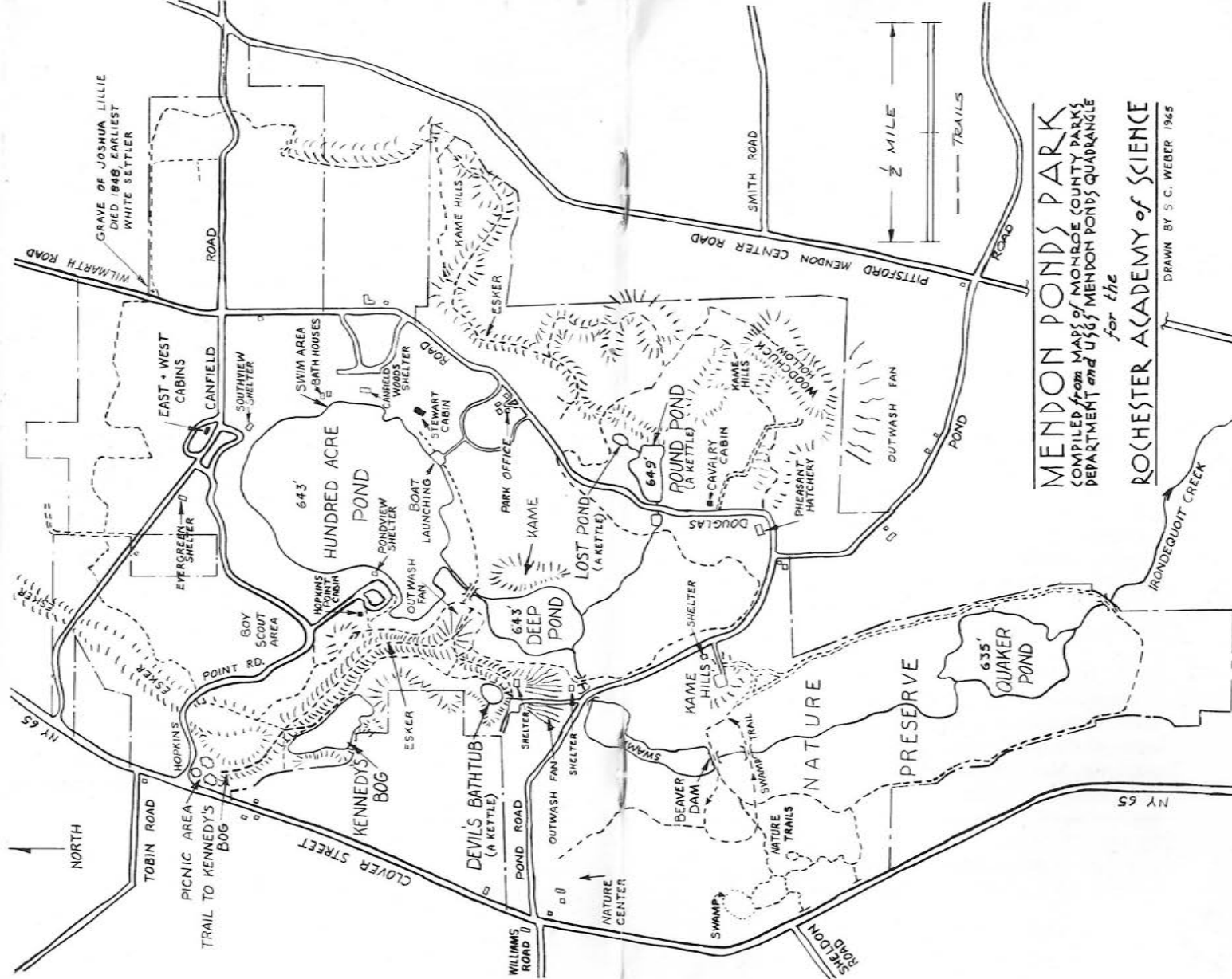
*Turtle-head*



*Joe Pye  
Weed*



*Horse Balm*



**MENDON PONDS PARK**  
 COMPILED FROM MAPS OF MONROE COUNTY PARKS  
 DEPARTMENT and USGS MENDON PONDS QUADRANGLE  
 for the  
**ROCHESTER ACADEMY of SCIENCE**

DRAWN BY S.C. WEBER 1965



NY 65



## KENNEDY'S BOG

Babbette B. Coleman, F.R.A.S.  
Associate Professor of Botany  
University of Rochester

Don your boots and prepare for a trip to Kennedy's Bog—a vegetation-covered depression, more than twice as long as wide, hidden from the notice of most park visitors by the wooded esker on its north side. This 5-acre area is unique among the varied plant associations of the park. It is a piece of the northland, a bit of Canadian muskeg.

The middle entrance from Clover Street (Hopkins Point Road) offers the easiest access. Stop at the first picnic area on the right, shaded in part by a few apple trees. Where the clearing ends to the south, a break in the woodland on the esker ridge reveals a hiking trail. Follow this to the fork at the brink of the esker. The right path, dropping down, leads to the bog. At the foot of the hill is a thicket of shrubs and trees which stand in and near a moat which rings the bog proper.

### DEVELOPMENT OF THE BOG

Thousands of years ago Kennedy's Bog, like the Devil's Bathtub and other depressions in the park, was just another of the numerous Mendon ponds. It was a possible ice block depression, associated with the more western of the two irregular eskers of the present park. With the melting of this great ice-chunk, a pond formed in the depression from which drainage was blocked.

With the recession of the last great continental glacier which covered Monroe County, seeds and other propagative parts of plants, windblown or carried by birds and animals from the south, slowly began to invade uncovered areas. Those from aquatic plants colonized the water. Dying and regrowing water plants made an accumulation which, through thousands of years, gradually built up the substratum of the pond, especially around its margin. Next, other grass-like invaders, the sedges, needing only shallow water for their roots, added to the filling in of the pond. Then came those shrubs which can tolerate the acid, moist situation of the margin, extending their lower branches and roots further and further into open water, making ideal "rafts" for bog mosses, and resting places for twigs, leaves, logs, until the surface of the pond was completely covered over. As the Bog-Moss (*Sphagnum*) grows from the tips, the older parts below die and are compressed, in time, to form the greater part of the "peaty" character of the bog "floor", and an ideal, spongy propagating bed. Thus the bog has reached its so-called consolidation stage. In the shade of its shrubs, seeds of larch, black spruce and others which can tolerate the acid and the moisture, are able to germinate and grow—the stage of Kennedy's Bog now. When conditions become dry enough for the tree seeds from the surrounding deciduous forest to grow, the final stage of development of the bog is at hand;

for, unless some catastrophe arrests this encroachment, the forest will increase and the bog will gradually disappear.

Throughout its development the plant species of the bog have been virtually floating on water, their lower parts submerged. The moisture in the bog has greatly exceeded that lost to the atmosphere by transpiration of its plants. This, too, is the present state of Kennedy's Bog. As the climax, or forest stage advances, more water is lost through tree leaves than is gained from rain, snow melt and slope drainage, and the bog becomes ever drier. Bogs are, therefore, dynamic features of the landscape—gradually changing their species of plants, the amounts of water they contain and their chemical conditions. The past history of a bog may be learned by securing borings from various depths and studying the pollen buried in its layers.

Standing by the moat, you can see why this is called a "flat bog". Its surface does not form a dome, but is covered with low shrubs and dotted by "islands" of small to larger trees. At some points there are "tongues" of trees jutting out from the margin. It is usually "flat bogs" which are ringed by a moat. This is full of vegetation, but watch your step if you do not wish to sink into water and muck to your knees—or deeper! Follow the footpath, looking at some of the characteristic plants of the moat as you search for the best break in the shrub "wall" for an access point—some logs and

branches placed across the moat to reduce the danger of a muck bath.

#### PLANTS IN THE BOG

Coming down the esker through the familiar oak woodland you passed *Maple-leaved Viburnum*, a small shrub, and *Pinxter Flower*, a native rhododendron; and perhaps you noticed *Trailing Arbutus* on the ground. But the plants around and on the bog are very different from these.

In the moist ground along the moat look for several trees that have trunks 5–6 inches in diameter, black bark that is broken into small squarish, scaly plates, and branches that extend at right angles. The lustrous leaves are simple, arranged alternately along the upturned twigs and turn a vivid red in fall. These are *Tupelo* or *Sour Gum*—rare in Monroe County.



*Trailing  
Arbutus*



*Tupelo*



*Black Ash*



*Maple-  
leaved  
Viburnum*



*Pinxter  
Flower*



*Yellow  
Birch*

Other smallish trees with compound leaves, opposite one another on the twigs, are *Black Ash*. The leaflets are attached directly to the leaf stalk, the bark is longitudinally roughened by narrow, spongy, corky ridges. Feel them.

Nick the shiny, horizontally-peeling and curling bark of the *Yellow Birch* with your thumbnail and smell the faint "wintergreen" odor. Its leaves are arranged alternately.



Red Maple



Balsam Poplar



Wild Calla



White Oak



Swamp Viburnum



Button Bush

Another moisture-loving tree is the *Red Maple*. The young trees have smooth gray bark, with simple leaves, opposite on the twigs, the twigs opposite on the branches.

*Balsam Poplar*, or *Tacamahac*, is another rare tree found in this moist location. Irregularly triangular-shaped leaves, with pale lower surface, alternate along the stems, male (pollen-bearing) flower clusters which fall off after shedding their pollen, and resinous-sticky, pungent-smelling buds characterize this native poplar.

In and around the moat you must have noticed the bright green, somewhat heart-shaped leaves of an herbaceous plant, the stem of which trails in the muck. Look for its flower cluster surrounded by a showy white leaf. Does it remind you of its familiar relatives, the jack-in-the-pulpit, skunk cabbage and calla? A most striking member of the Arum family is this native *Wild Calla*, with its flowers in spring and bright clusters of red berries late in summer.

Pause under the big *White Oak* whose branches stretch out over the moat. It marks an erstwhile entrance to the bog, and is a good site for study of the moat shrubs. Look for one with opposite, simple leaves, slender,  $\frac{1}{2}$ – $\frac{3}{4}$  inch-long buds, and a graceful, neat habit, producing several stalks rising from the muck. Any fruits will be black berries. This is *Swamp Viburnum* or *Withe-rod*.

Another shrub with opposite, simple leaves is *Button-bush*. However, it is twiggy and awkward in habit, and unkempt in ap-

pearance with its dirty looking, light-colored bark. It may have ball-shaped flower clusters or fruits on long slender stalks.

*Black Chokeberry* is a slender, sparse shrub with alternate, simple leaves. Close inspection will show small, distinctive black hairs on the upper surface along the main vein of a leaf. The attractive clusters of white flowers with pink anthers which appear in late May, develop into purplish-red berries by late summer.

*Black Alder*, a native holly, unlike some hollies, loses its alternate, simple leaves, which are not prickly, at the end of the growing season. With the magnification of a hand lens you may recognize this shrub by the minute pair of black scales (stipules) on either side of the stem at the base of the leaf. Some plants bear "male" and some "female" flowers. Which type has the red-berry-covered branches that give it still a third name—*Winterberry*?

*Mountain Holly* is another deciduous shrub with simple, alternate leaves on purplish stalks, along purplish twigs. Its tiny greenish flowers and later red berries are carried on rather long, slender stalks.

In spring, the *High Bush Blueberry* is distinguished by clusters of small, drooping, white, urn-shaped flowers, dangling at eye level or above. They produce the delicious blueberries of mid- to late July. This much-branched shrub has greenish, hairy twigs which support small, simple leaves, alternately arranged.



Black Chokeberry



Black Alder



Mountain Holly



High Bush Blueberry



Alder



Willow

Another common shrub of wet places, the *Alder*, usually has several trunks where white marks (lenticels) show rather distinctly on the smooth, dark reddish bark. The alternate, simple leaves have wavy margins, and above each leaf is a maroon-colored bud on a short stalk. Two scales surround the bud.

Shrubs of the *Willow* group are easily identified in early spring by their "pussies" which are produced before the leaves, and later by the expanded catkins. Each simple, alternate leaf will show at its base a bud which is covered by a single bud scale, varying in color with the species.

Now to find the best place to cross the moat. But first look VERY carefully to your footing, and even more carefully at any shrubs you must pass.

**TOUCH NO SHRUB AS YOU CROSS THE MOAT AND ENTER THE BOG!** At some entrances along the trail there may be a shrub or two of *Poison Sumac*. It is recognized by beautiful alternate, pinnately compound leaves on reddish leaf stalks; and also by clusters of dirty-white berries which remain on the shrub from the previous season. It causes a more severe case of poisoning than the familiar poison ivy.



Poison Sumac



Peat Moss

are other mosses, too, on the bog floor, under the conspicuous heaths. Shrubs belonging to the heath family of flowering plants are by far the most numerous out here. Blueberries and cranberries are representatives of this large group. Threaded among the mosses are the creeping, wiry stems of the native *Large Cranberry* and *Small Cranberry*. Eat one of the red fruits; notice the color, size and shape of the leathery leaves, white and waxy on the undersurface. Leaf size will differentiate the two kinds. Both bear exquisite, dainty pink flowers in early summer.

Most abundant of the heaths in Kennedy's Bog is the *Leatherleaf*—a shrub about 2 feet high—whose branches nearly all have a drooping spike of buds, white flowers (not very conspicuous) or fruits, depending on the season. The simple, alternate, brownish leaves of this plant give the bog its bronzy appearance from a distance. Botanical names may be forbidding—but this one is so rhythmical you should say it—*Chamaedaphne calyculata*.

Wetter areas over the bog show clustered plants of *Bog Rosemary*, with another beautiful name—*Andromeda glaucophylla*. You will easily spot it by its long, narrow gray- or bluish-green leaves with waxy white undersurfaces, and branch-tips dangling pink flowers and buds.

Several kinds of insect-trapping plants make bogs their lairs. Among the sphagnum you will find rosettes of handsome and



Cranberries



Leatherleaf



Bog Rosemary



Pitcher  
Plant



Sundews



Rose  
Pogonia



Bladder  
Rush



Cotton  
Grass

unique leaves of the *Pitcher Plant*. Each leaf is a water-trap in which drowned and then digested insects furnish nitrogen to the plant. Late June or early July is the time to see the exotic blooms on foot-tall stems. Along the "trails" you should come to little "mats" of sundews—two species, both so tiny their sparkling rosettes are apt to be overlooked. The one with the leaf "spoon" round is the *Round-leaved Sundew*, the other, the *Spatulate-leaved Sundew*. Can you see fine projections on both these leaves? Each is tipped by a tiny gland from which exudes the sticky, digestive secretion that is both lure and trap. If you have time, why not watch this carnivorous plant catch its prey?

From late June to early July search for the *Rose Pogonia*, a diminutive native orchid with a single, pink, irregular flower at the apex of the flower stalk. Dozens of these beautiful flowers may show simultaneously. A large group of them was found recently on the west side of the bog.

In the southeast section of the bog look for *Bladder Rush*. A glimpse of this short plant, inconspicuous when in flower, well repays the searcher for his time and energy. In summer its clusters of three bladderly fruits make the plant easier to find.

*Cotton Grass* is a sedge, easily recognized in summer by the mass of cottony fibers enmeshing the tiny fruits at the tip of a grass-like plant.

In addition to cotton grass there are many

other sedges in the bog. The tiny *Beakrush* may be discernible to you because of the white scales at the top of its 5-inch-high stem. The scales hide its minute flowers.

Still other sedges belonging to a large and variable group called *Carex* will be noticeable when their fruits, often in drooping clusters, begin to ripen. Each fruit is surrounded by a yellowing, bladderly sac. Many sedges have stems which are three-sided, or triangular in cross section. An exception to this rule is a round-stemmed sedge that grows abundantly in the northeast section of the bog. Its stems reach 8–10 inches in height and are striking with their leaves in three series. No common name exists for this plant which scientifically bears the musical title of *Dulichium arundinaceum*.

You cannot fail to find the *Virginia Chain Fern*, common throughout the northern end of the bog. Upright fronds of last year may be seen in spring before the new leaves uncurl from the plant stems buried in the mat of bog mosses.

Before you leave the bog, inspect some of the tree and shrub "islands". Have you looked carefully at a perfectly formed small to medium-sized *Black Spruce*? These trees are coniferous evergreens. Try to find cones on a tree. In this close inspection you may discover one of the rarest plants of the bog, the *Dwarf Mistletoe*, which grows as a parasite on the branches of the black spruce. It will not be green like the sharp needles of



Beakrush



Carex



Dulichium



Va. Chain  
Fern



Black  
Spruce  
and  
Dwarf  
Mistletoe



*Tamarack*

the spruce, nor like the mistletoe in popular use during the Christmas holiday season.

The *Tamarack*, or *Larch*, another conifer, but one which loses its delicate leaves in fall, will probably be the largest tree in the "island". Surely you can find its cones. Try to visit Kennedy's Bog in October when larch leaves are golden, and in spring when the female cones of these trees are delicate pink "rosebuds".

Encircling the "island" trees will be High Bush Blueberries, such as you saw near the moat as you entered the bog, and also the shorter shrubs of *Black Huckleberry*, the leaves of which are bright red both in spring and fall.

Additional plants may be found in the bog, but perhaps they should be saved for later visits. As you leave the bog, again watch out for *Poison Sumac*. If you ascend the esker trail, look back on Kennedy's Bog when you reach the top. Do you find more to see and to contemplate than in your earlier view of the bog?



*Black  
Huckleberry*

## AQUATIC PLANT LIFE

R. Eliot Stauffer, F.R.A.S.

No habitat offers more of interest for the nature lover than the margins of a pond or slow moving stream. Beginning with the first days of spring the male red-winged blackbirds arrive on their territorial grounds in the marshes beside the ponds, and sunlight, penetrating through the water to the black ooze of the bottom, stirs the duckweeds and algae to renewed photosynthesis and brings them to the pond surface as a shimmering green bloom. Throughout the summer the pond is rich with plants and animals to see and study, until finally, the long cold nights of November skim the shallow waters with ice, and all becomes quiet except for the winter wind, swishing through the cattails and sighing in the tamaracks and spruces of the nearby bog.

Ponds are small bodies of water which, strictly speaking, are shallow enough that rooted water plants can grow all the way across them. They are usually less than fifteen feet deep, and light can thus penetrate readily to the bottom except where floating vegetation such as lily pads or mats of duckweed shade the bottom.

On this basis some of the ponds in the Mendon Ponds Park are true ponds. These include Hundred Acre Pond and the unnamed inundated area southwest of Deep Pond. Others like Lost, Round, Deep and Quaker Ponds and the Devil's Bathtub are more benthic spring-fed bodies of water,

which however are not large enough to be called lakes.

Besides these permanent ponds, a number of transient pools, which usually dry up by the end of the summer, form in late winter or spring in depressions among the eskers and drumlins of the park. In addition to the microscopic plants and animals which can endure the drastic changes in conditions in these pools, the surfaces of such areas often become covered with a bright green sheet of the floating plants of the Liverwort *Riccia*. Some years this may be found in the fall as a mat on the damp ground of a depression to the northwest of Kennedy's Bog, or in the Woodchuck Hollow area on the East side of the park.



*Riccia*



1 Arrowhead  
2 Water  
Plantain



*Pickerel  
Weed*



*Swamp  
Loosestrife*

The permanent ponds hold the greatest variety of life. Plants grow in them in more or less clearly defined zones, and particular communities of animals are associated with these zones.

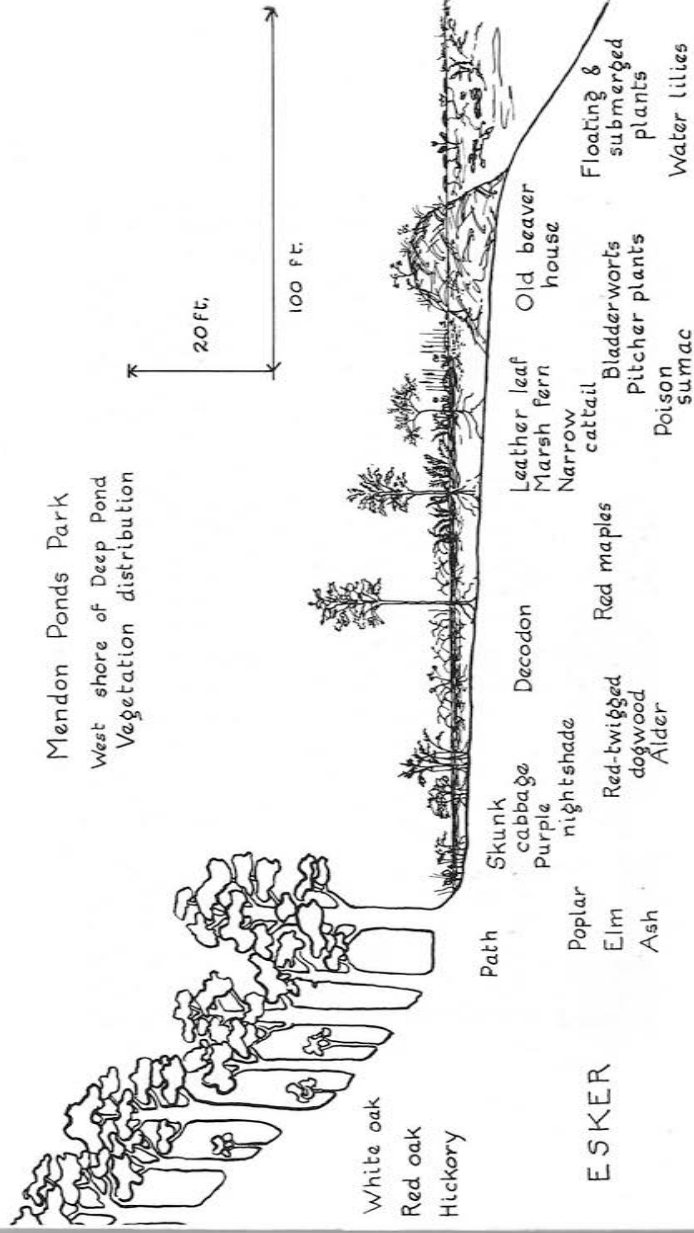
Such a zonation is shown in the diagram of the vegetation distribution of the west shore of Deep Pond. Closest to the shore are the emergent water plants which grow with their roots in the water and the pond bottom, and with their stems, leaves and flowers in the air. Here are reeds, bulrushes, white-blossomed *Arrow-Heads*, *Water Plantains* and *Pickerel Weeds*. One of the prominent plants invading the pond margins near the open water is the *Swamp Loosestrife* with its long arching woody stems and whorls of pink flowers. The tips of these



*Devil's Bathtub (a kettle) in foreground. Deep Pond in the background.  
An esker separates the two ponds.*



An underwater branch of Common Bladderwort showing traps.  
Ten times size. Microphotograph by R. E. Stauffer.







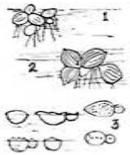
Marsh Fern



Pitcher Plant



Grass Pink



- 1 Duckweed Lemna
- 2 Duckweed Spirodela
- 3 Wolffia

stems dip into the water and root to form new interconnected colonies of floating plants. These colonies form a tough mat of interlaced floating clumps of vegetation on which grow other marsh plants. The older clumps of Swamp Loosestrife are specially attractive because of the delicate fronds of *Marsh Fern*, the red and yellow madder-streaked rosettes of the insectivorous *Pitcher Plants* and occasional specimens of *Grass Pink*.

Covering the submerged stems of the rooted aquatics are myriads of simpler plants and animals, desmids, algae, as well as the aquatic stages of various insects.

The stems and roots of the Swamp Loosestrife are thickened with a light-brown tough spongy covering below the water surface. This illustrates a type of adaptation by such plants for growth in a waterlogged medium which is deficient in free oxygen. This spongy growth is made up of cells separated by air spaces through which oxygen may diffuse to the submerged parts of the plant. Other species of aquatic plants have a variety of adaptations for their watery habitat.

In the open water among the clumps of vegetation and in the channels scoured out by beaver or muskrats are small floating aquatics. Of particular interest are the *Duckweeds*, as well as that tiniest of flowering plants, *Wolffia*, which consists of microscopic, yellow-green, egg-shaped or dumb-bell granules floating among the duckweeds, and which are only seen when a bit of the

pond scum is gathered and examined with a 10 or 20-power hand magnifier. Two other interesting plants grow in the shallow channels; these are the small aquatic carnivorous plants, the *Humped Bladderwort* and the *Lesser Bladderwort*. These are much more readily overlooked than their cousin, the *Common Bladderwort* which is found floating submersed farther from the pond's edge. This last species produces long bright green feathery streamers studded with hundreds of miniature traps or utricles. In mid-summer its golden yellow flowers stud the surface of the pond in quiet bays or inlets.

One more bladderwort is found around the ponds; this is the *Flat-leaved Bladderwort*, which grows in the shallow rivulets among the sedges and shrubs on the marly moor which surrounds Quaker Pond to the south of the park.

As fall approaches, and the water of the ponds cools, the bladderworts develop winter buds or turions. In the *Common Bladderwort* these consist of bright green spheres of closely lapped flat needles, a few millimeters in diameter, which become detached from the digging streamers, float for a while, and then sink to the muddy bottom to spend the winter.

The zone of floating-leaved plants beyond the loosestrife or *Decodon* mat is occupied by the pads of the *Cow Lily*, and the *Sweet Water Lily*, *Water Smartweeds*, of which *Polygonum amphibium* with its rose-colored



Common Bladderwort



Cowlily



Sweet Water Lily



Water Smartweed  
*P. amphibium*

flowers is most conspicuous. From here on out appear masses of the submerged plants. These include two species of *Naiad*, *Waterweed*, *Eel Grass*, *Hornwort*, two species of *Water Milfoil*, and the Common Bladderwort mentioned above. In one of the ponds the *Indian Lotus* lifts its flowers into the air above the floating leaves.



*Naiad*



1 *Water Milfoil*  
2 *Water Weed (Anacharis)*



*Water-weed (Hornwort)*  
*Eel Grass*



*Indian Lotus*

Around the muddy marly shores of Quaker Pond, the *Water Stargrass* is particularly to be noticed because of its small yellow flowers which appear from July to October.

In many places the Large Stonewort Alga, a *Chara* with its small bright orange spermaries at the base of the branches arranged in whorls along the slender brittle stems forms grey-green water forests in the ponds fed by lime-bearing springs. *Chara* secretes a limy covering which gives the plants a harsh, brittle feeling, and the plants, when gathered have a strong sulphurous or skunk-like odor. Although the limy covering of *Chara* stems makes the plant unpalatable to animals, many microscopic animals and plants are found attached to the stems. Examination of stems or branches in a water-



*Water Stargrass*



*Chara*

cell under a microscope usually will be rewarded with views of one or more species of the fresh water animals called *Hydras* feeding on *Daphnia* and other organisms in the water.

In places in Deep Pond and Lost Pond, *Chara* is growing in colonies in the lime-bearing water almost to the exclusion of any other larger aquatic plant species, and is producing heavy deposits of the whitish limy mud called marl, which can be seen on the bottom through the clear waters.



*Hydra Daphnia*

PLANT LIST OF COMMON AND  
SCIENTIFIC NAMES

Common names of wild flowers are not uniform. Variation comes from different local usage, from European names and from different authors' preferences. In this introduction to the Mendon Ponds flora common names mostly follow those used by Richard H. Goodwin in the Flora of Mendon Ponds Park (Proceedings, Rochester Academy of Science 8: 5-6) which is available and recommended for anyone wishing to study fully the plants of the area. Other field guides to the wild flowers may be used and for convenience in using them this alphabetical list of the common names used here will relate them to their botanical names.

NAMES	Common and Scientific	PAGE
Alder—	<i>Alnus incana</i>	36
Balsam Poplar—	<i>Populus tacamahaca</i>	34
Beakrush—	<i>Rynchospora alba</i>	39
Bellwort—	<i>Uvularia perfoliata</i>	21
	<i>Uvularia sessilifolia</i>	21
Big-leaf Aster—	<i>Aster macrophyllus</i>	27
Black Alder—	<i>Ilex verticillata</i>	35
Black Ash—	<i>Fraxinus nigra</i>	33
Black Chokeberry—	<i>Aronia melanocarpa</i>	35
Black-eyed Susan—	<i>Rudbeckia hirta</i>	26
Black Huckleberry—	<i>Gaylussacia baccata</i>	40
Black Spruce—	<i>Picea mariana</i>	39
Bladder Rush—	<i>Scheuchzeria palustris</i>	38
Bluebell—	<i>Campanula rotundifolia</i>	23
Blue Cohosh—	<i>Caulophyllum thalictroides</i>	20
Bog Moss—	<i>Sphagnum spp.</i>	36
Bog Rosemary—	<i>Andromeda glaucophylla</i>	37
Boneset—	<i>Eupatorium perfoliatum</i>	25
Bristly Buttercup—	<i>Ranunculus hispidus</i>	20

NAMES	Common and Scientific	PAGE
Butter-and-eggs—	<i>Linaria vulgaris</i>	23
Butterfly-weed—	<i>Asclepias tuberosa</i>	24
Button-bush—	<i>Cephalanthus occidentalis</i>	34
Canada Mayflower—	<i>Maianthemum canadense</i>	19
Common Bladderwort—	<i>Utricularia vulgaris</i>	47
Common Mullein—	<i>Verbascum thapsus</i>	18
Cotton Grass—	<i>Eriophorum virginicum</i>	38
Cow Lily—	<i>Nuphar variegata</i>	47
Crinkleroot—	<i>Dentaria diphylla</i>	19
Devil's Paintbrush—	<i>Hieracium aurantiacum</i>	23
	<i>Hieracium pratense</i>	23
Downy Yellow Violet—	<i>Viola pubescens</i>	21
Duckweeds—	<i>Lemna minor</i>	46
	<i>Lemna trisulcata</i>	46
	<i>Spirodela polyrhiza</i>	46
Dulichium—	<i>Dulichium arundinaceum</i>	39
Dwarf Mistletoe—	<i>Arceuthobium pusillum</i>	39
Early Meadow-rue—	<i>Thalictrum dioicum</i>	20
Early Saxifrage—	<i>Saxifraga virginiana</i>	19
Eel Grass—	<i>Vallisneria americana</i>	48
False Foxglove—	<i>Aureolaria pedicularia</i>	25
	<i>Aureolaria virginica</i>	25
False Mitrewort—	<i>Tiarella cordifolia</i>	20
Flat-leaved Bladderwort—	<i>Utricularia intermedia</i>	47
Golden Alexanders—	<i>Zizia aurea</i>	22
Golden Ragwort—	<i>Senecio aureus</i>	22
Goldenrod—	<i>Solidago spp.</i>	26
Grass Pink—	<i>Calopogon pulchellus</i>	46
Great Lobelia—	<i>Lobelia syphilitica</i>	25
Harebell—	<i>Campanula rotundifolia</i>	23
Heal-all—	<i>Prunella vulgaris</i>	25
Hepatica—	<i>Hepatica acuminata</i>	18
Highbush Blueberry—	<i>Vaccinium corymbosum</i>	35
Hornwort—	<i>Ceratophyllum demersum</i>	48
Horse Balm—	<i>Collinsonia canadensis</i>	27

NAMES	Common and Scientific	PAGE
Humped Bladderwort—	<i>Utricularia gibba</i>	47
Indian Lotus—	<i>Nelumbo lutea</i>	48
Jack-in-the-Pulpit—	<i>Arisaema atrorubens</i>	19
Joe-Pye-Weed—	<i>Eupatorium dubium</i>	27
Ladies' Tobacco—	<i>Antennaria plantaginifolia</i>	22
Larch—	<i>Larix laricina</i>	40
Large Cranberry—	<i>Vaccinium macrocarpon</i>	37
Large White Trillium—	<i>Trillium grandiflorum</i>	19
Leatherleaf—	<i>Chamaedaphne calyculata</i>	37
Lesser Bladderwort—	<i>Utricularia minor</i>	47
Maple-leaved Viburnum—	<i>Viburnum acerifolium</i>	33
Marsh Blue Violet—	<i>Viola cucullata</i>	21
Marsh Fern—	<i>Dryopteris thelypteris</i>	46
Marsh Marigold—	<i>Caltha palustris</i>	18
Marsh Skullcap—	<i>Scutellaria galericulata</i>	22
Marsh St. Johnswort—	<i>Hypericum virginicum</i>	24
Mayapple—	<i>Podophyllum peltatum</i>	20
Mitrewort—	<i>Mitella diphylla</i>	20
Moth-mullein—	<i>Verbascum blattaria</i>	26
Mountain Holly—	<i>Nemopanthus mucronata</i>	35
Naiad—	<i>Najas flexilis</i>	48
	<i>Najas marina</i>	48
New England Aster—	<i>Aster novae-angliae</i>	26
New Jersey Tea—	<i>Ceanothus americanus</i>	24
Orange Hawkweed—	<i>Hieracium aurantiacum</i>	23
Peat Moss—	<i>Sphagnum spp.</i>	36
Pinxter Flower—	<i>Rhododendron nudiflorum</i>	33
Pitcher Plant—	<i>Sarracenia purpurea</i>	38
Poison Sumac—	<i>Rhus vernix</i>	36
Pussy's Toes—	<i>Antennaria plantaginifolia</i>	22
Rattlesnake Weed—	<i>Hieracium venosum</i>	24
Red Baneberry—	<i>Actaea rubra</i>	21
Red Maple—	<i>Acer rubrum</i>	34
Richweed—	<i>Collinsonia canadensis</i>	27

NAMES	Common and Scientific	PAGE
Rose Pogonia—	<i>Pogonia ophioglossoides</i>	38
Round-leaved Sundew—	<i>Drosera rotundifolia</i>	38
Rue Anemone—	<i>Anemonella thalictroides</i>	18
Self-heal—	<i>Prunella vulgaris</i>	25
Shadbush—	<i>Amelanchier spp.</i>	18
Silverrod—	<i>Solidago bicolor</i>	26
Skunk Cabbage—	<i>Symplocarpus foetidus</i>	17
Small Cranberry—	<i>Vaccinium oxycoccus</i>	37
Sour Gum—	<i>Nyssa sylvatica</i>	33
Spatulate-leaved Sundew—	<i>Drosera intermedia</i>	38
Spicebush—	<i>Lindera benzoin</i>	15
Spreading Dogbane—	<i>Apocynum androsaemi- folium</i>	24
Sundews—	<i>Drosera intermedia</i>	38
	<i>Drosera rotundifolia</i>	38
Swamp Loosestrife—	<i>Decodon verticillatus</i>	42
Swamp Viburnum—	<i>Viburnum cassinoides</i>	34
Sweet White Water Lily—	<i>Nymphaea odorata</i>	47
Tacamahac—	<i>Populus tacamahaca</i>	34
Tall Buttercup—	<i>Ranunculus acris</i>	23
Tamarack—	<i>Larix laricina</i>	40
Tick Trefoils—	<i>Desmodium spp.</i>	24
Trailing Arbutus—	<i>Epigaea repens</i>	33
Tupelo—	<i>Nyssa sylvatica</i>	33
Turtlehead—	<i>Chelone glabra</i>	27
Two-leaved False Solomon's Seal—	<i>Maianthemum canadense</i>	19
Virginia Chain Fern—	<i>Woodwardia virginica</i>	39
Virginia Spring Beauty—	<i>Claytonia virginica</i>	18
Virginia Waterleaf—	<i>Hydrophyllum canadense</i>	22
Wake Robin—	<i>Trillium erectum</i>	19
Water Milfoil—	<i>Myriophyllum exalbescens</i>	48
	<i>Myriophyllum verticillatum var. pectinatum</i>	48

NAMES	Common and Scientific	PAGE
Water Smartweeds—	<i>Polygonum spp.</i>	47
Water Stargrass—	<i>Heteranthera dubia</i>	48
Waterweed—	<i>Anacharis canadensis</i>	48
White Baneberry—	<i>Actaea pachypoda</i>	21
White Oak—	<i>Quercus alba</i>	34
White Snakeroot—	<i>Eupatorium rugosum</i>	25
White Wood Aster—	<i>Aster divaricatus</i>	27
Wild Bergamot—	<i>Monarda fistulosa</i>	26
Wild Calla—	<i>Calla palustris</i>	34
Wild Columbine—	<i>Aquilegia canadensis</i>	21
Wild Geranium—	<i>Geranium maculatum</i>	22
Wild Ginger—	<i>Asarum canadense</i>	21
Willows—	<i>Salix spp.</i>	36
Winterberry—	<i>Ilex verticillata</i>	35
Withe-rod—	<i>Viburnum cassinoides</i>	34
Wood Betony—	<i>Pedicularis canadensis</i>	23
Wood Rush—	<i>Luzula carolinae var. saltuensis</i>	22
	<i>Luzula multiflora</i>	22
Yellow Adder's-Tongue—	<i>Erythronium ameri-</i>	
	<i>canum</i>	21
Yellow Birch—	<i>Betula lutea</i>	33
Yellow Toadflax—	<i>Linaria vulgaris</i>	23

Numbers Refer to Page on Which  
Plant is Described

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