

The Historical Flora of Wykers Island in the Delaware River, Bucks County, Pennsylvania, from the 1884 to 1887 Botanical Notes of John and Harvey Ruth

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ABSTRACT. Over three years beginning in 1884, amateur botanists John and Harvey Ruth conducted a vascular plant species inventory of Wykers Island, now known as Lynn Island, in the Delaware River, Bucks County, Pennsylvania. This is one of the earliest known detailed descriptions of native plant communities in the state. It is a unique “snapshot” of the species composition of a riverine floodplain from a time before most of the native plant communities on riverine floodplains in the region were greatly altered by invasive plants and plant pathogens introduced from Eurasia. The Ruths’ accounts are presented verbatim. An appendix lists the 197 species identified by them, with updated nomenclature, together with the 155 taxa found in a survey at the same site in 1992, which included only 51 of the species encountered by the Ruths.

INTRODUCTION

Detailed descriptions of plant communities from the nineteenth century are rare treasures for the botanist, historical ecologist, or wildland restoration specialist. So rare, in fact, that in several years of searching we have turned up only a handful for the entire state of Pennsylvania. People who had the botanical knowledge to identify all of the species growing in a particular location were uncommon then, as they are now. Even more exceptional were those who took the trouble to do so, and then to catalog them in writing. Except for the work of Alexander von Humboldt and Charles Darwin, ecology and plant geography scarcely existed as scientific disciplines until the 1890s, a decade that saw Eugenius Warming in Denmark, Oscar Drude and Andreas Schimper in Germany, and C. Hart Merriam and Henry C. Cowles in the United States independently turn ecology into a functioning science (Worster 1994). Until then it evidently didn’t occur to most botanists and natural historians that species differences among plant communities—and their causes—were subjects worthy of study.

Historical “florulas” such as the subject of this article are our best sources of information about the species composition of plant communities before they were greatly altered by invasive exotic plants, introduced pathogens, and lethal insects from other parts of the world. Many native plants lack co-evolved defenses against these onslaughts; furthermore, native

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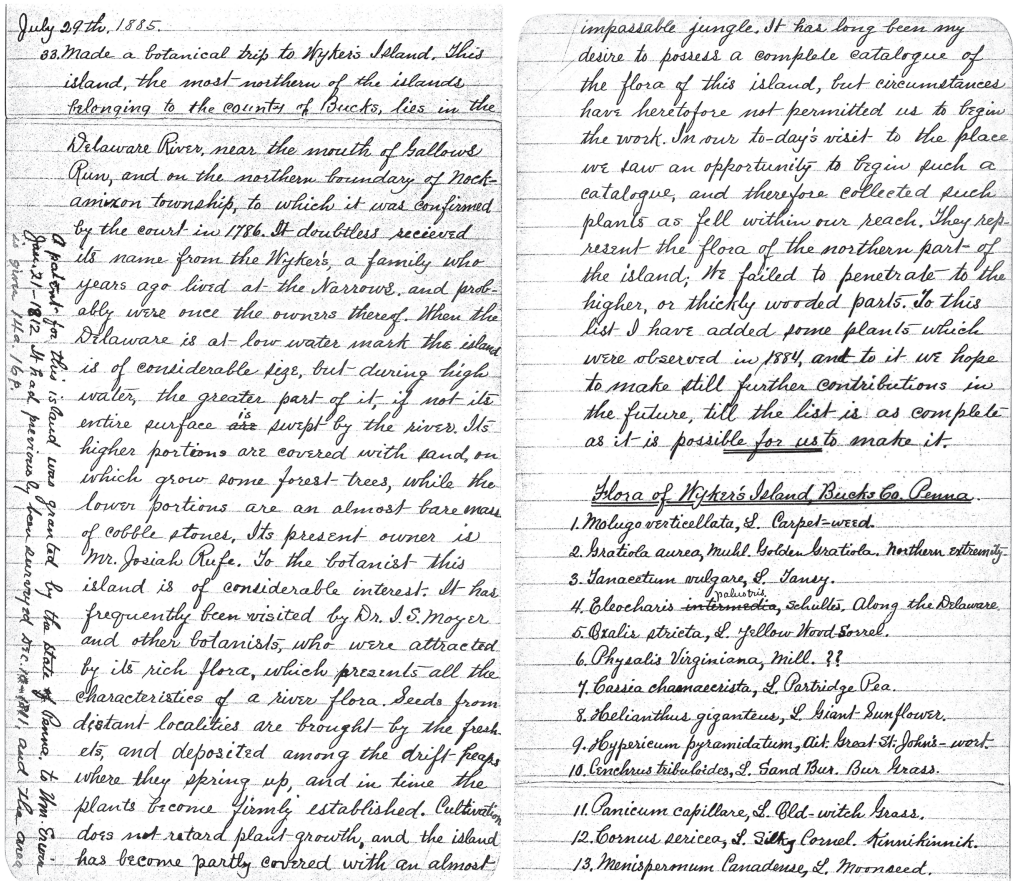


Figure 1. The beginning of the Wykers Island floral list, from John Ruth's botanical notes.

predators, parasites, and herbivores have been incapable of regulating many of the newcomers' populations. Other relatively recent human influences, including land-use fragmentation, overbrowsing by unprecedented high deer populations, acid rain, and wildfire suppression, have resulted in a host of indirect effects on plant community composition. Today, as interest grows in probing these processes with the tools of modern scientific experimentation and in restoring certain "natural" ecosystems, the rare, early snapshots of native plant communities become more and more valuable.

The brothers John A. Ruth (1859-1918) and Harvey F. Ruth (1866-1904), amateur botanists who lived in northern Bucks County, Pennsylvania, were ahead of their time in their keen observations of habitat differences in plant species composition. As detailed in an earlier issue of *Bartonia* (White and Rhoads 1996), their botanical pursuits included John's meticulous accounts of their finds in a series of notebooks begun in 1881, when he was 22 and his brother was 16 (Ruth 1881-1917; see Figure 1). Despite their youth and amateur status, the Ruth brothers quickly cultivated a network of professional botanists who were their frequent correspondents and field companions. Their identifications were regarded as trustworthy because they were in the habit of sending difficult specimens to eminent botanists for

confirmation, including Thomas C. Porter (professor at Lafayette College and author of the first statewide flora of Pennsylvania, published posthumously in 1903), who was another pioneer in the plant geography of our region. The Ruths' finds were incorporated by others into county-wide and state-wide floras (Benner 1932; Porter 1903) but we have found no evidence that any of their notes, which are in the archives of the Academy of Natural Sciences of Philadelphia, have ever been published.

We were particularly struck by six notebook entries from January 1884 to October 1887 in which John Ruth recounted the brothers' visits to Wykers Island, now called Lynn Island, in the Delaware River at the Narrows below Nockamixon Cliffs (see Figures 2 and 3). This eyewitness account has special interest today because it is extraordinarily thorough for its time and because by now much of the region's riparian vegetation has been severely altered by invasive exotics, deer browsing, and other factors that have changed a great deal since the 1880s.

In 1884-1887, the Ruths identified 197 vascular plant species on the island, 166 native to the region and 31 introduced from Eurasia. They made no comment indicating that any of the non-native species were abundant. A survey in 1992 by Pam White and Ann Rhoads included 155 taxa, 111 native to the region and 44 introduced, including just 51 of the species identified more than 100 years earlier by the Ruths (see Appendix). Of the 51 species common to both lists, only 5 are introduced—*Barbarea vulgaris* (common wintercress), *Daucus carota* (Queen Anne's-lace), *Hypericum perforatum* (common St. John's-wort), *Linaria vulgaris* (butter-and-eggs) and *Plantago major* (broad-leaved plantain); none is considered an invasive pest species. According to White and Rhoads (1996), "Today the herbaceous flora of much of the island's interior is dominated by exotics such as *Alliaria petiolata*, *Anthriscus sylvestris*, *Hesperis matronalis*, *Microstegium vimineum*, *Lonicera japonica*, *Lamium purpureum*, *Glechoma hederacea*, *Allium vineale* and *Polygonum cuspidatum* [*Fallopia japonica*], none of which were reported 100 years ago."

Here we present the Ruths' notebook entries documenting their historic surveys of Wykers Island in their entirety, as a window into the experience of a pair of dedicated, late nineteenth-century, amateur botanists. We have attempted a faithful transcription of the notes including variant spelling and punctuation, capitalization and cross-outs. The current names of plants are inserted in square brackets where appropriate. We conclude with an appendix that lists, in current nomenclature and by family, the Ruths' finds and the additional taxa found by White and Rhoads in 1992.

EXCERPTS FROM THE RUTH BROTHERS' BOTANICAL NOTES

Jan. 20 – 1884.

If opportunity offers we will work out the botany of Wyker's Island. The island is not a large one, but is covered with a dense mass of vegetation, and doubtless some very interesting plants. Aquatic plants may be looked for. At high water the entire island is submerged. An orchard was on it at one time, several apple-~~s~~ trees remaining to mark the spot. Among the rare plants ~~is~~ are the beautiful Lupinus perennis, and Smilacina stellata. The northern end is covered with cobble

stones, and overgrown with low bushes and grasses. The southern end is covered with trees, overgrown with parasitic vines. During the great freshets of late years large quantities of driftwood and logs have been lodged on the middle and southern sections. Great piles of it are every where seen. This forms an excellent harbor for rabbits and other small animals, and perhaps some reptiles. By a little work and perseverance much may be learned about this island.

Aug. 23 – 1884.

Yesterday morning Harvey loaned Mr. Riegel's boat and we went to Wyker's Island. We found the island an excellent collecting ground for many of the grasses, but had collected most of them before. We however found good specimens of *Spartina cynosuroides* [*S. pectinata*] or Fresh Water Cord Grass and *Panicum proliferum* [*P. dichotomiflorum*]. The former is probably new to our county. We also found *Lythrum Salicaria*, *Cirsium discolor*, and three species of *Potamogeton*, which as near as we can determine without the fruit are *P. lucens* [*P. illinoensis*], *P. lonchites* [*P. gramineus* L.], and *P. perfoliatus*. They grow in the Delaware at Monroe. The island is a mass of vegetation, a paradise for the botanist. It would be

an excellent training to catalogue the flora of the island. I would try it if I lived nearer. We found the grasses fine and abundant. The Leguminosae were well represented by the Lupine and by a number of species of *Desmodium* and *Lespedeza*. The Star Cucumber is common, and frequently ascends to the tops of the trees. *Laportea* soon reminded us of its presence. We found three species of Oak. Willows form an important part of the vegetation. Received Bailey's 'Botanical Collectors Handbook.' It contains instructions for collecting all kinds of plants. If circumstances are favorable I shall next spring begin a new, first class herbarium. Mounted on good paper, and poison proof against insects.

July 29th. 1885.

... Made a botanical trip to Wyker's Island. This island, the most northern of the islands belonging

to the county of Bucks, lies in the Delaware River, near the mouth of Gallows Run, and on the



Figure 2. A 1991 view of Lynn Island (formerly Wykers Island) from the top of Nockamixon Cliffs (photo by Ann Rhoads).

northern boundary of Nockamixon township, to which it was confirmed by the court in 1786. It doubtless received its name from the Wyker's, a family who years ago lived at the Narrows, and probably were once the owners thereof. When the Delaware is at low water mark the island is of considerable size, but during high water, the greater part of it, if not its entire surface are swept by the river. Its higher portions are covered with sand, on which grow some forest trees, while the lower portions are an almost bare mass of cobble stones. Its present owner is Mr. Josiah Rufe. To the botanist this island is of considerable interest. It has frequently been visited by Dr. I. S. Moyer and other botanists, who were attracted by its rich flora, which presents all the characteristics of a river flora. Seeds from distant localities are brought by the freshets, and deposited among the drift heaps where they spring up, and in time the plants become firmly established. Cultivation

does not retard plant growth, and the island has become partly covered with an almost impassable jungle. It has long been my desire to possess a complete catalogue of the flora of this island, but circumstances have heretofore not permitted us to begin the work. In our to-day's visit to the place we saw an opportunity to begin such a catalogue, and therefore collected such plants as fell within our reach. They represent the flora of the northern part of the island. We failed to penetrate to the higher, or thickly wooded parts. To this list I have added some plants which were observed in 1884, and to it we hope to make still further contributions in the future, till the list is as complete as it is possible for us to make it.

[marginal note] A patent for this island was granted by the State of Penna. to Wm. Erwin Jan. 21 - 1812. It had previously been surveyed Dec. 10 - 1811, and the area is given 14 a. 16 p.

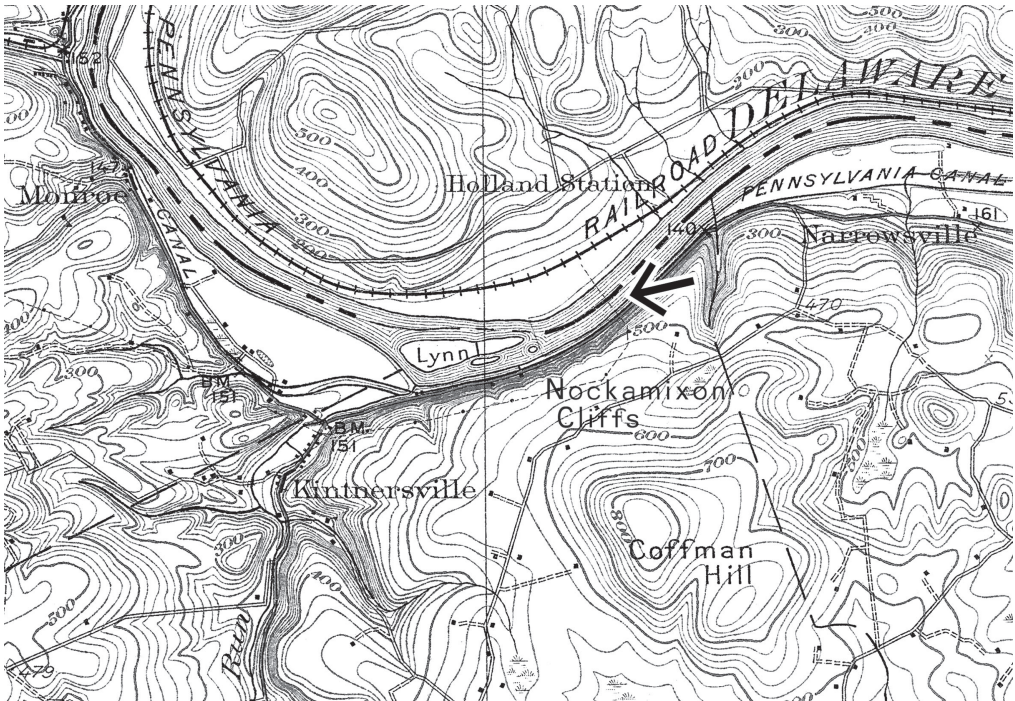


Figure 3. An early twentieth-century map of Lynn Island and vicinity (adapted from U.S. Geological Survey 1932). The arrow indicates the vantage point and direction of the photo in Figure 2. Scale: 1 inch = approximately 4,000 feet. North at top.

Flora of Wyker's Island, Bucks Co. Penna.

1. Molugo verticellata, L. Carpet-weed. [*Mollugo verticillata*]
2. Gratiola aurea, Muhl. Golden Gratiola. Northern extremity.
3. Tanacetum vulgare, L. Tansy.
4. Eleocharis ~~intermedia~~ palustris, Schultes. Along the Delaware. [(L.) Roemer & Schultes]
5. Oxalis stricta, L. Yellow Wood-Sorrel..
6. Physalis Virginiana, Mill. ??
7. Cassia chamaecrista, L. Partridge Pea. [*Chamaecrista fasciculata* (Michx.) Greene]
8. Helianthus giganteus, L. Giant Sunflower.
9. Hypericum pyramidatum, Ait. Great St. John's-wort.
10. Cenchrus tribuloides, L. Sand Bur. Bur Grass.
11. Panicum capillare, L. Old-witch Grass.
12. Cornus sericea, L. Silky Cornel. Kinnikinnick. [*C. amomum* P.Mill.]
13. Menispermum Canadense, L. Moonseed.
14. Carpinus Americana, Mx. Hornbeam. [*C. caroliniana* Walt.]
15. Chrysopogon nutans, Benth. Indian Grass. [*Sorghastrum n.* (L.) Nash]
16. Spiraea salicifolia, L. Common Meadow Sweet. [*S. latifolia* (Ait.) Borkh.]
17. Liriodendron Tulipifera, L. Tulip Poplar.
18. Lysimachia quadrifolia, L. Four-leaved Loosestrife.
19. Verbena urticifolia, L. White Vervain.
20. Verbena hastata, L. Blue Vervain.
21. Tradescantia Virginica, L. Common Spiderwort. [*virginiana*]
22. Scutellaria laterifolia, L. Mad-dog Skullcap. [*lateriflora*]
23. Setaria glauca, Beauv. Foxtail Grass. [*S. pumila* (Poir.) Schultes]
24. Panicum Crus-galli, L. Barnyard Grass. [*Echinochloa crusgalli* (L.) Beauv.]
25. Lepidium Virginicum, L. Wild Pepper Grass.
26. Onoclea sensibilis, L. Sensitive Fern.
27. Galium asprellum, Mx. Rough Bedstraw.
28. Rumex crispus, L. Common, or Curled Dock.
29. Hypericum perforatum, L. Common St. John's-wort.
30. Ampelopsis quinquefolia, Mx. Virginian Creeper. [*Parthenocissus q.* (L.) Planch.]
31. Rhus toxicodendron, L. Poison Ivy. [*Toxicodendron radicans* (L.) Kuntze]
32. Crataegus coccinea, L. Scarlet-fruited Thorn.
33. Baptisia tinctoria, R.Br. Wild Indigo. [(L.) Vent.]
34. Phleum pratense, L. Timothy.
35. Aster patens, Ait. Spreading Aster. [*Symphotrichum p.* (Ait.) Nesom]
36. Asclepias tuberosa, L. Pleurisy Root.
37. Verbascum Thapsus, L. Common Mullein.
38. Panicum clandestinum, L. Hidden-flowered Panic Grass. [*Dichantheium c.* (L.) Gould]
39. Rudbeckia hirta, L. Cone Flower.
40. Ludwigia alternifolia, L. Seed-box.
41. Elymus Canadensis, L. Var. glaucifolia, Gr. Wild Rye. Lyme Grass.
42. Cyperus filiculmis, Vahl. Wiry Sedge. [*C. lupulinus* (Sprengel) Marcks]
43. Chrysanthemum Leucanthemum, L. Ox-eye Daisy. [*Leucanthemum vulgare* Lam.]
44. Chenopodium Botrys, L. Jerusalem Oak. [*Dysphania b.* (L.) Mosyakin & Clemants]
45. Elymus Canadensis, L. Wild Rye.
46. Panicum dichotomum, L. Polymorphus Panic Grass. [*Dichantheium d.* (L.) Gould]
47. Cassia Marilandica, L. Wild Senna. [*Senna m.* (L.) Link]
48. Euphorbia corollata, L. Flowering Spurge.
49. Betula nigra, L. River Birch.
50. Teucrium Canadense, L. Germander.
51. Rhynchospora glomerata, Vahl. Common Beak Rush. [*Rhynchospora capitellata* (Michx.) Vahl]
52. Eupatorium purpureum, L. Joe Pye Weed. [*Eutrochium p.*]
53. Juglans cineria, L. Butternut. [*cinerea*]
54. Mimulus ringens, L. Monkey Flower.
55. Platanus occidentalis, L. Buttonwood.
56. Linaria vulgaris, Mill. Toad Flax. [Hill]
57. Potentilla Canadensis, L. Common Cinquefoil.
58. Lespedeza capitata, Mx. Capitata Bush Clover.
59. Tephrosia Virginiana, Pers. Goat's Rue. [(L.) Pers.]
60. Daucus Carota, L. Common Carrot.
61. Echium vulgare, L. Viper's Bugloss.
62. Saponaria officinalis, L. Bouncing Bet.
63. Achillea Millefolium, L. Yarrow.
64. Apocynum cannabinum, L. Indian Hemp.
65. Penthorum sedoides, L. Ditch Stone Crop.
66. Andropogon scoparius, Mx. Purple Wood

- Grass. [*Schizachyrium scoparium* (Michx.) Nash]
67. *Cyperus inflexus*, Muhl. Dwarf Galingale. [*C. squarrosus* L.]
 68. *Eleocharis obtusa*, Schultes. Obtuse Spike-rush. [(Willd.) Schultes]
 69. *Mentha Canadensis*, L. Wild Mint. [*M. arvensis* L.]
 70. *Eupatorium perfoliatum*, L. Thoroughwort.
 71. *Hypericum ellipticum*, Hook. Elliptic St. John's-wort.
 72. *Hypericum mutilum*, L. Dwarf St. John's-wort.
 73. *Lysimachia ciliata*, L. Fringed Loosestrife.
 74. *Lysimachia stricta*, Ait. Spiked Loosestrife. [*L. terrestris* (L.) BSP]
 75. *Andropogon furcatus*, Muhl. Finger-spiked Wood Grass. [*A. gerardii* Vitman]
 76. *Equisetum arvense*, L. Common Horsetail.
 77. *Equisetum hyemale*, L. Scouring Rush. 1884.
 78. *Ambrosia artemisiaefolia*, L. Ragweed. [*artemisiifolia*]
 79. *Plantago lanceolata*, L. Ribgrass.
 80. *Cyperus phymatodes*, Muhl. Straw Sedge. [*C. esculentus* L.]
 81. *Juncus acuminatus*, Mx. Var. *legitimus*, Gr. Sharp-fruited Rush.
 82. *Juncus tenuis*, Willd. Slender Rush.
 83. *Cyperus dentatus*, Torr. Toothed Galingale.
 84. *Prunus pumila*, L. Dwarf Cherry.
 85. *Desmodium Canadense*, DC. Canada Tick Trefoil. [(L.) DC.]
 86. *Eragrostis pilosa*, Beauv. Slender Meadow Grass. [(L.) Beauv.]
 87. *Solidago lanceolata*, L. Lanceolate Goldenrod. [*Euthamia graminifolia* (L.) Nutt.]
 88. *Nasturtium palustris*, DC. Marsh Cress. [*N. officinale* R.Br.]
 89. *Barbarea vulgaris*, R.Br. Yellow Rocket.
 90. *Agrostis scabra*, Willd. Hair Grass.
 91. *Cuscuta gronovii*, Willd. Common Dodder.
 92. *Spartina cynosuroides*, Willd. Fresh water Cord Grass. [*S. pectinata* Link]
 93. *Panicum virgatum*, L. Tall, Smooth Panic Grass.
 94. *Panicum agrostoides*, Spreng. Agrostis-like Panic Grass. [*P. rigidulum* Nees]
 95. *Panicum proliferum*, Lam. Prolific Panic Grass. 1884. [*P. dichotomiflorum* Michx.]
 96. *Lythrum salicaria*, L. Spiked Loosestrife. 1884.

97. *Cirsium discolor*, Spreng. Two colored Thistle. 1884. [(Muhl.) Spreng.]
98. *Lupinus perennis*, L. Wild Lupine. 1884.
99. *Sicyos angulatus*, L. One-seeded Star Cucumber. 1884.
100. *Diospyrus Virginiana*, L. Persimmon. [*Diospyros*]
101. *Laportea Canadensis*, Gaudichaud. Woodnettle. 1884. [(L.) Weddell]
102. *Rubus Canadensis*, L. Low Blackberry. Dewberry.

Of the above named Flora, Nos. 83, 92 & 96 are new to the flora of Bucks Co., and are rare. No. 92 is found at the extreme northern end of the island and is well established. Of No. 96 we found a single plant along the eastern shore near the water's edge. Have not seen it this year. It has probably been destroyed. Of No. 100 we found a small tree, well in fruit. It is rare in these parts but common in the Trap Rock Region. 98 is not common. We have noticed a few plants of it along the Delaware, north of the island. 84 is a very interesting shrub, having somewhat the appearance of a willow. It is at present laden with the ripe cherries. 99 was very abundant when we were on the island in 1884. Its vines covered bush and tree. 36 was very abundant at the same time. No. 2 is found in the mud at the northern extremity, and is also found along the Delaware near Monroe. Grasses are plentiful. The above list contains 18 species. The St. John's-worts are well represented.

When returning from the island we made an examination of the Potamogetons growing in the Delaware, and found the following:—

1. Potamogeton lonchitis, Tuckerm. Long-leaved P. [*P. gramineus* L.]
2. [Potamogeton] lucens, L. Shining Pondweed. [*P. illinoensis* Morong]
3. [Potamogeton] perfoliatus, L. Perfoliate [Pondweed].

No. 1 is new to the county as is also No. 2. No. 3 is found at a single place near Monroe, and I am not too sure in regard to the analysis. It may be *P. crispus*, L. Found some Fresh Water Sponges, on the under side of stones along the shore. Found *Dulichium spathaceum*, Pers. [*D. arundinaceum* (L.) Britt.] along the Delaware, near John Nicholas' woods. The second bud of our Night-blooming *Cereus* opened last night.

August 21st. 1885.

Made another trip to Wyker's Island yesterday for the purpose of collecting its flora. Found *Cyperus dentatus* and *Sparatina* [sic] *cynosuroi-*

des well established. Came through the higher and wooded parts of the island and made the following additions to our list of the Flora:

Flora of Wyker's Island. (Continued)

103. *Lobelia cardinalis*, L. Cardinal flower. Rare.
104. *Helianthus annuus*, L. Common Sun Flower.
105. *Impatiens fulva*, Nutt. Spotted Touch-me-not. [*I. capensis* Meerb.]
106. *Smilacina stellata*, Desf. Stellate Solomon's Seal. [*Maianthemum stellatum* (L.) Link.]
107. *Cirsium altissimum* Willd. Tallest Thistle. [*C. altissimum* (L.) Spreng.]
108. *Poa serrotina*, Ehrhart. Foul Meadow Grass. [*P. palustris* L.]
109. *Tricuspis seslerioides*, Torr. Tall Red Top. [*Tridens flavus* (L.) A.S.Hitchc.]
110. *Bromus ciliatus*, L. Var. *purgans*, Gr. Fringed Brome Grass.
111. *Smilacina racemosa*, Desf. False Spikenard. [*Maianthemum racemosum* (L.) Link.]
112. *Lindera Benzoin*, Meisner. Spice Bush. [(L.) Blume]
113. *Celastrus scandens*, L. Climbing Bitter-sweet.
114. *Rhus typhina*, L. Staghorn Sumach.
115. *Silene stellata*, Ait. Starry Campion. [(L.) Ait.f.]
116. *Anemone Virginiana*, L. Virginian Anemone.
117. *Elymus striatus*, Willd. Slender Lyme Grass. [*E. villosus* Muhl. ex Willd.]
118. *Hydrangea arborescens*, L. Wild Hydrangea.
119. *Alisma plantago*, L. Water Plantain. [*A. subcordatum* Raf.]
120. *Epilobium coloratum*, Muhl. Willow Herb. [Biehler]
121. *Rubus occidentalis*, L. Black Raspberry.
122. *Phytolacca decandra*, L. Pokeweed. [*P. americana* L.]
123. *Thalictrum cornuti*, L. Tall Meadow Rue. [*T. pubescens* Pursh]
124. *Nepeta cataria*, L. Catnip.
125. *Smilax rotundifolia*, L. Common Green-brier.
126. *Cynoglossum Morisoni*, DC. Beggar's Lice. [*Hackelia virginiana* (L.) I.M.Johnston]
127. *Rubus odoratus*, L. Purple Flowering Raspberry.
128. *Erechtites hieracifolia*, Raf. Fireweed. [*Erechtites hieracifolia* (L.) Raf. ex DC.]
129. *Clematis Virginiana*, L. Common Virgin's Bower.
130. *Euphorbia maculata*, L. Spotted Spurge.
131. *Leersia oryzoides*, Swartz. Rice Cut Grass. [(L.) Swartz]
132. *Bidens frondosa*, L. Common Beggar-ticks.
133. *Oenothera biennis*, L. Evening Primrose.
134. *Ipomoea pandurata*, Meyer. Wild Potato-vine. [(L.) G.F.W.Mey.]
135. *Helenium autumnale*, L. Sneeze-weed.
136. *Lycopus Europaeus*, L. Water Horehound.
137. *Plantago major*, L. Common Plantain.
138. *Gerardia tenuifolia*, Vahl. Slender-leaved *Gerardia*. [*Agalinis t.* (Vahl) Raf.]
139. *Cyperus strigosus*, L. Bristly-spiked Galin-gale.
140. *Aster ericoides*, L. Heath-like Aster. [*Symphyotrichum e.* (L.) Nesom]
141. *Leersia Virginica*, Willd. White Grass.
142. *Cyperus diandrus*, Torr. Diandrus Sedge.
143. *Polygonum Pennsylvanicum*, L. Penna. Knotweed. [*Persicaria pennsylvanica* (L.) M. Gomez]
144. *Ambrosia trifida*, L. Great Ragweed.
145. *Vernonia noveboracensis*, Willd. Ironweed. [(L.) Michx.]
146. *Xanthium Canadense*, Mill. Common Cocklebur. [*X. strumarium* L.]
147. *Gaura biennis*, L. *Gaura*.
148. *Lactuca Canadensis*, L. Wild Lettuce.
149. *Castanea vesca*, L. Chestnut. [*C. dentata* (Marshall) Borkh.]
150. *Juniperus Virginiana*, L. Red Cedar.
151. *Cinna arundinacea*, L. Wood Reed Grass.
152. *Carex comosa*, Boot.
153. *Muhlenbergia Mexicana*, Trin. Mexican *Muhlenbergia*. [(L.) Trin.]
154. *Muhlenbergia sylvatica*, Torr. & Gr. *Sylvan Muhlenbergia*. [(Torr.) Torr. ex A.Gray]
155. *Carex stipata*, Muhl. Awn-fruited Sedge.

Lobelia cardinalis is not common in this locality. Found three plants of it along the northern end of the island. No. 148. will bear further study. The specimens were from 6 to 8 feet high and had the general appearance of *Lactuca*, but had white flowers, instead of yellow. No. 117 is one of the rare grasses of this region. No. 106 is rare. Dr. Moyer collected it on the island years ago. Few

specimens have been found along the Delaware. It was also discovered in another part of the county by several botanists in 1884.

On our way home we collected a lot of Potamogetons which we have sent to Dr. Moyer for analysis. Also sent him some specimens of *Podostemon*.

May 20th. 1887.

Made a trip to Wyker's Island, the first since 1885. During that year we made several trips for the purpose of cataloguing the flora of the island. During 1886 circumstances prevented us from continuing the work. Our former trips were made in July & August, and the plants then collected represent the mid-summer flora. To day's trip was made to collect as much as possible of the spring flora. I loaned one of Mr. Carty's boats and rowed from Monroe to the northern end of the island. One of the first

plants found was *Prunus pumila* in flower. It is spread over the stony northern end of the island. We formerly collected it in fruit. Near by we found large beds of Lupine in flower. This is a splendid plant. I never saw such fine plants of it before. A scrubby kind of oak was found in flower but the fruit and mature leaves are necessary to determine the species. The willows form a prominent part of the flora. About an hours collecting resulted in the following additions to the flora.

Flora of Wyker's Island. Continued.

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|--|---|
| <p>156. <i>Galium triflorum</i>, Mx. 1885. Sweet scented Bedstraw.
 157. <i>Thalictrum dioicum</i>, L. Early Meadow Rue.
 158. <i>Saxifraga Virginiensis</i>, Mx. Virginian Saxifrage.
 159. <i>Geranium maculatum</i>, L. Wild Geranium.
 160. <i>Aspidium marginale</i>, Swz. Shield Fern. [<i>Dryopteris marginalis</i> (L.) A.Gray]
 161. <i>Sambucus Canadensis</i>, L. Common Elder.
 162. <i>Tilia Americana</i>, L. Basswood.
 163. <i>Prunus Americana</i>, Marshall. Wild Plum.
 164. <i>Anthoxanthum odoratum</i>, L. Sweet Vernal Grass.
 165. <i>Thaspium aureum</i>, Nutt. Golden Meadow Parsnip. [<i>T. trifoliatum</i> (L.) A.Gray]
 166. <i>Erigeron bellidifolium</i>, Muhl. Robin's Plaintain. [<i>E. pulchellus</i> Michx.]
 167. <i>Taraxacum officinale</i>, Weber. Dandelion.</p> | <p>168. <i>Poa pratensis</i>, L. Common Spear Grass.
 169. <i>Urtica gracilis</i>, Ait. Nettles. [<i>U. dioica</i> L. ssp. <i>gracilis</i> (Ait.) Seland.]
 170. <i>Viola cucullata</i>, Ait. Blue Violet.
 171. <i>Sassafras officinale</i>, Nees. Sassafras. [<i>S. albidum</i> (Nutt.) Nees]
 172. <i>Phlox subulata</i>, L. Moss Pink.
 173. <i>Cerastium arvense</i>, L. Field Chickweed.
 174. <i>Vitis cordifolia</i>, Mx. Frost Grape. [<i>V. vulpina</i> L.]
 175. <i>Salix longifolia</i>, Muhl. Long-leaved W. [<i>S. exigua</i> Nutt.]
 176. <i>Salix alba</i>, L. White Willow.
 177. <i>Salix petiolaris</i>, Smith. Petioled Willow.
 178. <i>Salix cordata</i>, Muhl. Heart-leaved W. [<i>S. eriocephala</i> Michx.]
 179. <i>Quercus ilicifolia</i>, Wang. Scrub Oak.
 180. <i>Carex</i> [sic]</p> |
|--|---|

October 1st. 1887.

... Made a trip to Wyker's Island this morning for the purpose of collecting its fall flora. The Delaware was in fine condition for rowing and I made the down trip in a very short time. The is-

land is well worth visiting at this time of the year. The flora of the extreme northern end of the island is not very interesting as that part was under water a great part of the summer. But further in-

land flowering plants are abundant. *Aster patens*, Ait. [*Symphyotrichum p.* (Ait.) Nesom] is very abundant, and its fine, large, blue flowers are a splendid sight. Among them I found the fruit of *Asclepias tuberosa*. Found the following which are new to the Flora of the island:—

Flora of Wyker's Island. Continued.

- | | |
|--|--|
| <p>181. <i>Acalypha Virginica</i>, L. Three-seeded Mercury.</p> <p>182. <i>Bidens connata</i>, Muhl. Swamp Beggar-ticks.</p> <p>183. <i>Solidago nemoralis</i>, Ait. Old field Golden Rod.</p> <p>184. <i>Gnaphalium polycephalum</i>, Mx. Common Everlasting. [<i>Pseudognaphalium obtusifolium</i> (L.) Hilliard & B.L.Burt.]</p> <p>185. <i>Aster cordifolius</i>, L. Cordate-leaved Aster. [<i>Symphyotrichum cordifolium</i> (L.) Nesom]</p> <p>186. <i>Eupatorium ageratoides</i>, L. White Snake-root. [<i>Ageratina altissima</i> (L.) R.M.King & H.Robinson]</p> <p>187. <i>Aster linariifolius</i>, L. [<i>Ionactis l.</i> (L.) Greene]</p> <p>188. [Aster] <i>Novae-Angliae</i>, L. New England Aster. [<i>Symphyotrichum n.</i> (L.) Nesom]</p> <p>189. [Aster] <i>multiflorus</i>, Ait. Many-flowered [Aster]. [<i>Symphyotrichum ericoides</i> (L.) Nesom]</p> | <p>190. [Aster] <i>umbellatus</i>, Mill. [<i>Doellingeria umbellata</i> (P.Mill.) Nees]</p> <p>191. [Aster] <i>diffusus</i>, Ait. Diffuse [Aster]. [<i>Symphyotrichum lateriflorum</i> (L.) A.&D.Love]</p> <p>192. [Aster] <i>paniculatus</i>, Lam. Panicked [Aster]. [<i>Symphyotrichum lanceolatum</i> (Wieg.) Nesom]</p> <p>193. <i>Melilotus alba</i>, Lam. White Melilot. [Medic.]</p> <p>194. <i>Solidago caesia</i>, L. Bluish Golden Rod.</p> <p>195. [Solidago] <i>Canadensis</i>, L. Canada [Golden Rod].</p> <p>196. [Solidago] <i>serotina</i>, Ait. [<i>S. gigantea</i> Ait.]</p> <p>197. <i>Panicum sanguinale</i>, L. Crab Grass. [<i>Digitaria sanguinalis</i> (L.) Scop.]</p> <p>198. <i>Quercus coccinea</i>, Weng. Var. <i>tinctoria</i>, Gr. Black Oak. [<i>Q. velutina</i> Lam.]</p> <p>199. <i>Juglans nigra</i>, L. Black Walnut.</p> <p>200. <i>Carya tomentosa</i>, Nutt. Mocker Nut. [(Lam. ex Poir.) Nutt.]</p> |
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ACKNOWLEDGMENTS

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APPENDIX: FLORA OF WYKERS ISLAND (NOW LYNN ISLAND),
BUCKS COUNTY, PENNSYLVANIA

The list includes the 197 species recorded in January and August 1884, July and August 1985, and May and October 1887 by John and Harvey Ruth (Ruth 1881-1917) and the 155 taxa identified in May and August 1992 by Pam White and Ann Rhoads (White and Rhoads 1996). There are 301 taxa in all, with 51 species in common between the two sets of surveys. Nomenclature follows the Pennsylvania Flora Project database (Rhoads and Block 2006). The last column is an index of the numbers John Ruth used in his notes on the island's flora; where it is blank, the taxon was found in 1992 but not in 1884-1887. Species found by White and Rhoads, including those also seen by the Ruth brothers, are in block letters (sans-serif typeface).

Aceraceae (see Sapindaceae)

Adoxaceae	<i>Sambucus canadensis</i> L.	American elder	161
Alismataceae	<i>Alisma subcordatum</i> Raf.	broad-leaved water-plantain	119
Alliaceae	<i>Allium canadense</i> L. <i>Allium vineale</i> * L.	wild onion field garlic*	
Amaranthaceae	<i>Dysphania botrys</i> * (L.) Mosyakin & Clemants	feather-geranium*	44
Anacardiaceae	<i>Rhus typhina</i> L. <i>Toxicodendron radicans</i> (L.) Kuntze	staghorn sumac poison-ivy	114 31
Apiaceae	<i>Anthriscus sylvestris</i> * (L.) Hoffm. <i>Daucus carota</i> * L. <i>Thaspium trifoliatum</i> (L.) A.Gray <i>Zizia aptera</i> (A.Gray) Fern.	chervil* Queen Anne's-lace* meadow-parsnip heart-leaved alexanders	60 165
Apocynaceae	<i>Apocynum cannabinum</i> L. <i>Asclepias tuberosa</i> L.	Indian-hemp butterfly-weed	64 36
Araceae	<i>Arisaema dracontium</i> (L.) Schott	green-dragon	

Asclepiadaceae (see Apocynaceae)

Asteraceae	<i>Achillea millefolium</i> * L.	common yarrow*	63
	<i>Ageratina altissima</i> (L.) R.M.King & H.Robinson var. <i>altissima</i>	common white snakeroot	186
	<i>Ambrosia artemisiifolia</i> L.	common ragweed	78
	<i>Ambrosia trifida</i> L.	giant ragweed	144
	<i>Arctium minus</i> * (Hill) Bernh.	common burdock*	
	<i>Artemisia vulgaris</i> * L.	common mugwort*	
	<i>Bidens connata</i> Muhl.	purple-stemmed beggar-ticks	182
	<i>Bidens frondosa</i> L.	devil's beggar-ticks	132
	<i>Cirsium altissimum</i> (L.) Spreng.	tall thistle	107
	<i>Cirsium arvense</i> * (L.) Scop.	Canada thistle*	
	<i>Cirsium discolor</i> (Muhl.) Spreng.	field thistle	97
	<i>Conyza canadensis</i> * (L.) Cronq.	horseweed*	

*Not indigenous to the region.

Appendix (cont'd)

Asteraceae (cont'd)	<i>Doellingeria umbellata</i> (P.Mill.) Nees	flat-topped white aster	190
	<i>Erechtites hieraciifolius</i> (L.) Raf. ex DC.	fireweed	128
	<i>Erigeron philadelphicus</i> L.	daisy fleabane	
	<i>Erigeron pulchellus</i> Michx.	robin's-plantain	166
	<i>Eupatorium perfoliatum</i> L.	boneset	70
	<i>Eupatorium serotinum</i> * Michx.	late eupatorium*	
	<i>Eutrochium maculatum</i> L.	spotted joe-pye-weed	
	<i>Eutrochium purpureum</i> L.	sweet-scented joe-pye-weed	52
	<i>Euthamia graminifolia</i> (L.) Nutt.	grass-leaved goldenrod	87
	<i>Gnaphalium uliginosum</i> L.	low cudweed	
	<i>Helenium autumnale</i> L.	common sneezeweed	135
	<i>Helianthus annuus</i> * L.	common sunflower*	104
	<i>Helianthus giganteus</i> L.	swamp sunflower	8
	<i>Ionactis linariifolius</i> (L.) Greene	stiff-leaved aster	187
	<i>Lactuca canadensis</i> L.	wild lettuce	148
	<i>Leucanthemum vulgare</i> * Lam.	ox-eye daisy*	43
	<i>Pseudognaphalium obtusifolium</i> (L.) Hilliard & B.L.Burtt.	fragrant cudweed	184
	<i>Rudbeckia hirta</i> L.	black-eyed-susan	39
	<i>Solidago caesia</i> L.	bluestem goldenrod	194
	<i>Solidago canadensis</i> L.	Canada goldenrod	195
	<i>Solidago gigantea</i> Ait.	smooth goldenrod	196
	<i>Solidago nemoralis</i> Ait.	gray goldenrod	183
	<i>Solidago rugosa</i> Ait.	wrinkle-leaf goldenrod	
	<i>Symphotrichum cordifolium</i> (L.) Nesom	blue wood aster	185
	<i>Symphotrichum ericoides</i> (L.) Nesom ssp. <i>ericoides</i>	white heath aster	140, 189
	<i>Symphotrichum lanceolatum</i> (Wieg.) Nesom ssp. <i>lanceolatum</i>	simple aster	192
	<i>Symphotrichum lateriflorum</i> (L.) A.&D.Love	calico aster	191
	<i>Symphotrichum novae-angliae</i> (L.) Nesom	New England aster	188
	<i>Symphotrichum patens</i> (Ait.) Nesom	late purple aster	35
	<i>Tanacetum vulgare</i> * L.	common tansy*	3
	<i>Taraxacum officinale</i> * Weber	common dandelion*	167
	<i>Verbesina alternifolia</i> (L.) Britt.	wingstem	
	<i>Vernonia noveboracensis</i> (L.) Michx.	New York ironweed	145
<i>Xanthium strumarium</i> L.	common cocklebur	146	
Balsaminaceae	<i>Impatiens capensis</i> Meerb.	jewelweed	105
Betulaceae	<i>Betula nigra</i> L.	river birch	49
	<i>Carpinus caroliniana</i> Walt.	hornbeam	14
Bignoniaceae	<i>Catalpa speciosa</i> * (Warder ex Barney) Warder ex Engelm.	catalpa*	
Boraginaceae	<i>Echium vulgare</i> * L.	viper's bugloss*	61
	<i>Hackelia virginiana</i> (L.) I.M.Johnston	beggar's-lice	126
	<i>Myosotis</i> sp.*	forget-me-not*	

*Not indigenous to the region.

Appendix (cont'd)

Brassicaceae	<i>Alliaria petiolata</i> * (Bieb.) Cavara & Grande	garlic-mustard*	
	<i>Barbarea vulgaris</i> * R.Br.	common wintercress*	89
	<i>Capsella bursa-pastoris</i> * (L.) Medic.	shepherd's-purse*	
	<i>Hesperis matronalis</i> * L.	dame's-rocket*	
	<i>Lepidium virginicum</i> L.	poor-man's-pepper	25
	<i>Nasturtium officinale</i> * R.Br.	watercress*	88
Caesalpiniaceae (see Fabaceae)			
Campanulaceae	<i>Lobelia cardinalis</i> L.	cardinal-flower	103
	<i>Lobelia inflata</i> L.	Indian-tobacco	
Cannabaceae	<i>Celtis occidentalis</i> L.	hackberry	
Caprifoliaceae	<i>Lonicera japonica</i> * Thunb.	Japanese honeysuckle*	
	<i>Lonicera morrowii</i> * A.Gray	Morrow's honeysuckle*	
(see also Adoxaceae)			
Caryophyllaceae	<i>Cerastium arvense</i> L. ssp. <i>arvense</i>	field chickweed	173
	<i>Saponaria officinalis</i> * L.	bouncing-bet*	62
	<i>Silene latifolia</i> * Poir.	white campion*	
	<i>Silene stellata</i> (L.) Ait.f.	starry campion	115
	<i>Stellaria media</i> * (L.) Vill.	common chickweed*	
Celastraceae	<i>Celastrus orbiculatus</i> * Thunb.	Oriental bittersweet*	
	<i>Celastrus scandens</i> L.	American bittersweet	113
Chenopodiaceae (see Amaranthaceae)			
Clusiaceae (see Hypericaceae)			
Commelinaceae	<i>Tradescantia ohioensis</i> Raf.	Ohio spiderwort	
	<i>Tradescantia virginiana</i> L.	Virginia spiderwort	21
Convolvulaceae	<i>Cuscuta gronovii</i> Willd. ex Schultz	common dodder	91
	<i>Ipomoea pandurata</i> (L.) G.F.W.Mey.	man-of-the-earth	134
Cornaceae	<i>Cornus amomum</i> P.Mill.	silky dogwood	12
Cucurbitaceae	<i>Echinocystis lobata</i> (Michx.) Torr. & A.Gray	prickly cucumber	
	<i>Sicyos angulatus</i> L.	bur cucumber	99
Cupressaceae	<i>Juniperus virginiana</i> L.	eastern red-cedar	150
Cuscutaceae (see Convolvulaceae)			
Cyperaceae	<i>Carex comosa</i> Boott	longhair sedge	152
	<i>Carex grayi</i> Carey	Gray's sedge	
	<i>Carex stipata</i> Muhl. ex Willd.	stalk-grain sedge	155

*Not indigenous to the region.

Appendix (cont'd)

Cyperaceae (cont'd)	<i>Cyperus dentatus</i> Torr.	toothed flatsedge	83
	<i>Cyperus diandrus</i> Torr.	umbrella flatsedge	142
	<i>Cyperus esculentus</i> L.	yellow nutsedge	80
	<i>Cyperus lupulinus</i> (Sprengel) Marcks	Great Plains flatsedge	42
	<i>Cyperus squarrosus</i> L.	bearded flatsedge	67
	<i>Cyperus strigosus</i> L.	false nutsedge	139
	<i>Eleocharis acicularis</i> (L.) Roemer & Schultes	needle spike-rush	
	<i>Eleocharis obtusa</i> (Willd.) Schultes var. <i>obtusata</i>	blunt spike-rush	68
	<i>Eleocharis palustris</i> (L.) Roemer & Schultes	creeping spike-rush	4
	<i>Eleocharis tenuis</i> (Willd.) Schultes	slender spike-rush	
	<i>Rhynchospora capitellata</i> (Michx.) Vahl	brown beak-rush	51
Dioscoreaceae	<i>Dioscorea villosa</i> L.	wild yam	
Dryopteridaceae (see Polypodiaceae)			
Ebenaceae	<i>Diospyros virginiana</i> L.	persimmon	100
Equisetaceae	<i>Equisetum arvense</i> L.	field horsetail	76
	<i>Equisetum hyemale</i> L.	scouring-rush	77
	<i>Equisetum</i> sp.	horsetail	
Euphorbiaceae	<i>Acalypha virginica</i> L.	three-seeded mercury	181
	<i>Euphorbia corollata</i> L.	flowering spurge	48
	<i>Euphorbia cyparissias</i> * L.	cypress spurge*	
	<i>Euphorbia maculata</i> L.	spotted spurge	130
Fabaceae	<i>Amorpha fruticosa</i> L.	false-indigo	
	<i>Apios americana</i> Medic.	ground-nut	
	<i>Baptisia tinctoria</i> (L.) Vent.	wild indigo	33
	<i>Chamaecrista fasciculata</i> (Michx.) Greene	partridge-pea	7
	<i>Desmodium canadense</i> (L.) DC.	showy tick-trefoil	85
	<i>Desmodium</i> sp.	tick-trefoil	
	<i>Lespedeza capitata</i> Michx.	round-headed bush-clover	58
	<i>Lupinus perennis</i> L.	blue lupine	98
	<i>Melilotus alba</i> * Medic.	white sweet-clover*	193
	<i>Robinia pseudoacacia</i> L.	black locust	
	<i>Senna marilandica</i> (L.) Link	southern wild senna	47
<i>Tephrosia virginiana</i> (L.) Pers.	goat's-rue	59	
Fagaceae	<i>Castanea dentata</i> (Marshall) Borkh.	American chestnut	149
	<i>Fagus grandifolia</i> Ehrh.	American beech	
	<i>Quercus ilicifolia</i> Wang.	scrub oak	179
	<i>Quercus rubra</i> L.	northern red oak	
	<i>Quercus velutina</i> Lam.	black oak	198
Geraniaceae	<i>Geranium maculatum</i> L.	wood geranium	159
Grossulariaceae	<i>Ribes americanum</i> P.Mill.	wild black currant	

*Not indigenous to the region.

Appendix (cont'd)

Hemerocallidaceae	<i>Hemerocallis fulva</i> * (L.) L.	orange day-lily*	
Hyacinthaceae	<i>Ornithogalum umbellatum</i> * L.	star-of-Bethlehem*	
Hydrangeaceae	<i>Hydrangea arborescens</i> L.	sevenbark	118
Hypericaceae	<i>Hypericum boreale</i> (Britt.) Bickn.	northern St. John's-wort	
	<i>Hypericum ellipticum</i> Hook.	pale St. John's-wort	71
	<i>Hypericum mutilum</i> L.	dwarf St. John's-wort	72
	<i>Hypericum perforatum</i> * L.	common St. John's-wort*	29
	<i>Hypericum punctatum</i> Lam. <i>Hypericum pyramidatum</i> Ait.	spotted St. John's-wort great St. John's-wort	9
Juglandaceae	<i>Carya tomentosa</i> (Lam. ex Poir.) Nutt.	mockernut hickory	200
	<i>Juglans cinerea</i> L.	butternut	53
	<i>Juglans nigra</i> L.	black walnut	199
Juncaceae	<i>Juncus acuminatus</i> Michx.	sharp-fruited rush	81
	<i>Juncus tenuis</i> Willd. var. <i>tenuis</i>	path rush	82
Lamiaceae	<i>Agastache nepetoides</i> (L.) Kuntze	yellow giant-hyssop	
	<i>Collinsonia canadensis</i> L.	horse balm	
	<i>Glechoma hederacea</i> * L.	gill-over-the-ground*	
	<i>Lamium purpureum</i> * L.	purple dead-nettle*	
	<i>Leonurus</i> sp.*	motherwort*	
	<i>Lycopus europaeus</i> * L.	European water-horehound*	136
	<i>Lycopus</i> sp.	water-horehound	
	<i>Mentha arvensis</i> L.	field mint	69
	<i>Mentha</i> sp.	mint	
	<i>Monarda fistulosa</i> L.	horsemint	
	<i>Nepeta cataria</i> * L.	catnip*	124
	<i>Prunella vulgaris</i> L.	heal-all	
<i>Scutellaria lateriflora</i> L.	mad-dog skullcap	22	
<i>Teucrium canadense</i> L. var. <i>virginicum</i> (L.) Eat.	wild germander	50	
Lauraceae	<i>Lindera benzoin</i> (L.) Blume	spicebush	112
	<i>Sassafras albidum</i> (Nutt.) Nees	sassafras	171
Liliaceae (see Alliaceae, Hemerocallidaceae, Hyacinthaceae, Ruscaceae)			
Limnanthaceae	<i>Floerkea proserpinacoides</i> Willd.	false-mermaid	
Lythraceae	<i>Lythrum salicaria</i> * L.	purple loosestrife*	96
Magnoliaceae	<i>Liriodendron tulipifera</i> L.	tuliptree	17
Malvaceae	<i>Tilia americana</i> L.	white basswood	162
Menispermaceae	<i>Menispermum canadense</i> L.	moonseed	13
Molluginaceae	<i>Mollugo verticillata</i> * L.	carpetweed*	1

*Not indigenous to the region.

Appendix (cont'd)

Moraceae	<i>Morus</i> sp.*	mulberry*	
Myrsinaceae	<i>Lysimachia ciliata</i> L.	fringed loosestrife	73
	<i>Lysimachia nummularia</i> * L.	creeping-charlie*	
	<i>Lysimachia quadrifolia</i> L.	whorled loosestrife	18
	<i>Lysimachia terrestris</i> (L.) BSP	swamp-candles	74
Oleaceae	<i>Fraxinus americana</i> L. var. <i>americana</i>	white ash	
	<i>Fraxinus pennsylvanica</i> Marshall	green ash	
	<i>Ligustrum obtusifolium</i> * Sieb. & Zucc.	obtuse-leaved privet*	
Onagraceae	<i>Circaea canadensis</i> (L.) Hill ssp. <i>canadensis</i>	enchanter's-nightshade	
	<i>Epilobium coloratum</i> Biehler	purple-leaved willow-herb	120
	<i>Gaura biennis</i> L.	gaura	147
	<i>Ludwigia alternifolia</i> L.	seedbox	40
	<i>Oenothera biennis</i> L.	evening-primrose	133
Orobanchaceae	<i>Agalinis tenuifolia</i> (Vahl) Raf.	slender false-foxglove	138
Oxalidaceae	<i>Oxalis stricta</i> L.	common yellow wood-sorrel	5
Papaveraceae	<i>Chelidonium majus</i> * L.	greater celandine*	
Penthoraceae	<i>Penthorum sedoides</i> L.	ditch stonecrop	65
Phrymaceae	<i>Mimulus ringens</i> L.	Allegheny monkey-flower	54
Phytolaccaceae	<i>Phytolacca americana</i> L.	pokeweed	122
Plantaginaceae	<i>Chelone glabra</i> L.	turtlehead	
	<i>Gratiola aurea</i> Muhl. ex Pursh	goldenpert	2
	<i>Gratiola neglecta</i> Torr.	hedge hyssop	
	<i>Linaria vulgaris</i> * Hill	butter-and-eggs*	56
	<i>Penstemon digitalis</i> Nutt. ex Sims	tall white beard-tongue	
	<i>Plantago lanceolata</i> * L.	English plantain*	79
	<i>Plantago major</i> * L.	broad-leaved plantain*	137
	<i>Veronica arvensis</i> * L.	corn speedwell*	
Platanaceae	<i>Platanus occidentalis</i> L.	sycamore	55
Poaceae	<i>Agrostis perennans</i> (Walt.) Tuckerman	autumn bent	
	<i>Agrostis scabra</i> Willd.	fly-away grass	90
	<i>Andropogon gerardii</i> Vitman	big bluestem	75
	<i>Anthoxanthum odoratum</i> * L.	sweet vernalgrass*	164
	<i>Bromus ciliatus</i> L.	fringed brome	110
	<i>Cenchrus tribuloides</i> * L.	dune sandbur*	10
	<i>Cinna arundinacea</i> L.	wood reedgrass	151
	<i>Dichanthelium clandestinum</i> (L.) Gould	deer-tongue grass	38
	<i>Dichanthelium dichotomum</i> (L.) Gould	cypress panic grass	46
	<i>Digitaria sanguinalis</i> * (L.) Scop.	northern crabgrass*	197

*Not indigenous to the region.

Appendix (cont'd)

Poaceae (cont'd)	<i>Echinochloa crusgalli</i> * (L.) Beauv. var. <i>crusgalli</i>	billion-dollar grass*	24
	<i>Elymus canadensis</i> L. var. <i>canadensis</i>	Canada wild-rye	41, 45
	<i>Elymus riparius</i> Wieg.	riverbank wild-rye	
	<i>Elymus villosus</i> Muhl. ex Willd.	hairy wild-rye	117
	<i>Eragrostis frankii</i> C.A.Mey. ex Steud.	sandbar lovegrass	
	<i>Eragrostis pilosa</i> * (L.) Beauv.	India lovegrass*	86
	<i>Leersia oryzoides</i> (L.) Swartz	rice cutgrass	131
	<i>Leersia virginica</i> Willd.	whitegrass	141
	<i>Microstegium vimineum</i> * (Trin.) A.Camus.	stiltgrass*	
	<i>Muhlenbergia mexicana</i> (L.) Trin.	leafy satgrass	153
	<i>Muhlenbergia sylvatica</i> (Torr.) Torr. ex A.Gray	woodland muhly	154
	<i>Panicum capillare</i> L.	witchgrass	11
	<i>Panicum dichotomiflorum</i> Michx.	smooth panic grass	95
	<i>Panicum rigidulum</i> Nees	red-top panic grass	94
	<i>Panicum virgatum</i> L.	switchgrass	93
	<i>Phleum pratense</i> * L.	timothy*	34
	<i>Poa palustris</i> L.	fowl bluegrass	108
	<i>Poa pratensis</i> * L.	Kentucky bluegrass*	168
	<i>Schizachyrium scoparium</i> (Michx.) Nash var. <i>scoparium</i>	little bluestem	66
	<i>Setaria pumila</i> * (Poir.) Schultes	yellow foxtail*	23
<i>Sorghastrum nutans</i> (L.) Nash	Indian-grass	15	
<i>Spartina pectinata</i> Link	freshwater cordgrass	92	
<i>Tridens flavus</i> (L.) A.S.Hitchc.	purpletop	109	
Polemoniaceae	<i>Phlox subulata</i> L. ssp. <i>subulata</i>	moss-pink	172
Polygonaceae	<i>Fallopia convolvulus</i> * (L.) A.Love	black bindweed*	
	<i>Fallopia japonica</i> * (Hout.) Ronse Decraene	Japanese knotweed*	
	<i>Fallopia scandens</i> (L.) Holub	climbing false-buckwheat	
	<i>Persicaria longiseta</i> * (Bruijn) Kitagawa	low smartweed*	
	<i>Persicaria pennsylvanica</i> (L.) M.Gomez	Pennsylvania smartweed	143
	<i>Persicaria punctata</i> (Elliott) Small	dotted smartweed	
	<i>Persicaria virginiana</i> (L.) Gaertner	jumpseed	
	<i>Rumex altissimus</i> A.Wood	tall dock	
<i>Rumex crispus</i> * L.	curly dock*	28	
Polypodiaceae	<i>Dryopteris marginalis</i> (L.) A.Gray	marginal wood fern	160
	<i>Onoclea sensibilis</i> L.	sensitive fern	26
	<i>Thelypteris palustris</i> Schott	marsh fern	
Primulaceae (see Myrsinaceae)			
Ranunculaceae	<i>Anemone virginiana</i> L.	tall anemone	116
	<i>Clematis virginiana</i> L.	virgin's-bower	129
	<i>Ranunculus bulbosus</i> * L.	bulbous buttercup*	
	<i>Thalictrum dioicum</i> L.	early meadow-rue	157
	<i>Thalictrum pubescens</i> Pursh	tall meadow-rue	123
Rosaceae	<i>Crataegus coccinea</i> L. sensu lato	red-fruited hawthorn	32
	<i>Geum canadense</i> Jacq.	white avens	

*Not indigenous to the region.

Appendix (cont'd)

Rosaceae (cont'd)	<i>Physocarpus opulifolius</i> (L.) Maxim.	ninebark	
	<i>Potentilla canadensis</i> L.	dwarf cinquefoil	57
	<i>Potentilla simplex</i> Michx.	old-field cinquefoil	
	<i>Prunus americana</i> Marshall	wild plum	163
	<i>Prunus pumila</i> L. var. <i>depressa</i> (Pursh) Gleason	sand cherry	84
	<i>Prunus virginiana</i> L.	choke cherry	
	<i>Rosa multiflora</i> * Thunb. ex Murr.	multiflora rose*	
	<i>Rubus canadensis</i> L.	smooth blackberry	102
	<i>Rubus hispidus</i> L. sensu lato	swamp dewberry	
	<i>Rubus occidentalis</i> L.	black-cap	121
	<i>Rubus odoratus</i> L.	purple-flowering raspberry	127
	<i>Rubus pensilvanicus</i> Poir. sensu lato	blackberry	
	<i>Rubus phoenicolasius</i> * Maxim.	wineberry*	
<i>Spiraea latifolia</i> (Ait.) Borkh.	meadow-sweet	16	
Rubiaceae	<i>Cephalanthus occidentalis</i> L.	buttonbush	
	<i>Galium asprellum</i> Michx.	rough bedstraw	27
	<i>Galium mollugo</i> * L.	white bedstraw*	
	<i>Galium triflorum</i> Michx.	sweet-scented bedstraw	156
Ruscaceae	<i>Maianthemum racemosum</i> (L.) Link.	Solomon's-plume	111
	<i>Maianthemum stellatum</i> (L.) Link.	starflower	106
Salicaceae	<i>Populus tremuloides</i> Michx.	quaking aspen	
	<i>Salix alba</i> * L.	white willow*	176
	<i>Salix discolor</i> Muhl.	pussy willow	
	<i>Salix eriocephala</i> Michx.	diamond willow	178
	<i>Salix exigua</i> Nutt.	sandbar willow	175
	<i>Salix nigra</i> Marshall	black willow	
Sapindaceae	<i>Salix petiolaris</i> Smith	slender willow	177
	<i>Acer negundo</i> L.	box-elder	
	<i>Acer platanoides</i> * L.	Norway maple*	
	<i>Acer saccharinum</i> L.	silver maple	
	<i>Acer saccharum</i> Marshall	sugar maple	
Saxifragaceae (see also Penthoraceae)	<i>Saxifraga virginiana</i> Michx.	early saxifrage	158
Scrophulariaceae (see also Orobanchaceae, Phrymaceae, Plantaginaceae)	<i>Scrophularia marilandica</i> L.	eastern figwort	
	<i>Verbascum thapsus</i> * L.	common mullein*	37
Simaroubaceae	<i>Ailanthus altissima</i> * (P.Mill.) Swingle	tree-of-heaven*	
Smilacaceae	<i>Smilax rotundifolia</i> L.	common greenbrier	125
Solanaceae	<i>Physalis virginiana</i> P.Mill.	Virginia ground-cherry	6
	<i>Solanum dulcamara</i> * L.	trailing nightshade*	

*Not indigenous to the region.

Appendix (*cont'd*)

Thelypteridaceae (see **Polypodiaceae**)

Tiliaceae (see **Malvaceae**)

Ulmaceae (see also Cannabaceae)	<i>Ulmus americana</i> L.	American elm	
Urticaceae	<i>Boehmeria cylindrica</i> (L.) Swartz	slimspike false nettle	
	<i>Laportea canadensis</i> (L.) Weddell	Canada wood-nettle	101
	<i>Pilea pumila</i> (L.) A.Gray	clearweed	
	<i>Urtica dioica</i> L. ssp. <i>gracilis</i> (Ait.) Seland	stinging nettle	169
Verbenaceae	<i>Verbena hastata</i> L.	blue vervain	20
	<i>Verbena urticifolia</i> L.	white vervain	19
Violaceae	<i>Viola cucullata</i> Ait.	blue marsh violet	170
	<i>Viola sororia</i> Willd.	common blue violet	
Vitaceae	<i>Parthenocissus quinquefolia</i> (L.) Planch.	Virginia-creeper	30
	<i>Vitis vulpina</i> L.	frost grape	174

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