

A LIST OF THE FERNS OF MAHONING COUNTY WITH SPECIAL REFERENCE TO MILL CREEK PARK.

EARNEST W. VICKERS.

Lying toward the north-eastern corner of the state and belonging to a group known as the Highland Counties of Ohio, Mahoning presents variations of soil and surface which find natural expression in its flora.

The erosions of the Mahoning River which flows up the west side of the County and again down across the north-east corner, as well as numerous smaller streams have left steep banks, glens, ledges and cliffs and in the case of Mill Creek—which gives the park its name—at Lautermain Falls, near Youngstown, a gorge has been cut seventy-three feet in depth.

It is in these places that the rock loving ferns find congenial habitat. There are rich wet woods—remnants of noble forests—where the sylvan groups are well represented; while swamps of greater or less area are scattered over the county where ferns of the marsh or bog flourish.

In its remarkably varied character in such small compass, Mill Creek Park represents the whole county so faithfully that the botanist may expect, and without disappointment, to find therein almost a complete living index to the fern flora of Mahoning County.

The ferns listed below have been verified by Prof. J. H. Schaffner and are represented by specimens deposited in the State Herbarium at Columbus, Ohio.

Polypodium vulgare L. Common Polypody. Commonest on rocks and ledges, its natural home, but also found on stumps and logs.

Phegopteris polypodioides Fée. Long Beech Fern. Appears to be well distributed growing on high banks and on sandstone ledges, not so abundant as the next species which is frequently found growing with it. Abundant in Mill Creek Park and along the Mahoning River in Berlin Township.

Phegopteris hexagonoptera (Mx.) Broad Beech Fern. Common everywhere in moist shady woods.

Adiantum pedatum L. Maiden-hair Fern. Everywhere and common.

Pteris aquilina L. Common Brake. Common. Wherever found there is a generous colony preempting the ground.

Asplenium pinnatifidum Nutt. Pinnatifid Spleenwort. July 18, 1909, while carefully searching the cliffs in Mill Creek Park near Lautermain Falls, the writer discovered this rare species. This is at once the most eastern and northern station for this

fern in the state. Originally but one block, the operation of man, first in building the now abandoned grist mill and more recently the high bridge across Mill Creek Gorge, has cut it up into three approximate stations containing in all a little over two hundred plants. The stream flows about east and west at this point and the ferns all grow on the north side. Forked fronds and those with pinnules elongated beyond the middle were found.

Asplenium trichomanes L. Maiden-hair Spleenwort. Found principally along ledges in Mill Creek Park, although it grows in similar locations along the Mahoning River.

Asplenium platyneuron (L.) Mill Creek Park, along the Mahoning and in wooded and rocky slopes.

Asplenium montanum Willd. Mountain Spleenwort. So far but one station and that quite restricted for this somewhat rare Ohio fern: "Standing Rock" in the Mahoning River in Berlin township. This curious boat-shaped sand-stone rock has been eroded free from a jutting "bogi back" through the united action of the river and a tributary, and stands a picturesque mass 15 to 20 ft. high, 82 ft. long, 27 wide at base and 7 to 12 ft. wide at top. And in the crannies of its fractured sides from 150 to 175 plants cling in flourishing condition.

Thus far diligent search has failed to extend the distribution either in the neighborhood of this rock or elsewhere in the county.

Asplenium angustifolium Mx. Narrow-leaved Spleenwort. So far its title to a place in this list rests on a single sterile plant growing in low moist woods in Ellsworth Township. During several years of watching it has failed to put forth a fertile frond.

Asplenium acrostichoides Sw. Silvery Spleenwort. Rather common in its distribution over the county.

Asplenium filix-foemina. Lady Fern. As common in distribution as in variation.

Camptosorus rhizophyllus (L.) Walking Fern. Abundant on rocky walls of Mill Creek Park. Grows in similar situations along the Mahoning.

Polystichum acrostichoides (Mx.) Christmas Fern. Found everywhere in the county.

Aspidium thelypteris (L.) Marsh Fern. One of the commonest ferns, found in marshy places, wet pastures, woods, etc.

Aspidium noveboracense (L.) New York Fern. As delicate in design as in its exquisite shade of green. In damp woods, wet pastures, shaded ravines or on wooded banks, in which two latter places it attains highest perfection. Often found growing with the last mentioned and is abundant in the county.

Aspidium cristatum L. Crested Fern. Of general distribution though it does not form dense clumps or banks like some other ferns and so does not appear so abundant.

Aspidium marginale (L.) Marginal shield Fern. Common on ledges or on steep wooded hill sides and even low wet wood lands.

Aspidium spinulosum intermedium. Muhl. Common in woods as well as in the deep ravines and on wet rocks of Mill Creek Park and similar situations along the Mahoning. Annoyingly various but nothing approaching specific types has yet been found.

Cystopteris fragilis (L). Fragile Bladder Fern. As common in all situations as it is various in form. In low woods as well as on cliffs and rocks.

Dicksonia punctilobula (Mx.) Hayscented Fern, Boulder Fern. This graceful delicate green fern may be considered quite common in this county, attaining perfection in rich shady woods as well as on wet shaded rocks and cliffs, in which last location like the Bladder Fern its fronds become much elongated and elegantly tapered.

Onoclea sensibilis L. Sensitive Fern. Common in woods, thickets and pastures everywhere. Some seasons there appears a riot of that sportive so-called variety obtusilobata appearing to illustrate the evolution or intermarriage of sterile and fertile fronds. When they abound one season you search for them the following year in vain.

Osmunda regalis L. Flowering Fern. Found to some extent in wet woods and swamps.

Osmunda cinnamomea L. Cinnamon Fern. In swamps and wet pastures, though not common as in the tamarack bogs of some places in this corner of the state; a bog of this kind in Boardman Township having been destroyed.

Osmunda claytoniana L. Not abundant, though it may be found generally distributed.

Ophioglossum vulgatum (L). Adder's Tongue. For this plant the writer has two stations in the county viz: Jackson Township, June 9, 1900, where it has not been rediscovered, and Ellsworth Township, June 13, 1909. This plant being so readily overlooked is doubtless more common than would seem.

Botrychium obliquum Muhl. Grape Fern and var. dissectum. Their common form grows everywhere in woods and pasture and spring together as if from a common root.

Botrychium virginianum (L). More abundant than the last. The size attained depending upon the moist richness of the woods where heavy shade is a factor.

With the exception of *Asplenium angustifolium*, *Asplenium montanum*, and *Ophioglossum vulgatum*, I have found all of the above in Mill Creek Park, and probably two of the three will yet be found there.