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that they belonged to seed-bearing plants; in fact, they were supposed to belong to marattiaceous ferns.

The more or less complete life history of a number of other pteridosperms is now known, and from these it appears that there was considerable diversity not only in the form of the seed but in the manner in which it was borne on the plant. Thus, from the Carboniferous (Pottsville beds) of West Virginia, Mr. David White has described a plant under the name of *Aneimites fertilis*, which bore small, winged, rhomboidal seeds on the apices of reduced terminal pinnae. However, lack of space forbids further description of this and other forms.

It is evident from what has preceded that we are not dealing with ferns at all, but veritable seed-plants. It is probable that less than half of the Paleozoic "ferns" will ultimately be shown to be true ferns.

Ferns of the Wissahickon Valley

EDWIN C. JELLET

(Address delivered at the Philadelphia meeting of the Fern Society, December 29, 1914.)

I shall endeavor to speak, not of ferns, but of where ferns grow in the Wissahickon district.

To our local members present Wissahickon Creek is well known, but for the benefit of visitors it may be well to state it is a beautiful, romantic, historic stream, which rises in Montgomery County, Pa., and for 22 miles flows in a general southwesterly direction to the Schuylkill River, with which it unites south of Manayunk. For 16 miles this stream meanders through a picturesque open territory to Chestnut Hill, where it enters a great, tortuous, longitudinal ravine, connect-

ing with many secondary lateral ravines, accommodating streams, and for 6 miles, as part of Fairmount Park, it struggles onward over dams, between precipitous, rocky hills clothed by sweet-fern, wild honeysuckle, and laurel—by juniper, pine, and hemlock—by oak, chestnut, and tulip-poplar—shrubs and trees of unusual size and vigor—with an exceedingly rich floral undergrowth—until it finds its release at “Riverside.”

From colonial days “the Wissahickon” has been a resort for nature-lovers, and upon its northern bank near Ridge Road John Kelpius in 1695 founded and conducted what is believed to have been the first Botanic Garden of America. Here plants were grown and their uses taught, and from it Dr. Christopher Witt proceeded to Germantown, where, in 1705, the second garden for the study of plants was established.

Philadelphia being the important city of America until after the Revolutionary War, in it, first in the United States, the study of the natural sciences became popular, and, in connection with the Philadelphia College, the Academy of Natural Sciences, and other institutions of learning, teachers and their classes made frequent excursions and became familiar with the Wissahickon territory. From records existing it is of interest to note changes. Dr. W. P. C. Barton, in his *Compendium Florae Philadelphicae*, published in 1818, noted that *Viola rotundifolia* “is rare and grows only upon Wissahickon-hills near Ridge Road,” while now it appears two miles northwest upon the stream. Here C. S. Rafinesque was a frequent visitor, and from here, near Schuylkill Falls, Thomas Nuttall, in 1818, described *Asplenium pinnatifidum*. It would be difficult to name a Philadelphia botanist not connected with “the Wissahickon,” for, from the days of Kelpius to those of Stone and Brown, all known to us were familiar with it. Upon its banks flourished the nurseries of Maupay, Meehan,

and Andorra, and here, at Kieffer's nursery, was born the celebrated Kieffer pear. Indeed, the whole region is so rich in botanical lore and treasure that it is difficult to pass its many charms.

In the Wissahickon district, there are, so far as known to me, 38 varieties of ferns, which here, as elsewhere, frequent situations favorable to their growth, and are so generally distributed that one with confidence may go to a habitat and collect the fern he desires. In low grounds and along fences, *Onoclea sensibilis* is common, while the var. *obtusilobata*, its abnormal product, is infrequent, though not exceedingly rare. In damp places or in open woods appears *Dicksonia pilosiuscula*, and in deep, well drained mould *Phegopteris hexagonoptera* is not uncommon. Common everywhere in protected dry places is *Aspidium noveboracense* and *Asplenium ebeneum*, while more rare is *A. angustifolium*. On ledges, on the under side of shelving rocks, and in caves, *Asplenium Trichomanes* is not uncommon. Along swampy rivulets is *Aspidium Thelypteris* and *Athyrium thelypteroides*. Nowhere in Maine did I see a more beautiful hill of *Pteris aquilina* than appears upon the east side of Creshiem Creek, near "Devil's Pool." Near the same place, also upon stone walls and upon rocks, appear *Cystopteris fragilis*, *Woodsia obtusa*—and, it is said, *Woodsia ilvensis*, although the latter I have not collected. Everywhere in Wissahickon woods upon micaceous rocks *Polypodium vulgare* is common, while upon steatitic rock in both upper and lower Wissahickon woods appears sparingly *Camptosorus rhizophyllus*. Also upon rocks, near Ridge Road, are, or were, *Asplenium pinnatifidum*, *Pellaea atropurpurea*, and *Cheilanthes vestita*. Here also has been collected *Asplenium Rutamuraria*, but I have not been fortunate enough to collect it myself. A fern peculiar to the district grew near Allen's Lane. This was *Athyrium Filix-femina*. It

grew upon a shelving elevation, and, as it is several years since I visited the spot, it may have disappeared. For a knowledge of its hiding-place I am indebted to Joseph Meehan.

Everywhere throughout "the Wissahickon" appears *Polystichum acrostichoides*, while near Springfield Avenue grow *Aspidium marginale*, *A. spinulosum*, *A. cristatum*, and *A. Goldianum*. Nearby also appears a solitary group of *Woodwardia angustifolia*. Upon "Paper-mill Run" are, or were, *Osmunda regalis*, *O. cinnamomea*, and *O. Claytoniana*.

I have now named our best-known ferns, some of which are very common, others being rare—although all may be common to another locality. Among those rare with us is *Lygodium palmatum*, a single station of which in Wissahickon is near "Old Red Bridge." *Adiantum pedatum*, once with us very common, is now rare and only sparingly appears throughout the district. Perhaps the rarest fern now appearing near Wissahickon is *Struthiopteris germanica*, confined to one station and appearing out of place, for one usually thinks of it in connection with the *Woodwardias* and *Schizaea* of New Jersey. The locality was made known to me by George Redles. In many places appear the *Botrychiums*, the most common being *B. virginianum*, while close behind is *B. ternatum*, with its varieties *intermedium* and *dissectum*, for I hold the last two as but varieties of the first, produced by check, and which, like *Onoclea sensibilis*, var. *obtusilobata*, may be produced at will.

Variations bring us to hybridization and our most interesting fern, which was described from Roberts's Run, almost directly opposite the mouth of Wissahickon Creek, and is known as *Asplenium ebenoides*. This was discovered by the father of our worthy chairman, who was Robert Robinson Scott, and in the year 1862. For many years this district had been visited by a coterie

of Darby-Road botanists, composed of William Hobson, William DeHart, Robert Kilvington, Thomas Meehan, and others, but the "find" was made by Mr. Scott, who noted the dual character of the plant in his first report of it to the Pennsylvania Horticultural Society, which later appeared in the columns of the Gardeners' Monthly. From the date of its first report until now, and in spite of experiments and demonstrations by Miss Slosson and others, the plant yet continues a "bone of contention," and I know not a better subject to start an argument among botanists than to assert that it is, or is not, a hybrid. As I wish not, at this time, to start a discussion, I shall conclude by stating that the "Fern Flora" assigned me is but a small part of the wonders of the region, and I trust that, when again our members meet in Philadelphia, a day will be reserved and that you will ask me to guide you through our wondrous Wissahickon.

GERMANTOWN, PA.

Notes and News

A REVIEW: W. R. MAXON. THE NORTH AMERICAN SPECIES OF *PSILOGRAMME*.¹

Psilogramme is a genus of tropical ferns belonging to the tribe *Pteridiæ*, and is one of the groups formerly included under the omnibus generic name of *Gymnogramma*. In the present paper eight species are dealt with, of which three are new, all from Mexico or Central America. Besides these eight there are two species which have been called *Psilogramme* but which are here considered as of doubtful relationship to the others.

R. C. B.

¹ Bull. Torr. Club 42: 79-86. Fe 1915.