

BOTANISTS AND NATURALISTS AT DEVIL'S LAKE STATE PARK, WISCONSIN

KENNETH I. LANGE
Devil's Lake State Park
Wisconsin Department of Natural Resources

A traveler north-bound on Interstate Highway 90-94 in south-central Wisconsin notices a range of hills high and massive against the skyline for some time before the Baraboo-Devil's Lake exit. This is the Baraboo Range, an anomalous outcrop of pre-Cambrian, metamorphic rock amid otherwise younger, sedimentary rock. Generally called the Baraboo Hills or Baraboo Bluffs, this outcrop, actually a syncline, consists of an elliptical ring of quartzite rock extending for a west-east distance of 25 miles and enclosing the canoe-

shaped Baraboo valley, with a north-south distance averaging 5 miles. Devil's Lake and Devil's Lake State Park are located in the southern half of the quartzite ring, three miles south of Baraboo, in Sauk County. Greatest relief is attained at Devil's Lake, where three 500 foot bluffs with talus slopes (west, east and south) flank a spring-fed body of water approximately 360 acres in area (Fig. 1).

The Baraboo Range is rich in geologic history and features, and has been visited by geologists since 1848 and school classes since



Fig. 1. Devil's Lake and the surrounding country as seen from an airplane. The west bluff is in the upper part of the picture, the east bluff is to your right, and the south bluff to your left. Notice the railroad track through the middle of the lower half of the picture, the talus slopes, and the prairie strip along the upper edge of the south end of the east bluff.

the late 1800s. Black (1968) and Dalziel and Dott (1970) detail the geology of the area, and Lange and Tuttle (1975) and Lange and Berndt (1980) discuss park history, including educational use.

The land cover in 7400 acre Devil's Lake State Park is primarily red oak woods with red maple understory, but because of the relief and varying exposure it also includes sugar maple woods, stands of yellow birch, white pine groves, boreal fern gardens on north-facing talus slopes, thickets of red elder and mountain maple and pockets of northern herbaceous plants at the bases of the bluffs (such as in the linear depression at the base of the east bluff called "Alaskan Grotto"), marshy areas, and dry prairie relicts on top of the bluffs. Mossman and Lange (1982) discuss pre- and post-settlement vegetation of the Baraboo Hills, including Devil's Lake State Park.

With such a varied land cover, one would expect a rich flora. The vascular plant list for the park now stands at 798 species, approx-

imately 40% of the total vascular flora of Wisconsin. An additional 233 species occur in the Baraboo Hills only outside of the park (Lange, unpublished ms; *Crataegus* spp. are not distinguished).

Devil's Lake has consequently been a magnet for botanists and naturalists, as well as geologists. In the early years they came by wagon, then, beginning in 1873 when the main passenger line of the Chicago and Northwestern was completed, also by train.

Wisconsin's pioneering naturalist, Increase Allen Lapham (1811-75), seems to have been the first botanist to have explored Devil's Lake, doing so in 1849 with several companions: "A large body of broken fragments have accumulated along the edge of the water rendering it very difficult to walk along shore: yet two of our party made a circuit of the lake, jumping from rock to rock as best they could" (Lapham, 1849). On Lapham's 1850 map of Wisconsin, Devil's Lake is called "Lake of the Hills," a local name he heard on the 1849 trip.

Lapham (Fig. 2) was the true naturalist: he had to explore and understand. As a youngster in Palmyra, New York, he was once sent to fetch the family cow: in his diary, he recorded a variety of natural happenings, but "didn't find the cow" (Milwaukee *Free Press*, 8 March 1911). As an adult he apologized to a brother for not writing sooner: ". . . my head has been so full of topography, geography, etc., etc., that it would not contain the material for a letter besides" (Milwaukee *Sentinel*, 16 October 1895, Part 2, page 12). In the last entry in his notebook, dated the day before he died, Lapham referred to a plant that he had never found before (Hawks, 1960, p. 277).

When asked his speciality, Lapham replied, "I am studying Wisconsin" (Sherman, 1876, p. 51). Lapham was a generalist, not a specialist, yet despite his diversity of interests and lack of formal education, he associated scientifically with his contemporaries in a variety of fields and was accorded universal respect by his peers



Fig. 2. Wisconsin's pioneering naturalist, Increase Allen Lapham. From the collections of the State Historical Society of Wisconsin.

(Hawks, 1960, p. 279; Sherman, 1876, pp. 50-51). To Asa Gray of Harvard, for example, Lapham was thoroughly reliable, a "modest, retiring, industrious, excellent man" (Sherman, 1876, p. 21). Lapham and Gray met several times, for example in 1847 when Lapham traveled east where in Boston he had supper at Gray's with John Carey and William Oakes, and "didn't we four great Bostonians have fine times" (Hawks, 1960, p. 136).

Lapham wrote at one time or another to literally dozens of botanists, American and foreign, some of whom are now unknown, although others continue to be familiar names. He also had a national reputation as a "good exchanger," that is, someone who exchanged plant specimens generously and promptly (Hawks, 1960, pp. 149-150, 155).

Speaking as a botanist, Lapham preferred "spring and summer all year." By 1841 he had a "very handsome collection of dried plants, numbering something over 2,000 species," and was adding to it by exchanges (Milwaukee *Sentinel*, *loc. cit.*). Asa Gray by 1840, for example, had received plants from a total of 78 Americans of whom Lapham was his only contributor from Wisconsin Territory (Dupree, 1959, p. 96). These were the years when John Torrey and Gray were working on their *Flora of North America* (now in its 8th edition as *Gray's Manual of Botany*). Lapham sent plant specimens to Torrey and procured subscriptions for the *Flora* (Rodgers, 1965, p. 125).

In 1849 Lapham offered the University of Wisconsin his collection of plants if the University would preserve them properly, but he was refused (Noland, 1950, p. 83). Lapham also corresponded with the Wisconsin Natural History Association about his scientific collections, but here too the negotiations collapsed (Schorger, 1947, p. 174). The year after he died, Lapham's extensive scientific collections, including a 24,000 specimen herbarium of approximately 8000 species, was purchased for \$10,000 by the State for the University

(Arthur, 1881, p. 52; Bryan, 1950, p. 13). Lapham's plant collection was the beginning of today's University of Wisconsin Herbarium, as the other University botanical collections of the time were consumed by the 1884 Science Hall fire (Davis, 1925). Recently a series of lichens collected by Lapham has emerged from the past, but this has a different history (Thomson, 1973).

Sixteen years after his death, Lapham received special recognition as the most distinguished past citizen of the State of Wisconsin in a contest judged by the State Agricultural Society (Winchell, 1894, p. 1), a fitting epitaph to a remarkable individual.

Another exceptional naturalist, Thure Ludwig Theodore Kumlien (1819-88), was the first person to actually collect plants at Devil's Lake, insofar as extant herbarium specimens attest. The Milwaukee Public Museum has Kumlien specimens collected at Devil's Lake in 1860, and he very likely was here at other times also. "Camping trips" by Kumlien to Devil's Lake (for "preglacier flowers") are mentioned in her biography of her grandfather by Main (1944, pp. 333-334).

Kumlien, the oldest of fourteen children, was born in Sweden. Young Thure showed an early interest in natural history and was entrusted to a private tutor, later graduating from the University of Upsala where he studied under the renowned botanist, Elias Fries. Coming to America in 1843, he settled near Lake Koshkonong in southeastern Wisconsin because he had concluded from studying maps that this region would be rich ornithologically.

Kumlien hoped to make a living by selling natural history specimens to museums, American and foreign, and he wanted to travel (Kumlien, 1859). He did collect intensively around Lake Koshkonong and on a few trips but his income from these endeavors typically was meagre, so despite a background ill-prepared for farming he continued to work his land, albeit in a desultory way.

Like Lapham, he was the complete naturalist, being familiar with the fauna of his chosen homeland and its plant life, vascular and non-vascular. Kumlien authored only one paper under his name, a two-page note on the disappearance of wildflowers in the Lake Koshkonong area (Kumlien, 1876). Owing to his diffidence, he was well known to very few scientists, although they typically had heard of him and Lake Koshkonong.

In the latter years of his life, Kumlien taught at the nearby Albion Academy, collected birds for several schools, and was taxidermist and conservator at the Milwaukee Public Museum when he died (Greene, 1888; Lawson, 1921; Schorger, 1946).

A visit to the site of the original Kumlien homestead, a log cabin, reveals lilac bushes, several kinds of planted trees, a ground cover of periwinkle and lily of the valley, and a depression where the building stood. The Kumliens moved from the cabin into a frame house in 1874. Among her grandfather's papers in a trunk in the cabin, Main (1944, p. 337) found some lines written in pencil on an envelope by Kumlien after his wife had died: "We now have fine weather again and when I have time to spare I spend it in the old house . . . It reminds me . . . of old times and as much as says to me, 'Look at me now, we are old friends though of late you seem to not have cared so much about me as you used to. But I tell you that there is a great deal of similarity between us two. We both belong to the past, our present isn't much and our future prospects still less, my timbers are partly gone up, so are yours—age is upon me—so with you. With a little tender care I may last and be good for something yet a little while—so may you. I wasn't cut out for pretensions and show in the world, nor were you. Circumstances put me in a kind of out of the way place not very conspicuous to the public, yet many are they who have visited me. So with you. At the same moment we both lost our best friend, one who did more for us both than anyone

else ever did. I have after all, been a comfort to some—perhaps you have too. I have served the purpose for which I was made. Have you?'"

One of Kumlien's children, Aaron Ludwig (1853-1902), was also a well rounded naturalist (Schorger, 1945). He taught in southern Wisconsin at Albion Academy and Milton College where one of his students was Arlow Burdette Stout (1876-1957). Stout was born in Ohio and grew up on a farm near the Kumliens, where he spent countless hours afield and attended a one-room country school. In 1903 he rescued a number of Thure Kumlien plants, including a Devil's Lake sedge (*Carex leptalea*), which had been left in the garret of the old log cabin. These undated specimens, apparently 37 in all, are now at the University of Wisconsin (University Herbarium, Collectors' Files).

Stout graduated from the State Normal School at Whitewater, then taught science at Baraboo High School from 1903-07, spending weekends and parts of his vacations in field work, mainly in the Baraboo area. The University of Wisconsin has specimens, mostly pondweeds (*Potamogeton* spp.), collected by Stout at Devil's Lake in 1904, 1905, and 1906.

Stout's early interests included ornithology and archeology. As a young man, Stout mounted birds and collected bird skins and eggs, and in the summer of 1904 invited a Baraboo High School student, Alexander Wetmore, to spend several weeks with him at Lake Koshkonong. Soon after this, Wetmore left Wisconsin to eventually become Secretary of the Smithsonian Institution and an internationally known ornithologist. Stout's archeological field work in the Baraboo area resulted in a 60-page paper on the archeology of eastern Sauk County which appeared in the *Wisconsin Archeologist*.

Stout was an instructor in botany at the University of Wisconsin when he accepted the position of Director of Laboratories at the New York Botanical Garden in 1911, a

position he held until his retirement in 1947. He is best known for his studies on the sterility and fertility of seed plants, especially the day lily (Robbins, 1958; Stout, 1939).

In 1882 "Miss Remington" collected the only known specimen of twin-flower (*Linnaea borealis*) from the Baraboo Hills; the locality is "Baraboo." The locality has intrigued me more than the identity of "Miss Remington" (the collector might have been May Belle or Maud Estelle Remington, graduates of the University of Wisconsin in 1881—*Sauk County Democrat*, 25 June 1881). Science classes from Baraboo High School have been coming to Devil's Lake for field trips since the 1800s, for example the botany class to Pine Hollow (Pine Glen Scientific Area) in 1898 (*Baraboo Republic*, 11 May 1898). Possibly the plant was found

in this locality, a steep, wooded gorge in the park, but deliberate search by the author for twin-flower in Pine Hollow has been unsuccessful.

Devil's Lake was becoming a popular place to search for plants by the late 1800s and early 1900s. C. H. Sylvester did so in 1886, collecting both on the bluffs and in the lake, and William Finger was here in 1903; the herbaria of Sylvester and Finger are at the Milwaukee Public Museum. Will Sayer Moffat (born in 1847) was an M.D. and active student of the flora of the Chicago region for many years; he collected at Devil's Lake in 1895 (specimens at the University of Wisconsin).

Levi M. Umbach (1853-1918), a science instructor at North-western College (now North Central College) in Naperville, Illinois,



Fig. 3. An "excursion" of University of Wisconsin students on the west bluff overlooking Devil's Lake in the 1890s, Lellen Sterling Cheney (marked with an x) the instructor. From the University of Wisconsin Herbarium, Collectors' Files.

was an avid plant collector who compiled a herbarium of some 45,000 plants. The Umbach Herbarium was purchased by the University of Wisconsin in 1927 (Williams, 1929, p. 1). Umbach visited Devil's Lake every year from 1895 through 1900 and among his Devil's Lake specimens are the only collection of a dryland sedge (*Bulbostylis capillaris*) and the first collection of an uncommon gerardia (*Agalinis gattereri*). H. S. Pepoon's *Flora of the Chicago Region* is dedicated to Umbach, "best of friends and most enthusiastic of plant collectors."

Several University of Wisconsin faculty members visited Devil's Lake around the turn of the century, specifically, Lellen Sterling Cheney (1858-1938), Rodney Howard True (1866-1940), and Edward Kremers (1865-1941).

Cheney was the pioneer of systematic botany in Wisconsin. He was in charge of the University Herbarium from 1891-1903 and undertook botanical surveys of the Lake Superior shore and the Upper Wisconsin River valley. Transportation was by canoe or some other type of boat in a Wisconsin more primeval than any of us can ever know. Mosses were his main interest; in fact, he was preparing a catalogue of Wisconsin

mosses at the time of his death (Cheney, 1938; Conklin, 1941, p. 6), but he also added many vascular plants to the University Herbarium. His vascular plant collections from Devil's Lake (1891-1900) include such species as rock fern (*Polypodium vulgare*), twisted-stalk (*Streptopus roseus*), mountain maple (*Acer spicatum*), red elder (*Sambucus racemosa* subsp. *pubens*), and bladdernut (*Staphylea trifolia*). Cheney taught a number of courses and in at least one of them "excursions" (Fig. 3) were offered (Anon., 1900, pp. 125-126).

True was from Baraboo, a son of John M. True who at one time was a state senator (Baraboo Republic, 28 July 1892; Baraboo Weekly News, 22 April 1926). He and Cheney often took field trips together, e.g. to Wisconsin Dells (Lange, 1981, 1982) and Devil's Lake (Fig. 4). True's collections from Devil's Lake (1889-93) include green dragon (*Arisaema dracontium*), a wetland arum that no longer can be found here; the scarce Hooker's orchid (*Platanthera hookeri*); and a southern bush-clover (*Lespedeza virginica*), known in Wisconsin only from a few localities in the Baraboo Hills and a rhyolite outcrop approximately 30 miles northeast of Baraboo. True concluded his



Fig. 4. Lellen Sterling Cheney (left) and Rodney Howard True (right) at Devil's Lake, with part of a plant press between them. A handwritten note on the back of the original picture reads: "Devil's Lake May 13. 1897 Annual Long Excursion with Pharmacy classes." This picture and Fig. 3 were a 1966 gift to the University of Wisconsin Department of Botany by Monona L. Cheney, a daughter of L. S. Cheney. From the University of Wisconsin Herbarium, Collectors' Files.

academic career at the University of Pennsylvania where he was instrumental in initiating an updated state flora (Fogg, 1982, p. 20).

Kremers was in the Pharmaceutical Department of the University and his herbarium of economic plants included some from Devil's Lake. In 1892 he expanded the 2-year course in pharmacy to 4 in pharmaceutical chemistry, the first of its kind in the United States ([Smith] 1941; Urdang, 1945).

John Ronald Heddle, a Nebraskan, is the next botanist to appear on the Devil's Lake scene. He received his Bachelor's degree in botany from the University of Wisconsin in 1910, and both the University and the Milwaukee Public Museum have Heddle specimens from Devil's Lake (1907-17), including a quillwort (*Isoetes macrospora*) and several species of Juneberries (*Amelanchier*). Heddle in more recent years was living in Racine, Wisconsin, where apparently he died in the 1970's (Mary C. Bell, Valley County Genealogical Society, Ord, Nebraska, *in litt.*).

At the time that Heddle was collecting at Devil's Lake, a committee of local citizens was agitating for a Devil's Lake State Park. On a spring day in 1907, for example, state legislators and guests had a picnic and luncheon at the lake: they listened to speeches, heard the Baraboo Marine Band, and many of them climbed the bluffs where residents pointed out choice views and rare plants (*Baraboo Weekly News*, 8 May 1907). The park was established in 1911.

In the same year that the park was becoming reality, a man was retiring as a medical doctor at age 59 and embarking on a new career—Curator of the University of Wisconsin Herbarium, a position he would hold until his death. This was John Jefferson Davis (1852-1937), who had already been collecting plants as a young man (Wadmond, 1956, p. 77). His first botanical interest was in collecting and naming seed plants he observed on his medical travels in the country, but his training as a physician



Fig. 5. John Jefferson Davis, Curator of the University of Wisconsin Herbarium, 1911-37. From the U.W. Herbarium.

led to curiosity about diseases and finally to the fungi producing the diseases (Jones, 1972). Davis (Fig. 5) brought his plant collection with him to Madison and supervised the herbarium's growth for the next quarter-century, during which time he became acknowledged as an authority on parasitic fungi. The University of Wisconsin has vascular plants, e.g. squawroot (*Conopholis americana*), collected by Davis at Devil's Lake from 1913-29.

Rollin Henry Denniston (1874-1957) was another University of Wisconsin figure who collected in the park, e.g. arrow-leaved violet (*Viola lanceolata*) in 1930. Denniston was an instructor in pharmaceutical botany and botany.

Albert M. Fuller (1899-1981) of the Milwaukee Public Museum was at Devil's Lake State Park on 28 July 1930, looking for ladies'-tresses orchids (*Spiranthes*), "but saw no plants" (Fuller, 1930). In the following January he was writing Norman



Fig. 6. Norman Carter Fassett, Curator of the University of Wisconsin Herbarium, 1937-54. From *Taxon* 4:51, 1955.

Carter Fassett at the University of Wisconsin for the ladies'-tresses orchid that "Umbach collected at Devil's Lake, Wisconsin August 23, 1900" (Fuller, 1931). Fuller's *Orchids of Wisconsin*, a Milwaukee Public Museum bulletin, was published in 1933.

Fuller joined the Milwaukee Public Museum staff in 1923, following his graduation from the University of Wisconsin, and was the Museum's Curator of Botany from 1933 until his retirement in 1964. Some of his field work on orchids was done in the Baileys Harbor area of Door County, Wisconsin, and he was much involved in the establishment of the Ridges Sanctuary there (Traven, 1981). His concern for the preservation of natural areas is evidenced by the nine years he served as Chairman of the Scientific Areas Preservation Council of Wisconsin.

Emil P. Kruschke (1907-76) was another Milwaukee Public Museum figure of these years. He was Assistant Curator of Botany from 1938-64, and Curator from 1964-74

when he retired. Kruschke specialized in the taxonomy of hawthorns (*Crataegus*), and advised poison control centers, the city health department and the police on poisonous plants. Like Fuller, he served on the Scientific Areas Preservation Council of Wisconsin (Pease, 1974; Anon., 1976). In 1933 he was at Devil's Lake State Park where he collected such plants as pale corydalis (*Corydalis sempervirens*).

As a result of correspondence in 1934 between Fuller and N. C. Fassett (Fuller, 1934), Richard W. Pohl, now Distinguished Professor and Curator of the Herbarium at Iowa State University, decided to work on the angiosperm order, Rhamnales. He attended Marquette University from 1935-39, when he was also a volunteer at the Milwaukee Public Museum. Pohl, a grass specialist, first learned to identify grasses when he worked one summer as a Civilian Conservation Corps enrollee at Interstate State Park in northwestern Wisconsin and made a few field trips to Devil's Lake State Park (Pohl, *in litt.*). The Milwaukee Public Museum has a panic-grass (*Dichanthelium xanthophyllum*) collected by Pohl at Devil's Lake State Park in 1937.

Norman Carter Fassett (1900-54) followed Davis as Curator of the University of Wisconsin Herbarium. Fassett (Fig. 6) was born in Massachusetts and attended Harvard University where he studied estuarine plants for his Ph.D. under Merritt Lyndon Fernald (Peattie, 1954). Aquatic plants became an abiding interest, as he surveyed aquatic vegetation first in Wisconsin and later in Central America, and wrote *A Manual of Aquatic Plants*. His other books are *Spring Flora of Wisconsin*, *Leguminous Plants of Wisconsin*, *Grasses of Wisconsin*, *Ferns and Fern Allies of Wisconsin* (one of four authors) and *Hayfever Plants of the Middle-west* (one of three authors); his bibliography (Bruch and Iltis, 1966) also includes approximately 100 papers. Fassett became a leader of taxonomic thought in North America and at the time of his death was President of the

American Association of Plant Taxonomists, an organization of which he was a founder (Thomson, 1955).

Fassett was also a major figure in the conservation movement in Wisconsin (Anderson and Tryon, 1955). He sparked field botany and ecological work at the University, was active in the establishment of the Arboretum, served as the first chairman of the committee for preserving natural areas, and very likely introduced many botanical ideas to Aldo Leopold (Bean, *et. al.*, 1954; Thomson, 1955).

Fassett came to Wisconsin in 1925 as an instructor in botany. Within a year he was adding specimens to the University Herbarium from a number of places, including Devil's Lake State Park, e.g. a sedge (*Carex artitecta*) new to the park and still known in Wisconsin only from here, and Selkirk's violet (*Viola selkirkii*). The following year (1927) he found another northern violet (*Viola septentrionalis*) in the park. Fassett personally collected some 28,000 specimens for the University Herbarium, which grew several-fold during his years at Wisconsin.

Under Fassett's guidance, James Hall Zimmerman (Fig. 7) in the summer of 1946 conducted a botanical survey of the park, which included mapping vegetation, locating rare species, and recommending sensitive areas (Zimmerman, 1947). Zimmerman received a small stipend from the Wisconsin Department of Natural Resources for this project. He reported the first park records for a number of species, including a quillwort (*Isoetes echinospora*), a sedge (*Carex prasina*), two grasses (*Aristida dichotoma*, known in Wisconsin only from the park where apparently it is disjunct from central Illinois, and *Poa nemoralis*), and certain dicots; he also collected here in succeeding years. His compilation of ferns and seed plants (Zimmerman, 1962) has been the foundation of the park's current vascular species list.

Zimmerman has many fond memories of that summer. He rode the train back and

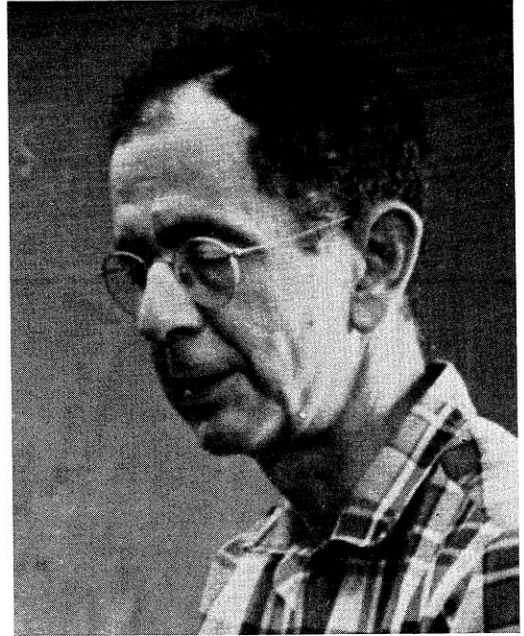


Fig. 7. James Hall Zimmerman, naturalist and consulting ecologist. Photo courtesy of J. H. Zimmerman.

forth from Madison, his home, staying in an upstairs room above the park's garage. On his first day the park superintendent drove him to the top of the east bluff and Zimmerman then proceeded to follow Fassett's advice—collect everything you don't know and also everything you think you know. By the time he staggered back with a stuffed vasculum and put the plants in a press, it was early the next morning. Thirty-five years later, Zimmerman (*in litt.*) recalled that sunny June day: "I remember seeing the Peregrine Falcons stoop from their eyrie, how the bluff looked, and many of the plants..."

Zimmerman is an instructor in the University of Wisconsin's Department of Landscape Architecture and a consulting ecologist. His current projects include sedges (*Carex*) of Wisconsin and an ecology book.

For more than half a century up to 100 or more University of Wisconsin students came to Devil's Lake State Park for a one-day field trip in the spring as a review for the

final exam in the second semester botany course. At first they came by train, but later by bus. The tradition was started by George Smith Bryan (1879-1958) of Charleston, South Carolina, who taught the course until his retirement in 1949, and was continued by Herbert M. Clarke (1909-81) of Indiana until his retirement in 1974.

Bryan, with his duck hunter's cap, was a colorful story teller with a southern accent. Former students now in their senior years continue to recall him with fondness, and this is also true of Clarke who always tried to reach each student. These leaders strove to make the field trip a true sharing experience. The class broke into groups at the park. Both faculty and teaching assistants guided in earlier years when the group was larger, but in later years with smaller groups only Clarke and one or two assistants guided. They started at the south end of the lake, along the railroad tracks, and headed for Koshawago Springs near the southwestern corner of the lake. Here they always stopped for coffee. For lunch each student brought something to share, rather than an individual meal. The instructor, Bryan or Clarke, fried small pig sausages and bacon in a 12-inch skillet. After lunch they sometimes climbed a bluff. Since the course was a survey of all plants, the students were shown examples of all major plant groups; by the springs, for example, they looked for red algae (Clarke, pers. comm.).

Botanists and other scientists continue to visit the park. Thomas G. Hartley, now in Australia with the Division of Plant Industry in Canberra, studied the flora of the driftless area for his Ph.D thesis (Hartley, 1962, 1966) and his collecting stations included Devil's Lake State Park (Hartley, 1962, pp. 126, 127). Robert C. Koeppen, now with the U.S. Forest Service in Washington, D.C., collected in the park for his report on the mints of Wisconsin. William E. Tans, then with the Wisconsin Department of Natural Resources' Scientific Areas Preservation Council, added a plant to the park's list

when in 1968 he discovered the three birds orchid (*Triphora trianthophora*). Michael Nee and Robert K. Peet in 1969 found ebony spleenwort (*Asplenium platyneuron*), a new species for the park; Nee is a Botany Curator at the New York Botanical Garden, and Peet is in the Department of Botany at the University of North Carolina at Chapel Hill. Theodore S. Cochrane, a Curator at the University of Wisconsin Herbarium, collected marsh plants along the lake shore in 1975 with J. H. Zimmerman on a sedge class field trip. William S. Alverson, then with the Scientific Areas Preservation Council, made a 1981 collection of the sedge (*Carex artitecta*) known in Wisconsin only from the park. Sylvia A. Edlund studied the ecology of pale corydalis in the park (Edlund, 1970), and F. Christopher Baker surveyed littoral macrophytes in the lake (Baker, 1975). Hans Ris, a geneticist in the University of Wisconsin Zoology Department specializing in chromosomal studies, collected quillworts in Devil's Lake. W. Carl Taylor, a pteridologist at the Milwaukee Public Museum, has also collected quillworts in the lake and in 1978, with Neil T. Luebke, Assistant Curator of Vascular Plants at the Museum, found Christmas fern (*Polystichum acrostichoides*), a first record for the park. In recent years still other botanists, e.g. Philip B. Whitford and Forest Stearns of the University of Wisconsin-Milwaukee, have led field trips for school classes in the park.

Four scientific areas have been designated in the park. One of these, the Red Oak Scientific Area, was recommended by Wisconsin's pioneering ecologist, John T. Curtis (1913-61). Gary Birch, then with the Scientific Areas Preservation Council, compiled a quantitative data sheet of this scientific area in 1976, using the point quarter method of Grant Cottam and Curtis.

Another scientific area in the park is Parfrey's Glen, a narrow, rocky gorge four miles east of Devil's Lake. Its beauty and unusual plants have long attracted botanists. Among them, as determined by vascular

plant collections in the University of Wisconsin Herbarium, have been Samuel Christensen (S.C.) Wadmond of Racine, Wisconsin; Edgar T. Wherry (1885-1982) and Arthur N. Leeds (1870-1939) for the Academy of Natural Sciences of Philadelphia; Douglas W. Dunlop, now Prof. Emeritus of U.W.-Milwaukee and one of the authors of *Ferns and Fern Allies of Wisconsin*; Frederick J. Hermann, now in Fort Collins, Colorado, a moss specialist; Henry C. Greene (1904-67), who succeeded Davis as the University of Wisconsin's authority on parasitic fungi; John W. Thomson, of the University of Wisconsin-Madison Department of Botany, a lichen specialist; Hugh H. Iltis, Curator of the University of Wisconsin Herbarium since Fassett's death; Donald Ugent, Curator of the Southern Illinois University Herbarium; and Marsha Waterway, who studied clubmosses (*Lycopodium*).

The most extensive survey of the cryptogams of the park has been the study of the boulder fields of the Devil's Lake bluffs by Patricia Armstrong (1968); she found 35 species of mosses and 43 species of lichens, including a new state record, the boreal lichen, *Parmelia substygia* (Armstrong, 1970). Armstrong is an educator at the Morton Arboretum in Lisle, Illinois. Irving Halsey Black (1941) compared the mosses and liverworts on sandstone and quartzite in the Baraboo Hills, including Devil's Lake State Park; bryophytes in the park have also been investigated in recent years by Richard I. Evans, Frank D. Bowers, James A. McCleary, and (lichens also) Marietta S. Cole.

The author of this paper has been the park naturalist at Devils Lake since 1966, and has recommended scientific areas, initiated prairie restoration projects, compiled vascular plant lists for a number of park areas, added a number of species to the park's vascular plant list, including such uncommon natives as bush-clover (*Lespedeza violacea*) and purple milkweed (*Asclepias purpurascens*), and rediscovered others,

notably maidenhair-spleenwort (*Asplenium trichomanes*) in 1978, which Fassett had first found in the park in 1926. An herbarium of vascular plants, mostly from the park and the Baraboo Hills, is located in the Nature Center.

ACKNOWLEDGMENTS

Many thanks to the curatorial staffs at the herbaria of the University of Wisconsin-Madison, especially Theodore S. Cochrane, and the Milwaukee Public Museum, especially Neil T. Luebke, for all their patience with my many inquiries. James H. Zimmerman kindly shared his memories of his field work in the park, and Herbert M. Clarke, on a pleasant afternoon shortly before his death, shared his reminiscences of the botany field trips in the park. Michael J. Mossman, John W. Thomson, and Glenn Sonnedecker referred me to sources that I would otherwise have missed.

LITERATURE CITED

- Anderson, Edgar & Rolla M. Tryon, Jr. 1955. Norman Carter Fassett. Bull. Torrey Bot. Club 82:248-250.
- Anon. 1900. The Badger Pharmacist. Published in the interests of pharmacy in Wisconsin by the students of the school of pharmacy of the state university.
- Anon. 1976. Museum botanist E. P. Kruschke dies. Milw. Jour., 1 Feb.
- Armstrong, Patricia K. 1968. Cryptogam communities on quartzite of Devil's Lake, Wisconsin, M.S. thesis, Univ. Chicago, 91 pp.
- _____. 1970. *Parmelia substygia* in Wisconsin. Bryologist 73:152-153.
- Arthur, J. C. 1881. The Lapham Herbarium. Bull. Torrey Bot. Club 8:52-53.
- Baker, F. Christopher. 1975. The littoral macrophyte vegetation of southeastern Devil's Lake. Trans. Wis. Acad. Sci., Arts & Letters 63: 66-71.
- Barnhart, John Hendley. 1965. Biographical notes upon botanists. G. K. Hall & Co., Boston, 3 vol.
- Bean, E. F., J. T. Curtis, [H.] C. Greene, Joseph J. Hickey, & John W. Thomson. 1954. Norman Carter Fassett. Castanea 19:122-125.

- Black, Irving Halsey. 1941. Ecology of the Musci and Hepaticae on the quartzite and sandstone deposits in the Baraboo Hills Sauk County Wisconsin. B.A. thesis, Univ. Wis.-Madison, 21 pp.
- Black, Robert F. 1968. Geomorphology of Devils Lake area, Wisconsin. Trans. Wis. Acad. Sci., Arts & Letters 56:117-148.
- Bruch, Doris & Hugh H. Iltis. 1966. Bibliography of Norman Carter Fassett. 1900-1954. Univ. Wis. Herbarium, Madison, Wis., 6 pp. plus additions.
- Bryan, George S. 1950. A brief history of the development of botany and of the department of botany at the University of Wisconsin to 1900. Trans. Wis. Acad. Sci., Arts & Letters 40:1-27.
- Cheney, Monona L. 1938. Letter to N. C. Fassett, 18 April. Fassett correspondence files, Univ. Wis. Herbarium, Madison, Wis.
- Conklin, George Hall. 1941. An appreciation of the work of Lellen Sterling Cheney. Bryologist 44:4-6.
- Dalziel, I. W. D. & R. H. Dott, Jr. 1970. Geology of the Baraboo District, Wisconsin. Univ. Ext.-Univ. Wis., Information Circular No. 14.
- Davis, J. J. 1925. An untitled and unpublished 2-page paper, Univ. Wis. Herbarium, Madison, Wis.
- Dupree, A. Hunter. 1959. Asa Gray. 1810-1888. Harvard Univ. Press, 505 pp.
- Edlund, Sylvia A. 1970. The aspects of an ecological life history of *Corydalis sempervirens*. Ph.D. thesis, Univ. Chicago, 150 pp.
- Fogg, John M. 1982. Reminiscences of a botanist. Harrowood Books, 3943 N. Providence Rd., Newtown Sq., Pa., 19073, 36 pp.
- Fuller, Albert M. 1930. Field book, entry for 28 July. Milw. Publ. Mus., Dept. of Botany.
- _____. 1931. Letter to N. C. Fassett, 21 Jan. Fassett correspondence files, Univ. Wis. Herbarium, Madison, Wis.
- _____. 1934. Letters to N. C. Fassett, 14 & 21 Dec. Fassett correspondence files, Univ. Wis. Herbarium, Madison, Wis.
- Greene, Edward L. 1888. Sketch of the life of Thure Kumlien, A. M. Pittonia 1:250-260.
- Hartley, Thomas G. 1962. The flora of the "Driftless Area." Ph.D. thesis, Univ. Iowa-Iowa City, 932 pp.
- _____. 1966. The flora of the "Driftless Area." Univ. Iowa Studies in Nat. Hist., Vol. 21, No. 1, 174 pp.
- Hawks, Graham Parker. 1960. Increase A. Lapham, Wisconsin's first scientist. Ph.D. thesis, Univ. Wis.-Madison, 305 pp.
- Jones, Edith Seymour, with Jean Matheson. 1972. Dr. Davis' plant specimens still used in studies at UW. Racine (Wis.) Sunday Bulletin, 5 March.
- Kumlien, Thure. 1859. An unfinished letter, undated. Kumlien papers, State Historical Society of Wisconsin.
- _____. 1876. On the rapid disappearance of Wisconsin wild flowers; a contrast of the present time with thirty years ago. Trans. Wis. Acad. Sci., Arts & Letters 3:56-57.
- Lange, Kenneth I. 1981. Botanists and naturalists at Wisconsin Dells in the 19th century. Mich. Bot. 20:37-43.
- _____. 1982. *Rhododendron lapponicum* at Wisconsin Dells. Bull. Bot. Club Wis. 14(2): 21-22 (April issue; cover is numbered incorrectly).
- _____ & D. Debra Berndt. 1980. Devil's Lake State Park: the history of its establishment. Trans. Wis. Acad. Sci., Arts & Letters 68: 149-166.
- _____ & Ralph T. Tuttle. 1975. A lake where spirits live: a human history of the midwest's most popular park. Baraboo Printing, Baraboo, Wis., 80 pp.
- Lapham, I. A. 1849. Geological notes of a tour to the Dells October 22 to Nov. 1st 1849. Unpubl. ms, Lapham papers, State Historical Society of Wisconsin.
- Lawson, Publius V. 1921. Thure Kumlien. Trans. Wis. Acad. Sci., Arts & Letters 20:663-686.
- Main, Angie Kumlien. 1943-44. Thure Kumlien, Koshkonong naturalist. Wis. Mag. Hist. 27: 17-39, 194-220, & 321-343.
- Mossman, Michael J. & Kenneth I. Lange. 1982. Breeding birds of the Baraboo Hills, Wisconsin: their history, distribution, and ecology. Wis. Dept Nat. Res. & Wis. Soc. Ornith., 196 pp.
- Noland, Lowell E. 1950. History of the department of zoology, University of Wisconsin. Bios 21:83-109.
- Pease, Harry S. 1974. Expert on plants plans to retire. Milw. Jour., 5 Feb.

- Peattie, Donald Culross. 1954. Norman Carter Fassett 1900-1954. *Rhodora* 56:233-242.
- Robbins, William J. 1958. Arlow B. Stout, geneticist and plant breeder. *Science* 127:1034-1035.
- Rodgers, Andrew Denny III. 1965. John Torrey. A story of North American botany. Hafner Publ. Co., New York & London, 352 pp. (facsimile of the Edition of 1942).
- Schorger, A. W. 1945. Aaron Ludwig Kumlien. *Passenger Pigeon* 7:9-14.
- _____. 1946. Thure Kumlien. *Passenger Pigeon* 8:10-16 & 52-58.
- _____. 1947. The Wisconsin Natural History Association. *Wis. Mag. Hist.* 31: 168-177.
- Sherman, S. S. 1876. Increase Allen Lapham. LL.D. A biographical sketch read before the Old Settlers' Club, Milwaukee, Wis., December 11, 1875. *Milw. News Co., Printers*, 80 pp. [Smith, C. A., Secy.] 1941. Memorial resolution on the death of Edward Kremers. *Minutes of Univ. Wis. faculty meeting*, 6 Oct.
- Stout, Arlow Burdette. 1939. Arlow Burdette Stout. An autobiography. *Herbertia* 6:30-40.
- Thomson, John W. 1955. Norman C. Fassett 1900-1954. *Taxon* 4:49-51.
- _____. 1973. Lichens out of Wisconsin's past. *Wis. Acad. Review* 19:20-24.
- _____. & O. S. Thomson. 1974. Naturalist writers of the Lake Koshkonong area. *Bull. Bot. Club Wis.* 6:2-7 & 15-16.
- Traven, Olivia. 1981. Memorial to one of Ridges founders. *Ridges News* 6:3.
- Urdang, George. 1945. Edward Kremers (1865-1941) reformer of American pharmaceutical education. *Trans. Wis. Acad. Sci., Arts & Letters* 37:111-135.
- Wadmond, S. C. 1956. John Jefferson Davis. *Wis. Acad. Review* 3:76-80.
- Williams, Harold Fish. 1929. Notes on the Umbach Herbarium. B.Ph. thesis, Univ. Wis.-Madison, 22 pp.
- Winchell, N. H. 1894. Increase Allen Lapham. *Amer. Geol.* 13:1-38.
- Zimmerman, James H. 1947. The flora of Devil's Lake State Park. Bachelor's thesis, Univ. Wis.-Madison, 106 pp.
- _____. 1962. Ferns and seed plants seen and collected at Devils Lake State Park. Unpubl., 7 pp.