On the Fringe

NATIVE PLANT SOCIETY OF NORTHEASTERN OHIO

Founding Chapter o
THE OHIO NATIVE PLANT SOCIETY

Thomas A. Sampliner,
Local President and Editor
2651 Kerwick Road
University Hts., Ohio 44118
(216) 371-4454

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ON THE FRINGE
Quarterly Newsletter of the
NATIVE PLANT SOCIETY
OF NORTHEASTERN OHIO
2651 Kerwick Road
University Heights, Ohio 44118

CLEVELAND, OH PM OCT 16 1997

FIRST CLASS

Thomas A. Sampliner
2651 Kerwick Road
University Heights, OH 44118

ED VOSS TO SPEAK AT ANNUAL DINNER

Dated Material - Do Not Delay
ADDRESS CORRECTION REQUESTED

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1997 PROGRAM SCHEDULE

by Dr. George J. Wilder
Program Committee Chairman

It is advised that all participants bring a brown-bag lunch on all field trips and to all workshops. All please call the trip leader to let him or her know you will be coming. This is very important in case of any last minute changes which participants may need to know about. A trip leader and their phone number will be listed for each event. Please feel free to invite guests.

SUNDAY, **OCTOBER 19**, 10:00 AM TO MID AFTERNOON - FALL WILDFLOWERS OF CLEVELAND (CUYAHOGA CO.). **Dr. George Wilder** will lead this trip. Observed, among plants of other families, will be various species of the families Chenopodiaceae (Goosefoot Family), Compositae (Sunflower Family), Cyperaceae (Sedge Family) and Gramineae (Grass Family). The group will meet in Room 226 of the Science Building at Cleveland State University. DIRECTIONS: The Science Building is located northwest of the intersection of East 22nd Street and Euclid Avenue in downtown Cleveland. Please telephone George to let him know you will be attending. This work number is (216) 687-2395 and his home number is (216) 932-3351.

SATURDAY, **NOVEMBER 8**, 5:30 PM TO ABOUT 9:00 PM - ANNUAL MEETING AND BANQUET. We are very pleased to announce that **Dr. Edward G. Voss** of the University of Michigan and author of numerous books on the flora of Michigan will be our guest speaker for the evening. Dr. Voss is Herbarium Curator and Professor Emeritus of the University of Michigan. Although retired since August of 1996 he still teaches at the summer biological station and the herbarium. This eminent scholar has recently completed the third and final volume of "Michigan Flora." As usual the dinner will be hosted by the Cleveland Botanical Gardens at University Circle. Dr. Voss will speak on "Some Great Plants of Some Great Lakes." Our social/cocktail hour will begin at 5:30. A buffet style dinner will begin at 6:30. The cost for the dinner and lecture is $13.00 per person. The cost for the lecture which begins at 7:30 (without dinner) is $3.00. A reservation form is inside the rear cover page

of this issue. Reservations for dinner must be made by the close of business on November 5th.

FRIDAY, **DECEMBER 5**, 7:30 PM TO ABOUT 9:30 PM - FEDERALLY ENDANGERED AND THREATENED PLANTS OF OHIO. **Buddy B. Fazio**, Endangered Species Biologist with the U.S. Fish & Wildlife Service, will provided an illustrated overview of the six nationally endangered plants that occur in Ohio explaining how the Endangered Species Act applies to them. The six species federally endangered (E) or threatened (T) plant species that occur in Ohio are: running buffalo clover (E), Lakeside daisy (T), eastern prairie fringed orchid (T), Virginia spiraea (T), small whorled pogonia (T) and northern monkshood(T). After briefly summarize each of these species Mr. Fazio will discuss the botanical, political, and economic challenges pertinent to the recovery of the northern monkshood, particularly in nearby Summit County. This program is presented in conjunction with the Geauga Park District. The presentation will be at the MEYER CENTER at BIG CREEK PARK. No advanced notice is required. DIRECTIONS: Big Creek Park is north of Chardon. Take I-90 East to Route 44. Head south on Route 44 about 2 miles to Clark Road. Turn left (east) on Clark Road and travel for about 1 mile to Robinson Road. Turn right (south) on Robinson Road and go about 1 mile to the entrance to Big Creek Park. Enter the Park and at the "Y" in the road bear to the left. Then enter the first parking lot on the right. Follow the signs to Don Meyer Center.

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PLATANTHERA LEUCOPHAEA,
THE EASTERN PRAIRIE FRINGED ORCHID;
PICKERAL CREEK STATE WILDLIFE AREA

by Tom Sampliner, naturalist

This increasingly rare native orchid presents itself to the pubic here in Ohio in a most accessible station. The state wildlife area bearing the name in the caption in located in Sandusky county hugging the shoreline of Lake Erie on Sandusky Bay. An impressive display of 2,000 plants will greet the timely visitor. Such a showing brings to mind a paraphrase of the often spoken words of comedian Hardy to sidekick Laurel: Here is another fine Pickeral you've gotten us into.

At both state and federal levels, this orchid qualifies for the endangered lists with a category of "threatened." Since the "type" locality, meaning where first discovered, was moist prairie, habitat loss has been the obvious explanation of scarcity.

Before delving into the traits of our subject, some basic family and genus discussion might prove helpful. Orchids belong to the monocot division of the flowering plant world. Membership explains their manifestation of parallel venation and flower parts in threes. The genus, *Platanthera*, is derived from the Greek for broad anther. An anther is the male reproductive part bearing the pollen. In orchids all the reproductive parts are fused into a unified structure called the column. From renouned orchid expert, Dr. Carlyle A. Luer, in his monumental work, "THE NATIVE ORCHIDS OF THE U.S. AND CANADA, EXCLUDING FLORIDA" 1975, we learn that the genus includes some 200 terrestrial species from the temperate

regions of both hemispheres. The genus was first described in 1818; however, it was Luer who regularly employed the genus, having separated it from the confusing complex of *Habenaria*.

Platanthera arise from fleshy tubers, rhizome or other thick clusters of roots. Flower scapes (stems) put forth leaves that may be basal, cauline (stem) or often both. Flowers are upon a raceme (each floret is stalked off the main stem). Secondary stalks, be it for florets or leaves, are called pedicels. The three sepals are similar in color and shape. The two lateral petals resemble each other; however, the central petal in orchids is different in shape and/or color from the other two. That central petal is called the lip or labellum. At the base of the lip is an opening to an elongated tube called the spur. This device holds the promise of nectar. The orifice and spur tube have evolved in shape and size to accommodate the proboscis of the insect pollinators. The orifice is below the sticky surface of the stigma, located on the column. Pollen adheres to the stigma. The pollination scenario seems to be science fiction. A withdrawing insects proboscis pulls away with a club shaped body of pollen granules. As the insect flies to the next floret, the stalk of pollen bends forward into aerodynamic and disposition ready position.

The species we will view, depending upon how well watered the plants are, attain up to 120 cm. of heights. From 2 to 9 keeled leaves sheath the stem with the lowermost being largest. The 15 to 25 creamy white flowers are loosely spread along the raceme. The lateral petals connive with the dorsal sepal as if to

form a protective hood for the lip and column. The lip is three parted and so deeply fringed it can confuse the novice observer. Towards dusk, Fred Case reports the orchid emits a fragrant odor that attracts small moths and the large showy sphinx moths. Case also notes that prolific seed production does not seem to weaken plants he has observed over time. His description of the lateral petals may be the best of all the writers when he calls their shape cuneate to fan shaped, truncated at the apex with erose toothing. He observes that in suitable soil, the species can go from seed to flower in just 5 years.

It was Fred Case who rescued some plants from certain demise at an industrial site transplanting them into his wildflower wet meadow garden. His transplants persisted in blooming from some 30 years. This differs from other genus members, many of which are short lived.

Luer notes this is the western most of the fringed orchids. Other orchids that can superficially resemble this and can in some habitats be companions would be *Platanthera dilitata* and *P. blephlariglottis*. Both of these species are bright pure white. The creaminess of our subject is often skewed to the chartreuse by virtue of the green backside of the sepals, again noted by Luer.

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PICKERAL CREEK

by

Tom Sampliner

On Sunday, June 29th, fourteen people from several different invited groups traveled to the Pickeral Creek State Wildlife Area. The principal purpose was to view the eastern

prairie fringed orchids (*Platanthera leucophaea*) during peak bloom. Each participant received upon arrival two full pages introducing them to the orchids and this site; it has been provided to all readers of this newsletter in this issue.

Weather could have been more sympathetic to our venture. Humidity and temperature were quite high. Fortunately, I had selected 10 AM arrival time so we could view and photograph before conditions became too beastly.

A state wildlife sign informed us that the orchids had enjoyed the most prolific population count yet the previous growing season with a tally of 5,600. This is a dramatic increase over the prior year sign giving the count at in excess of 2,200. Such figures bolster the state's declaration in this summer's quarterly wildlife journal wherein they proclaim this as one of the most accessable and successful sites for this species of the 54 currently known. On a critical note I feel it is an important omission from this year's sign that no mention is made of the sluice gates used to radically vary the water levels via the adjacent canals.

As my accompanying article discuss, proximity to Sandusky Bay giving rise to lake effect climate is important to note. As a corollary, so too is the sandy alkaline soils from earlier versions of Lake Erie.

I wonder what can be interpreted from the nearby magnificent populations of small white ladyslipper orchids (*Cypripedium candidum*) that heavily decorate Resthaven Wildlife Area perhaps only 6 miles to the east?

As we were assembling, an immature bald eagle repeatedly scanned our group to determine what manner of interlopers we were. Evidently none of us smelled particularly fishy so we

were not further investigated. Egrets and herons also flew over squaking their disapproval. A large pond as well as the canal across the road contained a formerly exotic, now naturalized, onion look alike from Europe commonly called flowering rush (*Butomis umbellatus*). This well established plant sends up a tall slender flowering raceme with an umbel of attractive pink flowers. I guess I forgot to mention that you had to judiciously select where you would go to the water's edge as the perimeter had some healthy looking poision ivy (*Toxicodendron radicans*) as well as poison hemlock (*Conium maculatum*). Hey, two for one isn't a bad deal. The flowering rush was really packed along the shallows so the photographers in the group didn't waste the opportunity.

We had parked our vehicles upon a small gravel parking lot in front of the new state sign. The gravel was home base for the fragrant pineapple-weed (*Matricaria matricarioides*). I enjoyed bruising one to release that tropical odor. This plant is a member of the chamomile group within the Aster tribe.

At this time of year the meadow forbs had attained great height. Head high stands of sumac (*Rhus glabra*) made thickets to penetrate. All your old field favorites put in at least an occasional appearance. Most showy or noticable were the bindweeds and common dodder (*Cuscuta gronovii*) climbed and twisted it's way on everything available. Through all of this were the orchids. Many stood in excess of waist height. At first glance you could confuse the fleabane or geums from a distance for the white of the orchids. Down much lower were field garlic (*Allium vineale*) and *Lobelia spicata*.

Once found, the orchids are unforgetable. Fred Case commments that in suitable soil, he has seen these orchids go from seed to flower in five years. For an outstanding twice life size drawing of the intricate florets, check out Robert H. Mohlenbrock's "Flowering Plants; Lilies to Orchids", a volume of "The Illustrated Flora of Illinois", Southern Illinois University Press, 1970.

After a couple of years now of becoming aquainted with the orchid, I can finally obtain what I deem good photographs. As with all species, until you really know it, the best pictures will elude you. Taking home my photographic memories, I bid the orchids goodby until next year.

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PADDLING AT PUNDERSON
OR
UP A CREEK BUT WITH A PADDLE
by Tom Sampliner

A group of nine attended our walk and boat outing on Sunday August 10th led by Dr. George Wilder. Three attendees came with canoes, so the logistics couldn't have worked out better. For August the day was as tolerable as one could hope for. The temperature would top out in the low 80's while cool breezes kept bugs away and refreshed against building humidity. Rain was forcast but rarely delivered.

First we walked around the marina area. Common field and waste area species were present. Quite a few were of the uninvited alien menagerie. For example. at water's edge dressed up in showy purple spires and current alien champion was purple loosestrife (*Lythrum salicaria*). Much more welcome and sharing the

same habitat was Pickeral weed (*Pontederia cordata*) featuring a solitary cauline leaf looking like those of it's basal cluster and a showy but tasteful terminal blue spike. Occasionally making it a trio was the handsome rush *Juncus effusus*. The earthtone lateral to the culm inflorescence is keyed by Weishaupt as green or pale brown neither of which does justice to the species.

Walking around the man-made structures, aliens became even more obvious. Teasel (*Dypsacus sylvestris*) of prickly stem and blade scratched as we passed. George told us that a white flowered species (*Dipsacus laciniatus*) has begun showing up in our area. Raspberry (*Rubus occidentalis*) and burdock (*Arctium minus*) got their jabs in as well. Not to be outdone, seed hitchhikers extraordinare such as *Geum canadensis* and *Agrimonia gryposepala* made their contributions. Fortunately, the nettles here were all of false persuasion, *Boehermia cylindrica* or the walk might have ended earlier than expected.

Nearby we took a look at black willow (*Salix nigra*). Both surfaces of each leaf are green and each leaf may have large stipules at the base. The presence of two different ashes proved very helpful. White ash (*Fraxinus americana*) has leaflets with white undersides and with petioles whereas leaflettes of most other local ashes are either sessile or winged to the rachis. Black ash (*Fraxinus nigra*) exhibits the sessile leaflets. Some hickories were present: shagbark (*Carya ovata*) which has alternate sets of five leaflets and Kingnut (*Carya laciniosa*) has seven leaflets. Silky dogwood (*Cornus amomum*) was observed with a brown pith and long brown hairs beneath the opposite leaves along with a brown pith can

separate out this species.

Underfoot almost everywhere were such common species as: Selfheal (*Prunella vulgaris*), Coltsfoot (*Tussilago farfara*) now in huge leaf, Yellow rocket (*Barbarea vulgaris*), Bittersweet nightshade (*Solanum dulcamara*) and many other of your favorites. We included a few grasses in our inventory: one of the manna grasses, a Glyceria: (*Glyceria striata*), *Carex cristatella*, Quack Grass (*Agropyron repens*), Bottle-brush grass (*Hystrix patula*) and reed canary grass (*Phalaris arundinacea*).

Surprises awaited us as we explored the areas near the attendant station. On the drive leading to the ranger booth, a lone Chesnut (*Castanea dentata*) was mature and healthy enough to produce both the male catkins and female burs. We were informed that since no other chesnut was present, the fruit would not be viable. At least many of us were seeing our first locally produced burs of this species. Another first for most of us was seeing bracken fern (*Pteridium aquilinum*) producing spores. The configuration is particularly interesting. Submarginal under the pinnae are the tawny spore masses forming perfect letter "U's". Among the grass adjacent to the parking lot was a hawkweed look-alike called Hawkbit (*Leontodon hispidus*). This small yellow flowered compositae has phyllaries of different lengths and demonstrated the species name well via hairy leaves and stems.

Machetes would have been welcome as we tripped our way over to the lake's edge. We were in search of Cow wheat (*Melampyrum lineare*) which Dr. Wilder assured us he has seen there, though this day we would not. However, so as not to go away unhappy, we were shown a most curious *Eleocharis* growing in the

shallow water and lake's muddy edge; it was *Eleocharis quadrangulata* , the culm is four-sided supporting a compact brown inflorescence on top. The healthy population was set off by more handsome pickeral weed. On our way out we did see a small clump of shining clubmoss (*Lycopodium lucidulum*). The last land based search was for that giant of the gentian family, American colombo (*Swertia caroliniensis*), that Dr. Wilder had seen in prior seasons. Perhaps Colombo was in trenchcoat disguise today because if he was there we did not see him.

It was time to hit the water. Passing aquatic samples among canoes requires some ingenuity, skill and of course, fun. We opted for using a paddle as a giant serving spoon. Probably remembered by someone from college dining hall experiences. If you make sure the paddle is wet while serving, you keep the specimen well and have the added benefit of soaking the recipient.

Two more mudflat to shallow-water residents were added: a bullrush (*Scirpus validus*) and the smartweed commonly called mild water pepper (*Polygonaum hydropiperoides*). The latter has a loose interrupted raceme of tiny white flowers.

Once out on the water we began to sort out the tiny floating plants. There were *Wolffia, Lemna* and *Spirodela*. The smallest was one of the watermeal (*Wolffia*). This tiny freshwater rootless plant forms mats of nitrogen rich food enjoyed by many creatures. Since there are half a dozen species, hand lenses are mandatory in sorting them out. We did not since, canoing dodgem was as important as viewing. *Spirodella* has roots which dangle beneath the underside of the floating thallus. In fresh sheltered

waters, all these species can rapidly produce new plantlets yielding large populations. Species of*Lemna* can either have large or small plant bodies. The small species are about as tiny as *Wolffia*. They have but one root and 1-5 nerves. Both Clara Weishaupt and a publication by U.S. Fish & Wildlife called, "Underwater and Floating-Leaved Plants of the U.S. & Canada" list 5 regional species of *Lemna*. You have to laugh at large vs. small when you are talking 5mm or less as the key trait for sizes. We were told we were seeing *Lemna minor*.

More impressive in stature was the tape grass or eel grass (*Valisneria americana*), which one book also refers to as wild celery. The plant arises from bottom-running rhizomes. Long flowering scapes support cylindrical pistillate flowers that float just below the water surface. A most elegant pollination scheme has evolved in this species. Male boat-like flowers separate and float free on the water surface. The pistillate flowers still attached to the plant and riding just at the water surface creates a depression in the water surface into which the male flowers are drawn. The scapes of the pistillate flowers then coil down under the water where the fruit will develop.

Coontail (*Ceratophyllym demersum*) certainly looks like it's common namesake. Many branched tightly spaced leafy stems occur underwater. Leaves are whorled at each node; but vary in length, width, firmness, forking and teeth. Flowers and seeds are at the bases of the leaves.

Two species of pondweeds were observed. First was *Potamogeton crispus* featuring submersed ruffled or wavy leaves with large

stipules. Later, was *Potamogeton ampliflolius* which had straight floating leaves as well as falcate submersed leaves.

Much of the shore line exhibited buttonbush (*Cephalanthus occidentalis*), a shrub or small tree jiggling white globular flowers in the breeze. Climbing upon anything available, was Virgin's bower (*Clematis virginiana*). It makes good use of it's three leaflets twisting the petiolules around objects it converts to nature's trellis (strange conduct for a member of the buttercup family).

Boating upon this lake, you can't help but notice the beautiful waterlillies floating on the surface. The white flowered one is *Nymphea odorata* exhibiting a fragrant multipetaled flower and circular floating leaves. Shortly, we saw the spatterdock or bull's head lily. The exact species is not clear as various sources seem to name this plant differently; Newcomb's uses *Nuphar variegatum;* Dr. Wilder used *Nuphar advena;* an old reference I have put out by the U.S. Dept. of the Interior and called "Underwater & Floating-Leaved Plants of the U.S. & Canada" used *Nuphar luteum*. Either there are differences not well described in these sources or nomenclature has changed.

A pale yellow six parted flower with grass-like leaves floated freely; this was water star grass (*Heteranthera dubia*). It can grow in mud flats where it will have a compact appearance or deep into fresh water. At only 1/2 to 3/4 inches these flowers fail to impress as do the lilies.

At this time of year, swamp loosestrife was out of it's magenta flowers: therefore, *Decodon verticillatus* more resembled another of it's common names, water willow. Four to six angled woody stems bend over until they retouch

water; from these new contact points, new plants arise and advance even farther.

A plant that can be confused with the arrowheads, *Sagittaria*, is the arrow arum (*Peltandra virginica*). First note the latter is a member of the Aracaceae-arum family. Generally found in shallow water, the leaves are long stalked and configured as the name suggests. That deeply cleft base of each leaf is dependable whereas in the arrowheads this is not true. Indeed they vary greatly with the species. Another visible trait is the strong central vein in *Peltrandra* with prominent lateral veins running from the central vein to the leafy margin. Obviously, once flower and then fruit appears, it is easy to tell them apart.

I can't do more than touch on most of the species we enjoyed this day. For those who miss these field trips, especially those given by experts such as Dr. Wilder, I suggest you reconsider in the future.

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A REVIEW
"Leaves, the formation, characteristics and uses of hundreds of leaves found in all parts of the world"
by Ghillean Tolmie Prance
Crown Publishing, 1985
by Tom Sampliner

I recently finished this fascinating work written by Ph.D. Ghillean Tolmie Prance of the N. Y. Botanical Garden, issue by Crown Publishers of N. Y. in 1985. Of equal importance with the text are the outstanding photographs by Kjell B. Sandved of both the

National Museum of Natural History and Smithsonian Institution. The pictures alone are not only works of art, but of great value to illustrate points made by the author.

The expanded title discloses much of what you should expect to glean from the 240 pages of text, including photographs. It certainly was an ambitious undertaking; well met in my opinion by author and photographer.

Obviously, leaves structure, function, shape, venation, cotyledon stage, variegation, aquatic, succulence and other topics are covered. Not so obvious, yet among the more esoteric and interesting subjects are leaf as a dwelling, a creature that preys, a device that mimics, as well as the whole gamut of uses and relationships with living creatures.

Neither style nor content requires prerequisite background knowledge or training. Care has been taken to define terms and relationships that would otherwise not be possible. When necessary, the author will revisit a concept or term that must be reemployed on a new topic.

From my perspective, one of the most curious and rewarding inquiries was into the symbiotic relationship of some species leaves to a predator or protector. Coloration of leaves that either blend into their environment to the point they literally disappear from view seemed to border on magic. Mimicry whereby a leaf appears as it it were of the animal kingdom was another trip to another world. You will meet bracts or leaves that protect the emergent plant as a mother holds her baby.

Without telling too many tales, a favorite of mine was the method of a Venezualan orchid (*Pleurothallis cardiochild*) exemplifying a concept called epiphyllous flowering, which is

when the leaf bears the flower directly upon its surface rather than the expected separate flower stalk.

If such interrelationships fascinate you as they do me, then visit your local library system which should have or can order for you a copy of this delightful, readable and intriguing work.

* * * * *

MEMBERSHIP APPLICATION/RENEWAL

Annual Dues and Membership Category - Check One

( ) Active $10.00 ( ) Sustaining $25.00
( ) Family $15.00 ( ) Patron $50.00
( ) Life Membership $500.00

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Thomas A Sampliner, President
Native Plant Society of Northeastern Ohio
2651 Kerwick Road
University Hts., Ohio 44118

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Native Plant Society of Northeast Ohio

ANNUAL DINNER

SATURDAY, NOVEMBER 8, 1997
CLEVELAND BOTANICAL GARDEN
11030 EAST BOULEVARD
CLEVELAND, OHIO 44106

Cocktail Hour	**5:30 PM**
Dinner	**6:30 PM**
Dr. Voss' Presentation	**8:00 PM**

"Some Great Plants of Some Great Lakes"

The Board of the Society has raised the price of the catered, buffet-style dinner from $12.00 to $13.00 this year to help defray some of the increased costs. The cost of attending the presentation only has been raised also from $2.00 to $3.00. Please feel free to bring guests. There is no additional charge for guests.

Please send your check and reservation form to Tom Sampliner, 2651 Kerwick Road, University Heights, Ohio 44118. Please make your check payable to the "Native Plant Society of Northeast Ohio". Be sure to indicate the total number of people coming with you.

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Name _____

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Dinners @ $13.00 each _____
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