NATIVE PLANT SOCIETY OF NORTHEASTERN OHIO
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On the Fringe

Volume 1 September, 1983 No. 7

SEPTEMBER PROGRAMS AND EVENTS:

September 22: "Native Trees for the Urban Landscape" Mr. William E. Fehrenbach, Jr., assistant superintendent of grounds at the Holden Arboretum will discuss the use and growth requirements, of some less used but still desirable trees, along with the more common species. Mr. Fehrenbach received his Masters degree in Urban Forestry from the University of Michigan and along with his duties as assistant superintendent, is a landscape designer and consultant. Trees are the backbone of the home garden and landscape, and with fall being a good time to transplant many of our native trees, be sure to attend this program. Meet at 7:30 p.m. at the Corning Bldg. at the Holden Arboretum.

September 24: Field trip. Presque Isle State Park, Erie, Penn.
Dune Ecology Leader: Brian Parsons
The extensive dunes along the Lake Erie shoreline of the park harbor many species more commonly found along the northeastern portion of the Atlantic coast, along with many examples of prairie species, especially grasses. The area is also very good for bird watching, and Brian may have an expert on birds come to assist. The majority of the day will be spent there so bring a lunch. Car pool groups can meet at the parking lot at Holden and will leave promptly at 8:00 a.m., or supply your own transportation and meet at the main information center inside the park at 9:30 a.m. To reach the park take I90 east to Penn. Rt. 832. Head north on Rt. 832 and watch for park signs. One last note, this is tick country. Be prepared!

FUTURE FUN:

Sometime in October, Dr. Barbara Andreas will conduct a field trip to Stumpy Basin. The details have not been completely worked out, so watch in the October newsletter when we can be more specific.

The Elusive Gentians

By Perry Peskin

Looking for members of the gentian family in northern Ohio? It can be frustrating.

I remember the first gentian I ever found, as a result of a "hot tip" that the plants were blooming on the shale bank adjoining Chagrin River Road south of US 422. On a clear October day, after locating the shale bank and doggedly climbing up the slope, slipping down two feet for every three feet ascended, I found on the few level places, growing under the first autumn leaf-fall, a delicate-stemmed plant with narrow, opposite leaves; one or two vase-shaped flowers at the top; and lightly-fringed petals of a peculiar smokey blue. As anyone might be, I was justly proud of having discovered the celebrated wildflower--Gentiana crinita, the fringed Gentian.

Actually I hadn't. The diminutive gentian growing on shale banks was, as in most cases, Gentiana procera, the small fringed gentian (or in Ohio a hybrid between the two species). To become acquainted with the real thing, I found out years later that one has to travel to mucky bottomlands, such as Stumpy Basin of Summit County, or to sterile borrow pits, waste areas depleted of topsoil by construction projects, such as the well-known location on Boston Mills Road, north of Peninsula, which is next to, and created by, the Ohio Turnpike.

Here in all its glory grows the true fringed gentian, with stout stems ranging up to three feet in height, broad leaves surmounted by dozens of flowers, and petals all deeply fringed at the ends and along the sides--a beautiful but hardly delicate wildflower, and an unlikely companion to the coarse, hardy mulleins, asters, and grasses that it competes with in a marginal type of habitat.

For the gentian family, competition is the name of the game. Like the North American heaths and orchids, attractive but rare plants, the gentians seem to prosper in habitats shunned by most plants as to dry, rocky, sandy, or boggy. They seldom are found in large stands or among familiar climax vegetation, such as a beech-maple forest. In poor, treeless habitats, since they do not run the risk of being shaded out, most gentians bloom from midsummer to late fall, as do their relatives in the milkweed and dogbane families.

The giant of the family in Ohio, the American columbo (Swertia caroliniensis) blooms in June on sunny slopes, such as the toboggan run in Virginia Kendall Park. Its small, greenish-white, butterfly like flowers do not resemble those of the other gentians. Even when not in bloom, it can be recognized by its great size and the rosette of huge, straplike leaves growing from the base.

By contrast, the midget of the family, the yellow bartonia (Bartonia virginica) pokes its wiry leafless stems only a few inches above the moss in dark swamp forests, such as Towner's Woods near Kent or Grand River Terraces in Ashtabula County. In a striking case of plant mimicry, the tiny, yellow-green flowers of bartonia look for all the world like the inedible spore capsules of the haircap moss (Polytrichum) that it lives among, and thus perhaps it escapes predation from herbivores.

A large group of attractive, pink-flowered gentians (genus Sabatia) live in wet or rocky habitats. The rose-pink (S. angularis) can be found in the Cuyahoga Valley's Deep Lock Quarry Park growing quite comfortably in the quarry itself, where water seeps out of the rocks. Most of the Sabatias have a yellow, star-shaped pattern in the center of the flower to attract pollinating insects.

In contrast, many of the blue gentians found in Ohio have flowers partly closed at the top, as if to discourage insects. Stiff gentian (G. quinquefolia), found on dry hillsides, such as the shale bank on River Road, has many small tubelike flowers clustered near the top. The petals point inward and partially block the flower tube. The bottle gentian (Gentian Andrewsii) and the rarer closed gentian (G. clausa), both found on slopes, roadsides, or stream banks, go futher. They have "elastic" strips along the petals to make sure that even if the flower is forced open, it will snap shut again. One would expect that the chief pollinators would be tiny flies that can creep into the narrow opening at the top. A little observation soon dispels the notion. The major pollinating insects are large, clumsy bumblebees that force an entry past the elastic-lined opening and disappear inside the flower, which closes on top of them. After a few seconds, in which they somehow turn around, they emerge head first, pushing their way out of the "bottle", having gathered nectar and pollinated the plant at the same time. Undaunted by the effort, they usually aim for another closed gentian and repeat the process.



Perhaps the rarest gentian in Ohio, the white-flowered aquatic bog-bean (or buckbean), now known from only two locations, resembles the fringed gentian most closely with its cup shape, abundant flowers, and deeply fringed petals. Sometimes placed in a separate family, Menyanthes trifoliata seems to be a northern plant displaced by the last glacier and surviving only in cold bogs, a companion of pitcher plants and rose pogonia orchids. Although it blooms in July in Canada, bog-bean blooms in mid-May in Ohio, if at all, for late frosts often kill the flower buds.

Because of their habitat preferences, most of Ohio's gentians are listed as endangered, threatened, or potentially threatened by the Natural Heritage Program, which has been mapping and inventorying the 600 rarest of the native plants since 1978. Since the fringed gentian chooses a wide variety of marginal habitats, it is rated as potentially threatened; however, due to its great fame and attractiveness, it tempts too many people to pick or transplant it from the wild. They might be disappointed when they find it is a biennial or annual. A better garden subject, the bottle gentian, which is a perennial and not on the endangered list, can be bought as cuttings from wildflower dealers, transplanted easily into ordinary garden soil, and expected to bloom every year, attracting the bumblebees to perform their eccentric acrobatics before winter closes in. Frustrated plant hunters can thus enjoy one of the elusive gentians close to home.

Mr. Peskin is a retired teacher, a volunteer at the Cleveland Museum of Natural History and an amateur plant hunter and photographer. He spends a great part of the summer looking for endangered plants in Ohio and reporting the findings to the Natural Heritage Program.

pH pH pH pH pH pH pH pH pH pH pH pH

The relative acidity or alkalinity of the soil is commonly expressed in terms of the symbol pH. The neutral point in the scale is 7. Soil testing below a pH 7 is acid; soil testing above pH 7 is alkaline. For more information regarding the ways in which to adjust your soil to the proper pH, consult a good garden book.

pH	9.5	intensely alkaline
pH	9.	strongly alkaline
pH	8.5	definitely alkaline
pH	8.	moderately alkaline
pH	7.7	slightly alkaline
pH	7.	NEUTRAL
pH	6.5	very slightly acid
pH	6.	slightly acid
pH	5.5	moderately acid
pH	5.	moderately acid
pH	4.5	definitely acid
pH	4.	strongly acid

Comments from the President

Those of you who could not attend the Prairie Weekend missed a stimulating and enjoyable occasion. The lectures were outstanding, starting with the Friday night presentation by William R. Jordon III. We are indebted to our members Guy Denny, Jim Bissell, Bob Bartolotta, Jack H. Selby and Brian Parsons for giving us their time and sharing their knowledge. A special thanks to Betty Koellicker, Florence Selby and Wilma Kupfer for the educational display in the Corning Building depicting the prairie and woodland plants available for sale. A big thank you to each member who gave of his time, along with the Friends of the Arboretum to make the Prairie Weekend a huge sucess. The combined total raised was $ 1500.00.

Our sincere gratitude to Ray Harm for the donation of two of his prints and to Caren's Gallery in Bath for donating the framing. Ticket sales totaled $ 575.00 raised for the Myrtle S. Holden Wildflower Garden. The Great Horned Owl print was won by Andy Smith and Ruth Crowl was the winner of the Barred Owl print.

At our August business meeting an open discussion was held about the future direction of the Society. Subjects raised were: the number of meetings, field trips, and newsletters per year; the raising of dues (because members have assumed expenses, a true picture of operating costs is not available); organization reconstruction; meetings in other areas of northeastern Ohio; and a better system for recording volunteer help, as well as the help needed by other members on projects. An executive board meeting will be held on September 21. Please call or write me with any ideas or opinions on these subjects (or others) that you would like me to relate to them.

The nominating committee will announce at the regular October meeting the slate of officers and board members. At the Annual November Meeting we will be electing officers to serve in 1984. Nominations may also be made from the floor at this meeting.

I have observed over the past months that this Society definitely needs more workers to aid the elected officers, appointed people, and committee chairpersons. I know you are all busy with jobs, families and other activities, but that goes for those of us who carried the load this year. I would like to see a greater participation of our membership in our Societies activities. We have made remarkable progress in eight months and have accomplished some very outstanding things which have been recognized all over the state. The amount of time you give may be small but it will greatly help to further our goals.

Ann Malmquist

Native in the Garden

by Brian Parsons, Horticulturist
The Holden Arboretum

The cultural requirements for members of the gentian and buckbean families found in northeastern Ohio are poorly understood and undocumented. Cultural information is available for the most commonly cultivated native plants but is scarce for the many rare species. These families have some of the most beautiful flower forms and colors, but they are not easy to grow. Some factors to consider before getting started are; by and large they are rare within the state, are often biennial, resent transplanting, and do not lend themselves to the vast majority of gardens. Our field testing at the Holden Arboretum with these families has proved that growing them from seed is the best approach. However, seed propagation is not as easy method.

The seeds should be collected when the seed capsule turns brown and cracks open, then cleaned and stored in a dry environment. In January, sow the seed in a 4 inch pot using a sterile medium (milled sphagnum or redi-earth) which matches the species soil requirements. (See chart following this article). Mist the seed into the medium with a fungicide (captan) and cover with a clear polyethylene sandwich bag and put into a warm greenhouse.

Fresh properly handled seed germinates usually in four or five weeks, then the fun begins. They are very susceptible to damp off which could destroy many, if not all, of the seedlings. The tiny seedlings, like their parents, do not like to be disturbed. If germination has been successful and enough growth has been put forth to allow them to be handled, move them out of their seed-pot and into separate containers. With luck you will have some nice first year rosettes for fall planting.

Other methods we have tried are to sow a few seeds into individual small pots, and to sow fresh seed into a prepared plot outside. Both methods have produced marginal results but eliminated some of the handling these species resent. Once established in the garden, divide perennial species only when dormant and do not move flowering plants. Biennial species should only have the first year rosettes disturbed.

I strongly urge you to leave the Gentian family and relatives to the whims of nature. Do not dig these species unless the bulldozer is in sight, and then only with the land owners permission.

The best way to enjoy these beautiful plants is in their native habitat. They are really quite successful seeders and unless their home is destroyed will persist for years. The seed of the gentian relatives is their survival mechanism so if you are tempted to try these species, only collect a couple of seed capsules as they contain hundreds of tiny seeds. This will leave the population enough seed to persist and provide you the opportunity to test your gardening skills. Good luck

For further information contact me or Tom Yates at Holden.

*Field tested at Holden

CULTURAL REQUIREMENTS FOR THE NATIVE MEMBERS OF THE GENTIAN AND BUCKBEAN FAMILIES FOUND IN NORTHEASTERN OHIO

SCIENTIFIC NAME	COMMON NAME	STATE STATUS	LIFE CYCLE	PROPAGATION METHODS	SOILS/ HABITAT	EXPOSURE
Bartonia virginica	Yellow Bartonia	P	A or B	S	1, 3	L - F
*Gentiana Andrewsii	Bottle Gentian	none	P	S or D	2, 4	L - F
*G. clausa	Closed Gentian	T	P	S or D	1, 3	L - S
*G. crinita	Fringed Gentian	P	A or B	S	2, 4	F
*G. procera	Smaller Fringed G.	P	A or B	S	2, 4	F
*G. quinquefolia	Stiff Gentian	P	A or B	S	2, 4	F
Obolaria virginica	Pennywort	P	P	S	2, 5	L - S
*Sabatia angularis	Rose-pink	none	B	S	2, 4	F
Swertia caroliniensis	American columbo	P	B or T	S	2, 4	L - F
*Menyanthes trifoliata	Buckbean	T	P	S or D	1, 3	L - F

KEY

STATE STATUS

P - Potentially threatened
T - Threatened

LIFE CYCLE

A - Annual
B - Biennial
P - Perennial
T - Triennial

PROPAGATION METHODS

S - Seed
D - Division

SOILS/HABITAT

1- moist, pH 4.0-6.0
2- moist, pH 6.0-8.0
3- bogs, swamps
4- alkaline seeps, prairies
5- woods, thickets

EXPOSURE

F - Full sun
L - Light shade
S - Shade

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Editor's Corner

In the course of one's life, we embark upon new adventures in learning and life. I feel that I have benefited in my association with this fine society. I know that a large part of the experience has been the people.

Laurel and I would like to thank everyone for the warm response given us at the August meeting. Even though the hours have been long, they would have been much longer without the help of Roxy Hayes and Wendy Perks. Their efforts have been invaluable.

I would also like to take the opportunity to thank the great number of people who provided us with articles, artwork, professional assistance and consultation.

Once again, thank you for helping to make our job an easier one.

Larry Giblock