



NATIVE PLANT SOCIETY OF NORTHEASTERN OHIO

Founding Chapter Of

THE OHIO NATIVE PLANT SOCIETY

6 Louise Drive
Chagrin Falls, Ohio 44022
(216) 338-6622

Volume 3

July/August 1985

Number 4

JULY PROGRAMS AND EVENTS:

- ✓ 13th (Saturday) 2 p.m.; **Wilderness Center Botanizers field trip to Jackson Bog.** Meet at the Administration Bldg. on Fulton Rd. in Jackson Township. (See President's Column for phone number to call.)
- 13th (Saturday) 2 p.m.; **Cincinnati Wildflower Society field trip to Bald Knob.** (See President's Column for phone number to call.)
- ✓ 27th (Saturday) 1 p.m.; **Wilderness Center Botanizers field trip to Brewster Railroad Bog.** This is an interesting raised bog. Meet at the Center.

AUGUST PROGRAMS AND EVENTS:

- ✓ 3rd (Saturday) 9:30 a.m.; **Meet at Division of Natural Areas and Preserves on Fountain Square in Columbus.** Guy Denny will guide us to prairies and fens on the western side of Columbus. A rare opportunity to see these unusual sites. A 6:30 departure from Cleveland will get you to Fountain Square in time. Call 338-6622 for details. Columbus Wildflower Society will join us for this trip. They have no other trips planned for this period.
- 2 17th (Saturday) 8 a.m.; **Cincinnati Wildflower Society field trip to see the ferns of eastern Kentucky.** Dr. John Thieret, noted fern expert, will lead this trip. Meet at Northern Kentucky University parking lot near the guard station at 8 a.m. This is right across the river from Cincinnati. (See President's Column for phone number to call.)
- 2 24th (Saturday) 11 a.m.; **Wilderness Center Botanizers field trip to Zoar property strip mining area.** Meet in Zoar parking lot at the bottom of the levee. They will go into the Zoar Woods and bring a lunch. (See President's Column for phone number to call.)

MOSESSES: WHAT ARE THEY?

by James R. Rastorfer

Mosses are very fascinating land plants that occur nearly everywhere, but yet are easily ignored and often not understood. Many plants that superficially resemble mosses have "moss" or "mosses" in their common names.

Sea mosses are marine algae or seaweeds. These plants are confined to marine water, whereas no mosses are known to inhabit submerged saline environments. Irish moss is the marine alga *Chondrus crispus*. This red alga is one of our major sources of carrageenin used in the food industry.

Reindeer mosses (*Cladina* spp.) and Iceland moss (*Cetraria islandica*) are lichens. Lichens are compound plants consisting of an alga and a fungus living together in a unique harmonious association. Habitats of lichens and mosses often overlap, especially in boreal and austral forests and polar regions.

Club mosses are lower vascular plants belonging to the genera *Lycopodium* and *Selaginella*. The leafy shoots of these plants are sporophytes, whereas the leafy shoots of mosses are gametophytes.

Spanish moss is the epiphytic flowering plant, *Tillandsia usneoides*. It is a member of the pineapple family (Bromeliaceae) that hangs in festoons from trees and man-made structures in our southern states. Even professional botanists have been misled by this plant. Its specific epithet is attributed to thalli of the lichen genus *Usnea* which it resembles. Hence a recent, but short lived, botany textbook indicated that Spanish moss is really a lichen.

Mosses belong to their own class of the plant kingdom, the Class Musci, in the Division Bryophyta. In addition, two allies of mosses also belong to the same division, the liverworts (Class Hepaticae) and the hornworts (Class Anthocerotae). The plants of these three classes are widely known among botanists as the bryophytes. Although all of the bryophytes have significant morphological features in common, each class has its own unique features which warrant separate consideration. Furthermore, only the true mosses (Subclass Bryidae) of the Musci will be treated subsequently excluding the genera *Sphagnum* (Subclass Sphagnidae) and *Andreaea* (Subclass Andreaeidae). The true mosses are comprised of fourteen orders and approximately 14,000 species of the estimated 22,000 known species of bryophytes.

Mosses are distinguished from the vascular plants by several structural features. An important feature you should particularly keep in mind when observing mosses is that the obvious leafy-green photosynthetic shoots are haploid (1n) plants called gametophytes. Vegetative

gametophytes consist of stems, leaves, and hair-like rhizoids, but lack roots and the vascular tissues, xylem, and phloem.

Gametophytes of some taxa grow erect with little or no branching, or in other taxa they tend to grow prostrate and branch freely. Usually these leafy shoots are within 1-5 cm of their substrata, but our largest moss, *Polytrichum commune*, has erect shoots 5-20 cm in height and occasionally up to 40 cm in height. If you should happen to be in Australia or New Zealand you might keep a lookout for a relative of *Polytrichum* and the world's largest known erect terrestrial moss, *Dawsonia*, reported to attain a height of 80 cm. Among the largest prostrate growth forms are shoots of the aquatic moss *Fontinalis* (*F. dalecarlica*) reported to be as long as 90 cm.

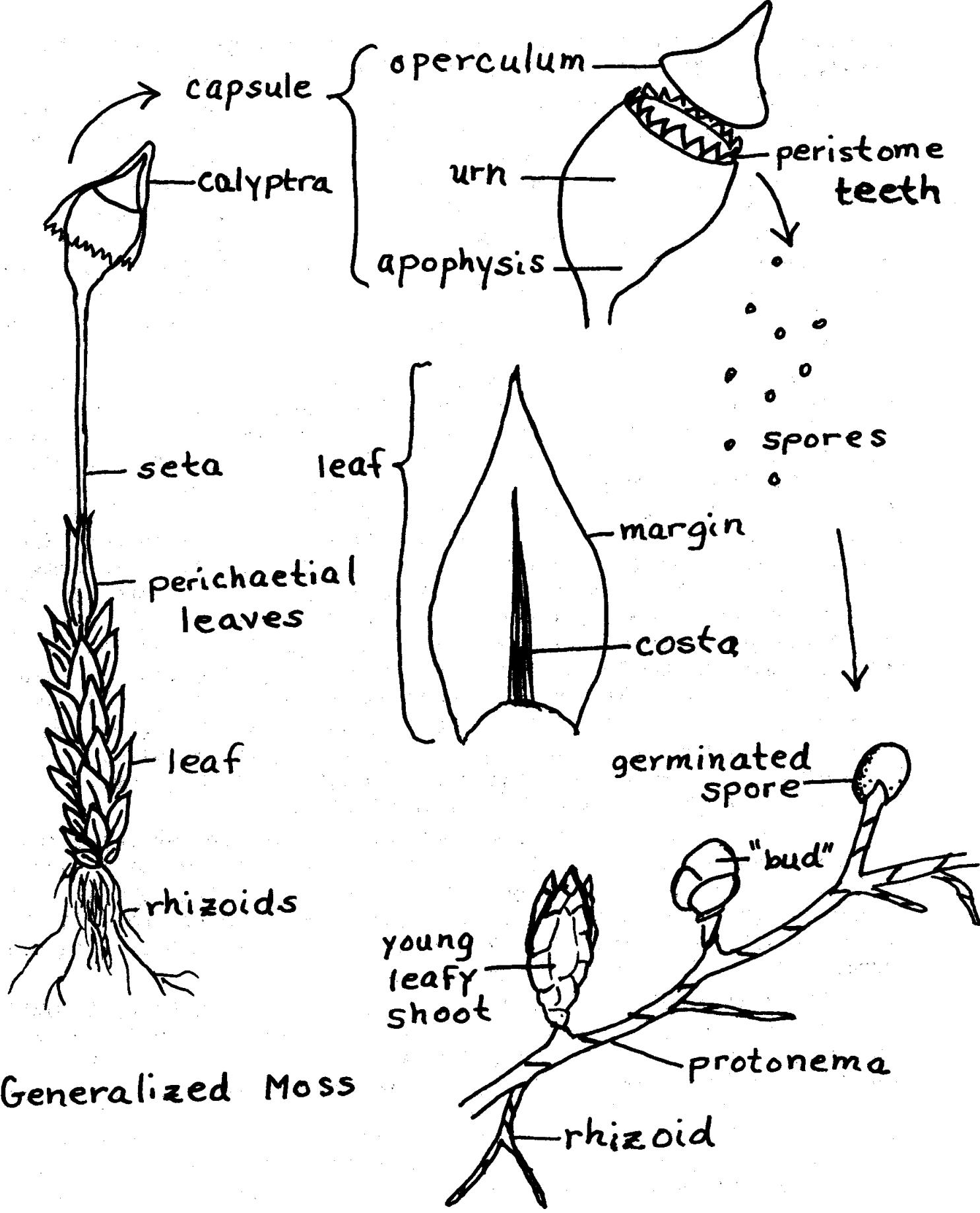
Generally, leaves are arranged on stems in many spiral rows; on the other hand, in some taxa they are inserted on stems in two rows, hence these leafy shoots have a flattened appearance resembling leafy liverworts. An interesting moss having leaves in two ranks is the rare *Bryoxiphium norvegicum*, also known as the sword moss. I have seen this species on shaded moist sandstone outcrops in Hocking County, Ohio and at a rather secret location in Indiana known as "Sword Moss Gorge". Leaves of mosses range from minute to 5 mm, and in a few taxa they might exceed 10 mm. Leaf forms, with respect to shapes, are too varied to enumerate; however, a well illustrated moss flora will quickly show their great diversity--from leaves narrowly linear to leaves broadly ovate sub-orbicular; from leaves that are straight with nearly parallel sides to leaves that taper out to very fine points and curve nearly into semicircles. Shapes, conditions of margins, the absence or presence of a costa or midrib, and other microscopic features of leaves have a high degree of constancy within a species and thus, they provide useful aids in identification.

Generally gametophytes are anchored to substrata by the thread-like rhizoids, whether a particular substratum might be soil, rock, wood, or an old pile of clinkers from a coal-fired steam engine. Experimental evidence indicates that rhizoids have a minor role in the uptake of water and minerals. Nevertheless these substances are absorbed directly through leaf and stem surfaces.

The gametophyte, as the name implies, produces gametes in multicellular sex organs. The male sex organ is called the antheridium and produces motile sperms. The female sex organ is called the archegonium and bears an egg. Some taxa of mosses are unisexual, whereas others are bisexual. Yet in either situation a film of water is required for released sperms to swim to a receptive archegonium where fertilization occurs. Sperms do not swim at random, but are attracted to a compatible archegonium by a chemical substance it releases

SPORO PHYTE

GAMETOPHYTE



Generalized Moss

during maturation. The zygote resulting from the union of one sperm and one egg remains in the archegonium where another critical structure supervenes, the diploid ($2n$) plant or sporophyte.

The sporophyte remains attached to its parent gametophyte throughout its development. At maturity it consists of a foot, seta or stalk, and capsule. Normally, the foot is not visible because it is imbedded in the archegonium which is surrounded by a rosette of special leaves called the perichaetium. In addition to functioning in anchorage, the foot provides a port of entry for food and water from the parent gametophyte to remaining sporophyte tissues. Although some cells of the young seta and capsule are photocynthetic, they do not synthesize enough food to meet the entire requirements of the developing sporophyte. Therefore the sporophyte might well be considered semiparasitic upon the gametophyte; however, the degree of parasitism among taxa seemingly ranges from nearly total dependence to nearly total independence.

The seta of some taxa may consist of only one or two cells and thus, the capsule is essentially sessile and remains immersed in the perichaetical leaves (e.g., *Physcomitrium immersum*). On the other hand, the seta of most taxa is 1-5 cm in height, and in our robust *P. commune* it is usually 6-12 cm in height. The capsule consists of a sterile basal area called the apophysis, an urn which produces spores ($1n$), and an operculum or lid. At maturity, the operculum is forcibly removed by the swelling and fracturing of subtending annular cells. Subsequently, the spores are shed, but this process is controlled by the hygroscopic movements of a ring of peristome teeth that surrounds the mouth of the capsule.

If a spore should land in a favorable environment, it germinates to a hair-like branched filament called the protonema which resembles a filamentous green alga. As the protonema ages, it produces buds which grow and differentiate into the familiar haploid leafy shoots. The algal-like features of the protonema have led to some mischief among phycologists. For decades they have placed specimens of moss protonemata among specimens of filamentous green algae in laboratory examinations. A microscopic examination quickly reveals the difference. The algal filament has perpendicular cross walls, whereas the moss protonema has oblique cross walls.

Another structure that is related to the development of the sporophyte, but of different origin, is the calyptra. During growth of the sporophyte the capsule is capped by the calyptra which is derived from the archegonium as the capsule and seta emerge. Shapes, sizes, and other features of calyptra are quite variable among taxa of mosses. One of the most noted is the calyptra of *Polytrichum*. This genus is

characterized by a relatively thick calyptra which is light brown and hairy at maturity. Hence **Polytrichum** means many hairs and accordingly, its common name is the hairy cap moss.

Mosses are widely distributed and are found in all sorts of places except in salt water as mentioned previously. They occur from the polar regions to the tropics and from high mountains to lowlands. Mosses grow on moist and relatively dry soil, on bare rock, on living trees, and on decaying wood such as old logs, stumps, and roots. Some species inhabit fresh water streams, ponds, lakes, and places that are seasonally submerged. Many mosses may be found in open places such as lawns, abandoned fields, and even in crevices of walls and sidewalks. However, in northeastern Ohio mosses will be especially abundant and luxuriant in moist woods and bogs.

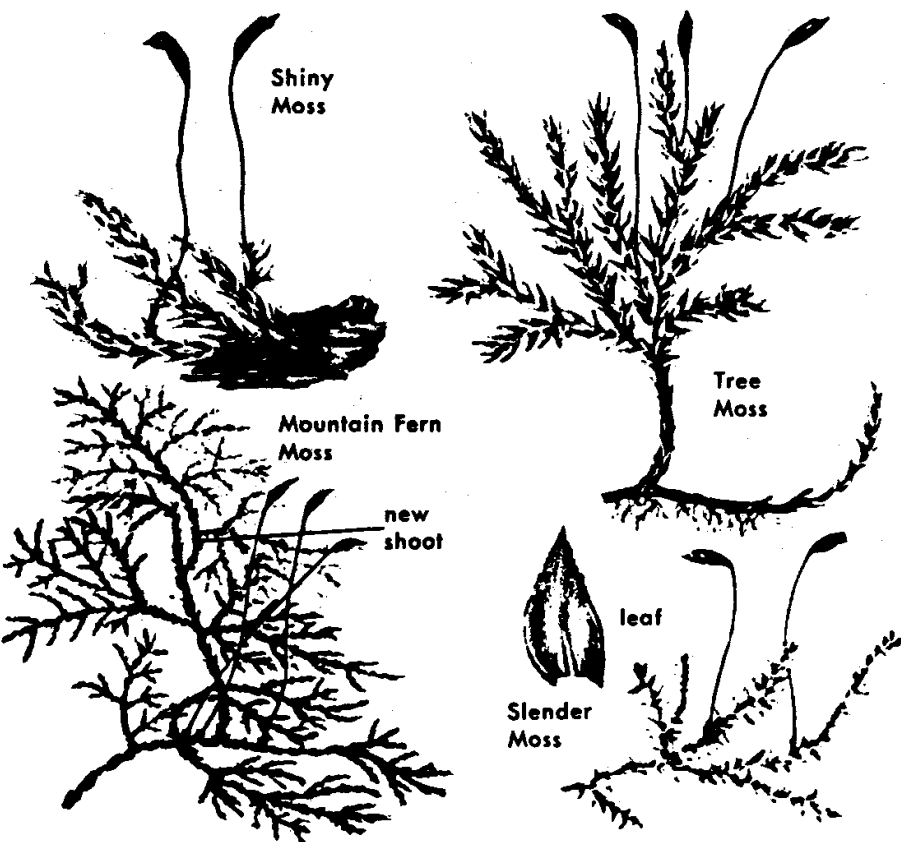
To begin your exploration of mosses, I suggest P.L. Redfearn's revision of H.S. Conard's How to Know the Mosses and Liverworts (Wm. C. Brown Company, Publishers) or H.A. Crum's Mosses of the Great Lakes Forest (University Herbarium, University of Michigan). A microscope is a necessary tool in the identification of species of bryophytes and the use of the keys in these books is no exception. Nevertheless, they are the best currently available inexpensive guides to the mosses of North America. Crum's book contains a more detailed treatment with respect

to descriptions and drawings. In addition, it contains a wealth of information and folklore that provide delightful reading. Those who become enamored by mosses will eventually need H.A. Crum and L.E. Anderson's comprehensive work entitled Mosses of Eastern North America (Two Volumes, Columbia University Press).

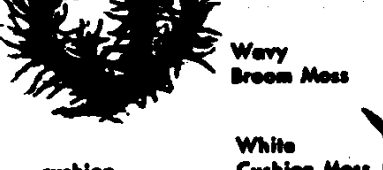
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By James R. Rastorfer, June 2, 1985, Park Forest, Illinois.
 Edited, typed and illustrated by Judith B. Rastorfer.

A. Rastorfer is on the staff of the Botany Department at Chicago State University. He is a long-time friend of Donald Dean and a native Ohioan



After Dr. Chitaley's memorable lecture in January on paleobotany, I discovered a book that enables the layperson to understand this very complex subject. "The Evolution of Plants and Flowers" by Barry Thomas (St. Martin's Press, NY, 1981, \$13.95) looks at the evolution of plants from their simple beginnings over 3,000 years ago to the results of modern selection and hybridization. Written in clear, straightforward language, it is the ideal introduction to this fascinating subject. The eight double-page drawings in full color show what the landscape must have looked like millions of years ago and the gradual evolution to what we see today. The life cycles of each of the major plant groups are detailed and diagrammed in such a manner that comprehension is immediate. This book is not only a primer on paleobotany, but one of the best basic botany books for the beginner that I've ever seen. A must for your libraries.



SILKY FORK MOSS forms dense patches on wooded banks. Upright plants are often branched; leaves smooth with long, tapering tip. Capsule has a beaked lid. Peristome teeth forked. Ht. 0.5-2 in.; L. 0.2-0.5 in.

BURNED GROUND MOSS is common on walls, sidewalks, and dry ground. Leaves have rolled-back margins except at toothed tip. Furrowed capsule has conical lid. Ht. 0.5-0.7 in.; L. 0.6 in.

BROOM MOSS forms light-green tufts in woodlands. Stems are tall, with tapering leaves normally bent in same direction, appearing wind-blown. Cosmopolitan in north temperate areas. Ht. 2-4 in.; L. 1-1.5 in.

WAVY BROOM MOSS has long, wavy leaves with a silky luster. These merge into robust, bright, glossy mats. Capsules are clustered, each on a long stalk. Grows in shade on soil or stones. Ht. 2-5 in.; L. 1-1.5 in.

WHITE CUSHION MOSS grows in poor, acid soil, often producing spongy, dense cushions several inches deep. Plant is dirty white, becoming blue-green when wet. Sporophytes seldom formed. Ht. to 4 in.; L. 0.5-1 in.

CORD MOSS frequently grows on burned or limed soil or in limestone areas. The closely overlapping leaves form a bud-like head. The mouth is on the side of the pear-shaped capsule. Peristome teeth have crossbars. Ht. 0.2-0.5 in.; L. 1-2 in.

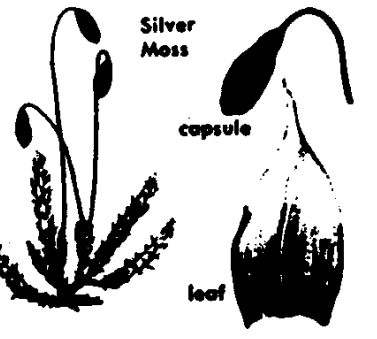
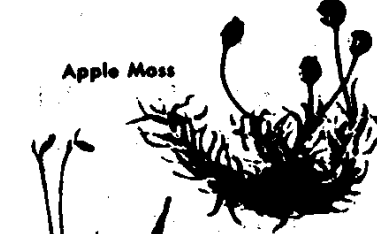
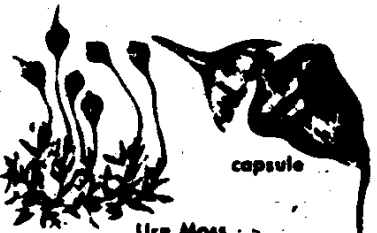
URN MOSS appears frequently on shaded roadsides, in open woods, and on damp soil in greenhouses. Urn-shaped capsules have erect cap and no peristome; mature in May. Ht. 0.1-0.5 in.; L. 0.2-0.5 in.

APPLE MOSS has small, apple-shaped capsules, furrowed when dry. Often makes woolly patches on rocky soil of woodlands. Leaf margins have double row of tiny teeth. Ht. 1-3 in.; L. 0.5-1 in.

INDIAN BRAVE MOSS, of northern regions, has an erect calyptra jutting from behind the bent capsule like a single feather of a warrior. Orange leaf base is noticeable where it overlaps stem. Ht. 2-4 in.; L. 0.7-2 in.

ROSE MOSS has creeping stems with upright branches. Lower leaves scalelike; upper leaves large, forming rosettes. Fruiting uncommon, but sporophytes occasionally found. May form mats. Ht. 1.5-2 in.; L. to 2 in.

SILVER MOSS is found on waste ground, walls, roofs, and even between paving stones. The overlapping leaves lose their chlorophyll with age, creating mats of tiny silvery shoots. Capsules droop. Ht. 0.2-0.5 in.; L. 0.5 in.



PRESIDENT'S COLUMN

Spring flew past in a blaze of abundance and glory. As if to penalize us for the lush flowering, Nature let us have each succession of bloom for just a few days. The heat and drought may have foreshortened the time, but I have never seen hepaticas, spring beauty, trillium, and wood geranium in such profusion. Now we are into summer and I think this time of year (middle of June) is the moment when Nature holds her breath. Not before nor after will the world be quite so beautiful nor so perfectly finished. Each season has its own beauty and particular attraction. But now is when the period of rest and growth has climaxed and Nature is clothed in her finest garments.

We will not have an activity until the **August 3rd** field trip with Guy Denny to the prairies and fens west of Columbus. Please put this on your calendar. It is a rare opportunity to see these unique areas with the best expert in the state, and you will be well rewarded for the trip by seeing lots of rare plants. In addition, let me remind you of the **Sept. 14th** field trip to Ohiopyle, PA. Paul Weigman, Pennsylvania's expert on their endangered species, will be our leader to this important area.

It is not too early to mark your calendars for the **Nov. 8th** Annual Dinner and Meeting at the Museum of Natural History. Our speaker for this year will be Michigan's Dr. Ed Voss, one of America's most respected botanists. More on that later, but let's all turn out. Last year was a great success, but it takes each and every one of you to make it so.

As you can see, our chapters are busy and flourishing. For your use I am listing the officers to contact if you wish to join one of their field trips. In Cincinnati: Katherine E. Malmquist, 727 Dixmyth Ave., Apt. 307W, Cincinnati 45220, 513/751-2701 evenings. In Columbus: Dr. Jeanne Willis, P.O. Box 63, Westerville 43081, 614/882-4644. At Wilderness Nature Center: Bobbie Lucas, 857 W. Turkeyfoot Lake Road, Akron 44319, 216/644-7682. It would be well to contact these people if you intend to join them and make sure you have all the details of the trip.

And now, we are off on one of our hair-brained journeys of exploration and discovery. This time it is up to the far northeastern section of Canada where we have never been, but we have a couple of new friends who have promised to lead us to orchids and other good things. A fruitful summer to all of you, and when we next meet I hope that you have lots to share with us.

VERSATILE VIBURNUMS

Mark Druckenbrod,

Assistant Horticulturist, The Garden Center of Cleveland

A famous plantsman once said, "a garden without a viburnum is akin to life without music and art." A person after my own heart, for viburnums are indeed an elegant contribution to the landscape. Members of the Caprifoliaceae family, viburnum encompasses over 100 species plus numerous select cultivars. They are endlessly versatile as is demonstrated by the cultural adaptability, varying plant heights, abundant flowers and a multitude of fruit colors ranging from brilliant scarlet through rich purple-black.

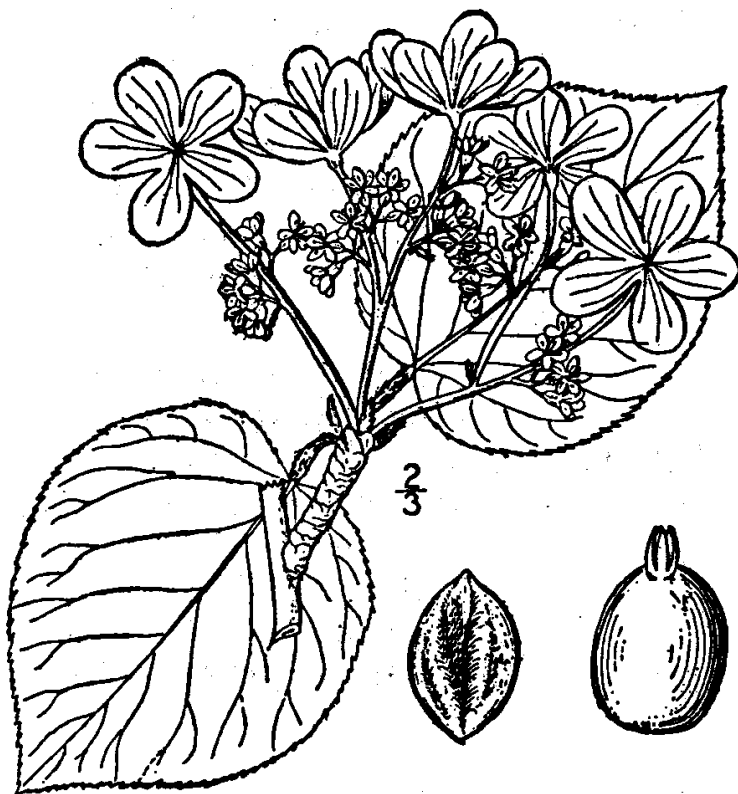
A mass of white flowers in April and May are the greatest asset of most viburnums. All viburnum flowers are a beautiful cream white. Several fragrant species are pink in bud; however, the flowers will eventually open white. Other species may appear a creamy-yellow. This is due to the numerous yellow stamens protruding above the white flower petals.

Viburnums require a moist, slightly acidic well-drained soil. The key is "well-drained," as the more ornamental species will not survive in heavy wet soils. Being fibrous rooted, viburnums readily transplant and develop rapidly into mature specimens.

Our native viburnums are generally found as understory plants in moist woods or along protected streambeds. They are rarely observed growing in dry field locations.

Viburnum alnifolium is a typical species adapted to shady moist conditions. This northeastern Ohio native is a ten foot open shrub with pendulous branches often rooting when in contact with the ground. Tangle-legs and Hobblebush are two very descriptive common names.

Leaves are opposite, simple, broadly-ovate and four to six inches long. Attractive fall color ranges from a reddish purple through a rose-gold. **Viburnum alnifolium** flowers are unique in that the outer flowers of the cyme are enlarged and showy. These outer white flowers form an attractive spring display. However,



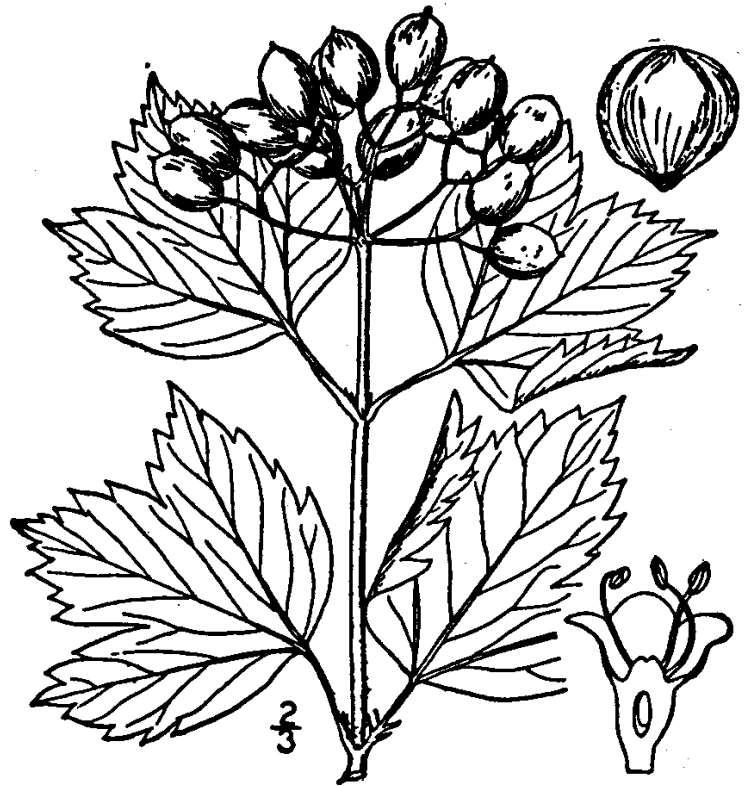
they are sterile and the late summer red fruit is only produced from the inner fertile flowers.

Viburnum trilobum, the American Cranberrybush Viburnum, is the one other native viburnum with sterile enlarged outer flowers. A naturalized specimen plant in mid-May bloom is extremely handsome. **Viburnum trilobum** has simple, opposite, three lobed leaves, similar to maple leaves. Winter vegetative buds are rounded or tear shaped, two scaled and a shiny reddish-green. September fruiting consists of abundant bright red berry-like drupes often persistent well into winter, forming the appearance of dried red raisins. The acidic fruit is edible and used for a distinctive flavor in jellies and preserves.

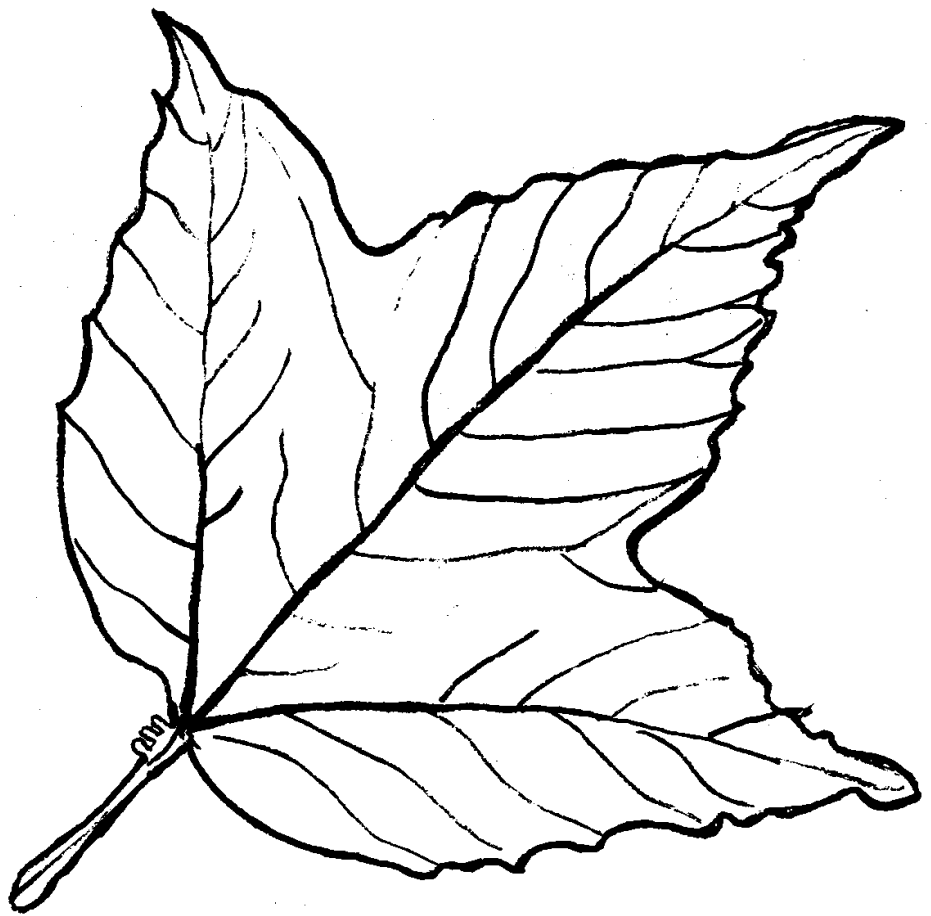
The key identification feature for trilobum is a group of stalked dome-shaped glands on the petiole near the leaf blade. These glands distinguish this species from the similar European species, **Viburnum opulus**. The common European Cranberrybush has disk-like glands on the leaf petiole that are concave in nature: that is, curving inward rather than dome-like.

Roseum, a cultivar of **Viburnum opulus**, is the true European snowball viburnum. Snowball refers to beautifully rounded flower clusters formed from numerous individual florets. In mid-May, hundreds of these four inch inflorescences dangle from the ends of the branches. Though extremely showy, the flowers are sterile, thus there is no fruit production. This is a small trade-off for such a beautiful spring display. Another novel viburnum worth consideration is **Viburnum opulus 'Nanum'**. Nanum is a dwarf, densely branched shrub maintaining 18-24 inches in height. Similar to boxwood, it is a good filler plant and excellent as a low hedge.

Returning to native Ohio species, we find **viburnum prunifolium**, the Blackhaw viburnum, to be the most extensive in range. Reported in most Ohio counties, the blackhaw viburnum is easily sighted along woods, thickets and roadsides. **Viburnum prunifolium** is a twelve foot multi-stemmed shrub, possibly maturing to a twenty-five foot tree. Lustrous



dark leaves are simple, broadly-elliptic and two to three inches long. Vegetative buds are half inch long, pointed and with a gray coloration. Prunifolium blooms abundantly in May with three inch flat topped cymes. Though the petals are white, the flowers appear cream colored due to the numerous bright yellow stamens. Fruits are half inch long pinkish drupes which mature to a deep bluish black. These palatable fruits have traditionally been used for preserves.

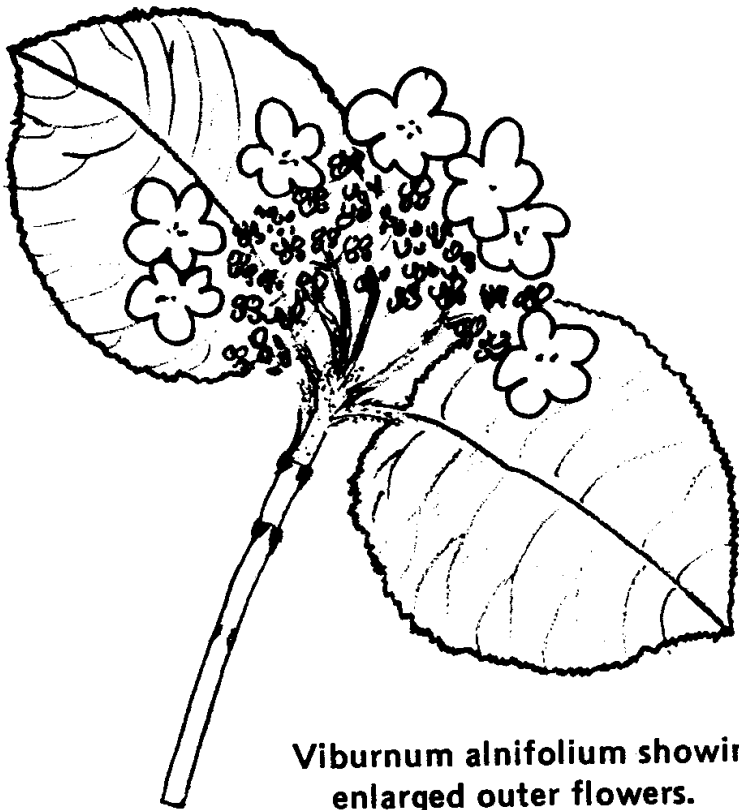


Viburnum trilobum leaf showing dome-shaped stalked glands.

The most colorful fruiting viburnum is native to our northeast. **Viburnum cassinoides**, the withe-rod viburnum, produces brilliant multi-color fruit. In September, the fruit changes from green to pink, through red, blue, purple then black. All colors are often present at the same time. Indeed, an interesting plant to observe. **Viburnum cassinoides** forms handsome ten foot shrubs near swamps and wet woods. This species is easily identified by its scurfy brown stems, buds and undersides of leaves.

In contemporary landscapes, our native viburnums often share with beautiful non-native species. From Korea and Japan come **viburnum burkwoodii** and **viburnum juddii**. These two species bear two to three inch semi-snowball flowers in April. The burkwood and judd viburnum flowers have a rich, spicy aromatic fragrance. Heavy, though not overpowering, these plants are an excellent choice near your home or patio for that scented evening air.

Several viburnum species, though scentless, are considered among the best flowering shrubs. **Viburnum plicatum** var. **tomentosum** 'Mariesii' from Japan is exceptional. This tongue twister, commonly called the doublefile viburnum, is a rounded shrub with tiered horizontal branching creating a stratified look. This effect is similar to the layered branches of a mature flowering dogwood. Four inch flat topped flowers are arranged in beautiful doublefile order along the horizontal surface



Viburnum alnifolium showing enlarged outer flowers.

of these branches, a truly outstanding display. A second display, that of bright red fruit, soon follows in July and August. Look quick, for it will soon be devoured by the local song birds.

Viburnum sieboldii is another choice flowering shrub. The flowers appear a distinctive creamy yellow. In late May, this attractive display quite literally masks the entire plant. A coarsely rugged, yet clean plant, this ten foot viburnum is ideal against a blank wall or grouped in the back border. It is a heavy fruiter; however, soon devoured by birds.

For other viburnums, the fruit alone is the greatest asset. *Viburnum dilatatum*, the linden viburnum, fruits heavy enough to bend branches. Cherry or scarlet red fruits persist well into December, developing the appearance of dried red raisins. For color and fruit persistence, this is the best. The linden viburnum is also an attractive bloomer with a nice orange-red fall color to boot.

Among all the species and cultivars discussed, undoubtedly, you have observed many of them in your area. Viburnums are indeed special shrubs and should be used appropriately in your landscape.

Mark is the assistant horticulturist with The Garden Center of Greater Cleveland. He is also our contact with the Garden Center and has been very helpful in our workings in the ravine.

Thanks, Mark, for an extremely informative article.

JIM BISSELL WINS HIGHEST STATE AWARD

Good things happen to nice people!! At the May 1985 Annual Meeting of the Ohio Nature Conservancy, Jim Bissell won the highest award that can be given, The Silver Bowl. The citation accompanying the award stated that Jim has been committed to the Conservancy work on all levels. His programs and presentation of information have helped to convince key people of the urgency of protecting valuable areas. He has been instrumental in assessing the potential of lands, collecting data, and contacting land owners of fragile areas. Jim has averaged 80 new rare plant sitings per year since 1976 for the Heritage Program, and has personally been responsible for the acquisition of 13 natural areas with statewide significance.

Jim grew up on an Ashtabula County dairy farm and learned his love of nature from his grandmother, herself an accomplished naturalist. He received his B.Sc. from Ohio State University and his Masters from the University of Wyoming. His first position was with the U.S. Forest Service in Bridger National Forest in Wyoming. He came to the Museum of Natural History in 1971 and became Curator of Botany in 1976. In addition, he is also Coordinator of Natural Areas for the Museum and Adjunct Instructor at Case-Western Reserve University.

Jim and his wife, Debbie, live in Ashtabula County on land that allows him to propogate his beloved native plants. He had also received the Silver Oak Leaf Award from the Conservancy and last year was named Naturalist of the Year by the Native Plant Society. He has given the Society much help in programs, field trips, and articles, and we could not have a better friend.

Jim Bissell is one of the most talented, knowledgeable, and hard working botanists in the state. He has the respect and friendship of all who know him and well deserves the award he has received.

CONSERVATION ALERT

Reed grass (*Phragmites australis*), also known by the common name phragmites, is a tall grass reaching to ten or more feet high. The flower clusters which resemble plumes appear in middle summer and are held by the plant through the winter. This grass now forms large colonies along Cleveland area interstate highways. Once established, reed grass covers additional ground by spreading rhizomes. This particular species of grass is the most widely distributed flowering plant in the world, and reed grass formerly held the status of being a rare native in northeastern Ohio wetlands. This status changed in the mid-1950's soon after the construction of Interstate 90. Following the completion of I-90 east of Cleveland, reed grass began to show up in ditches and wetlands adjacent to the interstate. Some people have correlated

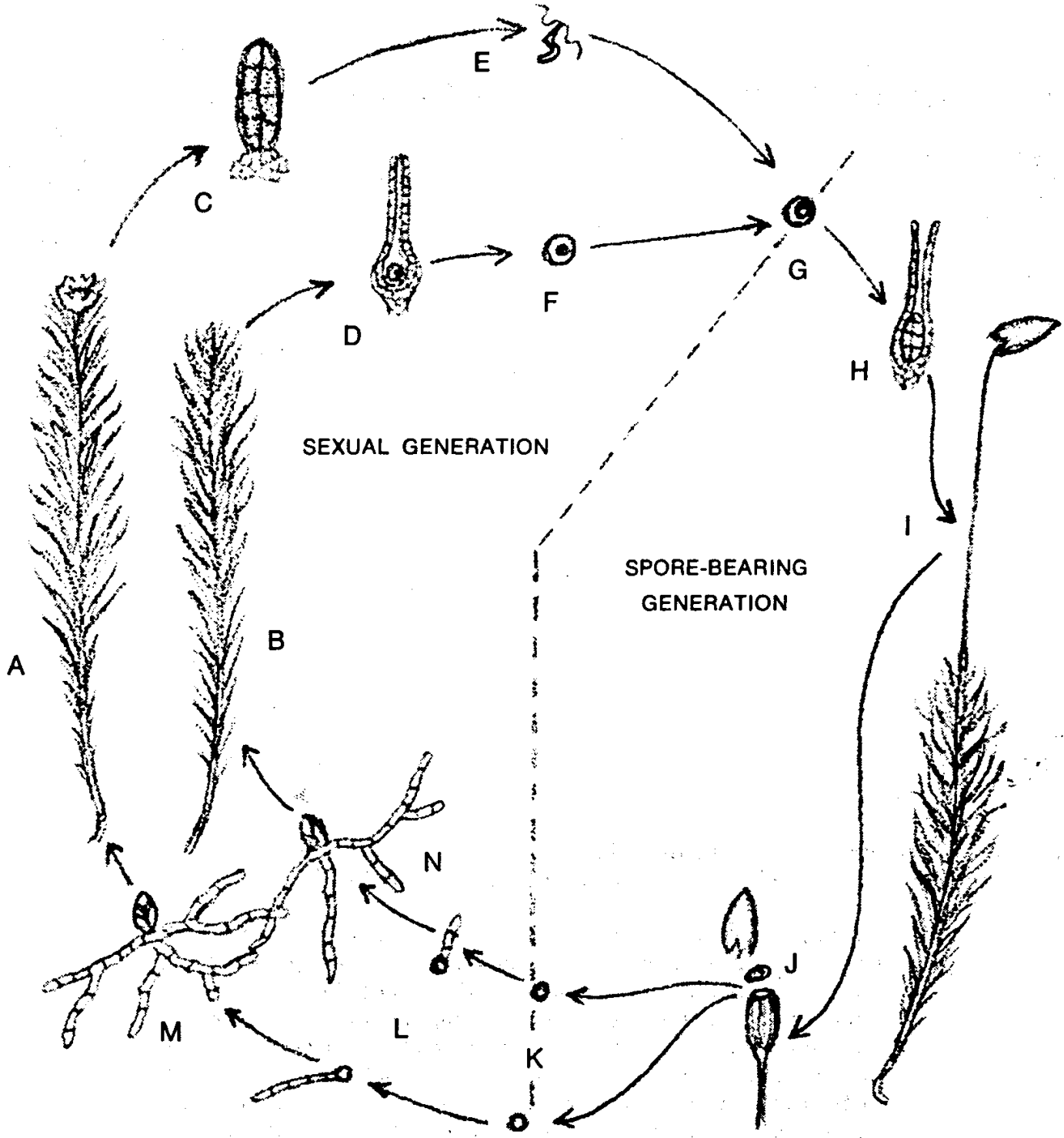
the recent increase and spread of reed grass with highway salt and salt dumps. Reed grass is a salt tolerant species; however, reed grass is establishing and spreading in wetlands free of salt including fens, Lake Erie shore marshes, upland springs and floodplains. On many wetland sites, reed grass stands are changing formerly diverse marshes into reed grass monocultures. Regional wetlands managers are developing a general consensus that, if possible, entry of new reed grass clones into shallow water marsh meadows or fens should be prevented.

PLACES TO GO

A year ago Dan Best introduced us to Castalia Prairie near Castalia. Just a little farther west is Irwin Prairie State Nature Preserve. Irwin Prairie includes one of the finest sedge meadows in the state. Several distinctly different plant communities occur in the preserve. The northern part is a swamp white oak-pin oak forest. Southward the soil becomes increasingly waterlogged and clumps of cottonwood, quaking aspen and dogwood have become established. The lowest and wettest part of the preserve contains a lush sedge meadow with many species of rare plants, including spiked blazing star, smaller fringed gentian, alder-leaved buckthorn, prairie rattlesnake-root, Green Lakes goldenrod, Riddell's goldenrod, and several species of orchids. The preserve provides habitat for the rare spotted turtle and supports a wide spectrum of bird life. Irwin Prairie is a relic of the old Lake Maumee lake bed and provides the visitor with a look at an unusual environment. There is an extensive boardwalk so please use it and do not walk into the prairie. Take Route 20 west out of Toledo to State Route 295. Go south on Route 295 - 2½ miles to Bancroft Road. Then east on Bancroft 3 miles to the Nature Preserve sign.

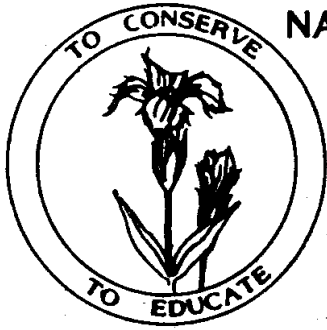
While in the area you are very near Oak Openings which we will treat in September newsletter. However, if you go to Irwin, do stop and visit this area for it is loaded with interesting plants.

Tom Yates and Brian Parsons of The Holden Arboretum Wildflower Garden have been chosen by the Center for Plant Conservation to head the midwest Regional Garden. This region covers Ohio, Indiana, Illinois, Michigan, Wisconsin and Minnesota. They will go out into the field with permits to bring back threatened and endangered species. They will learn how to propagate them, mostly from seed and some spores and cuttings, and grow them in the arboretum garden. Sixteen other botanic gardens have been selected as well, such as the Missouri Botanical Gardens, and the North Carolina Botanical Gardens. Tom and Brian were selected because they have already had great success with such plants as *Trollius laxus*, and they have brought great honor to Holden. **We congratulate them.**



Life cycle of a moss (common hair cap)

A. A male plant. B. A female plant. C. Sex organ of male plant. D. Sex organ of female plant. E. Sperm. F. Egg. G. Fertilized egg. H. Spore-bearing plant begins to grow from fertilized egg. I. Spore-bearing plant attached to sexual plant. J. Capsule of spore-bearing plant opens to release spores. K. Spores. L. Spores germinate to form threads. M. Bud forms to produce a male plant. N. Bud forms to produce a female plant.



NATIVE PLANT SOCIETY OF NORTHEASTERN OHIO

Founding Chapter Of

THE OHIO NATIVE PLANT SOCIETY

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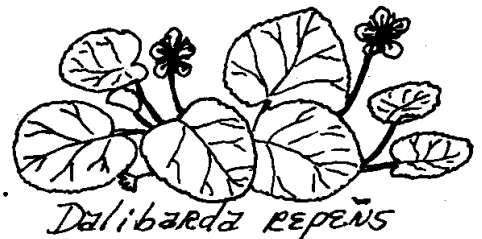
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NATIVE PLANT SOCIETY OF NORTHEASTERN OHIO
Founding Chapter of The Ohio Native Plant Society

"to promote conservation of all native plants and natural plant communities through habitat protection and other means; encourage public education and appreciation of native plants; support proper ethics and methods of natural landscaping; encourage surveys and research on natural plants and publication of the information; and promote cooperation with other programs and organizations concerned with the conservation of natural resources."

Please enroll me as a member of the NATIVE PLANT SOCIETY OF NORTHEASTERN OHIO.

- ACTIVE\$ 7.50
- FAMILY\$15.00
- SUSTAINING ...\$25.00
- PATRON.....\$50.00



Membership runs from January through December and is not pro-rated.

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