

NATIVE NOTES

THE WEST VIRGINIA NATIVE PLANT SOCIETY

Volume 3, Number 3

February, 1996

LETTER FROM THE PRESIDENT

Greetings from Charleston! I've been reflecting on the fall WVNPS activities of 1995, while digging out from under the recent snowfall. The Cranberry Glades field trip in September was wonderful - a sunny, balmy, fall day. In fact, the glades were the driest in my memory. Thanks to Mark Chatfield for leading the hike, and to Donna Ford for helping to identify plants found along the way.

The Cranberry Glades trip was part of the WVNPS annual meeting held at Watoga State Park. Also, as a part of the meeting more work was done on the Brooks Arboretum. Thanks to the DNA group from West Virginia State College for their assistance painting blazes, doing trail cleanup and helping develop ideas for updating the interpretive signs in the arboretum. Gratitude also to the folks at Watoga for allowing us the use of the staff cabin for our meeting.

Twice in the last few months, I have been impressed with comments in the national media about invasive exotic plants. The first was on a Saturday morning *Weekend Edition* show, aired on National Public Radio. During an interview the *plant lady*, a woman who does a regular gardening spot on the show, was admonished by a listener for not identifying a plant as an invasive exotic. At any rate, the plant lady responded quite appropriately, she agreed with the listener and seemed quite pleased that someone had raised the issue of invasive exotics.

Just this month, newspaper columnist Ellen Goodman wrote a column in which she identified and apologized for mistakes she had

made in her articles regarding invasive exotic plants. First of all, if I had never read her column before (actually I have, and she is a favorite) this atonement column would win me over as a permanent fan. How many people do you know, who would think about their mistakes, and then publish them in a newspaper? Anyway, her confession dealt with an unintentional praise of purple loosestrife as a garden bedding plant. Apparently, a reader caught the mistake and wrote to her about it.

The point of my digression here is this; it would appear that the word is spreading and awareness is broadening about the problem of invasive exotic plants. I hope that we can assist in local outreach and education on the issue through the Society's Grow Native Committee.

Are you interested in helping establish the direction of the Native Plant Society? Consider running for an office! The elections committee is looking for interested folks to fill several positions that will be open on next year's Board. Anyone interested in serving on the WV Native Plant Society Board should contact Steve Mace at (304)882-2450.

LIBBY

**KUDOS TO MIKE BREIDING FOR THE
"TECHNICAL SUPPORT" REQUIRED TO
GET THE TWO HARD DRIVES ON MY
COMPUTER LIKING EACH OTHER
AGAIN. WITH HIS HELP I WAS ABLE
TO GET THIS NEWSLETTER
COMPLETED!**

Editor

AN EXCEPTION TO A RULE

by: Barry Glick

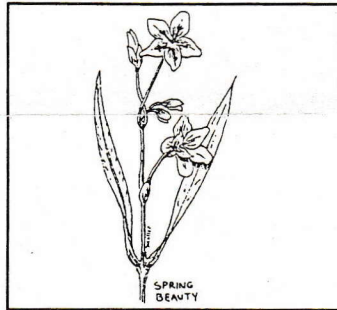
In most cases, I have discovered that the Asian counterpart of many of our native plants is much showier, more robust and in many instances more floriferous than our native species. For example, our native *Claytonia virginica* is an early blooming, beautiful plant, but its flowers are tiny and the entire plant is extremely ephemeral. On the other hand, *Claytonia siberica* has thicker, more deeply veined foliage, and flowers for months. Though many similar comparisons exist, I would like to discuss one major exception.

Pachysandra procumbens is an east coast member of the Buxaceae (boxwood) family, commonly referred to as Allegheny spurge. It is superior to the more commonly planted Asian variety, *Pachysandra terminalis*. *Pachysandra procumbens* is a clump forming groundcover that fills in the area a little slower, but much more elegantly than its cousin, *Pachysandra terminalis*.

Though the Asian variety will fill in an area quickly, it becomes an aggressive, stoloniferous thug.

Our native *Pachysandra* is hardy in most areas of the US, probably into zone 4, maybe even zone 3. In zones 7-10 it stays evergreen, whereas in colder climates it dies back for the winter. In our area, in early spring, Allegheny spurge sends up lovely spikes of pink and white fragrant flowers which last for a week or two. Soon after the flowers have set seed, the first shoots poke through the soil and their dark green leaves begin to unfold.

The foliage remains a dark, luxurious green all summer. The more sun that a plant gets, the lighter its leaves become. I planted a row in full sun as an experiment to push the plants to the extreme. The plants growing in full sun were healthy, but their leaves were lighter in color, some with an almost chlorotic appearance. This



plant is more adapted to shade. In fact it thrives in deep shade.

In late summer to early fall, *Pachysandra procumbens* reminds us of the approaching Autumnal equinox by "opening its windows to let in more light." This effect takes its form as beautiful silvery mottling on the leaves that compares to snowflakes, in that no two leaves are alike. Oh! the joy I have experienced, jumping from plant to plant, trying to select the most striking patterns. However, they are all equally beautiful and unique.

Pachysandra procumbens is an easy plant to propagate. You can take stem/leaf cuttings in the early spring, but rhizome divisions are quicker and easier. On a mature rhizome, you will find many joints. If you make a complete cut at each joint, leaving the plant above it with a few good roots intact, you will have several two inch to four inch pieces that can be potted, or laid out in a flat with about half an inch of soil to cover. Root pieces taken in the early spring while the plants are still dormant, will produce new plants ready for planting the same season.

All in all, it is hard to find a better, all around, more useful, adaptable ground cover plant than *Pachysandra procumbens*. And, being a native American plant, you can feel like a patriot when you grow it.

VIOLA IN THE WEST VIRGINIA MOUNTAINS

by: Barry Glick

Living at 3000 feet in the Appalachian Mountains of West Virginia has some definite advantages. For instance, there are almost thirty *Viola* species native to West Virginia and most of them can be found in the woods and meadows near my farm in Greenbrier County.

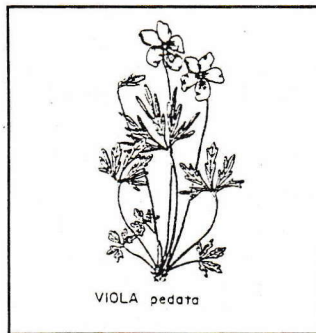
I have found that all thirty species make excellent garden plants, once removed from the competition of weeds, and tree roots. Most of the species are abundant in the wild, though their abundance has never diminished the joy of stumbling onto a new population.

The earliest *Viola* to bloom in the spring is *Viola rotundifolia*. It springs forth from a rather rough rootstalk which becomes horizontal as the plant ages. The Spring leaves are orbicular or ovate and are mildly pubescent with short white hairs. The flower petals are bright primrose yellow with three lower brown striations, sometimes chocolate tinted. The summer leaves are almost orbicular, but cordate at the base. It is the only yellow violet found in West Virginia with a stemless plant.

Viola hastata is another fascinating violet with its yellow flowers and unusual leaf shape. Even if it never flowered, it would be well worth growing for its silvery marbled foliage. The specific epithet *hastata*, refers to the almost arrow shape of the leaves. The variation among populations is astounding. I have spent much time in the woods looking from leaf to leaf in a population of *Viola hastata* to find a multitude of patterns.

Viola canadensis is the tallest of our native *Viola* species. As with the previously mentioned species, this violet can be found in moist rich woods throughout the state. Attaining a height of twelve to sixteen inches, this species has large white flowers with a spur. The petals are pale yellow at the base and marked with fine dark stripes. The three lower petals are purple veined.

Viola pedata is known locally as the bird foot violet. This common name comes from the fact that the foliage resembles the shape of a birds foot. In contrast to the above species, *Viola pedata* is frequently associated with shale barrens, and requires well drained, shaley, rocky soil. Its variable colored flowers are among the most showy of the Genus. The flowers are produced in profusion in early spring and are held well above the foliage. Colors range from pale blue to dark lilac. A friend in Decatur Georgia, Don Jacob's at Eco Gardens, has selected a lovely form and named it 'Eco Artists Palette.'



Many other beautiful species of *Viola* can be found in the Mountain State. I hope that this brief foray into one small area of our native flora has wet your appetite for native plants, and that you will come visit West Virginia, a true botanical paradise.

Barry grows over 10,000 different plants at his sixty acre garden and nursery in the mountains of Greenbrier County West Virginia. He welcomes visitors and correspondence.

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A SHORTAGE OF LICHENOLOGISTS

by: Emily Grafton

Lichen Biology

Lichens are one of nature's more unique and intriguing groups of organisms. Though often confused with mosses, lichens look nothing like them nor any other living thing. Yet, most of us will unknowingly pass by hundreds of species in a growing season, while in pursuit of more showy herbaceous plants.

Most biology or natural history texts state that a lichen is a plant which results from the symbiotic union of an algae and a fungus. The mycobiont (fungus) makes up the primary structure of the plant body, with the photobiont (algae) enclosed within layers of hyphae (strands of fungal tissue). The composite lichen structure and physiology is highly adapted to living in harsh environmental conditions, like bare rock and bare soil. However, recent scientific findings have been expanding the traditional definition from a simple plan of harmonious living to one with a diverse assortment of capabilities.

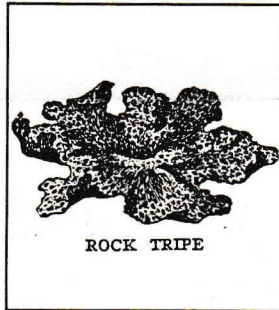
Lichens have traditionally been categorized into three primary growth forms. The thallus, or plant body is organized into layers, though the number and kinds of layers varies with each

group. Fruticose lichens produce upright hollow stems (British soldiers, reindeer moss, old man's beard); foliose lichens produce a flat, curly edged, leaf-like form (rock tripe); and the crustose, with a granular looking form, grows tightly adhered to a substrate. A less common fourth group has been identified, it is called leprose. Leprose lichens consist of a formless mass of intertwining fungal and algal cells that may appear as a thin crust on the surface of a substrate.

Lichens are found all over the world, and in every climatic condition. They have long been dubbed as "pioneer plants." Not only are lichens adapted to growing in environments bereft of nutrients, they secrete acids which can dissolve bare rock, releasing minerals which other plants may ultimately utilize.

A lichen survives in such poor conditions because of the unique arrangement between the algae and fungus. The algae photosynthesizes carbohydrates which the fungus more or less steals from it.

The fungus benefits the algae by providing it with a safe environment in which to cloister itself when there is a lack of moisture. Due to this arrangement, the fungus can colonize environments that free-living fungi could not, and the algae increases its opportunities for dispersal.



Living in nutrient poor, dry environments has its disadvantages for the lichen. Lichens grow at exceptionally slow rates, generally less than a centimeter per year. Also, due to the fact that lichens are not able to actively absorb and store water, photosynthesis can occur only during periods of rain, or in the early morning hours before the dew or fog has evaporated. A lichen can take up water in contact with its surface, including moisture from the air.

For decades scientists could separate and culture the fungal and algal components in a lab, but they could not generate a lichen from the isolated components. They found that many of

the photobionts exist as free living species, but none of the lichenized fungal species exist freely in nature. Beginning in the last century, researchers have also been extracting various chemical substances produced by lichens.

Recent investigations into lichen biology have answered some of the unknowns and opened new windows of opportunity for further studies. In 1980, a Clark University biologist, Vernon Ahmadjian successfully created a lichen in his lab. Not only did he discover the conditions necessary for lichen formation, he discovered that the relationship between the algae and fungus is not so cozy. In some cases, the fungus parasitizes the algae.

What's A Lichen Good For?

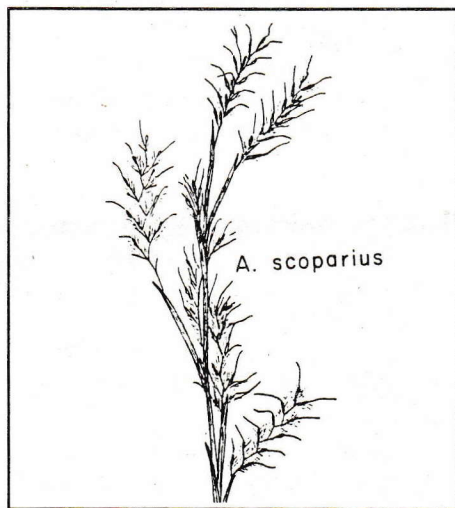
Though little was known about their biology until recent decades, people have used lichens for various purposes, in diverse cultures for centuries. For example, lichen extracts have been used as stabilizers in perfumes. The original colors of Harris tweeds, manufactured in Scotland, are dyed with lichen extracts. That musty odor associated with the fabrics comes from the lichen. Lichens were even used to line the coffins of mummies in ancient Egypt.

Certain types of lichens, particularly species of reindeer moss, are collected for use in decorating Christmas wreaths and other arts and crafts. Reindeer moss can be purchased commercially. Hopefully, the commercialization of these slow growing plants will not pose a threat to their existence, as has happened with other life forms that have been capitalized upon.

The use of lichens as medicines has a long history. Usnic acid from old man's beard has been used as an antibiotic in China for over a thousand years. Lichens were used quite often in the middle ages as treatments for certain ailments. *Lobaria pulmonaria* was used to treat lung diseases due to its resemblance to the human lung. The principle known as the "Doctrine of Signatures" was the basis for this use as well as for many other erroneous medical practices at that time period. *Peltigra canina*, commonly known as dog tooth lichen was used to treat rabies.

Lichens have not been ignored by modern scientists in their pursuit of marketable medicines. The antibiotic properties of lichens have been investigated. Usnic acid and protolichesterinic acid are two lichen extracts with demonstrated antimicrobial properties. However, their action is limited only to certain groups of bacteria. There are already several antibiotics on the market with a more wide range effect.

Other scientific investigations of lichen substances have found that some can inhibit plant growth while others act as pesticides. The lichen extract, sodium usnate has been found to kill tomato canker. Some other lichen substances have demonstrated abilities to inhibit seed germination and root growth in grasses.



Lichens have never provided a major source of food for people. However, some animals depend on lichens for survival. Caribou living on the northern tundra may acquire over half of their winter diet from reindeer moss. Many species of birds use lichens to line the outsides of their nest, probably to serve as a camouflage. Recent studies have demonstrated that several kinds of invertebrate animals feed on lichens including slugs, land snails, springtails, beetles, moths, termites and earwigs.

Lichens and Air Pollution

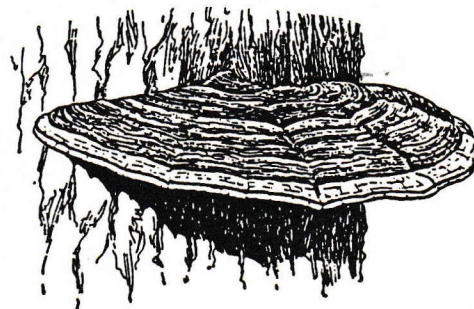
Though it would seem that lichens have limited economic value, and the mystery of their unique physiology has been solved, we are discovering

that they may play a greater role in dealing with one of modern society's major problems - air pollution. For nearly one hundred years it has been known that lichens are natural barometers of air quality. Lichens are sensitive to airborne pollutants like sulfur dioxide gas, because they absorb everything in the air surrounding them. The thallus, or main body of the lichen can absorb whatever chemicals contact its surface, and store them in the gelatinous hyphal walls.

However, many chemicals when taken up by the algal component may be destructive to its metabolic processes. Damage to the algal component may harm or kill the whole lichen plant. It has only been in the last twenty years or so that serious investigations and applications of this characteristic have been undertaken.

Researchers have found that lichens are not equally susceptible to all pollutants. Some lichen species are intolerant of one pollutant but highly tolerant to another; others are extremely sensitive to air pollution in general. Species of lichens that are highly tolerant to most all forms of air pollution also exist. *Lecanora conizaeoides* is a gray, foliose lichen which actually thrives around heavily polluted European industrial areas.

In the 1970's when Germany's forests were found to be dying at an alarming rate, some suspected that sulfur dioxide gas blowing in from coal burning power plants in France was the cause. However, scientists investigating the problem found that sulfur sensitive lichens were alive and well throughout the Black Forest, even on affected trees. Further studies of the "forest death", led to the discovery that nitrous oxide emissions from auto exhaust was harming the trees, obviously having little effect on the sulfur sensitive lichens. This study was a landmark for understanding the role that lichens can play in helping people monitor air pollution. It also led to the first laws establishing auto-emission standards.



BRACKET FUNGUS

A lichenologist named Thomas Nash discovered that a California lichen, *Ramalina menziesii*, is highly susceptible to nitrous oxides. He established a study to determine why this species had disappeared from trees in the Los Angeles area. He placed *Ramalina* plants recovered from other places on trees lining the Los Angeles city streets. Chemical analysis of the transplants revealed that these lichens were periodically absorbing nitrates and fluorides. It was discovered that both chemicals killed the plants. Automobiles were identified as the source of the nitrates, but he was not sure where the fluorides had come from.

Finnish researchers have a long history of studying the relationship between lichens and air quality. They have evaluated the status of lichen populations along the paths of prevailing wind patterns. From these investigations they have been able to detect sources of pollution from as far as several hundred miles away. They have also devised a lichen sensitivity gradient of species intolerant to those of a moderately to highly tolerant range. These plants could be used as transplants in areas where people would like to determine the air quality without investing hundreds of thousands of dollars in monitoring equipment.

Researchers in the United States are beginning to look more seriously into the relationship between lichens and air quality. A recent study in the Cuyahoga Valley in Ohio discovered that eighty percent of the lichen species identified by naturalists one hundred years ago, are gone. The Environmental Protection Agency initiated studies of lichens growing in the Brooks Range of Alaska, in response to the occurrence of lingering air pollution over the peaks during the winters in the late 1980's.

So, what do we know about the lichens of West Virginia? The historical records of lichen studies in the state are well documented, however, the studies have been sporadic, and none of them have been extensive. The earliest recorded listings of specimens from the state are from Millspaugh's *A Preliminary Catalogue of the Flora of West Virginia* published in 1892. Lawrence W. Nuttall, who collected extensively in the New River Gorge area increased the states list when he and Millspaugh collaborated on a



revised flora, *The Living Flora of West Virginia*, which they published in 1913.

Dr. John L. Sheldon, former botany professor of WVU published a checklist of 299

species of lichens in a 1939 article of Castanea. This publication gives us quite a remarkable record, because his entries were taken from herbarium specimen labels. Included in the checklist is the name of the collector and the general locality where it was collected. The extensive collections of *Cladonia* species made by Dr. Fred Gray are also included in Dr. Sheldon's list.

In the 1950's, the renowned lichenologist, Dr. Mason Hale was a WVU Department of Biology faculty member. Apparently, he collected and identified quite a few specimens throughout the state. However, his collection is housed at the US National Herbarium. It might be possible to go through Dr. Hales landmark lichen key and extract the list of plants he collected here.

There has been one recent report of lichen research in West Virginia, in the 1993 publication, *Upland Forests of West Virginia*, edited by Dr. Steve Stephenson. Dr. Jonathan P. Dey conducted field work collecting and identifying lichens at 25 sites in the upland forests of Grant, Pendleton, Tucker, Pocahontas, Preston, and Randolph Counties in 1989. Dr. Dey states that "lichens are widespread and often locally abundant in the upland forests of West Virginia."

It requires a good deal of time and experience to learn how to identify lichens. This probably explains why so few botanists and plant aficionados take time to study them. However, there are several reasons for us to turn that trend around. One of the main reasons may be that just like the rain forests, species may be disappearing before we even know they exist.

Book Reviews

Requiem for a Lawnmower

Sally Wasowski with Andy Wasowski
Taylor Publishing Company
Dallas Texas, 1992

by: Libby Chatfield

If you are ready to "grow native" in your own back yard, or if you are looking for an enjoyable book on the subject then "Requiem for a Lawnmower" is for you. Not just a compilation of essays on easy gardening with native plants, this book covers both the philosophical and practical reasons for landscaping with native plants, and provides lots of useful information about how to go about it.

Ms. Wasowski begins by describing how she got interested in landscaping with native plants, and her evolution as a landscape designer. She is pragmatic rather than dogmatic about the incorporation of native plants into existing gardening and landscaping schemes and encourages small scale changes for those unwilling to tear out all of the existing non-native species in their yards and gardens.

Essay topics range from choosing bedding plants and native herbs to digging up, transporting and transplanting shrubs and trees. Sandwiched between these are pieces on composting (no more raking leaves), the benefits of organic gardening, creating habitats (desserts, grasslands and woodland) and the provenance of the possum haw and the floating bladderwort. Upon hearing the name, floating bladderwort became Mr. Wasowski's favorite native plant.

A thorough reading of this user friendly book will provide you with plenty of information to begin your native gardening. Whether you have an established yard and garden, or if you've just purchased a wooded lot and are building your dream home, Requiem for a Lawnmower has something of interest for you. In addition to being informative and easy to read, Requiem is highlighted with lovely illustrations by Susan Edison. Also, each chapter is introduced with interesting and thought-provoking quotations.

Unfortunately, the librarian at the state reference library could not find it listed at any local library in the state. However, judging from the delighted guffaw which erupted from the reference librarian at the Kanawha County Library at my request, ("I know a few lawnmowers that deserve a good requiem"), the book should appear at that library soon. So, work on your local librarian to get this book on the shelves, and/or look for it at your favorite bookstore - you'll be glad you did.

Mushrooms of North America in Color: A field Guide Companion to Seldom-Illustrated Fungi.

By Alan E. Bessette, Orson K. Miller Jr.,
Arleen R. Bessette, and Hope H. Miller.
1995 Syracuse University Press, Syracuse, NY
172 pp. Hardcover \$39.95. Soft-cover \$17.95.

by: Bill Roody

Because common and popular mushrooms are a necessary feature of general mushroom field guides, there is considerable overlap of coverage in many books. Typically only a small percentage of rare or previously undocumented species get included. It is therefore refreshing to see this "field guide companion" entirely devoted to seldom illustrated mushrooms. Most of the 73 species described in *Mushrooms of North America in Color* have never before appeared in popular guide books nor have they been illustrated in color in more technical works. The authors estimate that only about 2/5 of North American mushrooms have ever been illustrated using color photographs.

The mushrooms chosen for this work include representatives from a vast geographical area. As such, its usefulness is diluted for any one region. Only 20, for instance, have thus far been reported to occur in West Virginia. That number is likely to increase as a direct result of the publication of this book. The distribution of included species is slightly weighted toward those found in western North America. Forty-eight taxa are members of the Agaricales, 14 are in the Aphylophorales, while the remainder are scattered among seven other orders. Arrangement of species is alphabetical in taxonomic progression.

Each mushroom is thoroughly described using both macroscopic field characters and relevant microscopic features. An eight page glossary explains technical and descriptive terms. Additional information provided includes manner of growth, habitat, distribution, frequency of occurrence, and edibility. Distinguishing features and similar species are discussed under the heading of "observations." The commentary here is very helpful in making confident identifications. There are also notes pertaining to taxonomy and references to additional sources of information which are listed separately as "works cited."

The documentary color photographs that accompany each description are for the most part of a very high standard and the color reproduction is particularly fine throughout.

Common names rarely exist for lesser known mushrooms. Fortunately, the authors have refrained from creating any new artificial ones. Cultural usage is likewise minimal for uncommon mushrooms and edibility is unknown or unrecorded for many in this collection. There are exceptions however, such as Pleurotus cystidiosus and Pleurotus populinus which are described as edible and choice.

Drawing attention to some lesser known mushrooms is sure to inspire new distribution records as well as broaden the understanding of the general represented. The authors and publisher should take a bow.....and consider an encore.

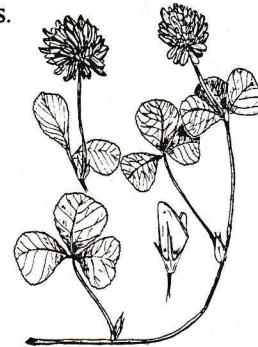
Exciting Plant Work Continues in WV!

by P. J. Harmon, Chair of Grow Native Committee

What an exciting time it is right now for those interested in the native plants of West Virginia! Not only are members of the WVNPS becoming more knowledgeable about our native plants, but committed botanists at various colleges and universities around the Mountain State are conducting key research in cooperation with West Virginia Natural Heritage Program (WVHP) staff into the status of rare vascular

and non-vascular native plants. I thought I'd give you a summary of that work.

West Virginia Natural Heritage continues to monitor the federally threatened and endangered species in our state. There are now 19 known populations of Running Buffalo Clover, *Trifolium stoloniferum* within West Virginia, and 106 known occurrences of this species in the world. West Virginia has the largest populations.



T. stoloniferum

WVHP, in cooperation with Virginia Division of Natural Heritage, continues to monitor shale barren rockcress each year. We found the number of plants on two key index sites to be quite low compared to other years, but data taken at one site by Rob Jarret, graduate student of Drs. Frank Gilliam and Jeffrey May (Marshall University) show that the population size was much larger early in the field season of 1995. This species' population size seems to vary widely from year to year and even within a given growing season.

The Nature Conservancy in cooperation with WVHP has developed a statistically sound monitoring program of the federally endangered Harperella (*Ptilimnium nodosum*) populations on Sleepy Creek and Cacapon River. Over the past two years, Drs. Dean Walton and Carene Motivans have helped Dr. Tina Hall (TNC, WV) and myself to design a program that was more efficient yet effective in helping us detect the population trend of Harperella. In a nut shell, the plan involves taking frequency plot data at five sub-populations every two years, as an index to what is happening along the entire 80 miles of river habitat. Also, TNC volunteers keep an eye on Harperella patches, watching for evidence of threats or dramatic changes to sub-populations. Along both stretches of river, this and a few other measures will enable us to watch over the species in a manner that is

efficient and cost effective. The 1995 data, compared to the 1994 data, shows that four out of five index sites are stable to increasing, while one site decreased. We'll monitor the sites again in 1996.

Northeastern Bulrush (*Scirpus ancistrochaetus*), a federally endangered species, was found to be doing well at the two known sites in our state. Photo-point monitoring has been set up at the sites with the permission of land owners, and we will continue to monitor the population annually for a while, using photography from permanent points in a way that lets us document the status of the populations without impacting the site so dramatically. Land owners are enthusiastic about having us keep tabs on these very rare communities that support this fragile species, and threats to the sub-populations seem moderate at present.

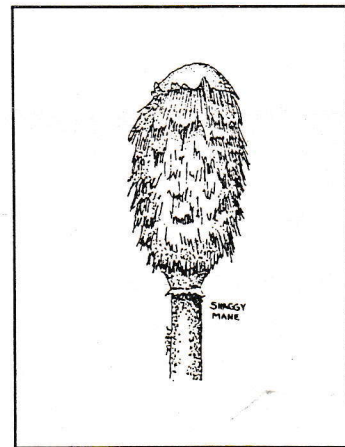


Dr. Tom Weaks of Marshall University has been working with WVHP the past two years to monitor a very rare moss called *Tortula ammonsiana*, named after the late Nelly Ammons, a famous professor of botany at West Virginia University. Tom revisited the one known site in Pocahontas county, and searched numerous seemingly appropriate habitats throughout the New River Gorge and the Cheat River Gorge, but was unable to find any new additional populations. This species is currently known only from one site at the border of Tennessee and North Carolina in the Smokies, here, and a site in South Africa! It is currently being reviewed for federally endangered status.

Dr. Dan K. Evans also of Marshall's Department of Biology, and his student, Eric Ewing, have done some excellent research into the taxonomic status of a rare group of skull caps, called the *Scutellaria ovata* complex. A couple of historical species of this group have been considered rare and endemic to shale barrens in West Virginia and Virginia, and with funds from the U. S. Fish and Wildlife Service, WVHP asked Dr. Evans

and Mr. Ewing to study the morphological similarities and differences among the sub-specific taxa of the group, as well as to investigate the value of examining certain proteins as a way of detecting any genetic differences among the taxa. The results have not yet been published, so I will not share them with you here, but their work is critical to helping conservation botanists in both states clarify what taxa in the complex are worthy of our monitoring and protection.

I know you will have a hard time believing it, as it has taken much longer than I anticipated, but the Checklist of the Vascular Flora of West Virginia and the Checklist of the Wetland Vascular Plants of West Virginia have been corrected, revised, and are now in Charleston being printed! The work was done using the Flora and Fungi Database System, developed by yours truly, and will provide us with current lists that reflect the nomenclature used by Dr. John Kartesz in his national list of Latin plant names. I'm very proud of this work, the product of a host of contributors throughout the eastern U. S. WVHP plans to make the checklist available on the internet, periodically updating it as new data is received.



The *Flora of West Virginia Committee*, made up of key professional botanists throughout the state and a few from Maryland and North Carolina, are making good progress on a revision of Strausbaugh and Core's classic manual the *Flora of West Virginia*. We are taking the electronically scanned text and correcting errors, as we revise, family by family.. When completed, it will be an important tool for botanists throughout the eastern U. S. Steve Stephenson, Bill Roody, and Donna Mitchell have been cooperating with WVHP to produce a checklist to the macro-fungi (the larger species) of the state. This checklist is also being developed using the Flora and Fungi Database System, and is nearly complete. It's a

huge task, begun years ago by Steve, edited by Bill and Donna over the past year, and typed and typed by Sue Kennedy of WVHP. My involvement in the project has been technical support for getting data into and out of the computer database and printed in an acceptable manner. Be looking for this document to become available within the next three months.

We at WVHP have made up-dating the rare plants portion of our database a high priority. For the past two years, botanists from around the state have regularly met with us to add to our knowledge about the rarest plants of the state, through the Native Plant Society's Rare Plant Roundups. This year, we are cleaning up global information on 26 species about which the National Forest Service has hired us to write Plant Characterization Abstracts, and then we will be re-writing the state ranks of over 150 plant species.

The WV Native Plant Society's Grow Native Committee has completed the Checklist of Non-native Invasive Plant Species in West Virginia, and a white paper on the impact of exotic plant species on natural areas in the state. The documents are still being reviewed by the Wildlife Resources Section, with whom we wish to cooperate in the publication of these documents. Soon, we hope to be able to distribute them to raise people's awareness of the threat to natural areas non-native invasive plant species pose.

Meanwhile, the Grow Native Committee continues to collect articles about the subject, and collect slides of those species that are on the checklist for use in future slide shows. [By the way, if you have any interest in helping with this project, please contact Gay Brown of the Kanawha Chapter regarding providing slides, or me, regarding helping with other aspects of the project.]

Isn't it great to see so much botanical work and fun happening in West Virginia? If you have new information on those species that WVHP tracks, please send them to P. J. Harmon, WV Natural Heritage Program, P. O. Box 67, Elkins, WV26241. I hope you continue to enjoy the miraculous diversity and beauty of our state's plant life, and that perhaps we may meet to talk "rare plants" at an up-coming WVNPS hike or

workshop soon! Here's wishing you many happy hours in the field.

If you would like to have copies of the new checklists described in this article, please contact WVHP after the first of February to receive copies. I apologize that it took so long to complete them! After I announced their availability, the first 300 were gone before most of you wrote for copies! Now, the work is finished, the master is to the printers, and we just have to wait for the state printing office to get them done and back to us. We are awaiting word from the DNR headquarters regarding whether it will be necessary to charge for the checklists to offset the printing and mailing costs. So contact WVHP in February for further information. I appreciate your patience.

FIELD TRIPS!

The field trip committee is busy compiling a schedule of field trips for the 1996 season. They are requesting ideas for field trips, i.e. new places you would like to go see and explore in, places you have been to before but would like to go to again, and more!

If you are interested in leading a field trip or serving as a coordinator for one that would be great too. Please contact Mike Breiding phone: 304/291-0020, or Bill Grafton 304/292-0229 with your ideas and suggestions. Please do not hesitate to explore an idea simply because it has never been done before, or recommend folks you know who would make good field trip leaders.

Also, it would be terrific to receive some reports on field trips for the newsletter.

FIELD NOTES ORCHIDS AND SERPENTS.....A HIGHER LEVEL OF FIELD ID by: Bill Grafton

Three orchid "nuts," a plant generalist and a snake lover made a late fall trip (Oct. 21-22) to the southern tip of WV, to look for one of our states' rarest orchids, spreading pogonia, and a *serpent handling church*. The three "nuts" included Al Shriver, Scott Shriver and Clete Smith, all from Pittsburgh. The generalist was

"yours truly", and the snake man was Brad Miller, both from Morgantown.

The orchids were superfluous! *Spiranthes cernua* (ladies tresses) seen growing along the WV Turnpike was the first find. Then on the twisty curve of the Mayberry-Pageton Road we found *Spiranthes ochroleuca*, *Aplectrum hymale* (puttyroot), *Cypripedium pubescens* (large yellow ladies slippers), and *Liparis lilifolia* (twayblade).

On the way to Jenkinjones (3 miles from VA border), the sharp eyed orchid nuts spotted *Tipularia discolor* (cranefly orchid), dead fruits of *Isotria verticillata* (whorled pogonia), *Habenaria lacera* (ragged fringed orchid), and *Cypripedium acaule* (pink lady's slipper). Also the woods abounded with *Leucothoe recurva* (recurved fetterbush).

After a hasty pizza dinner, the explorers were off to Jolo for the Saturday evening serpent-handling church service. A potpourri of phrases describe it best: very friendly, ordinary folk; spontaneous singing and praying; ear pounding music; 18 of 23 adults handled rattlesnakes while dancing rhythmically; **deep sincere faith!**

On a chilly Sunday morning, the group again went in search of orchids. In the cold frost of a Pineville roadside Al saw *Spiranthes cernua*. This plant was abundant throughout Fayette, Wyoming and Nicholas counties.

While driving through Twin Falls SP, Clete established a "higher level" of botanizing by spotting the stick-like pods of coralroot in the newly fallen autumn leaves, at 20 mph.

This was a trip to remember! The quest for spreading pogonia was unsuccessful, but the journey led us to discoveries we'd never dreamed of. May each of you have a trip like this one, in your lifetime.

We were cavalier and made jokes while driving south. However, an air of awe and respect hovered over us while heading home on Sunday morning. Would we go back? Yes!! Will we test our faith by handling serpents? No!!

WELCOME!

WVNPS NEW MEMBERS

Dean, Dr. Bonnie Lee & Dr. Stan Ash
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Thomas, Jane A. & Robert A. Hamburg
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Thomas, Jr., Robert L.
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New Address:

Joy, Susan J. & James E. Joy
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business 1 phone: 614/529-5710

Please add these names to the membership list that was mailed to you in January of 95. If you would like a membership printout from last year, please let me know and I will send one out to you. Also, if any new members have been left off this list, **we apologize and let us know so that we can get you in the next newsletter.** Emily Grafton, Newsletter Editor. 456 West Virginia Ave, Morgantown, WV 26505. phone: 304/292-0229.