

NATIVE



Kate's Mountain Clover

NOTES

THE WEST VIRGINIA NATIVE PLANT SOCIETY

Volume 1, Number 3

April, 1995

PRESIDENT'S MESSAGE

The last two years have been enjoyable for me as president of WVNPS. As an original member in the early 80's, I was glad to see the organization rise to a new existence. The energy of fellow officers and members is recognized as a vital ingredient in that revival. We have passed some significant milestones, but there is still much to accomplish.

I am a believer in the positive influence of change. Change brings new approaches to problems and invigorates mission. I am excited about continued involvement in our organization and wish all new officers the best of luck. I encourage all members to step forward and contribute.

Talk about exciting! A new nationwide initiative for native plant conservation is underway. The "National Native Plant Coalition" is in the formative stages. Seventy representatives from all over North America met to discuss the possibility of a coalition that would represent native plant conservation concerns to legislators, agencies, and interested groups. State organizations, like WVNPS, will no doubt play a significant role in supporting such an initiative.

Of course we have our own initiatives at the state level. Our "Grow Native!" program will provide alternatives to non-native plantings and stem the introduction of invasive exotics. Our Rare Plant Roundups are generating useful information for rare plant conservation and management. Do you want to stretch your legs? Join a field trip this summer or help us with trail work and field studies within the Brooks Arboretum at Watoga State Park.

The opportunities are there....can we count on your involvement? Only you can make native plant conservation a reality!



Sphagnum
Moss

BRYOPHYTES, A WILDERNESS SURVIVAL FOOD?

by Susan Moyle Studlar

Imagine that you are stranded in the wilds of some wilderness - without food. It has just rained and some luxuriant bryophyte colonies look as tempting as a freshly tossed salad. Should you eat them?

There is some good news, and some bad news. The good news is that bryophytes are high in unsaturated fatty acids. Some animals in the far north eat bryophytes as part of their diet. The unsaturated fatty acids probably help keep their cell membranes flexible, so the snow geese, lemmings, and moose can keep moving through the long winter.

Researchers at the University of Kuwait are growing a campus moss (Bryum) in culture with the goal of producing "good fat" supplements to food. They found if you starve the moss of nitrogen, they make lots of "good fat". Maybe someday you will hit the trail carrying extra salt, M & M's and moss made "good fat"!

The bad news is that bryophytes accumulate toxic heavy metals such as lead, copper, zinc, chromium, nickel, and mercury to extraordinarily high levels in their cell walls. The cell wall is an excellent but imperfect barrier to toxic metals; at a very slow rate, metals may enter the cells and cause damage to the bryophyte.

Bryophytes (mosses and liverworts) are small land plants with leaves that are only one cell thick (except for midribs); under bright sun they dry up, but few plants are as lovely as mosses plumped up by rain.

Since relatively few animals eat bryophytes, accumulated metals are not usually passed up the food chain. Indeed, we can be grateful to the bryophyte layer for "immobilizing" toxic metals, a public service that few people appreciate.

A large amount of toxic metals can be displaced from bryophytes when they are doused with an acid. **Do not** add vinegar if you decide to dine on a tossed salad of mosses and liverworts!

Some other bad news is, bryophytes are so intimately united with the substrate they grow on that the bryophyte and its substrate are nearly inseparable. This aspect of their biology provides good survival strategies for them. A liverwort that has insinuated itself between layers of shale benefits from the water and soil trapped there. However, this union of the living and non-living world presents problems for the hungry human.

Another down side is the fact that bryophytes do not taste very good. Liverworts have a remarkable array of terpenoids in segmented oilbodies found in no other plants; these help render the liverworts inedible to most animals. Yet, these volatile chemicals can be so fragrant that you can sniff the liverworts and forget about your hunger!

Although eating bryophytes is not recommended, they can be used to protect your food. In the Himalayas, villagers grind dried bryophytes to a powder and sprinkle them on top of stored grains; the ground moss repels grain-eating insects.

So when you go off into the woods, be sure to bring plenty to eat so that you can admire bryophytes for their beauty and intrinsic interest rather than as a potential food. You might bring along the delightful, inexpensive introductory guide to bryophytes and lichens published in 1985 by the Missouri Department of Conservation (Jefferson City, MO): L.P. Thomas & JR. Jackson's *Walk Softly Upon the Earth*. I would like to close with "bryological rhapsody" by the Victorian poet John Ruskin:

"No words, that I know of, will say what these mosses are. None are delicate enough, none perfect enough, none rich enough. How is one to tell of the rounded bosses of furred and beaming green.... They will not be gathered, like the flowers for chaplet or love-token; but of these the wild bird will make its nest and the wearied child his pillow." (J. Ruskin, 1859).

EASY TO GROW ORCHID!

by Barry Glick

Since the dawn of gardening, the Orchid family has been one of intrigue and mystique. Almost everyone is familiar with the multitude of orchids from the tropical regions of the

world. However, few people are aware of the diversity of terrestrial orchids native to the US.

Gardeners, plant lovers and naturalists knowledgeable about native orchids have been able to appreciate them only in the wild. Our native orchids are extremely difficult to cultivate, so the majority of gardeners have not attempted to grow them.

The most commonly accepted theory for the difficulty of cultivating orchids is based on the close association between orchids and mycorrhizal fungi, found in the soils where orchids grow. The fungi infect the root tips of orchids and other groups of plants. They help make food available to the host plants by aiding in the breakdown of nutrients found in the soil substrate.

It is believed that the species of plants which rely on the mycorrhizal fungi are incapable of breaking down essential nutrients on their own. However, there are some people who believe that this is not entirely true. They believe that with proper cultivation, any gardener can grow terrestrial orchids.

The Eastern coast of the North American Continent from Canada to Florida is home to about twenty of the 200+ orchid species of the genus *Spiranthes*. Found worldwide, the majority of the species are tropical. The generic name *Spiranthes* comes from the Greek words, *spirea* meaning spiral, and *anthos* meaning flower. This name refers to the arrangement of the flowers in a spiral twisted spike.



Nodding Ladies' Tresses
Spiranthes cernua

According to the Flora of West Virginia, *Spiranthes cernua*, or nodding ladies' tresses occurs in every county of the state, in wet meadows and swamps. I protest the specific epithet *cernua* which means nodding in Latin; there is nothing nodding about this plant. In fact the flower stems are quite erect.

Chadds Ford is a wonderful new cultivar of *Spiranthes cernua*, form *odorata*. Form *odorata* refers to a special form

of the species that is fragrant. In the wild, this form occurs more frequently in the southernmost part of its range.

This selection was first discovered in a wet ditch near Bear, Delaware in the 1960's by Dick Ryan. Mr. Ryan rescued the plant from a land developer's bulldozer. In 1973 a division of the original plant grown by Dr. Merlin Brubaker received a certificate of cultural merit from the American Orchid Society. Dr. Brubaker named the plant in honor of the area just outside Philadelphia where he lived.

In August of 1992 I was given a six inch pot of Chadds Ford by Dick Lightly, Director of the Mt. Cuba Center for the Study of Piedmont Flora in Greenville, Delaware. The plant was housed in a moderately heated green house (45 degrees F) and by December 30, 1992, I had made several propagations of the plant.

In the spring of 1993, several divisions were planted out in the garden. By mid summer, flower buds had begun to form and orchid flowers, tinged with green and scented vanilla, persisted late into fall. WOW, what more could you ask for from a plant?

Although this species prefers wet feet, it is perfectly happy in any rich, moisture retentive soil, in sun or shade. *Spiranthes cernua* is a stoloniferous plant and forms colonies very quickly.

Chadd's Ford flowers are much larger and more fragrant than the more common variety. I highly recommend adding this plant to your garden.

NEITHER I, NOR THE NATIVE PLANT SOCIETY PROMOTE THE REMOVAL OF ORCHIDS FROM THE WILD!



Showy
lady's
Slipper

If you would like to learn more about native Orchids, I suggest the following books.

1. Hardy Orchids. Cribb, Phillip & Bailes, Christopher, Portland, Timber Press 1989. Great color pictures, good cultural information and sources to purchase commercially propagated hardy orchids. Written by the curator of the Orchid Herbarium at Kew Gardens, and the curator of the RHS Rosemoor Garden in the UK
2. Wild Orchids of the Middle Atlantic States. Gupton, Oscar W. & Hope, Fred C., Knoxville, University of Tennessee Press, 1986. A good identification book with over fifty full page color photographs.
3. Flora of West Virginia. Strasbaugh, P.D. & Core, Earl, Morgantown, Seneca Books, 1978. Good line drawings and taxonomic information on the 38 species and 16 general of orchids native to West Virginia.



Fragrant
waterlily

"BLUE GINSENG"
Caulophyllum thalictroides

by Emily Grafton

Caulophyllum thalictroides is a deciduous, perennial plant. The one to three foot tall stem is sheathed at the base and grows from a thick, long root. The yellow-green flowers are about one third to one half inches wide. The flowers bloom in a branched raceme at the top of the stem, with six gland-like petals that are smaller than the six sepals; there are six stamens and one pistil. Each plant usually produces only one large, triterately compound leaf. A cluster of dark blue, pea sized berries appear by mid summer. The plant blooms from April to June, with the flowers appearing before the leaf is fully open.

A common species of sheltered ravines, blue cohosh, alias blue ginseng, adds a touch of beauty and mystique to the Appalachian cove forests. Blue cohosh is a native species and is also commonly known by the names, papoose root and squaw root. The name blue ginseng refers to its occasional confusion with ginseng and because of its strong medicinal properties.

It is called blue cohosh, or blue ginseng because the whole plant develops a unique greenish-blue cast, somewhat reminiscent of the color of the open sea. With a texture as soft and supple as well tanned leather, the obtusely shaped leaflets have rounded lobes along the top margin. The mature plant has an overall downy softness to its appearance.

Cohosh is an Algonquin Indian word for medicine, or medicinal. The real magic of this plant lies embedded in its chemistry, for it has a long established medicinal history. The women of most north-eastern Indian tribes were well acquainted with blue cohosh. At some point in time, they discovered that it served them as an effective aid to childbirth. An expectant mother would begin drinking a tea prepared from the root a few weeks prior to delivery. The effect was to hasten and ease her labor.

Blue cohosh was listed in the US pharmacopoeia from 1882 - 1905. Dr. Charles F. Millspaugh, noted physician of the time highly recommended that this plant be scientifically evaluated. Based on his experience prescribing the drug, he found its use to be promising.

Dr. Millspaugh included this plant in his voluminous work "Medicinal Plants," published in 1892. The following description from his beautifully illustrated book, on the preparation and use of blue ginseng is charming. To some, this treatise may seem a little humorous compared to modern medical practices.

"The fresh root gathered in early spring, should be chopped and pounded to a pulp and weighed. Then two parts by weight of alcohol are taken, the pulp mixed thoroughly with one-sixth part of it, and the rest of the alcohol added. After stirring the whole well, and pouring it into well-stopped bottles, allow it to stand at least eight days in a cool dark place. The tincture obtained from the above mass by filtration, should have a deep orange-red color, by transmitted light; a taste at first sharp & penetrating, then sweetish....."

Dr. Millspaugh's two volume text is housed in the West Virginia Collection in the Colson Hall library at West Virginia University. It is a real treasure and worth a trip to the library. He taught in the biology department at WVU for several years.

Modern scientists have evaluated the chemical components of blue cohosh and discovered the glycoside caulosaponin and the alkaloid methylcisticine as the active ingredients. Caulosaponin acts to stimulate the uterine muscles, while methylcisticine stimulates respiration and peristalsis.

However, clinical studies done with rats, have shown that caulosaponin acts to constrict the blood vessels of the heart. Consequently, the use of this drug may lead to heart damage. Its use is not recommended by the modern medical community.

Blue cohosh has been prescribed by herbal practitioners for several hundred years in cases where there is a prolonged delivery. Apparently, it is still being prescribed by herbal doctors and can be found in recently published texts on herbal remedies.

One particular book on herbal healing (Herbal Healing for Women, by Rosemary Gladstar) challenges the nature of the studies and concern over the negative effects of caulosaponin. The author bases her challenge on the successful application of this plant by herself and others for so long.

If it is in fact being used as a therapeutic drug by many people, let us hope that the truth lies somewhere between the two views. And, whatever the future holds for the use of this plant, may we continue to value its existence and preserve its natural history.

The little yellow flowers of blue cohosh should be appearing soon, in some deep, shady ravine near you.



WVNPS MEMBERS SPEAK OUT!

The following essay is a response from John Northeimer, to the editor's request for member views concerning a statement by Stanwyn G. Shelter from an article in Chinquapin. Mr. Shelter stated that "every plant sowed or transplanted is an alien or exotic, whether or not it is native to the region." The editor indicated that the point may be moot because humans have already substantially altered vegetation patterns and stated that "prolifically transplanting and sowing seeds may

be our only hope of preserving many species." John's response begins with a question.

Since we have already altered natural patterns and extirpated numerous species, why would accelerated human alteration help?

Effective human dispersion of seeds or distribution of plants would depend on our ability to accurately measure ecosystem dynamics and then to quantify and understand our influence. We are hindered from the start because we have no historical blueprint of what represents a balanced ecosystem. Even if we did, we could never monitor and "tweak" a human conceived system to meet those criteria dictated by natural forces. It would be unrealistic to assume a human held equivalent to the vast and continuously growing pool of natural evolutionary wisdom.

Let's face it, once we stick our finger into the ecosystem pie it is tainted. Why? - because we bring a human-centered bias into our actions no matter how pure our intentions. We will constantly lag behind in our understanding, because we can only observe the consequences of our actions - consequences that may not be revealed for decades.

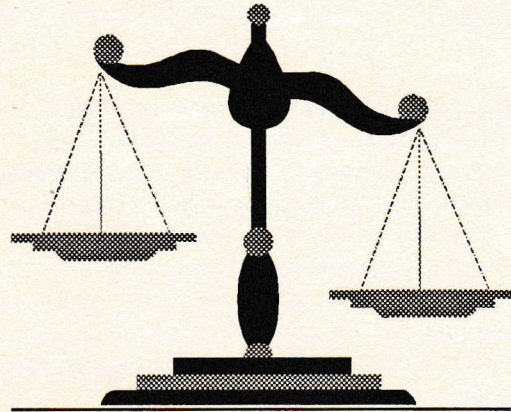
A possible example of our good intentions gone awry may be our focus on endangered species. There is certainly a need to preserve rare species, but at what expense to other commonly occurring species? I have personal knowledge of situations where a management plan or development decision, based on a single diminishing species, may have adversely affected a less regarded one or habitat. This can occur, for example, when we alter natural succession in favor of the selected species without regard to cohabitants. The extreme case is when we allow destruction of habitat simply because the endangered species is not present!

And how does endangerment occur? It can occur through habitat alteration or loss, introduction of an invasive alien or possibly aggressive native species, uncontrolled harvest - mainly human related activities. In many cases the species was abundant before these influences were brought to bear.

Remember the Passenger Pigeon? The Passenger Pigeon represented more than ten percent of the total avian population of North America before habitat destruction and over-hunting brought its demise. If we construe as safe, plant species or habitats based on their abundance, and allow alteration by the introduction and management of plant species that we deem important, what will be the consequences?

I believe that some of our actions, no matter how well intended, do not represent a viable approach to overall native

plant preservation. We must minimize our human influence and preserve habitat and ecosystem integrity rather than rely on artificial dispersion. Humans seek to manage and control, but nature will continue to respond independent of our intent.



The Editor Responds: First of all, John's response far exceeded my expectations! My objective for writing such an extreme point of view was to generate some discussion about the problem of alien species. As we all know there are no simple solutions to this problem.

Though my original broad statement could be interpreted many ways, it was intended to address one major aspect of the diminished ecosystems problem. To be more specific, planting common and threatened species of native plants in backyards, community gardens or botanic gardens may be one way of providing native plants more of an edge against the onslaught of invasive exotic plants. However, I agree wholeheartedly with John, that "transplanting" into natural habitats will upset the balance of natural genetic pools and evolutionary processes.

The problem of introduced plant species is similar to the problem of the gypsy moth throughout much of the northeast; eradication is no longer a viable issue. The problem is one of management, minimizing the spread and minimizing impacts, with the least negative impacts to the ecosystem, or a total "hands off" approach, letting nature take its course. Adopting either approach as a management philosophy will not unravel the past "tainting of the ecosystem pie" nor prevent the equally unmeasurable ongoing present and future random "taintings" where people live.

I also very much agree with John that the majority of threatened, endangered and rare plant species are perched precariously on the brink of extinction due to human influences. And yes, many threatened species were thriving prior to human intervention much as are oak trees, and violets. The answer lies in seeing the value in every species of oak and every habitat type, before accelerating human expansion drives them towards the status of "rare and highly valued."

Habitat destruction and fragmentation are occurring at an alarming rate on both hemispheres of this globe. The primary factors degrading ecosystem integrity are a growing human population, and the expansion of human development. I believe the conversion of thousands of acres of North American woodlands into subdivisions as critical to ecosystem integrity as the conversion of a South American rainforest into cropland. No doubt, there is a more severe loss of biodiversity and a much longer period for recovery, when rainforest habitat is destroyed.

Within the past ten years I have seen two miles of my favorite suburban birding habitat destroyed by the construction of homes, churches and businesses. There is no longer enough habitat for the meadowlarks and flycatchers that graced this area a few years ago. More and more acres of forest are broken up due to subdivision development. If development is going to continue, then how about a "grow native" horticultural revolution, from sea to shining sea?

I have also been disheartened by the unconcerned attitude of my community over the fate of the woodlands surrounding the Morgantown city reservoir. The backwater area of the stream feeding this manmade lake provides a wonderful little niche for migrating and resident birds. Not only does this little strip of woodlands support a complex diversity of plant species, including a willow sandbar, it provides a valuable buffer, filtering the pollutants washing off of the adjacent paved roads, small businesses and mall parking lot.

How do I convince the local City Council and Board of Parks that the thirty acres of woods around the city water supply is as important to the long term health of the community as a new indoor swimming pool, or a public golf course?

At what point will statements like the following become untenable? "There are several other places along the Monongahela River for birds to stop.....That's just a scraggly patch of woods - it has no value." Hopefully, never.

Thanks again, John for your thought provoking comments!

If anyone wishes to contribute ideas, thoughts and philosophies on the issue of exotic plants or any other, please let us hear from you! Your thoughts and ideas may provide valuable insights for the "Grow Native" campaign.

NEWLY ELECTED OFFICERS

STATE CHAPTER

President - **LIBBY CHATFIELD**
 Vice President - **ELIZABETH McCLINTOCK**
 Recording Secretary - **STEVE MACE**
 Corresponding Secretary - **TERRY HARMON**
 Treasurer - **MIKE BREIDING**
 Director-at-large - **KEN ANDERSON**

CHARLESTON CHAPTER

President - **MARK CHATFIELD**
 Vice President - **CHRIS GATENS**
 Secretary - **SHIRLEY SCHWEIZER**
 Treasurer - **CAROLYN WELCKER**

CONGRATULATIONS!

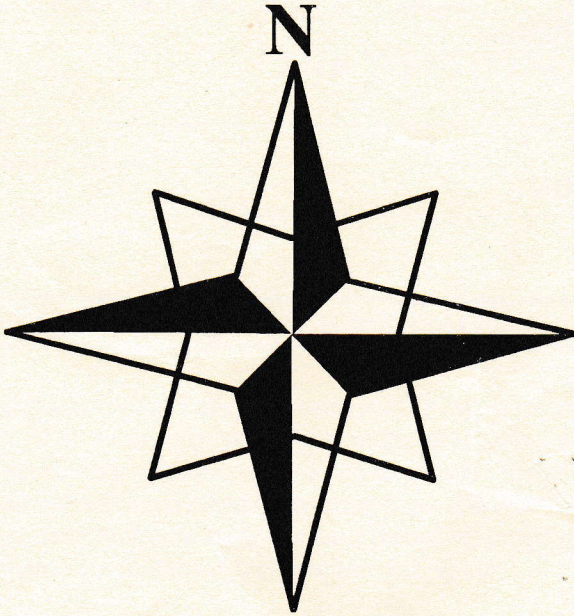
TWO NEW PUBLICATIONS!

Two new checklists are now available from the West Virginia Natural Heritage Program. Author, PJ Harmon says that his checklist, Vascular Flora of West Virginia and Checklist of the Wetland Vascular Plants of West Virginia, are both available and free. Write to the following address to request them. He states that there will be a charge on the second printing, so send in your request early. Write to:

Paul J. Harmon, State Botanist
 West Virginia Natural Heritage Program
 PO Box 67
 Elkins, WV 26241



SOUR GUM



1995 FIELD TRIPS

WINFIELD WETLANDS - April 29. Tour a unique forested wetland, one of WV's rarest habitats. Many early spring wildflowers hide underneath the sweetgums and pin oaks. Come prepared for mud, standing water and poison ivy. Bring your lunch and beverages.

Meet at 10:00 am, one quarter mile west of the St. Albans interchange (I-64) on WV Rt. 35 at a wide spot along the highway. Leader - Chris Gatens. Home phone: 458-1062, day: 759-0704.

WEST LIBERTY HILLS - May 6th. Tour the forests, hills and valleys near West Liberty State College with one of West Virginia's premier nature photographers and interpreters. There should be an excellent chance to see screech owl young, goldenseal and green violet. Bring your camera equipment, lunch and drinks.

Exit I-70 in Wheeling on WV Rt. 88 (Oglebay Park exit). Drive 8 miles north of Oglebay Park and look for a brown house on left with an "owl logo". This is also across the road (WV 88) from West Liberty College. Park at the Federated Church lot. Leader - Bill Beatty. Home phone: 336-7363.

FERN SURVEY - May 27th. This will be a road trip to see the ferns and fern allies at four sites in Monongalia and Preston Counties. We will see 20-25 species. Bring a hand lens, lunch and plan to get your feet wet. We will stop at the following sites: 1) Maiden Run Hollow and Cave entrance just west of Greer on ST. Rt. 7. 2) Old Laurel Engineering site near Dry Run hollow just east of Greer. 3) Oglebay Institute Mountain Camp on Lake Terra Alta. 4) Chestnut Ridge Lake near Coopers Rock State Forest. 5) Optional - old sand stone quarry site near Hopemont, 15 min east of Terra Alta.

Meet at 10:00 am, at east end of Kroger parking lot in Sabraton. Leader - Mike Breiding. Home phone: 291-0020

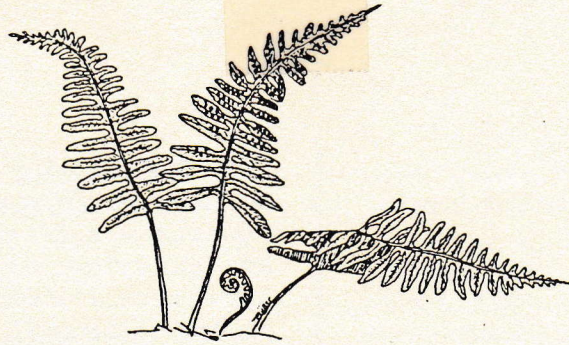
THE ROARING PLAINS AREA - June 10th. This trip will begin near the Dolly Sods Picnic Area. We will hike along the Randolph and Pendleton County boundary in the Red Creek Plains area toward Roaring Plains. Hopefully, good weather and open balds will provide exceptional viewing of the Spruce Knob-Seneca Rocks National Recreation Area to the southeast. Our trip will be approximately 7 to 9 miles long and will last most of the day. Be sure to bring a lunch and plenty of water. The area is characterized by broad, open, and rocky "plains" intermixed with spruce forests. This hike will cover wet and muddy trails as well as rock fields and laurel "hells" on our route to the pipeline Trail, from there we'll head north to a forest service road that parallels the southeast rim of the South Fork of Red Creek which we will follow back to the cars. The topographic quads that cover the area we will be traversing are Laneville and Hopeville. *This trip is not for the faint of heart or unsure of foot!*

Meet at 10:30 am in the parking area of the Laneville cabins next to the Red Creek Bridge.

Leaders: Barnes Nugent and Betsy Breiding. Home phone: 291-0020.

GREENBRIER RIVER TRAIL - July 8th. This will be a pleasant, round-trip hike of ten miles in length along the scenic Greenbrier River. Experience the lovely scenery, plants, birds and for a close and personal look at the river, bring your swimsuit. Bring your lunch and plenty to drink.

Meet at 10:30 am, at the old train depot in downtown Marlinton. Leaders: Mike & Betsy Breiding. Home phone: 291-0020.



COMMON POLYPODY FERN

MEMBERSHIP REGISTRATION COUPON

Please sign me up as a member of WVNPS!

Name(s) _____

Phone: (h) _____

Address _____

(w) _____

Membership Dues:

Individual: \$8 (New members, only: Jan 1-Mar 31, \$8. APR 1-June 30, \$6. Jul. 1-Sep 30, \$4. Oct. 31-Dec. 31, \$2)

Family: \$12 (New members, only: Jan 1-Mar 31, \$12. Apr. 1-June, 30, \$9. Jul 1-Sept 30, \$6. Oct. 31-Dec. 31 \$3.)

Student: \$5 Life: \$200

Preferred Chapter: _____

I wish to make an additional contribution to the WVNPS in the amount of:

\$10 \$25 \$50 \$100 \$ _____

This is a gift membership. Please include a card with my name as donor: _____

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