Fiddlehead Forum
Bulletin of The American Fern Society

Fern Uses Revealed

Ferns are among the most highly prized of cultivated plants (at least for those with discriminating taste), and thus their horticultural value is well known. Most of our readers also know that several ferns are eaten (although some species are known to be and others suspected of being carcinogenic). Some people will recall that the male fern (Dryopteris filix-mas) is the source of one of the oldest vermifuges known to man, but are the pteridophytes otherwise useless as some contend?

Au contraire, Pierre! In addition to the medieval "uses" of fern "seeds" to walk invisible and burning bracken to cause rain, ferns have been employed for everything from pottery glazes to hair conditioners. The wide range of fern uses has been assembled by Lenore May in a paper entitled "The Economic Uses and Associated Folklore of Ferns and Fern Allies," published in Botanical Review, vol. 44 (4): 491-526, 1978. Its contents include, in addition to general folklore, fern dyes, fats, fibers, flavorings, foods, medicines, oils, and frangrances, and miscellaneous uses. Reprints of this interesting paper are available for $2 prepaid from John Nickel, New York Botanical Garden, Bronx, NY 10458.

Northeast Regional Fern Foray

The Northeast Regional Fern Foray was held June 20-22, 1980 and sponsored by the Upper Ohio Valley Chapter. It involved visits to 10 localities in Ohio and West Virginia where the 32 participating saw 45 species of ferns and fern allies. Evening programs included visits to fern gardens, the greenhouse and herbarium at Youngstown State University, and two slide programs. Leaders were Jim Bissell, Nick Sturm, Carl Chuey, John and Nevada Laitsch, Forrest Buchanan, and Gordon Vujevic.

Southwestern Fern Society — 1st Annual Foray

The Southwestern Fern Society (Dallas area) held its first annual fern foray on June 21, 1980. We were ably led through Tyler State Park by B. Arnold Lipscomb, Herbarium Botanist at Southern Methodist University. Of the 13 species in Smith County (reported by Dr. Donovan S. Correll in "Ferns and Fern Allies of Texas" in 1956), we were able to find 10. It was an exciting trek and most informative for all participating members. We are looking forward to another foray, possibly in Palo Pinto County where another 13 species were reported by Dr. Correll.

The following ferns were sighted: Pteridium aquilinum, Polystichum acrostichoides, Osmunda regalis, Onoclea sensibilis, Athyrium filix-femina, Bocchrygium virginianum, Polypodium poly disaster, Woodsia obtusa, Lorinaeis areolata, and Asplenium platyleurum.

—Marguerite Hankerson, Dallas, Texas.

New Members

At Home...

Leffingwell, David, Norwich, CT 06360
Minton, Francine, Chatham, NJ 07928
Taverna, Carmen, 203 Buckhout Laboratory, Penn State University, University Park, PA 16802
Uinojosa, Charles, Levittown, PA 19055
Empp, M.K., Hayes, VA 23072
Turner, Melvin, Dept Botany, Duke U, Durham, NC 27701
Wallace, James, Birl, Dept, Western Carolina U, Cullowhee, NC 28723
Hallowell, Barbara, Hendersonville, NC 28739
Collins, Jean, Maco, GA 31206
Peal, Ann, Lighthouse Pt, FL 33064
Beaver, Dr. Wilfred, Athens, GA 30601
LaBonta, Gerald, Brooklyn Center, MN 55429
Kurtz, Gregory, Idaho Falls, ID 83401
Farr, David, Layton, UT 84041
Melone, Marsha, Reisterstown, MD 21136
Wash, Thomas, Fresno, CA 93725
Thrasher, Allen, Seattle, WA 98113

...and Abroad

Hinton, Mrs. Rae, Pretoria, South Africa, Faerie Glen, 0043

Beltville Symposium in Agricultural Research VI

The 6th annual Beltville Symposium in Agricultural Research will be held at the U.S. Department of Agriculture, Beltville Agricultural Research Center in Beltville, Maryland on May 17-20, 1981. The subject will be "Strategies of Plant Reproduction."

Topics to be covered include: transfer of genetic information and genetic interplay; photocontrol of flowering and other phytochrome-mediated processes; hormonal control of seedling growth, tuber formation, flowering, fruiting, and senescence; management and control of flowering and seed development through use of growth regulators, nitrogen and carbohydrate supply; and impact of temperature extremes, drought, air pollution, and other environmental stresses on plant reproduction.

Contact: Dr. Albert Piringer, ARS Symposium VT, U.S.D.A., Room 130, Bldg. 003, Bavec-W, Beltville, MD 20705, USA, for a copy of program and preregistration packet.
The annual foray of the American Fern Society was held July 10-11 in connection with the botanical meetings in Vancouver (joint meetings of the Botanical Society of America, the Canadian Botanical Association, and several other botanical societies, July 12-16). Vancouver is a good place to go to avoid the heat wave sweeping much of the United States. The last thing I tossed out of my suitcase before leaving New York was a jacket and raincoat since it was hot and dry there. Needless to say, most of the meeting time was chilly and wet.

The cool moist climate of Vancouver is representative of the Pacific Northwest and is very conducive to lush fern growth. Although not overly rich in species, there are several kinds that are in every patch of woods or even come up as weeds. The University of British Columbia, where the meetings were held, is situated on a peninsula and is bordered on three sides by water. Several of us who arrived early took a pre-foray down the wooded cliffs to the beach where we were treated to magnificent vistas. The forest of huge conifers has an understory consisting almost entirely of pteridophytes—lady fern (Athyrium filix-femina) to seven feet tall, western sword fern (Polystichum munitum), deer fern (Phlogeris spicant), and the giant horsetail (Equisetum telmateia). These four seem to be everywhere at least at the lower elevations, and whetted our appetites for the foray itself.

The foray was planned by Dr. Chris Marchant, research botanist with the Botanical Garden of the University of British Columbia. He originally had planned to go to Mount Seymour, but the snow had been so deep until recently that Christ thought the plants would not be very far along. Instead, 23 of us travelled by car northwest of the city to visit three localities. First, we stopped at Eagle Ridge to scramble up a rocky slope where we saw beautiful material of Chellanesus sillicuosus, Cryptogramma crispa, Selaginella wallacei, Polypodium glycyrrhiza, Asplenium trichomanes, Pityrogramma triangulans, Cystopteris fragilis, Polystichum munitum, and Pteris aquilinum.

The morning was sunny but cool, and it got much cooler at our next stop, Cypress Bowl, a provincial park and ski area. We hiked about two miles up the trail through gorgeous forest of cedars, douglas fir, and western hemlock. The lower slopes were rather sparsely in ferns (Polypodium-spicant, Equisetum arvense), although there were many flowering plants, including the saprophytic terrestrial orchid Cephalora. Farther up it became quite lush with abundant lady fern, spreading wood fern (Ophioglossus expansa), Thelypteris limbosperma, Lycopodium clavatum, Cyclanthus daphoides. We had lunch by a snow field high up in the mountain where we found the alpine lady fern (Athyrium distentifolium) and the fir club moss (Lycopodium selago). As we started down the slope, the lowering clouds began misting on us and chased us the rest of the afternoon.

The third and last stop of the day was to a rocky gorge at a large ecological center, where we saw the maidenhair fern (Adiantum pedatum) on the vertical cliffs in the spray of the falls. This is the normal form, which is common in the East but uncommon in the Northwest. There are other variations or forms in the Northeast, such as var. alpinum with a more upright, overlapping segment and var. subminutum, the lightly fringed drab along the Pacific coast, but we did not see them this foray. In addition to the maidenhair, on the more level areas we saw very large and abundant western sword, lady, deer, and spreading wood ferns.

The next day was even wetter. It never really seems to rain in Vancouver but there are varying degrees of drizzle. In this case it was drizzling heavily, and fortunately our stalwart organizer led us on a tour of the UBC greenhouses to see the marvelously varied collection of ferns. The UBC has many species in New Zealand, New Guinea, and the Philippines, so we could have tallied a few hundred species for our foray list. The UBC also has a good collection of native ferns outdoors, some in a lath house and others planted out near their alpine garden, which we saw later in the afternoon. Many of us were amazed to see the giant banana slugs which reach 5 to 6 inches in length; two bites and a fern is gone!

After lunch the sun broke through, and we made a visit to the home of Don Armstrong in Vancouver, where ferns are a major part of his landscaping. Here we saw many of the native northwestern ferns cultivated along with species and cultivars from Europe and Japan. We were honored to have among the foragers Jimmy Dyce, the president of the British Pteridological Society and past long-time secretary of the BFG, who regaled us constantly with his wit and called to our attention that several of our ferns do not look like they do on the other side of the Atlantic. Athyrium distentifolium, A. filix-femina, and Osmunda regalis are especially different, and indeed they are usually treated as distinct varieties. In Don's garden we could see our royal fern growing side by side with the European variety, and they certainly do look different. The European plant is much more leathery in texture, compact and stout in posture, and has more rounded pinnae. Don also had a large plant of var. cristata of the European plant. There were several cultivars of other European plants, such as Dryopteris filix-mas, D. pseudo-sax. Athyrium filix-femina, Phyllitis scolopendrium, and Polystichum setiferum.

All in all, it was a great and diversified foray, giving us a good impression of the native ferns and the kinds of ferns that can be cultivated in the mild, moist climate of the Northwest. Actually, most of the ferns there can be cultivated in the East too, but somehow the species have not been introduced as widely. The spores of most are available in the spore bank, and we encourage you to try your hand at some of these great ferns.

John Nickel.
Many fern enthusiasts on both sides of the Atlantic are fascinated by the history of popular interest in ferns. One consequence of this interest is the increasing attention paid to the older fern books. In recent years there has been a growing demand for these books, this demand being accompanied, of course, by greater scarcity and higher prices. These days, perhaps because of their age, all Victorian fern books command respectful attention. However, a glance into their history shows that some of these books received a rather different kind of attention when they first appeared.

In Britain it seems that the ambition of every fern enthusiast is to own a set of K. J. Lowe's FERNS: BRITISH AND EXOTIC. It is not difficult to see why. Lowe was an important and dominating figure in the Victorian fern world and in addition the eight volume set contains 679 colored illustrations of ferns by Benjamin Fawcett, one of the major nineteenth century British color printers. The current level of demand for these volumes would probably come as a surprise to the reviewer of the Gardener's Chronicle (1856, p. 91-92), who wrote, "Future writers on ferns must erase this trash from the list of works on science......it is a treacherous companion to the unskilled in fern lore."

Lowe's reputation was at stake again later in the century when his FERNS AND PLANTS was published in 1890. The reviewer of the Journal of Botany (1891, p. 60) commented, "The descriptions of the species are so brief as to be useless to the 'young collector' who, we trust, will not waste his shilling on this last and worst of the series. Fortunately this time the Gardener's Chronicle (1890, p. 754) was more conciliatory, "A glance is sufficient to show that it will be very acceptable to fern lovers. This little book, so difficult to find these days, is considered by some to be one of the most useful of fern books."

Earlier that century the Rev. E. Boscouquet had written (fortunately anonymously) a little book titled A PLAIN AND EASY ACCOUNT OF THE BRITISH FERNS. It received complete and unabated commendation from all sides. One of the most pointed comments came again from the reviewer of the Gardener's Chronicle (1854, p. 270), who said, "We would not impale a fly, and, therefore forbear to say more of the glories attached to this little volume than it is a pity that anyone should undertake to instruct others without possessing some knowledge of the subject taught." It is hardly surprising that after two editions the publisher, Robert Hardwicke, should have had the book rewritten by Phoebe Laneaster.

The Victorian reviewers were very skilled at damning a book by using a carefully constructed throw away line. The comment on Boscouquet's book is an example as is a comment about the book INDIAN FERNS by Mrs. C. E. Haynes. This was published in 1887 and is a slim volume of color plates. The Gardener's Chronicle (1887, p. 216) stated, "They form a pretty volume for the drawing room table," and in this casual sentence damn it with faint praise. This book did not reach a second edition. Today this is a scarce book but is a delightful one to own. The printing has a brightness of tone unmatched by any other of the chromolithographed fern works.

The reviewers did on occasion (as is not unknown today) disagree about a book. This was particularly evident where F. G. Heath's FERN PORTFOLIO was concerned. It received rude notice when published in 1885. Although extensively reviewed in local obscure journals, it did not get the same lavish praise from the more serious botanical and horticultural papers. To be truthful, the serious papers did not so much object to the book as to the claims Heath made about it. In the Preface Heath says he "has had the happy idea of giving the public such minutely exact pictures of fronds on ferns." This was written exactly thirty years after Moore and Lindley's HAND-PRINTED PLANTS OF GREAT BRITAIN AND IRELAND was published. The Gardener's Chronicle (1885, p. 154) rightly criticized Heath for ignoring what most exact of fern books and said, "As an original work it is of little value and this makes the omission of reference to its predecessor the more to be regretted." The Journal of Botany (1885, p. 58) commented on another claim by Heath, "We think a little overestimates the amount of time and labour which the execution of this work has required." Characteristically, Field (1884 ii, p. 686), a journal for hunters and field sportsmen, reflected a different feeling, "To persons fond of collecting fronds the work will be a boon." The image of "frond collecting" as a field sport seems to epitomize certain aspects of the Victorian attitude to ferns.

On the whole, the reviewers did not seem to put off people from buying books on ferns. Certainly a great many were printed and sold. Today there are plenty of Lowe's and Heath's books around and the others can still be found. During the last four years I have kept a record of every fern book that I have seen for sale. The list numbers almost a thousand books, about two thirds of which are Victorian. Some books, of course, have not been seen at all and some have occurred time and time again. It is not difficult in Britain at present to obtain a varied collection of Victorian fern books. It does, however, require some diligence, some knowledge, and unfortunately, quite a lot of money.*

Mrs. Ruth Russell, of Riverdale, New York, has called to our attention an article on fiddleheads in the Maine newspaper Coastal Guide (July 2, 1980) in which the fiddleheads' description is described:

"The Mallacast Indians of New Brunswick are being credited with recognizing and making good use of what they called Na-soe-i-ul. They considered the fiddlehead not only food but good medicine, a sort of spring tonic, one in a long line of "emily patent" medicines handed down through generations of tribal healers. Records of the United Empire Loyalists eating fiddleheads (no doubt pointed out to them by the Indians) to help them keep going during the rugged months after they left the United States which certainly must have been during the early spring before the canned variety and latter-day quick frozen ones became available.

"To the Indians then and now the harvesting of fiddleheads was far more than an outing; it's a thriving business and part of their heritage. As with hunting and fishing, ancient rights were always honored; members of one Indian community did not work the fiddleheading grounds of another. By the same token, to this day, no "Indian" who is a resident New Brunswick has ever challenged the rights of Indians to harvest fiddleheads wherever they choose."

"Fiddleheads were something more to Indians, past and present, than just something to eat. An ancient spokesman explained it, the fiddlehead is magic or protective. The tribal members would have all their belongings and property, clothing, utensils, wigwams and canoes marked with a symbol in the shape of a fiddlehead."
The Fern Flora of the Bald Hill Area: 
The Past, Present and Future of Some Pacific Northwest Pteridophytes
by Ed Alverson, Seattle, Washington.

At the height of Pleistocene glaciation, the Puget Sound basin in western Washington state was filled with a giant tongue of ice, and the landscape was quite different from what we see today. The ice sheet covered an area of 15,000 square miles south of Seattle and 30 miles east of Olympia. Here, a "Super River" carved a path through the landscape, creating a rugged topography with a variety of habitats and substrates. In the 13,000 years since the ice retreated, the climate has varied from cool and moist to warm and dry. A number of plant species found in the Bald Hill area are relics from a warmer epoch 6000 to 8000 years ago. This includes some ferns that are now rather rare at this northerly latitude.

Climate is one factor that has influenced the fern flora of this area, and fire (or the lack of it) is another. The Bald Hill area is covered with young coniferous forest, but has never been logged. It is likely that one or two hundred years ago these areas were open meadows, or balds; and the suppression of fire has allowed Douglas fir to invade on a large scale. scattered areas of open meadows persist in the driest sites where bedrock sits near the surface and soils are shallow. Shattered specimens of Oregon white oak help to give these sites a park-like setting. These open areas are especially beautiful in spring; native prairie flowers such as wildflowers, goldenrod, shooting star, balsamroot, blue-eyed Mary, rosie electric, long-spurred violet, western buttercup, saxifragus, to name but a few. In this habitat, pteridophytes are usually clustered around boulders or small outcroppings of rock. Fragile fern (Cystopteris fragilis) and goldback fern (Botrychium dissectum) both grow in these dry, open, areas; and each adapts to summer drought in its own way. As the last bits of moisture are lost, the evergreen fronds of the goldback fern curl up into flaccid; but the fragile fern withers and disappears until seasonal rains bring out new fronds. A spikemoss, Selaginella wallacei, is commonly found on exposed rock; it is well adapted to the cycles of dessication and rehydration.

Open, brushy areas on the canyon slopes harbor poison oak, mock orange, ocean spruce, snowberry, serviceberry, and oval-leaved viburnum; bracken (Pteridium aquilinum) is commonly found in these thickets. Coastal wood ferns (Dryopteris arguta) have thick evergreen fronds, and grow among brush and boulders; it is a rare find this far north.

Most of the slopes in the sheltered canyons have managed to escape loggers' saws; Douglas fir 9 ft. thick and 200 ft. tall are not uncommon. Three species of maple - bigleaf, vine, and Douglas' - are found here, as well as the western dogwood. In spring, the Oregon fawn lily and calypso orchid lift their delicate blooms above beds of moss to the feet of these magnificent trees. Also to be found are the western trillium, Hooker's fairy bells, three-leaved windflower, inside-out flower, vanilla-leaved, twineflower, starflower, and other assorted gems. Western sword fern (Polystichum munitum) is abundant in this timeless setting, often dominating the understory vegetation with glossy smooth green fronds that turn brown. Maltwood fern (Dryopteris expansa) is also found here, usually rooted in decaying wood. Lady fern (Dryopteris diluta) grows along the small brooks that flow through the canyon bottoms. In the cool shade of red alder and Oregon ash, lady fern commonly grows four foot long fronds. Skunk cabbage leaves are often just as large, and the two foot wide leaves of a spiny shrub called devil's club are small only in comparison.

The most interesting collection of ferns is found on the cliffs that form the canyon walls. Occasionally these cliffs are exposed to full sunlight, and a local colony of the imbricate sword fern (Polystichum muricatum) is found in such a place. This fern is related to the western sword fern, but has fronds with pinnae rotated perpendicular to the place of the rachis. But typically these cliffs are shaded and moist, often dripping with water. Where the cliffs are not overhanging, the rock faces are covered with thick moss mats. Dendrocalis abietina is one of the many interesting mosses that can be found. The licorice fern (Polypodium glycyrrhiza) takes kindly to this substrate, and the winter-green fronds form magnificent displays along most of the cliff walls.

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Where the tall cliffs are overhanging, the thick moss mats are not found, but the rock is still flocked with a collection of dust-like lichens. The roots of the northern malehair fern (Adiantum pedatum) are able to penetrate through crevices in the cliffs to reach a year-round supply of moisture. The graceful fronds of malehair browning in the breeze are a magical sight to behold. A handsome diploptere sword fern that is very rare in the Northwest is Polystichum californicum. It occurs rather frequently on these shaded cliffs. This fern is only found from one other locality in the state, and its attraction is enhanced by questions about its true identity, for it differs from typical P. californicum in its cliffside habitat and slightly different morphology. This writer believes that this "Puget Trough form" may actually be an undescribed species, but there is no conclusive evidence available at this time.

In contrast to the undisturbed old growth forest of the sheltered canyons, much of the surrounding terrain has recently been logged, opening the door for disturbance-related plants, such as trailing blackberry, fireweed, dandelion, thistle, and clovefoot. Bracken often becomes abundant in open clearcuts, spreading by means of extensive rhizomes. Two species of horsetails, Equisetum arvense and S. telmateia are both found in logged-off areas, but seldom show up in undisturbed habitats.
Eth William's Merry Stems
Growing Tips for Horticulturists

QUESTION: Geoffrey Simmons of Durack, Australia asks about the efficacy of dichlor on ferns. He has used a local product called Shelltop Minstrip containing 18.6% dichlor in an attempt to kill small scale on ferns, and has subjected ferns from a variety of genera, including Adiantum, to an atmosphere obtained by placing three Minstrips in a 7.1 cu. ft. container, usually for 18-24 hours at an ambient temperature of 24-29°C. No damage has been noticed on the ferns. The main problem is knowing whether dichlororvos is effective against scale. Does the moisture from the plant condensing on the surface of the strip prevent vaporization?

ANSWER: Pest strips evidently vary in size and strength in different parts of the world. In the New York area Shell No-Pest strips, containing dichlororvos dimethyl phosphate, is recommended by the manufacturers for killing flying insects in the yard but area 30' by 12' by 6' for four months. The vapor from such a strip in a small closed container such as yours would be powerful and surely would burn if not kill most ferns exposed more than a short period.

If the scale were to be removed by hand before exposing the fern to the strip, the efficacy of the treatment could be judged by the subsequent appearance of the appearance of the scale. You probably have made your own check by this time, and the results would be of interest to the readers of Fiddlehead Forum.

A popular method in this area is to spray with wettable powder Malathion which has the systemic action, using 1/2 the recommended amount. Black Leaf 40 is also effective. Even this low concentration will burn mourning and now growth on other delicate ferns. In a small, closed container such as you describe, a couple of good puffs from a mister containing the insecticide should be introduced. In any case, it is helpful to remove the insects with a damp paper towel before treating, and in case of heavy infestation, to spray again in a week's time until the scale is no longer present.

Virginia Otto of Westboro, Mass., has a recipe for a nicotine spray. Soak half a cipher in two cups of water for a week. Then spray the plants with 1/4 tsp. of mild detergent and 1 tbsp. of the cigarette water to a gallon of water. Scale can be picked off the fern easily with a piece of Scotch Tape on the tip of a finger.

Condensation on the surface of a pest strip will not inhibit vaporization, according to research done on the subject. Dalton's Law of Partial Pressures says that in a closed container, separate chemical compounds exert their independent pressures and quickly reach an equilibrium.

QUESTION: Martin P.W. Satter of Cleveland, Ohio writes enclosing a slide of a plant found growing on a moss-covered rotting log over a year ago. It has multiplied but not grown larger - approximately 3/8" high by 1/8" high. Thought at first to be a fern spore.frame, it has not grown beyond its present size. It seems to require a very humid environment and lives in bright indirect light.

ANSWER: The plant shown in your very clear slide has been identified by Dr. William Steere, Senior Scientist (Bryophytes), New York Botanical Garden, as a common liverwort, Pallavicinia lyelli (Hook.) Carruth.

SLUG/SLERP LIQUID kills slugs effectively. A thick liquid, it is diluted in water according to directions and sprinkled freely from a watering can over plants and soil with no harm to the plants, even young ones. One thorough application should rid house plants or greenhouse benches of slugs until one is introduced from the outside. Outdoors, slug is said by the manufacturers to remain effective for a week or so, depending on rainfall. Metaldehyde is the active ingredient, and the label cautions that Slugit is toxic to wildlife.

Slugit is made in England by Murphy Chemical Ltd., Westhampton, St. Albans, Hertfordshire. In the United States, the distributor is the Hutchinson Co., 695 Grand Ave, Ridgefield, CT 06877.

NERIFOLIUM rhizomes quickly form new plantlets which crown the pot. As they spring up near the pot rim, they can be removed and planted in their own pots so that the mother plant need not be disturbed and can be maintained in the desired size without repotting.

When the rhizomes hang down over a basket, new plants can be propagated easily and attractively by suspending several soil-filled 2" plastic pots from around the rim of the basket. Pin down a rhizome end or a little coil in each pot with a length of bent wire, and new plants will soon develop, self-potted. As soon as the young plants are established, they can be cut loose to grow on their own.

Send in your TIPS, QUESTIONS, and OPINIONS to
Eth Williams, 57 Clinton St, White Plains, NY 10603.

"Fern Flora of the Bald Hill Area" (continued from page 34)

Western sword fern usually persists in logged-off areas, but because of the lack of shade and increased moisture stress, the fronds produced are usually shorter and coarser, often with overlapping pinnae. This "saw form" of the western sword fern is often confused with the wholly distinct framboid sword fern, but is produced by stressful growing conditions, rather than genetic variation. When trees are grown as a crop, all other plants are considered to be weeds, so herbicides are applied to eliminate undesirable competition. Even if it manages to survive the herbicide stage, the herbaceous vegetation will be eliminated by the dense shade cast by a vigorous stand of 15 to 25 year old Douglas fir, and must wait until the stand has been thinned to localize. Species like the western sword fern are rather aggressive and can tolerate that kind of treatment, but some species present in the Bald Hill area (such as the coastal wood fern) are relicts that persist only because their habitats have remained undisturbed through the years.

Unfortunately, this land is owned by timber companies which have no interest in natural area preservation for scientific or aesthetic purposes. It seems to be only a matter of time before the giant Douglas fir are felled, the cliffs quarried, and the meadows filled with bulldozer tracks.

The only chance for this undisturbed area to escape the wrath of the chainsaw is by enough people showing an interest in its preservation. Fern fanciers are generally not known as "forces to be reckoned with," but maybe the time for change has come. There are probably scores of "petrological gems" across the country that remain vulnerable to the forces of destruction, or are kept secret by shy explorers. Maybe the Fiddlehead Forum could become a focal point for collecting, identifying, and publicizing these "gems", so that they could be watched, cared for, and hopefully preserved.

--Ed Alverston, 849 N.E. 58th St, Seattle, WA 98105.
Twenty-four participants arrived under an overcast sky on the Blue-Ridge Parkway at Balsam Gap, North Carolina to start the foray, and three additional members joined the group in the afternoon. Many were surprised that Osmunda cinnamomea, O. regalis, and Dryopteris crassiramea were just now spraying. Cameras were even aimed at the rare Hepatica americana. There was some effort deciding whether or not to step on the large undergrowth of wildflowers in order to find the ferns. Atop Balsam Mountain much movement was generated over the half-centimeter high Dryopteris simplex.

On Saturday the rains came. After driving down the Cullasaja Gorge and slushing around in the rain for an hour or so we came upon Trichomanes boschianus under a spray (naturally) of Crow Creek Falls. At Dry Falls the northern Thelypteris phegopteris and Lycopodium porphyrum were noted alongside the geogmophytes of the tropical genera Trichomanes, Hymenophyllum, and Vittaria. The famous Grammitis minuta population of the site, however, appears to be extirpated; at least the sporophytes have died. As the torrential rains continued on Saturday afternoon, about half the group decided that they would rather eat cheesecake and drink coffee in Highlands then observe ferns in the cold rain, so they missed the excitement of seeing Lycopodium australis and several Dryopteris hybrids.

On Sunday under blue skies we explored the Bartoe Gorge. There were arguments over whether we were seeing Dryopteris dissecta or D. bitternutum; no one won. (Oh, why did Herb Wagner not come along?) Then, as all pteridologists must do when exploring the gory, we had to forage across the swollen Bartoe Creek not once but over a dozen times. Luckily, no one was swept away by the current, but there was much hand-holding. (The other men were always willing to aid the young ladies.) At last we came upon the tiny filmy fern, Trichomanes petersonii, and the camera clicked. There were many "ohs!" and "ahs!" as we all passed, stumbled around, or climbed over a dozen gorgeous waterfalls covered with bryophytes. It was hard going trying to carry all of the cameras and bagged provisions through Rhododendron "heath" as we maneuvered around the waterfalls along the gory walls. A few of the participants departed before this excitement. Though pteridologists at heart, we were excited to find a large population of "fruiting" hornwort (Anthoceros) and several thalloid liverworts. Eventually, we found another filmy fern, Hymenophyllum cinnamomeum. As usual for any adventurous trip, the 16 remaining participants were three hours late emerging from the gorge, ready for a hot shower and a soft bed. A total of 54 taxa were found during the foray.

A CATSKILL FLORA AND ECONOMIC BOTANY, vol. I. Pteridophyta. The Ferns and Fern Allies, by Karl L. Brooks. Bulletin No. 438, New York State Museum, Albany; 8x10 paper cover; 8.5 x 11 x 276 pp. Includes 24 pp of introductory material, keys to the families, genera and species. Each species has notes on common names, habitat, range, New York distribution, and misc. notes, especially on economic uses. Illustrations of each species (line drawings) are taken from other works. An appendix contains distribution maps within the state. Cateskills, and specimens are cited.

The nomenclature is generally of recent vintage and conventional with the following exceptions. Dryopteris campyloptera, spinulosa, and intermedia are lumped under spinulosa. Polypodium virginianum is considered as a subspecies of P. vulgare. B. multipinnatum is treated as a hybrid between B. dissectum and B. multifidum. This book is an excellent buy for the price. Obtain by sending a check to: Gifts and Exchange Section, New York State Library, Cultural Education Center, Albany, N.Y. 12220. (Volume II, Coniferales, is available for $2.00.)

HEINEMANN GUIDE TO COMMON BRYOPHYTIC FERNS OF MALAYA AND SINGAPORE, by Audry Pigott. Heinemann Educational Books (Asia Ltd., Kuala Lampur and Hong Kong, 1979. 4.50 Singapore dollars. 276 pp, 16 pp of color plates (20 photos), and 50 black and white photos. Introductory notes on ferns in general, a little about the fern flora of Malaysia and Singapore, 20 common epiphytic species with photo and notes, scientific names and some common names, glossary and notes on growing epiphytic ferns.

ATLAS OF THE FLORA OF PENNSYLVANIA, by Edgar E. Blyth, John M. Fogg, Jr., and Herbert A. Wahl. published by the Morris Arboretum of the University of Pennsylvania, Philadelphia, 1979. $9.95. xix + 390 pp. The bulk of this book consists of dot maps of all the vascular plants found in the state of Pennsylvania, including varieties and hybrids.

FERNS OF MINNESOTA (revised edition), by Rolla M. Tryon, University of Minnesota Press, Minneapolis, Minn. 55455. $12.00 cloth, $9.50 paper. 175 pp, 600; 201 drawings, 13 color photographs. The first edition of this book (1954) has long been out of print.

FERNS AND FERN ALLIES, by John W. Thieret, published by the Lafayette Natural History Museum in conjunction with the University of southwestern Louisiana, Lafayette, LA. 1980. vii + 132 pp plus 201 plates (2 pp each). These are introductory sections on using the book, scientific names, pteridophyte features, cultivation of Louisiana pteridophytes, preparation of specimens, previous studies on Louisiana ferns, and rare species in the state. The taxonomic section of the book (pp 26-100) includes keys and descriptions of the species, followed by 75 plates, 2 pp per plate, pages unnumbered, of line drawings and range maps to show distribution within the state. The line drawings are mostly reproduced from other works and their reproduction is only fair; the lines often change to obscure details. The plates are followed by a checklist of the species, a glossary, and a list of literature cited, and an index. The paper is slick and of good quality, and the typeface is easy to read. This book is an excellent addition to our growing list of modern state fern floras.
The Village Blacksmith

or

The Rev-ace Triumphant

(with apologies to Henry Wadsworth - )

There is an herb, some say, whose virtue's such
In the pasture, only with a touch
Unshoes the new shoe stood.
-- George Wither, XVII Century

Under a spreading chestnut tree the village smithy stands;
The smith a mighty man is he with large and sinewy arms
And the muscles of his brawny arms are strong as iron bands.

When not employed in bending steel to shoe the barefoot steed
He's planning how to make a 'pil' to satisfy his greed,
And clinking coines he classifies as pahty chicken feed.

One golden day in sunny spring, the chestnut tree in bloom,
A horse by bridle led appears within the smithy's gloom
And with a pteriodist no less, to act as groom.

Then while the anvil's merry clang prepares the new shoe hoof
The pteriodist holds forth beneath the smithy's roof;
He xowm the Moonwort legend can be nothing but a spoof.

Strycterium lunaria he swears can hold no curse
And as for shedding horses' shoes he'll wager all his purse
They wouldn't do a single thing for better or for worse.

The village blacksmith listens and despite what he's been told,
He sends his young assistant out to search the neigh'ring fold
For Moonwort plants with which to turn the horseshoe iron to gold.

And soon the country's stable yards are planted far and wide
So all the blacksmith has to do is wait for men to ride
To bring a whole stampede of shoseless horses to his side.

Then while he waits he hides his time by making shoes for braces,
But not a single horse shows up with any pains or aches -
The smith he waves his brawny arms and cries 'For heaven's sakes.
But tracks abound around the ground, but not of horses' hooves;
The wheels of Modek I's by Ford have made those groovy grooves
And horsepower 'stead of horses' power is making all the moves.

The smith turns all his horseshoes round so luck will not run out
And soon he's selling brake shoes that are lying all about
And now his coffers start to fill without the slightest doubt.
His fortune's made - a bit delayed - but now he knows it's true
That superstitions always right if luck is good to you.
The moral of this ditty is - whatever you construe.
**Fern Fun**

*Our Potpourri of Pteridological Trivia*

If you think that maybe pteridologists can be mixed up, you're right — literally, of course. Here are a few of them (Column I) that have brought their names to fame. In Column II you are expected to straighten them out and in Column III you select the key word that associates their names with fame. Match them up and write the correct letter in the parentheses against each number. Then you can check your answers. 8 correct wins the Spore of the Month Award and 10 correct wins 2 spores.

<table>
<thead>
<tr>
<th>Column I</th>
<th>Column II</th>
<th>Column III</th>
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<td>SIMILARG</td>
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<td>TENDSADENT</td>
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<td>NIVALIS</td>
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<td>URBAN</td>
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**Mirror: (Answers)**

1. a. Quillwort
2. b. Giant Wood Fern
3. c. Holly Fern
4. d. Water Spangles
5. e. punctilobula
6. f. Water Clover
7. g. Asplenomorus
8. h. Spleenwort
9. i. Chain Ferns
10. j. clintoniana

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