Chapter Activities

For the third straight year the New York Chapter made a weekend foray to the Pocono Environmental Education Center near Blaughton, Pa., in eastern Pennsylvania. The featured genus this year was Dryopteris, the pomposus ferns which hybridize so freely. We encountered D. cristata, goldiana, intermedia, marginalis, and spinulosa. Hybrids seen were D. cristata x goldiana, D. cristata x intermedia (intermedia x spinulosa) and D. cristata x goldiana (this has no binomial name). The latter looks so much like goldiana (just slightly narrower) that it is difficult or impossible to distinguish it in the field, or swamp, but Dr. James Montgomery, a Joeseph student of this group, had previously examined the abortive spores and the chromosomes of this plant and attested to its hybrid nature. Forty-five species of pteridophytes were seen in the two days in this spectacular region.—John Nickel.

Who Sells What in Greenhouses

Anyone contemplating the purchase of a greenhouse—be it a window to a commercial size—will find "The Greenhouse Catalog of Catalogs" a most useful reference. Editor Saul Lapidus has assembled and reprinted the well illustrated catalogs of 36 prominent and enterprising greenhouse manufacturers. This compilation permits rapid comparison of features and offers prices, too. The first twenty-five pages of the nearly 160-page book are devoted to a general treatment of greenhouse selection, sitting, structure, covering, equipment, and management that will be useful to all newcomers to greenhouse growing. I found the discussion of covers, including their price, longevity, and other characteristics, very helpful. The differences between plastic formulations are often subtle, but the differences in performance are enormous, and Mr. Lapidus sets all this out in a straightforward manner. Since the book was just published in May, 1977 by David McKay (ISSN 0-879-50649-7 for $7.95), the reprinted catalogs are current, and so the book will remain useful for some years to come.—D.B. Lellinger.

Fern Journals for Sale

Dr. Richard Prince has volumes 1-24 of the American Fern Journal in bound form and Volume 25 unbound. He would like to part with the whole lot for $250. If you are interested in buying them, you may contact him at the Cryptogamic Herbarium, The New York Botanical Garden, Bronx, NY 10458.

My New Species

By Edgar T. Wherry

In the course of my travels, I have discovered several new species or subspecies, and an often asked how this occurred. Here are three illustrations.


When publishing the name Phlox Stellaris, A. Gray based it on a specimen collected by Dr. Short on cliffs of the Kentucky River, and remarked "the station should be re-discovered.

Having decided to monograph the genus Phlox, I looked into this problem. On visiting the herbarium at the University of Kentucky in Lexington, where Dr. Short's records are filed, it became evident that he had collected the specimen to which Gray referred at "Camp Nelson" latitude 39°15', longitude 84°37'.

Driving southwest from Lexington, a bright pink flowering Silene was conspicuous on rocky slopes. This proved to differ from the familiar S. caroliniana in the hairs covering the calyx being sharp pointed instead of tipped by viscid glands, forming a velvety indument. My plant was named Silene Wherryi by Small, with a specimen from Albertville, Alabama, being mistakenly cited as type S. caroliniana Walt. var. Wherryi (Small) Fern.; this reduction in status is here deemed unjustified since there are no intermediates between the two taxa.

II. Cut-leaf Foamflower

I was driving southward through the Appalachian Mountains, accompanied by Mr. Harry W. Studell. We slept in the auto and each morning planned our route for the day. Proving to be near the northwest corner of Tennessee, we decided to travel south in that state to visit the 'Ducktown Desert,' where the fumes from a copper ore smelter desecrated the normal vegetation cover. Before we reached that area, in a sheltered nook (or, as Harry termed it, 'Ducktown Dell') was observed colonies of a "Foam-flowers"—member of the genus Tiarella, differing from the common one in the region in lacking stolons spreading from plant bases, and relatively deeply and sharply cut leaves. A pressed specimen was sent to the University of Minnesota, where Dr. Olga Loken was engaged in the study of the genus, and she named it Tiarella wherryi.

A living plant was sent to the New York Botanical Garden, and seeds from it were taken by an exchange-student to England; these were grown by Mr. Clarence Elliott, and blooming plants were exhibited at the next Royal Horticultural Society Flower Show, where it received honorable mention as the best new introduction of the year.

Its usefulness in various garden situations was written up by Mr. Elliott. As a colloquial name it may be termed the Cut-leaf Foamflower; or since it dif-

(continued on page 2)
fers from the common T. cordifolia in blooming throughout the growing season, an even better name might be the Everblooming Foam-flower.

III. Hybrid Dryopteris - A Novel Way to Discover A New Fern.

On another occasion I was driving through northeastern Alabama again accompanied by Mr. Harry W. Trudell. During one night there was a rainstorm, which did not affect us, as my auto top did not leak, but did make the local streams cloudy with mud. We had planned to shave the next morning, but the water in successive streams we crossed did not look suitable, and Harry suggested that we wait until we came to a purling brook.

Before long, we found a stream which had just emerged from a spring, and so had received no rain-borne mud, so we set up our equipment. On looking in the mirror at the reflections of the surrounding vegetation, I saw a large Woodfern, resembling the more north-ranging Dryopteris clintoniana, but it proved to have the sorus nearer the margin.

Instead of naming it D. purlingbrookensis, it was published as D. clintoniana var. australis. This was later raised to species rank, as D. australis (Wherry) Small. In view of its apparent hybrid origin, this may well be written D. X australis.

Ferns in El Salvador

We have a note from a Fern Society member, Ralph Seiler, saying that he is now with the Peace Corps teaching botany in El Salvador for the next year and a half. He invites any fern folks visiting El Salvador during that time to contact him and he would be glad to act as a guide to some good fern localities. His address is: c/o Cuerpo de Paz, 25 Avenida Norte 914, San Salvador, El Salvador, Central America.

In the last issue of the PP we printed a review of Elaine Davenport's Ferns for Modern Living. If your bookstore does not yet have it, it can be obtained from Merchants Publishing Co., 20 Mills St., Kalamazoo, MI 49001.

Who's Who in Pteridia

CARLO MATTEUCCI (1811-1868) was born in Forli, Italy, the son of a physician. He attended the University of Bologna graduating with a degree in Physics at seventeen. He presented his first paper on Meteorology when only sixteen. He went to Paris, to study at the Sorbonne, returning to Forli in 1830.

He was appointed Professor of Physics at the University of Pisa in 1840 and here he carried out electrophysiological investigations the result of which was his famous discovery of the 'induced twitch,' a muscular reflex to an electric charge. Publishing in English, he sent his memoirs to the Royal Society where a list of 269 of his papers are recorded.

He was involved in the political upheavals of 1848, and when Italy was united, he was made a senator for life (1862).

The genus Matteuccia of which the Ostrich Fern is its chief component was named in honor of Carlo Matteuccio by Todaro in 1866.

Foray Forlorn

(With profuse apologies to Edgar Allan Poe from Edgar M. Paulson)!

Once upon a foray dreary,
while I wandered weak and weary,
O'er many a rock and crevice,
there upon the forest floor,
Suddenly I saw before me
fiddleheads that didn't bore me
Fiddleheads that did restore me
to the state I'd been before:
Only this and nothing more.

Now it was I got excited,
so astonished and delighted.
On a foray so benighted
is a mystery I shudder,
But these fiddleheads uncurling,
variant banners now unfurling,
Left my very senses whirring
as they'd never done before -
as they'd never done of yore.

This excitement so astounding
set my heart to fiercely pounding
And my every fibre trembled
in a manner I deplore,
And my knees in genuflexion,
bounding for a close inspection,
Let me make a swift detection
of these fiddleheads galore -
circumventing on the floor.

Like a thunderbolt it hit me;
this disclosure did submit me
To a shock that all my system
never had endured before.

Did my ardor waver? - slacken?
bid my outlook darken? - blacken?
YES! 'Twas nothing more than bracken -
brico-a-brachen - nothing more!

Bracken? - What a crashing bore!

EPIAPTIC DIFERNITIONS

Resupinate: In an inverted position
Rare species of our native ferns, descended from plants of ancient, geologic times, need protection. We, who cling to the bulldozed opens its jaws on acres of our lands, must cooperate with nature to protect these ferns from extinction.

In addition to protecting established public reserves, we should work toward developing more; also private ones must be created and maintained. Ferns from doomed areas can be rescued and transplanted. By division of plants and by propagating ferns from spores many new gardens may be established. Educational projects sponsored by societies and knowledge shared by individuals will spur new efforts towards conservation.

It is an interesting hobby to grow ferns from spores, whether in only a covered jar or a large moisture chamber with ninety percent humidity. The first wonderful green signs of tiny prothallia developing are a thrilling reward for the small amount of work and care involved. Furthermore, to finally transplant a year-old rare specimen which you have grown really promotes conservation. For instance, the once prevalent Lygodium palmatum, the Hartford or Climbing Fern, is being grown successfully from spores though its wild haunts are greatly diminished.

All of our northeastern ferns grown from spores can be transplanted outdoors by their second year and rare tropical and foreign species can remain indoors as part of your house plant collection.

In the past year and a half, after hearing and reading the advice of experts and amateurs, I tried planting a wide variety of spores, with successful results. My husband built a wood framed, two-shelved cabinet 3 1/2 wide x 2’ deep x 6’ high, and enclosed it on all sides with clear, heavy plastic. This creates a veritable chamber of moisture needed by tiny prothallia and by small sporophytes which appear later and grow into ferns we can recognize.

In the future I plan to use a separate envelope for each kind. When ready to sow, shake spores out of the envelope onto a piece of white paper. Fold the paper into a funnel shape, and gently tap the spore dust onto the surface of the medium, moving the funnel about to distribute evenly.

Fluorescent bulbs are attached to the ceilings of both upper and lower halves of the cabinet, and on the bottom of each half we use an inch of damp peat moss.

Some ferns can be transplanted outdoors at about a year of age, as was done with several of my husky Maiden-hair Spleenwort this year, but a second winter in a cold frame or indoors assures a better chance of survival.

An exciting experiment is to sow two kinds of spores together. For instance, the rare Scott’s Spleenwort, might be raised for your own lime tree stoneware. If you try sowing spores of Asplenium platyneuron and Camptosorus rhizophyllus together.

About 75 years ago Margaret Slosson was able to produce specimens of this hybrid, Aspleniorus chersonesii, by dividing the prothallia of each species and planting the antheridia or male of one species against the archegonia or female of the other species. This settled the controversy between fern professionals as to whether or not Scott’s Spleenwort was really a hybrid.

A list of thriving times of our most common northeastern ferns as given in George Henry Tilton’s book of 1923 is still good as presented in detail, but to generalize:

Osmundas are ripe the end of May to middle June; Polystichum acrostichoides, early July; Thelypteris phegopteris and Dryopteris cristata, mid-July; Pellaea atropurpurea, Cryptogramma stelleri, Woodwardia obtusa, Dryopteris goldiana, Thelypteris marginella, late July; Camptosorus rhizophyllus, Athyrium filix-femina, Polypodium virginianum, Adiantum pedatum, Polystichum braunii, all early August; Asplenium platyneuron, Asplenium trichomanes, Thelypteris palustris, Thelypteris noveboracensis, late August; Pteridium aquilinum, Lygodium palmatum Athyrium pycnocarpon, early September; Thelypteris simulata, Opposites sensibilis, middle September; Woodwardia virginica, late September.

This list shows that one can collect ferns all summer. It is important to use a separate envelope for each kind. When ready to sow, shake spores out of the envelope onto a piece of white paper. Fold the paper into a funnel shape, and gently tap the spore dust onto the surface of the medium, moving the funnel about to distribute evenly.

It is well to isolate yourself in different areas if sowing several kinds of spores or the air will become filled with different varieties and your plantings could be mixed.

After covering the jar of well moistened planted spores, label as to species and date of sowing. Place the jar in a north window, or better, under fluorescent lights. Generally in about four to six weeks the first specks of green will appear. Some species of Polystichum, however, take as long as a year to germinate.

The sporophytes, when about 3/4” high, are transplanted from covered jam jars into 2” clay pots, and the pots are set on the peat moss in the bottom half of the cabinet. Older plants grow in clay pots placed on the moss in the top of the cabinet.

Adjustable glass shelves are used in the cabinet also and hold jam jars in which spores are sown. One inch of sterilized, moistened mixture of 1/3 potting soil, 1/3 sand, and 1/3 vermiculite is spooned into each jar and then the spores are sprinkled onto this medium. Each jar is covered to contain the necessary moisture to encourage germination. The spores can be sown directly into clay pots of medium and covered with plastic, but the glass jar is a good incubator.

Care must be taken to sterilize pots and jars by boiling, to sterilize planting medium in a 350° oven for two hours, and to use only boiling water for moistening.

The earliest stages of prothallia and sporophyte growth do not seem to require different growing mediums for different species, though in later stages their culture requirements do differ as to acidity or alkalinity of soil.

Fresh spores gathered just after ripening will produce most prolific results, but spores are viable for in-
A Name for a Cultivated Pellaea

For several years an interesting Pellaea has been cultivated at Longwood and distributed to other growers. It closely resembles P. rotundifolia but the pinnae are more narrow. (Note the drawing). It has gone under the name of "P. rotundifolia" or "P. rotundifolia (Longwood)."

Recent examination of herbarium specimens and literature at the New York Botanical Garden has resulted in a name for this plant: Pellaea falcata var. nana Hooker. It was described in Hooker's Species Filicum (1858) (Vol. 2, p. 136) and based on a species from Queensland, Australia. Hooker and modern workers have pointed out the close relationships of Pellaea rotundifolia, P. falcata and P. paradox. The present plant falls between the first two species. Whether it is really a variant of P. falcata or in fact it is a hybrid between the two or even whether all three spp are truly distinct is a real question. Until the detailed taxonomy problem is worked out, it is best to use the established name P. falcata var. nana.

Fiddlehead For-rooms?

Ferns are becoming so popular nowadays that you never know next where you will see their influence. "Fiddlehead" is the name (see their logo) adopted for a new resort multi-residence (condominium) in the heart of the skiing district of Vermont. It includes swimming, tennis, saunas, and luxuriously appointed quarters. One wonders if their luxury extends to serving fiddleheads in their restaurant.
Adder's Tongue - For Snake Bites

Adder's Tongue (Ophioglossum vulgatum) is very uncommon in appearance. Its fronds resemble a snake's tongue from which its name and reputation is derived (Ophi- snake and glosaeus - tongue). This strange little fern is difficult to locate because it lives in grassy fields and moist meadows and is only one to two inches tall. At one time, as you could easily guess, its leaves were regarded as a sure cure for snake bites. Its reputation as a wound healer goes back in time. Gerard, in his Herball says:

"The leaves of Adder's Tongue stamped in a stone mortar, and boiled in olive oil unto the consumption of the juice, and until the herbs be dried and parched and then strained, will yield most excellent green oil, or rather a balsam of green wounds comparable to oil of St. John's wort (a plant) if it does not far surpass it."

Adder's Spear Ointment, also known as "Green Oil of Charity," made from the fresh leaves of this fern, are said to be in demand as a remedy for wounds to this day. The juice of the leaves was also extracted to treat internal wounds and bruises, vomiting or bleeding at the mouth or nose, and also for sores.

Michael Drayton, the seventeenth century botanist, extolled the virtues of Adder's Tongue for snake bites in the following lines:

"For them that are with nooses, or snakes or adders stung, He seeketh out a herb that's called adder's tongue, As Nature it ordained its own like hurts to cure, And spurious, did herself to neceties lure."

Despite the propaganda, victims of snake bite generally prefer the distillates of John Barleycorn to the licks of Adder's-tongue.

Ferns - Man's Best Friend

You may ask, "Why ferns? What do ferns have that "turns you on"? There is no simple answer; it is just a case of love but not at first sight. The fern lover loves ferns for their own sake, for what they are and where they are. Strange as it may seem, ferns are among the most overlooked and unfamiliar of the wild plants. Outdoor enthusiasts, hikers, nature lovers, amateur botanists, and friend-of-the-earth type people usually have a nodding, casual acquaintance with ferns. And their attitude usually is "you see one fern, you've seen them all." True, ferns are not as plentiful as other kinds of plants but they can be found in almost every setting and frequently in the most unusual and unexpected places. In a recent trip to the Galapagos Island, a Maidenhair fern was discovered growing in a volcanic rock crevice in a moonscape setting devoid of almost all life. Walls both artificial and natural are "fun" places to look and find ferns. Rarely, do they disappoint you. The great attraction is the places to which they lead you, and the pleasure and thrill of finding and recognizing fern friends. They are part of an international chain with representatives everywhere. Fern chasing gives the traveler something else to see and enjoy. In short, ferns are seductive, leading you on to become one of their lovers. This is the story of many pteridologists (fern followers), and pteridophiles (fern lovers).

In another vein, ferns have inhabited the earth for hundreds of million of years. They were here long before man appeared and may very well be here long after he has disappeared. Despite the fact that they have failed to cure "the thousand natural shocks that flesh is heir to," they have been a "thing of beauty and a joy forever" to poets, playwrights, story tellers, song writers and the seekers of truth and beauty.

In addition to the many ways in which they have contributed to a fuller and richer life, the fate of ferns and that of man are inseparably bound together. Symbolically at least, ferns are forecasters of the future. A world that cannot support fern life cannot support human life. A declining fern population should be regarded as a signal of a deteriorating environment spelling the destruction of all life. Let it not be said that man killed his friends and thus committed suicide. In a more nostalgic mood, let us read a poem by Mary B. Branch called the Petrified Fern:

"In a valley, centuries ago, Grew a little fern leaf, green and slender, Veining delicate and fibres tender; Nervy when the wind crept down so low, Blissful to the tail, and moss, and grass grew round it, Playful sunbeams darted in and found it, Drops of dew stole in by night, and crowned it, But no foot of man e'er trod that way, Earth was young and keeping holiday."

This is the last installment of Dr. Frankel's "Ferns: Fact and Fiction, Fables and Folklore."
Fern Fun
Pteridological Trivia

Knights' Errands

Starting at any letter and moving as the Knight in Chess (1 diagonal and 1 square forward in any direction) spell out the names of 16 individuals who have made a name for themselves in pteridology. Check them off as you track them down.

1. Boott ( )
2. Bradley ( )
3. Braun ( )
4. Butler ( )
5. Clinton ( )
6. Eaton ( )
7. Fee ( )
8. Goldie ( )
9. Graves ( )
10. Lloyd ( )
11. Marsigli ( )
12. Poyser ( )
13. Robert ( )
14. Scott ( )
15. Trudell ( )
16. Wherry ( )

(Roman numeral with letter gives starting square.)

Match the Latin epithets with their English equivalents:

(a) telmateia (1) smoothed
(b) pseudopodium (2) of rocky places
(c) scopulina (3) blunt
(d) laevigatum (4) with sharp projections
(e) pseudomuricata (5) bent-winged
(f) obtusum (6) of puddles
(g) scapulata (7) translucent
(h) anadenium (8) with a false foot
(i) diaphanum (9) lacking glands
(j) campyloteren (10) few-branched

Answers:

1 b-d
2 e-d
3 e-e
4 e-b
5 e-e
6 e-d
7 e-l
8 e-t
9 e-t

FeuNetary Rhymes

Sing a song of spleenworts,
A sorus full of spores,
Four and sixty haploids
Crowding at the doors;
The spores fly off in space,
Isn't that the proper gait
to propagate the race?

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