FROM THE EDITOR’S DESK...

Changing the Guard

Dr. James Montgomery, coeditor of NEWS AND VIEWS, has asked to be relieved of his duties in the preparation of our newsletter. We appreciate what Jim has done for us. Getting a paper started, with editorial details and production problems to be solved, is a big assignment. Your new editor is sure that the Society joins in extending Jim a hearty “thank you” for his efforts and our best wishes for success in his work.

Informal but Informative

During the coming year your new editor hopes to publish under the theme: "Informal but Informative." NEWS AND VIEWS is now in its eighth issue, and to be of value must have the far-reaching support of all our members. With our present plan we hope to have a broader scope of material that will appeal to all. There is a strong and increasing interest in growing and studying ferns which, if encouraged, can strengthen the Society and its program.

To this end we hope that you will let us have your comments and contributions. Mail your material to:

F. Gordon Foster, Editor
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FROM THE PRESIDENT’S DESK...

In the history of all institutions and organizations there are various pendulums that swing one way or another. The American Fern Society has had for most of its existence a happy balance between the amateur fern enthusiasts and the professional pteridologists. Both were involved in the establishment of the Society and both have been active all along in its activities and organization. We still have very active amateurs, but in recent years the pendulum has swung toward the professional end of the spectrum. The number of formal meetings has been limited to the one in connection with the meetings of the American Institute of Biological Sciences each year and the only official field trip has been just prior to the meeting. The annual meeting and foray have generally been well attended by both professionals and amateurs, but it is a great distance for most to travel, and the majority of our membership does not benefit from these Society functions.

The American Fern Journal has in recent years become more and more a strictly professional journal. This has been due largely to the fact that few amateurs have contributed serious articles on fern cultivation or other observations to the Journal, which is quite willing to publish such material.

There is a very great interest in the ferns, both from their broad use as research subjects by botanists (taxonomy, morphology, ecology, physiology, biochemistry, palynology, genetics, etc.) and for their beauty and general interest by the public. It has always been the policy of the Society to serve both these elements of our membership, and it remains so today. Unfortunately, many people join the Society and then drop out after one year when they find there is little to serve their individual needs.

The Council of the Fern Society is acutely aware of this problem, and it is our chief aim to change the present situation. We will do all within our power to give the pendulum a push in the other direction, to satisfy the needs of the amateur pteridologist without sacrificing the scientific level of the Journal and the professional meetings.

To accomplish this we are making changes on several fronts. First, our Newsletter, News and Views, is being expanded to incorporate as many pertinent items of interest to amateurs as possible. Several new columns or sections of articles are being initiated. We must all be aware of the fact, however, that Gordon Foster cannot write the entire newsletter! He wants to edit items coming from our members, and so it is the responsibility of all of us to send in articles or tidbits for inclusion in the coming issues. These should be anything you would like to share with other members—good fern localities, interesting natural or horticultural forms, fern travels, garden shows with ferns, items you need or have for exchange or sale, and so on.

The Journal itself will continue for items of more permanent interest, not only articles by professionals, but rather articles of substance on any fern subject that will be of long-term interest. It is not possible, of course, to draw a sharp line between the Journal and News and Views.

Secondly, our Society in the past gained a great momentum by having frequent meetings and field trips for its membership. We feel certain that this is the key to sustained interest. The British Pteridological Society has great success with its abundant offerings of forays, meetings and shows. We in America have a distinct problem in the great distances across the country, and this has led to the limited number of meetings and field trips. This obstacle can be overcome. Several years ago the Council of the Society advocated the establishment of regional chapters to enable the majority of the membership to get together on a more frequent basis. Nothing was done to implement this resolution at that time. This seems like the best way we can get people with fern interests together. There is no reason why we cannot have regional meetings in several parts of the country, such as New England, the New York-Troy area, Virginia-Pennsylvania, southern Appalachians, Florida (a group has already formed the South Florida Fern Society), Great Lakes, California, the Pacific Northwest, and others. To show that we mean business, Gordon Foster and I are organizing a group in the New York area this fall. If you want to help organize a group in your area, no matter how small or large, please contact me or the Secretary to see if we can help in any way, either with mailing lists, handouts on ferns, etc.

Any group is encouraged to report its activities in News and Views to let the rest of the members know what you are doing and give us ideas on what we could be doing.

AMERICAN FERN SOCIETY MEETING

The American Fern Society will meet with the ATMS at the University of Massachusetts, Amherst, in June, 1973. We will meet jointly with the Pteridological Section of the Botanical Society of America. Persons wishing to present a paper should send the title, their name and address, the time required (not over 20 minutes), and the kind of projection equipment needed by February 15, 1973, to Rolfe Tryon, Gray Herbarium, Harvard University, 22 Divinity Avenue, Cambridge, MA 02138.
CONRAD V. MORTON

It is with great regret that we report that Conrad V. Morton died July 29, 1972, of a heart attack. Mr. Morton had a history of heart trouble but his death was a blow to the fern world. He was for many years editor of the Fern Journal and has always been of great assistance to those interested in ferns. A detailed biography and bibliography will appear later in the Journal.

As an expression of the Society's esteem we are preparing a large memorial issue of the Journal in 1973. The additional cost for the issue will amount to around $700, which we would like to raise by contributions from the members and friends of the Society. We are certain that many of you will want to pay your respects to Mr. Morton in this way. You may send contributions to our Treasurer, Mr. Robert Stolze, Department of Botany, Field Museum of Natural History, Chicago, Illinois 60605. Contributors will be listed in the Memorial issue unless they wish to remain anonymous.

THE FERN COLLECTION AT THE BROOKLYN BOTANIC GARDEN
George Kalmbacher

The fern collection in the greenhouses of the Brooklyn Botanic Garden had exemplary sponsorship because of the association of Dr. Ralph Curtiss Benedict from its very beginning in 1914 until 1953. Dr. Benedict (1881-1965) built up the collection and was its guiding hand all those years as Research Investigator of Ferns. His eminence in this field is attested by the fact that he was the recipient of Fern subjects in Bailey's Standard Cyclopedia of Horticulture. He developed new forms here, and he kept here many varieties and forms of the Boston Fern as a separate section of the fern collection. The latter was his chief commitment. His role at the Garden was incidental to his regular professional career, but in his time he accumulated an excellent herbarium of ferns of the world, which is still maintained as a separate adjunct of the Brooklyn Botanic Garden herbarium.

After Dr. Benedict's tenure with the Garden, there was no fern specialist connected with BBG until this year. On February 26th Mr. F. Gordon Foster was named Honorary Curator of Ferns of BBG. A number of Dr. Benedict's introductions are still carrying on here, and, of course, new ones have been added. Apparently the management of the collection has decided that a few new kinds should be added, and so there is current activity. As in Benedict's time, the collection includes cultivarities as well as wild specimens.

When I came here in 1955 there were close relations between the Garden and Alfred Graf of Julius Röhrers Company, and at that time they had a varied fern selection. I would expect that there was a give and take involved, and we would be getting ferns from Röhrers at times.

As in other plant collections, new plants are acquired by gift, exchange and purchase. We were made a gift of about a dozen native ferns of Hawaii shortly after I came. They were sent by air and arrived during a weekend. Some of them were ferns that will not last if not taken care of in about a day's time. Nearly all failed in short time, and so we learned the lesson that a fern collection cannot grow everything that grows wild and has not been previously tested for reliability.

Another case of exchange was made with Dr. Ulrich Naf of what was then called the Rockefeller Institute, in Manhattan. He was then, and is now, interested in the biochemical factors that initiate the sexual processes in ferns. Here is a case showing that a fern collection can be a source of material for research projects of other institutions. He had big greenhouses for his collection, full of ferns being grown very well, when I visited his collection. I took back for our own collection several fine and desirable pots of ferns.

Of course, this sort of thing leads to exchange of information, and one of the things I learned from him was that there are some fern forms that do not go through the two-part life cycle that is standard information in textbooks of botany, but simply propagate from spores into spore-bearing ferns without forming the regular antheridial (male) or archegonial (female) processes. This was such easy establishment of new plants that these forms are really weeds. This method is practically a sort of vegetative propagation. One of its practical aspects is that when these kinds have a chance to get into another group of plants, such as in our adjoining bromeliad collection, they require eternal vigilance to root out the sprouts of continued invasion.

Dr. Benedict's collection of Boston Fern varieties and forms was kept intact as far as was possible until the closing years of his life as a courtesy. However, it did not elicit any interest from the public as an exhibit, and on his last visit here with the knowledge that without his periodical attention, and no surly of identifying continuity since there is no perfect way of labeling plants that does not involve human weaknesses, he worked over the names and gave the final set to a friend of his who was interested in them.

The Collection as of 1972

In the center of a greenhouse about 13 feet high, 24 feet wide, and 38 feet long, is a raised center bed in which plants are planted in the ground. These are a few tree ferns among the many vigorous plants. There is a bench 24 feet long holding a number of delicate-looking Adiantum and some coarser ones in pots. There are hanging baskets from quite small to very large. Plants have identification labels, and there are a few large "tablets" prominently placed giving fern information for the novice. At one end is a collection of Stegaria Ferns.

The center bed is raised about two feet above the floor level and is contained by walls of very large boulders. It is 49 feet long and six feet wide. There is a Hawaiian Tree-fern, Cibotium glaucum, fairly young but already impressive, another Hawaiian Tree-fern L. chamae-philum, until very young, a Blechnum gibbum with a trunk 2-1/2 feet high, and a patriarchial F. schiedei with several trunks and branches perched high on a stone throne. At the entrance is the large Angiopteris eventu, native from Japan to Australia to Madagascar, a member of the Marattia family of ferns.

There are big hanging baskets of Nephrolepis fijiensis and D. griffithiana, Polypodium diversifolium and P. quercifolium. On the bench one of the species is the uncommon unfornliky Elaphoglossum squamatum, and there are the "fern-allies," pots of Selaginella and Pellaea.

Before 1964 there were occasional popular short courses given on fern identification. It was in that year that F. Gordon Foster's "The Gardener's Fern Book" was published, and Mr. Foster was invited to give a one-day course "Ferns for the Fancier." This proved to be the most popular one-day course ever given and has been repeated once or twice a year since. It is also given at the Garden's Outreach Stations, the Kitchinon Field Station in Westchester County, and the New York Botanical Garden on Long Island. The content of the course varies with the season—Ferns for the Garden in spring and Ferns as House Plants in winter. Whenever possible the fern collection in the conservatories is visited by students in class and at the Outreach Stations a guided tour of the Ferns growing in the woods is an integral part of the course. In addition, students take plants home for their gardens or houses, and Mr. Foster attempts to make a heterogeneous selection for each student to enjoy at home.
Q: Can I bring hardy northern ferns indoors as house plants?
A: Most of our northern plants observe a resting period. Deciduous trees lose their leaves in early fall and their dormant period is quite obvious. By late summer, next year's crosiers of the Shield Ferns, Dryopteris marginalis, D. spinulosa, etc., are very prominent. To force these crosiers in a warm house during the winter may weaken the plant for the coming season. On the other hand, some northern ferns have flourished in greenhouses for years without any apparent dormant period. The greatest danger to the ferns in the house is low humidity.

Q: My asparagus fern has little white flowers and, later, purple/pink berries. What other ferns have flowers?
A: You are probably referring to Asparagus plumosus, a native of South Africa having very fine, fern-like foliage. While considered a fern in the floral trade, this plant is actually a member of the Liliaceae or lily family. Ferns are primitive plants and do not have any flowers.

Q: Do all fern spores look alike?
A: No, spores vary in color, size, shape, and sculpturing. The color of the spores of the Christmas Fern is golden yellow; those of the Shield Fern are dark brown; Osmundas have green spores, and the little Grape Ferns have creamy white spores. While the spores from one species are very uniform in size, the sizes and shapes vary greatly among different genera. The spores of some Lady Ferns measure about 26 x 38 microns, while the tiny Curly-grass Fern has spores about 65 x 90 microns. As a yardstick you may consider the diameter of a human hair to be about 75 microns.

BRACKEN AS A WEED

Bracken (Pteridium aquilinum) is a bad weed in various parts of the world. In France and England, for instance, I have seen large fields filled with bracken so dense that it is difficult to cross them; in such places the bracken grows to the exclusion of all other plants. This dominance of bracken has generally been explained on the basis of competition, the bracken being assumed to be more aggressive in competing for soil, water, and air than other plants. However, recent work by Stephen R. Gleissman and C. J. Muller ("The Phytotoxic Potential of Bracken," Madroño 21: 299-301. 1973) has shown that competition is not the sole or perhaps even the chief reason. It has long been known that bracken is poisonous to livestock, but now it is shown that it is poisonous to other plants. Gleissman and Muller made water extracts of the leaves (both live and dead) and demonstrated that this extract contained a toxic substance which inhibits the germination of seeds and the growth of other plants. They showed also that this substance is leached out of the plants and into the soil by rain, the bracken being able to destroy its competitors. The chemical nature of the toxic substance, assumed to be a phenolic compound, has not yet been determined--C. V. Morton.

SELAGINELLA AS A FOOD PLANT

Ferns and fern-allies have been thought to be immune to attack by insect larvae, probably in the case of the ferns at least by the presence of poisonous compounds. There is now a first report of butterfly larvae feeding on a species of Selaginella (S. horizontalis) on Barro Colorado Island in Panama ("Butterfly Feeding on Lycopsis," by M. C. Singer, P. R. Kehrlich, and L. E. Gilbert. Science 172: 1341, 1342. 1971). The butterfly Euphydryas xanthocephala (Nymphalidae, subfam. Satyrinae) deposits its eggs on the Selaginella and the larvae feed on it to maturity, causing considerable damage to the plants. The larvae of most butterflies of this subfamily feed on grasses and sedges. The authors suggest that there may be some biochemical similarity between this Selaginella and some grasses, thus originally causing some mistakes to be made in oviposition. The Selaginella apparently proved a suitable host, because it grows in dense mats, is abundant, and also probably because it is safe, not being eaten by any other insects or predators. The larvae would not eat another Selaginella (S. articulata) growing abundantly nearby--C. V. Morton.

KAY BOYDSTON HONORED BY LOS ANGELES FERN SOCIETY

The name of Kay Boydston has appeared in the American Fern Journal many times. Her patient and time-consuming research work in the study of the Appalachian Aspleniaceae has done much to clarify certain mysteries in the hybridization among the species of this genus (American Fern Journal Vol. 48 No. 4).

NEWS AND VIEWS is pleased to share with you a news note which appeared in the bulletin of the Los Angeles International Fern Society.

"CITATION AWARD: One of our members, KAY BOYDSTON, has received a special Professional Citation for outstanding achievement in horticulture. She is director of Fernwood Arbororetum at Niles, Michigan, an institution she built up from the beginning with her own talent and enthusiasm. Fernwood, Inc. covers ninety acres with trees, wooded paths, ground covers and rock gardens, and it has an ambitious and useful program with a great deal of emphasis on ferns. The Fern Society is happy and proud to report this award."

COLLECTOR'S ITEM

A copy of Thomas Moore's book, The Ferns of Great Britain and Ireland, has come to light. Those who know fern books will recognize this as a rare find, a limited edition having been printed in 1857. Plates of ferns in full size were printed by Henry Bradbury in the time-consuming color process of the day known as "Nature Printing." Some of the pages are loose, requiring rebinding of the volume. No price has been set but the owner is open for bids. Contact the Editor for further information.

If you have any books for sale or that you wish to buy, please let NEWS AND VIEWS know.
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