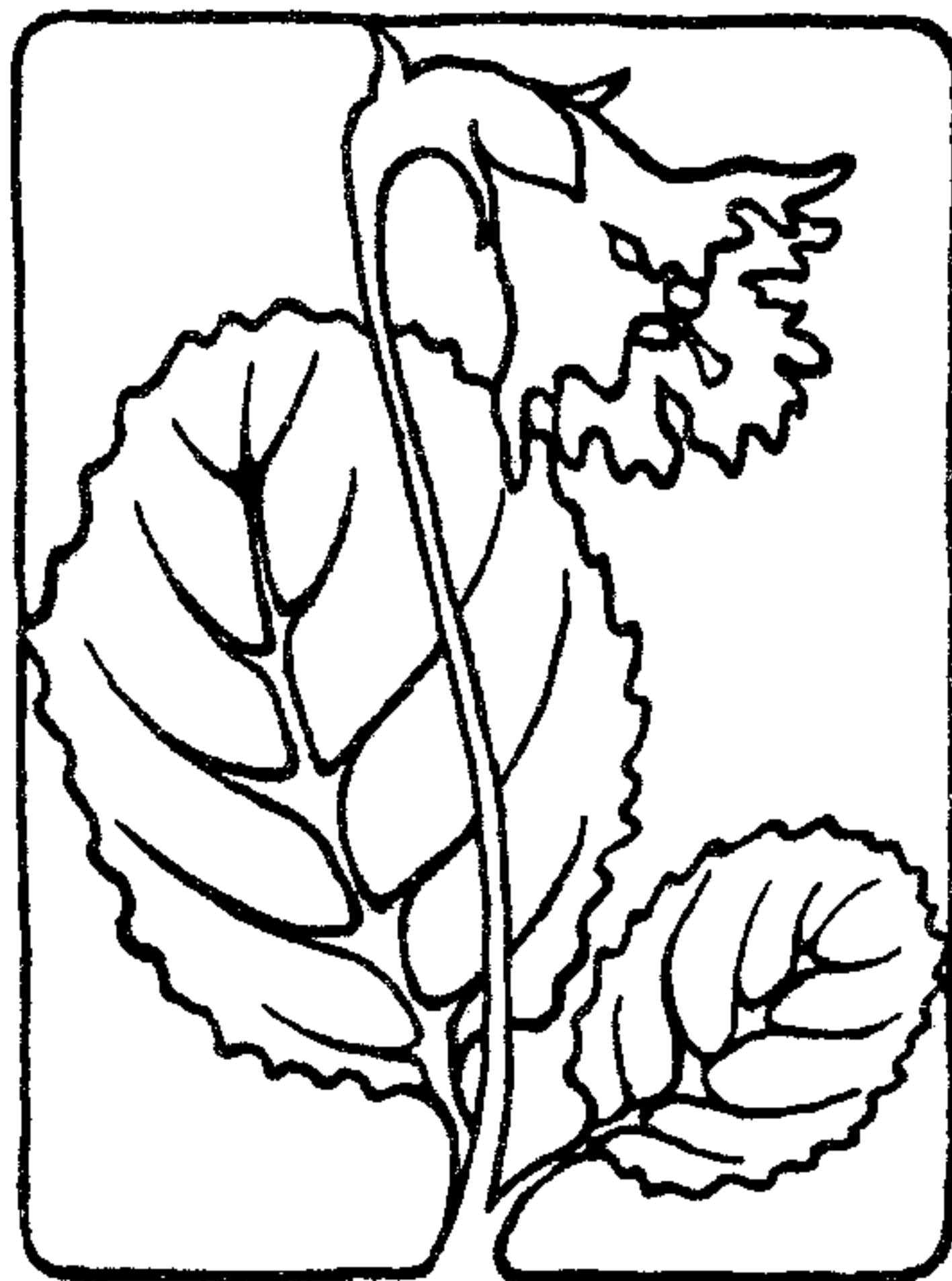


SHORTIA

NEWSLETTER OF THE
WESTERN CAROLINA BOTANICAL CLUB

SPRING 1990



DOROTHY RATHMANN, Editor

FROM THE PRESIDENT.....Bill Verduin

I know all of you are as eager as I am for our field trips to get under way. Alder catkins are shedding pollen and bittercress is already in bloom. These two seem to be the early birds. Let me remind you about a few procedures and courtesies related to our trips.

At our meeting place, look especially for an unfamiliar face. Welcome visitors, new members, or "seldom goers" lest any should feel unwelcome. Do offer rides -- and accept rides -- to conserve gas, to facilitate parking and, most of all, to make new friends. Don't always ride with your best buddies.

A good trip leader has scouted not just the trail but the flowers, too. If you get ahead of the leader, you will miss interesting discoveries he will point out. And don't lag too far behind, either, for the same reason. A good leader will appoint a sweep to bring up the rear and will slow forward progress, if necessary, to keep from fracturing the group. A good leader will make every effort to ensure that everyone in the group has an opportunity to see any rare or unusual plant or any point of particular interest.

Remember, these are field trips. We come to learn and share. Never hesitate to ask questions for fear you are asking about some common flower that "everybody knows." None of us was born with knowledge -- we all learned each and every flower one name at a time. Bring your field guide and hand lens. Writing names will help to make them stick. Sure, this slows down the group -- but the whole purpose of the trip is to learn and enjoy. One of the best trips we had last Fall took over two hours to cover one mile. Our trips are not for hikers!

On some of our trips this Spring, we plan to offer beginners and serious learners an opportunity to move at a snail's pace without slowing down the larger group. A knowledgeable person will lead this group and will deal with basics: how to use a lens, how to use a simple key such as Newcomb's, what to look for when identifying a "stranger." The Program Committee hopes this experiment will encourage more serious learning by those who find they can only pick up an occasional tidbit on the typical trip but wish for more personal attention.

And a matter of courtesy. When we leave the parking area after a trip, be sure the last car is not left before its motor is running. Many of our parking areas are not lovely places to be stranded with a dead car after all your friends have just driven off.

Field trips are fun trips. Come often and enjoy!

GIFTS TO OTHER ORGANIZATIONS

At the Annual Meeting WCBC members approved the following contributions: \$100 to the NC Nature Conservancy; \$75 to the NC Arboretum; \$75 to University Botanical Gardens at Asheville; \$75 to Southern Appalachian Highlands Conservancy (Roan Mt.).

OFFICERS FOR 1990.....Sam Childs

PRESIDENT, BILL VERDUIN: To our good fortune, Bill agreed to serve another year. His qualifications are many: degree in Forestry from the University of Michigan, director of the Kanuga Conference, association with Camp Sequoia, teacher of Asheville School for Boys, and a resident in this area since 1950.

VICE PRESIDENT, DEAN CRAWFORD: Dean retired following a career as Professor of History at the University of Minnesota. His interests and experiences with many conservation groups will be a contribution to our Club.

SECRETARY, CHARLOTTE CARMEN: Charlotte retired from a teaching career in Springfield, Massachusetts and has been active in Friends of the Library and as a remedial reading teacher in Drysdale School. She will be serving the Club as Secretary for a third term.

TREASURER, JOHN SABY: John is a research physicist who, in retirement, has expanded his interests in gardening and botany. He is also a "third timer."

RECORDER, ELTON HANSENS: With Elton as Recorder we indeed have a seasoned worker: past president of WCBC, long time contributor to the Buck Springs Nature Trail, and an experienced staff member of the Recorder Committee. As a retired entomologist from Rutgers University, Elton has given another dimension to the Club.

SECOND WIND HALL OF FAME AWARD TO DICK SMITH.....Tom Hallowell

At the WCBC Annual Meeting on January 19, 1990, the Honors Committee presented **Dick Smith** with the Second Wind Hall of Fame award. Dick has expanded and extended his lifetime interest in botany into retirement activity of benefit to many people in western North Carolina and beyond. His recently published book, **WILD PLANTS OF AMERICA**, adds generously to that! Locally he has presented wildflower programs, led field trips and taught classes at Blue Ridge Community College. In other activity, Dick has served as volunteer for the U. S. Forest Service, Blue Ridge Parkway, Connestee Falls Fire Auxiliary, and other local organizations. Congratulations, Dick!

NEED A HAND LENS?

Anne Ulinski reports satisfaction with a 10x hand lens (jeweler's loupe) which she recently purchased for \$4.95 from Mystical Merchandising, PO Box 416, Mystic, CN 06355 (Phone: 203-572-0485). You might like to try hers before ordering for yourself.

1989 RECORDER'S REPORT.....Bessie Sinish

The Annual Meeting of the Western Carolina Botanical Club is a good time to review some of the past year's activities. I will report on one.

During this past year a Recorder's Committee of six members, including the Chairman and the President, was formed. Although the following objectives were reported in SHORTIA, they bear repeating:

- (1) To record the rare or unusual flower, tree, moss, fern and lichen -- and large masses of flowers.
- (2) To learn of the different habitats visited, paying attention to what grows in each type. For example, what grows in an evergreen forest, a bog, an open field.
- (3) To follow the succession of plants of the different seasons by returning to a specified area many times.
- (4) To study the importance of plants in the ecological system.

Following all WCBC field trips, trees, flowers, ferns, etc. are recorded. Many thanks to Anne Ulinski who, over the past three years, has computerized these lists. These are for the members to use and can be obtained from the Chairman of the Recorder Committee. These lists are also used as a guide for setting up our field trips as well as suggesting articles in SHORTIA.

In this coming decade, Conservation is of the utmost importance -- The Thing. The WCBC, itself, is not a conservation organization but it does behoove us to be aware of how plants play a part in our ecological system so we, as individuals, can understand and participate in conservation. The above objectives contribute in this area.

With Newcomb in hand, Fern and Tree Finders, and a 10 power magnifying glass, anyone can go into the field to observe, to feel, to smell, to explore -- to enjoy nature with friends on our field trips or by themselves.

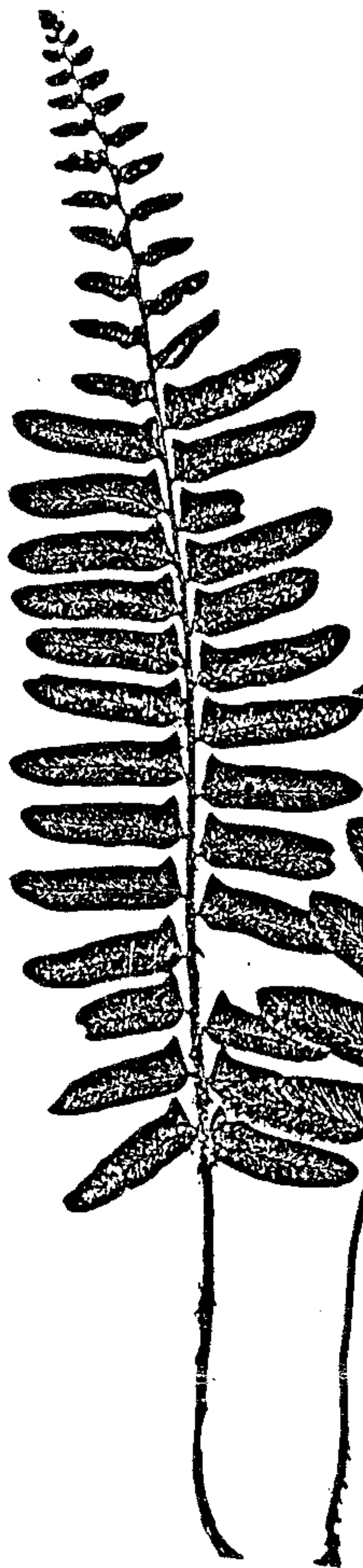
True, we have many knowledgable members, but in a sense we are all beginners -- just having different stages in our interest. I like this quotation: "The past is but the beginning of a beginning and all that is and has been is but the twilight of a dawn." Do come and join us.

In closing I would like to thank my committee: Elton Hansens, Grace Rice, Laverne and Bud Pearson, and Bill Verduin.

How Can One Tell Them Apart?

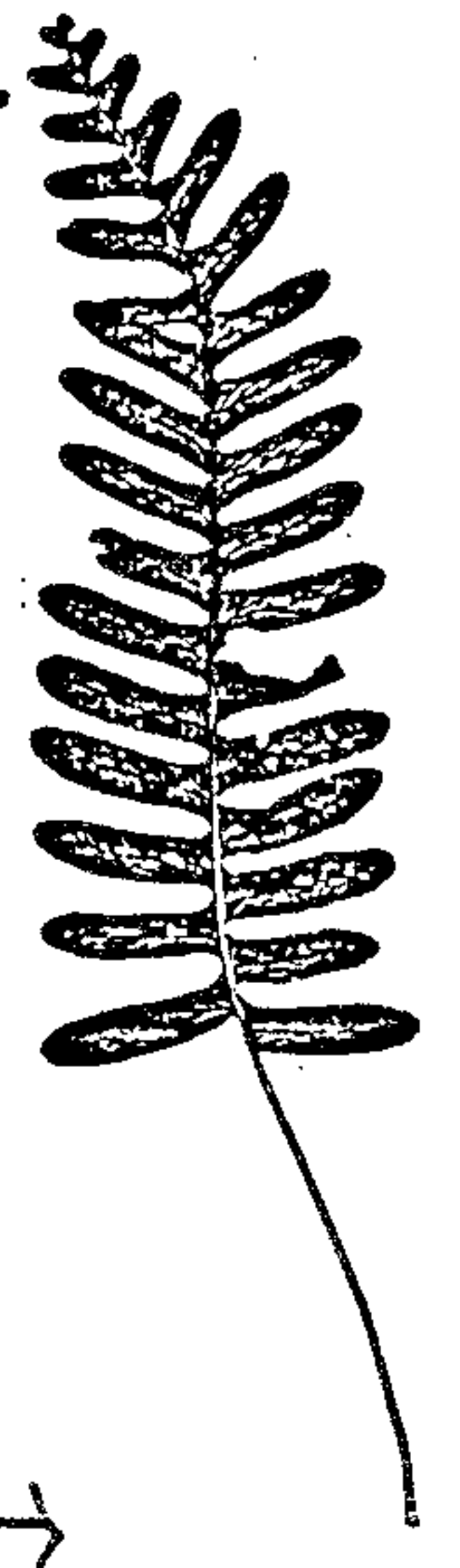
Some winter ferns stand--or lie--bright green,
even until their new spring fronds appear.

Three are commonly seen,
but how can one tell them apart easily?



CHRISTMAS FERN
(*Polystichum acrostichoides*)

COMMON POLYPODY
(*Polypodium virginianum*)



- ← Leaflets attached by tiny stalk
- Leaflets attach directly; no stalk
- Also:
- ← Fertile fronds (remnants of spore cases massed on back of tip sharply narrowed at tip)
- Fronds all the same shape (remnants) of spore cases on back as large, brown individual dots)
- ← Leaflets with "ear lobes" (auricled)
- Leaflets not lobed
- ← Stalk green, scaled
- Stalk green, smooth
- ← Clusters throughout woodlands
- Mats on woodland rocks

All silhouettes
1/3 natural size

EBONY SPLEENWORT
(*Asplenium platyneuron*)

Can be identified from
the two ferns above by
its stalk and shape.

- Stalk dark, reddish brown
- Fronds very narrow
- Also:
- Leaflets auricled
- Leaflets taper narrower toward base of frond
- Small sterile fronds lie flat
- Taller fertile fronds stand upright



Some other evergreen ferns:

- MARGINAL WOODFERN
Dryopteris marginalis
- INTERMEDIATE WOODFERN
Dryopteris intermedia
- MOUNTAIN SPLEENWORT
Asplenium montanum
- WALKING FERN
Camptosaurus rhizophyllus
- CLIMBING FERN
Lygodium palmatum
- GRAPEFERN
Botrychium dissectum

--Barbara Hallowell

INDEPENDENT FERN GAMETOPHYTES.....J. Dan Pittillo

During the past few decades bryologists, in consultation with pteridologists, have come to realize that often among their moss collections are fern gametophytes that are not typical of our common temperate terrestrial gametophytes. Three families are represented, namely, Hymenophyllaceae, Vittariaceae, and Grammitidaceae. Many of these gametophytes do not typically produce mature sporophytes throughout their range. They have been found in much of the eastern United States and elsewhere, including parts of western North America, Japan, India, Hawaii and Central America. These plants were first brought to the attention of a broader scientific community by W. H. Wagner, Jr. and A. J. Sharp in an article in SCIENCE in 1963.

One of Wagner's students, Don Farrar now of Iowa State University, has become one of, if not the leading, gametophyte fern specialist. He has been studying their morphology and recently differentiating them with the aid of gel electrophoresis of their enzymes, a more powerful comparative tool than those of anatomy and physiology. This technique has allowed him to compare certain enzymes of different populations of similar and dissimilar species in order to help determine the amount of relatedness. Some of his work presents some intriguing possibilities when related to the paleoecological history of the independent gametophytes. There are four independent types of gametophytes in our area:

Grammitis nimbata is represented at only one locality in the United States, near Highlands, North Carolina. It has survived here through the most severe cold and dry periods in recorded history and produces occasional, more vulnerable, sporophytes. Dr. Farrar noted three small fronds here in late summer 1989.

Vittaria, a thalloid form about the size of a small fingernail, is perhaps the most common independent gametophyte, often found on acidic boulders and cliff bases wherever there is low light and sufficient moisture. Vittaria lineata occurs over most of Florida into the southeasternmost corner of Georgia but the enzyme banding of the independent Vittaria gametophyte in the gel is more similar to the tropical American species, Vittaria graminifolia.

The Hymenophyllaceae is represented by two genera, Hymenophyllum and Trichomanes. Hymenophyllum tunbridgense occurs naturally in the Eastatooe Gorge of South Carolina and the gametophytes, very similar in appearance to Vittaria, occur in an adjoining four-county area. Trichomanes, comprised of fine bits of green lent-like filaments, is represented by two species, T. petersii and T. boschianum. The independent Trichomanes gametophytes have enzyme banding patterns distinct from the above species in the Southern Appalachians, but similar patterns in Arkansas and Louisiana. Thus, there are probably at least three species involved.

With the exception of Grammitis, which Farrar suggests might be a recent long-distance introduction into the Southern Appalachians, the independent gametophytes are probably remnants of once wide-spread species that may have been more normal in their life cycles. This implies that the Tertiary flora, the wide-spread forests that had some tropical elements, may have contained these ferns. What is a bit difficult for us to imagine is how they have made it through the glacial periods and continue to survive throughout the mountains in our spruce-fir forests as well as in northern areas. Vittaria populations extend from northern Alabama to western Kentucky and northern Pennsylvania while Trichomanes overlaps this area and extends westward into Arkansas and northward into New Hampshire. This must mean that the gametophytes really have a much greater tolerance to cold weather than their sporophytic counterparts and have apparently "hung on to life by the tiny threads" that make up their genes with little other protective cellular material.

LOOK AGAIN !

We frequently come across the Hop Clovers--diffusely branched plants with trifoliate leaves and tiny yellow papilionaceous flowers packed into little heads that gain our notice principally because of their numbers. Superficially, they tend to look alike, and all have come here from Europe, Asia, or even Africa, but there are three distinct species.

The largest and most erect is Trifolium agrarium. This can be distinguished by its palmately divided leaves (which means that all three leaflets are sessile) as contrasted with the pinnate leaves of the other species (in which the terminal leaflet is stalked). Intermediate in size is T. procumbens (or T. campestre), which in addition to being slightly smaller in all respects trails weakly over the ground; this has given it the name of Low Hop Clover.



TRIFOLIUM AGRARIUM

Even smaller is T. dubium, known as Least Hop Clover. Here the inflorescence consists of only 5 to 15 flowers, compared with at least 20 in T. agrarium and T. procumbens.



MEDICAGO LUPULINA

The pinnate-leaved Hop Clovers are often confused with another weed of Eurasian ancestry: Black Medick (Medicago lupulina). In the former, the yellow corollas wither to a pale brown color but remain in place, thus concealing the legumes, or "pods". On the other hand, the flowers of Black Medick fall off at maturity. This exposes tightly coiled, conspicuously veined, kidney-shaped legumes that turn black as they ripen. Interestingly, this plant has a familiar relative of very different appearance--the blue-flowered M. sativa, which we know as Alfalfa.

Dick Smith

A quarterly publication of the Western Carolina Botanical Club

Editor: Dorothy Rathmann

Distribution: Frances Gadd

Please submit contributions for next issue by May 15, 1990 to:

Dorothy Rathmann, Editor
Carolina Village Box 23
Hendersonville, NC 28792

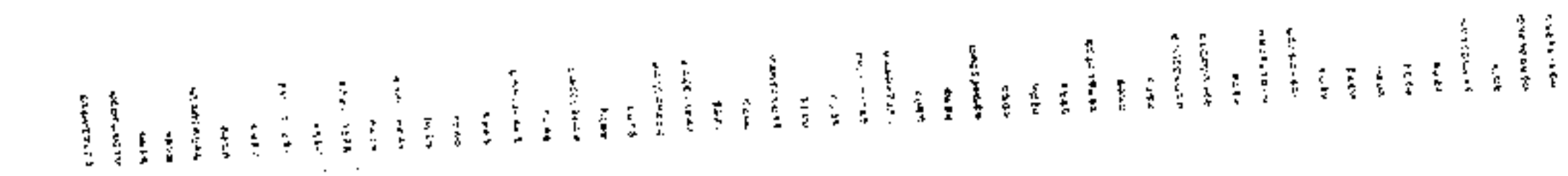
SHORTIA

c/o Frances Gadd
218 Pheasant Run
Hendersonville, NC 28739



PEAR514 T287390016 1290 03/13/90

PEARSON
10061 E SARAH ANN PL
TUCSON AZ 85748-6750



L. & H. Pearson
2514 Kanuga Road
Hendersonville, NC 28739