MISSISSIPPI NATIVE PLANT SOCIETY

February 1981

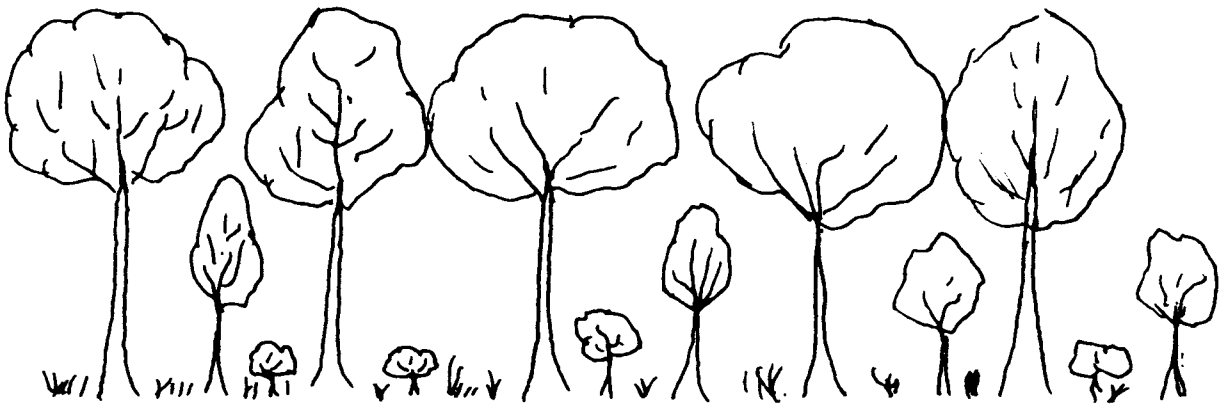
Another View of a Forest: Structure

Bare trees are so much a part of the winter landscape in Mississippi they are hardly noticed with passing thought. The unattentive eye will usually register an image of a lifeless forest, so lost from familiar form with leafless and anonymous trees that conscious thought moves on after momentary recognition of the striking architecture in a tree crown.

The mind is such a keen observer that much more information was gathered, perhaps unknowingly, during the process of observing one particular tree. Before attention could finally become focused on a single tree, the shape and arrangement of other surrounding species had to be noticed. What actually registered in that fleeting observation was one of the most unique and distinguishing features of a forest. It concerns structure or the arrangement of species in a community.

Without heavy foliage to obscure view, the winter forest can be seen as a layered community. Mature forests in Mississippi usually have five vertical layers or strata. The two tree layers consist of the crowns of the tallest trees that form an upper canopy, beneath which occurs a more open subcanopy of immature and shorter trees. The third layer is dominated by shrubs, the fourth by herbs, and the fifth is a surface layer of low growing herbaceous plants, mosses, or lichens. This pattern of stratification is characteristic of deciduous forests in eastern North America.

Deciduous forests, appropriately named because of the deciduous or leaf-dropping habit of the predominately woody species, cover eastern North America from the Canadian border to the Gulf of Mexico. They also cover major land areas in only two other parts of the world: central Europe and eastern Asia. Although the species composition varies due to the degree of geographic isolation between these areas, a surprisingly close relationship is found by the dominance of deciduous tree growth-form and the widespread distribution of a number of characteristic genera and species. The deserts of the world, for comparison, are each inhabitated by very different groups of plants.



The deciduous forest formation of eastern North American is divided into several regional associations which recognize difference in the environment, species composition, and structure. Nevertheless, these associations share strong similarities as indicated by widely distributed genera as oak (Quercus), maple (Acer), beech (Fagus), and basswood (Tilia). Others found found throughout a large portion of the area include hickory (Carya), ash (Fraxinus), birch (Betula), tuliptree (Liriodendron), and formerly chestnut (Castanea). The cohesiveness of deciduous forests as a unit of vegetation may be more apparent by considering the fact that deciduous forests of Japan more closely resemble the deciduous forests of eastern North America than either resemble the forests of western North America.

Species composition is only one of several methods to describe and compare features of vegetation. Structure or the arrangement of the component species, is another closely related viewpoint that creates a different perspective without absolutely requiring that all the species be known. The strucutural approach may be particularly attractive to those with limited species familiarity. Of course, to gain the full insight afforded by structural observation, it is necessary to know the identity of each component species. Stratification, as a structural feature, is normally so well defined in a mature deciduous forest it can be seen without knowing the identity of a single species. Inevitably, as the various layers become recognized, a curiosity about which species exist in each strata will prompt new identifications.

Some deciduous forest types in Mississippi have less than five vertical strata. In the Longleaf Pine Belt of the southern one-third of the state, a subcanopy may be completely absent beneath the upper canopy of longleaf pine. This condition is frequently found on the more well drained sandy upland soils where periodic fire retards the development of a woody understory. In a more hydric environment, such as a bottomland forest in the Mississippi delta subject to frequent flooding and standing water, all three of the lowermost strata may be poorly developed or even absent is some local conditions. Stratification is also indistinct in an immature forest that has been disturbed by recent logging. In this situation, an overlap occurs between the canopy, subcanopy, and shrub strata as the forest begins to regenerate and succeede toward a more mature stable condition.

Unfortunately, the number of climax forests in Mississippi continues to disappear in the same manner as the last virgin forests did at the turn of the century. Nevertheless, scattered examples of mature deciduous forest types can be found without great difficulty in virtually every county in the state.

Once a community is found and the various strata are recognized, prepare for a different look as the seasons progress through the forest. Spring will no longer explode quite so unexpectedly. Instead, a series of events rather unique to each stratum will develop with corresponding, but not necessarily related changes in other strata.

To begin, note the earliest patterns of emergence and new growth in spring. The perennial species in the herbaceous and ground layer will show the first signs of growth as they emerge from buds directly on the ground or from buds situated on underground storage organs such as bulbs, rhizomes, and corms. The next strata to demonstrate growth are the shrub, subcanopy and canopy when buds unfold and new shoots elongate.

Before the canopy foliage expands, most of the profusion of wildflowers in the herbaceous strata will grow, flower, produce seed, and die back. Since less than ten percent of the sunlight will penetrate the heavy foliage of the canopy, the rapid life cycle of such herbaceous species is an interesting adaptation in synchrony. Many other patterns of adaptation involving growth, reproduction, and senescence will pass through the strata before the next dormant winter season.

The result of examining stratification is basically the creation of a new system of observation. It helps reduce what may have first appeared as a chaotic jungle of vegetation into a forest of defined internal structure, it frees inquiry from the ritual of naming plants, it stimulates the desire to know the identity of unknown species since their pattern and arrangement in the forest is of interest, and finally, it leads to other viewpoints in addition to composition and structure that are used to understand more about plant communities.

Will McDearman

Field Trip and Program Scheduled in March

To take advantage of the early spring flora in the southern part of the state, the first meeting and field trip this year has been scheduled for Saturday, March 21 in Picayune. You will not want to miss this excellent outing and program!

Dr. Sidney McDaniel, a fellow member who is also Professor of Botany at Mississippi State University and Director of the Institute for Botanical Exploration, will be our very knowledgeable field trip leader. We will meet at 9 A.M. at the visitor center approximately one mile south of Picayune on Interstate 59. From there, we'll caravan a couple of miles to an arboretum that is currently being developed under the guidance of Dr. McDaniel. When completed, the arboretum will display the diverse native flora of Pearl River County. Please remember to bring a lunch.

From the arboretum, we'll follow Dr. McDaniel on a 30 to 40 minute drive south to a savannah, one of the most floristically distinct type of plant communities in Mississippi. Savannahs are open, virtually treeless communities restricted to the southern part of the state. They Consist primarily of a diverse and prominent herbaceous flora. Many of the wildflowers, insectivorous plants, and other noteworthy species that will be seen are restricted to savannahs and a few other closely related coastal plant communities. There is little shade on a savannah, and soils are often saturated in low areas where the water table is near the surface, so dress appropriately. The group should return to Picayune in plenty of time to rest, freshen up, and eat dinner before the evening program.

Dr. McDaniel will present a slide program that evening on "The Flora of Amazonas Peru". His program will feature the plant collecting and related activities of the Institute for Botanical Exploration in Peru. This is a rare and exciting opportunity to view a region of tremendous botanical diversity. The program begins at 7 P.M. in the Picayune Public Library directly across from Crosby Memorial Hospital.

IN PICAYUNE:

Sandman Motel (601) 798-3491 off I-59 near Ford Dealer. Singles $14.50, Doubles $18.70 with 4 people.

Picayune Motel (601) 798-7508 Hwy 11 North on west side

IN SLIDELL (across the river from Picayune)

Days Inn (504) 641-3450, I-10 at US 190 Exit, Single $24.88-29.88 + Tax, Double $34.88-39.88 + Tax, Restaurant - Breakfast, Lunch, and Supper.

Holiday Inn (504) 643-9770 I-10
Single $28.00-30.00, Double $30.00-32.00
Restaurant Breakfast, Lunch, Supper

Ramada Inn (504) 643-9960 I-10
Single $25.00, Double $28.00, Extra persons $3.00/room, Restaurant 6:30 A.M. - 10:00 P.M.

CAMPGROUNDS

Jellystone Campground (601) 798-2239 Picayune
A family type campground with trailer hook-ups and tent areas
Fees: $9.00 Camping with no hookup
$10.00 Camping with hookup
$2.00/Day/Person for hiking, etc.

KOA Campground in Slidell

Note: These are listed for your reference. No recommendations are made.

Book Review

Identification of Southeastern Trees in Winter. Richard J. Preston, Jr. and Valerie G. Wright. The North Carolina Agricultural Extension Service, 1978. 113 pages, illustrated, paperback, $1.50.

For the price, this is unquestionably the finest publication on the subject available and it is certainly worth more than several other more expensive books of otherwise similar comparison.

As the title indicates, the book is a set of keys using twig characters to identify leafless trees. The manual is divided in three sections. The first describes features of twigs, lenticels, pith, leaf scars, buds, and bark that are used in the keys. Each feature is illustrated by line drawings. Also included in the first section is a carefully written explanation and example that clearly describes how to use the identification keys. The second section provides keys and descriptions to the genera with line drawings to illustrate the prominent features of each genus. The last section is a final key to the species of each genus.

The success of the manual is not only found with the orderly, accurate and sufficiently detailed keys, but can be equally attributed to the authors' preparation and instruction to those who may shy away from using keys. While descriptive terminology must be used, the novice won't feel lost with the language. The authors even describe potential difficulties that may be encountered with often variable species such as in the oaks and hickories. As stated in the introduction, the book is intended for wide use, from the ecologist to the "many citizens who love trees".

With keys to 213 species, there is thorough coverage of southeastern species in a volume of ideal dimension (9" x 6" x ¼") for field use. Virtually any tree, including conifers, found in Mississippi can be identified. Even if you aren't interested in identifying trees in their winter condition, the manual can be used to supplement other keys based primarily on leaf and fruit characters. You can't lose with this one.

Note: Cary Norquist said she would place an order for those interested. Make your checks payable to her and mail to 111 N. Jefferson St., Jackson, MS 39202.

Officers Elected

In accordance with constitutional provisions, the society recently held the first election for officers. Although only one candidate was nominated for each position, 24 members returned their ballots in a welcomed gesture of support. Dr. John Burris at the Mississippi Museum of Natural Science kindly served to count the ballots. Newly elected officers for 1981 are:

President
Dr. Robert Stewart
Box 195
Merigold, MS 38759

Vice-President
Kirk Hill
Box 30
Pinola, MS 39149

Secretary-Treasurer
Travis Sally
202 N. Andrews Aven
Cleveland, MS 38732

Editor
Will McDearman
2101 McDowell Rd.
Jackson, MS 39204

Appreciation is expressed to our past acting officers who served during an organizational period of the society.

President
Fred Searcy, Jr.
P.O. Box 183
Fulton, MS 38843

Vice-President
Dr. Robert Stewart

Secretary-Treasurer
Travis Sally

Editor
Will McDearman

Past Field Trip

The September meeting began on a Friday night with a fine meal of smoked venison held on the banks of Westville Creek at Kirk and Linda Hill's place in Pinola. Kirk did an excellent job of preparing the venison provided by Johnny Bush. Aubrey Hill, Linda Hill, Dee Stewart, Dot Bush, and Martha Cunningham served some heaping side dishes. After the relaxing evening, several retired to local motels and quite a few camped in the Hill's pasture by the creek.

Saturday morning was overcast but not serious enough to threaten the field trip. The group met again at the Hills then drove a short distance to the "put in" on the Strong River. Seventeen people in eight canoes launched and successfully ran the first shoal that was encountered hardly more than 300 feet downstream. The canoeing experience of the group was mixed, ranging from novice whitewater ability (not to be confused with 'Mississippi' whitewater) to none at all. No problems were expected and none occured. The river was low, so just about everyone lodged in a couple of shallow shoals that were overcome by a little push. If another float trip down the Strong is scheduled in the future, and you want to go but feel hesitant, get some advise from Cary Norquist and Travis Sally. They'll tell you what a team can do.

Sidney McDaniel provided botanical authority during the trip. A lot of the vegetation was noted as we slowly floated by, but several stops were made on small bars and shoals. Woody vines, trees, shrubs, grasses, a few wildflowers, ferns, aquatic, and semi-aquatic species were seen.

After lunch on a bar below one of the larger shoals, the final rapid was run and the group waded up a small creek with canoes in tandem to the take-out at John Fuller's cabin. The peaceful natural setting of his homesite was notably appreciated after the float down the free-flowing and scenic Strong River.

A very brief introductory workshop on fern identification was held by Will McDearman that afternoon back on the banks of Westville Creek. Fresh specimens were examined with handout literature on basic fern morphology. Copies of a key to Mississippi ferns and fern allies by Dr. Murray Evans at the University of Tennessee were distributed.



Members and guests (not all shown) at September meeting and field trip

After some rest, it was time to treat an appetite. Sixteen folks then drove to Mendenhall for some home cooking at the Revolving Tables Restaurant to complete an enjoyable and well planned meeting.

The following is a partial list of species observed on the field trip.

TREES AND SHRUBS

Betulaceae - birch family
- Betula nigra - river birch - common along river, especially abundant in low sandy alluvium along creek at take-out

Fagaceae - beech family
- Fagus grandifolia - American beech - on high banks and in rich woods
- Quercus austrina - bluff oak - side of Hwy 28, east of put-in on Strong River
- Q. nigra - water oak - frequent in low woods along river
- Q. laurifolia - laurel oak - occassional along river

Magnoliaceae - magnolia family
- Magnolia grandiflora - southern magnolia along river, a very large old tree seen by Fuller's cabin
- Illicium floridanum - star anise - shrub, locally abundant on moist ridge above alluvial woods at Fuller's cabin

Rutaceae - citrus family
- Zanthoxylum americana - toothache tree - one seen, on ridge at Fuller's cabin

Theaceae- tea family
- Stewartia malacodendron - silky camelia - classified as "rare" on the state list of endangered species, one small tree seen on ridge by Fuller's cabin

Platanaceae - sycamore family
Platanus occidentalis - sycamore - along river in low woods
Ulmaceae - elm family
Planera aquatica - water elm or planer tree - uncommon, one unusually large tree seen on the edge of the river, this species is usually a smaller tree
Taxodiaceae - bald cypress family
Taxodium distichum - bald cypress - locally common in shallow sluggish water, and near old slough
Celastraceae - bittersweet family
Euonymus americanus - strawberry bush - shrub on high bank above small bar, only one noted, in fruit

VINES

Apocynaceae - dogbane family
Trachelospermum difforme - climbing dogbane - low woods behind lunch break bar
Asteraceae - sunflower family
Mikania scandens - climbing hemweed- near edge of old slough
Vitaceae - grape family
Ampelopsis arborea - pepper-vine -
Vitis sp. - wild grape
Bignoniaceae - trumpet creeper family
Anisostichus capreolata - cross-vine - low woods along river

FERNS

Osmundaceae - osmunda family
Osmunda cinnamomea - cinnamon fern - locally common in colonies near edge of water and on moist banks
Blechnaceae
Woodwardia aureolata - netted chain fern - infrequent, on low river banks, edge of water
Aspidiaceae
Onoclea sensibilis - sensitive fern - infrequent, low banks, edge of river

HERBS

Campanulaceae - harebell family
Lobelia cardinalis - cardinal flower - occassional on stream banks, in flower
Podostemaceae - riverweed family
Podostemum ceratophyllum - riverweed - aquatic, submersed in mats attached to rocks in shoals
Asteraceae - sunflower family
Helianthus angustifolius - narrow-leaved sunflower - locally abundant on roadside by Fuller's cabin
Poaceae - grass family
Uniola latifolia - wood oats - frequent in colonies on banks of river
Paspalum fluitans - paspalum - aquatic, floating grass, large mat noted in shallow sluggish water below first shoal

Logo Needed

Virtually any sort of organization lends visual identity to itself in the form of a distinctive logo, letterhead, trademark, or acronym. Our society could certainly use something and your input is needed. Don't be concerned with mastering art, go ahead and sketch your idea. If you don't feel comfortable with a sketch, a written description will serve equally well. The design possibilities are so endless, any idea you have is important. The membership will make the final selection. Please send suggestions to the editor, Will McDearman.

Financial Status

The Mississippi Native Plant Society begins a new year with a solid financial balance of $288.79. The new calendar year is also time to renew membership. The board of directors designated the first of each year to renew annual membership as many volunteer organizations have done in an effort to simplify bookkeeping. Since in many ways this is the society's first regular year, dues paid by new members after the September 1980 field trip and meeting are considered valid for 1981.

State Plant List Review

During the upcoming annual meeting of the Mississippi Academy of Science on March 5 and 6 in Jackson, a group of botanists will meet with the Mississippi Natural Heritage at the Mississippi Museum of Natural Science to review the state's list of special plants. The list, which is a classification of special plants to five categories - endangered, threatened, rare, peripheral, and special concern - was developed by the Natural Heritage Program from the authoritative recommendations of numerous botanists from Mississippi, Alabama, Georgia, and Tennessee. An endangered species is one in danger of extinction throughout all or a significant portion of its range in Mississippi. The least critical category is a species of special concern defined as one that has been suggested as possibly threatened , endangered, rare or peripheral, but adequate information is not available to determine its status.

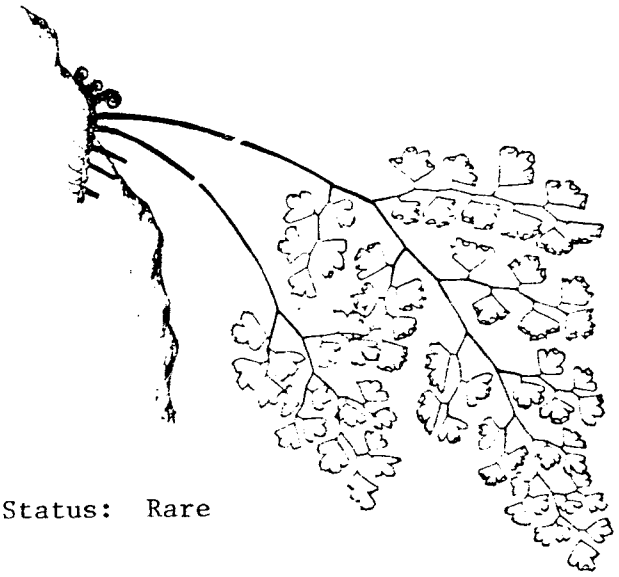
Ken Gordon, a botanist with the Heritage Program located in the Museum of Natural Science, has been a principal coordinator by soliciting and compiling information since 1975 from botanists and herbaria in the southeast.

By 1978, the list was ready for the first comprehensive review and evaluation. That year, ten botanists met in conjunction with an endangered species symposium of the Mississippi Academy of Science. Several important contributors were unable to attend, but thier written comments were reviewed with the group's evaluation of each species.

The meeting scheduled in March is basically a continuation of the process that began three years ago. With more information now available concerning their number, distribution, ecology, and threat to destruction, the species will be reevaluated. The status of some species may be changed to a more or less critical category. A few species may even be dropped entirely from the list. Ken Gordon noted that such changes are normal as the list becomes more refined and will be limited to a very small percentage of the 294 species.

For a copy of the list, contact Ken Gordon, Mississippi Museum of Natural Science, 111 N. Jefferson, Jackson, MS, 39202

Adiantum capillus-veneris



Status: Rare

Identification: Adiantum is distinguished from other genera of the Pteridaceae family in Mississippi by the discontin-ous sori located on the margin of each leaflet of pinnule. Adiantum pedatum - maidenhair fern - is the only other species of the genus to occur in Mississippi. The frond of maidenhair fern is forked in a fan-like pattern while the frond of venus-hair fern is pinnate or feather-like with a strong central axis.

Distribution: The largest populations are known from only two counties in the state: Clarke and Wayne. One other isolated occurence has been found in Wilkinson County.

Ecology: Restricted to moist faces of limestone cliffs and outcrops, and on moist basic soils of sheltered ravines. Outcrops of the Glendon and Mariana limestone occur elsewhere in Mississippi, but lack the shelter and seepage characteristics found in Clarke and Wayne counties. Well developed colonies arch from and hang on hard stable limestone. The species also exists isolated and scattered on seeps of steep, exposed, basic soil, but lack longevity due to slumping of the slope with erosion.

Comments: Venus-hair fern deserves protection and should only be observed, never collected.

Activity

If you've noticed a short article about Mississippi Native Plants in several local newspapers, then you've noticed the work of Nadine (Sam) Bush. Sam says she has found several newspapers interested in such a feature. In fact, an editor from the Bolivar Commercial sent me (Will McDearman) a note requesting more articles on plants. Sam has opened the door and she is requesting your contribution. Hope you'll take an interest and contact her at 112 Victoria Circle, Newton, MS, 39345.

Sam Bush and Kirk Hill recently gave a program to the Forest Garden Club. They were well received by an interested audience.

Travis Sally is on the go with his popular wildflower slide program. He recently made a presentation at the Cottonlandia Museum in Greenwood.

Growth

For a newborn organization, membership continues to grow. Almost 80 people have joined. A membership list will be distributed in the near future.

MISSISSIPPI NATIVE PLANT SOCIETY
DEPARTMENT OF BIOLOGICAL SCIENCES
DELTA STATE UNIVERSITY
CLEVELAND, MS 38733