

**MISSISSIPPI NATIVE
PLANT SOCIETY
DECEMBER 1985**



Carolina Holly
Ilex ambigua (Michx.) Torr.

Illustration by Anna Asquith

From the President:

Thank you for your vote of confidence in selecting me to serve as President of the Mississippi Native Plant Society for 1986. I look forward to this year with a great deal of pleasure.

I hope all of you will make plans to attend as many field trips this year as possible. The first one will be held on April 11, 12, and 13 at Tishomingo State Park. We will all be arriving at Tishomingo on Friday p.m. but since everyone doesn't get there until late, we won't have a formal program or meal served by the cafeteria that night. We will plan to have Open House at the Lodge on Friday night. We will have snacks, coffee, hot chocolate and a lot of good fellowship. Details of this get-together will be in the next newsletter. We will have at least 3 different field trips on Saturday a.m. and a repeat of these in the p.m. Field trip leaders at this time are: Sidney McDaniel, Tim Smith and Steve Timme. Steve will lead a trip that will be slowed down for the benefit of those who might have difficulty in conquering the more difficult areas. Our older members probably would find this field trip more to their liking. We will have at least one field trip on Sunday a.m. and plan to end this one just before noon. There will be no noon meal in the cafeteria. For those of us who like to rise early and do some birding or just plan to enjoy a nice walk, we will have nature walks before breakfast on Saturday and Sunday. Be sure and bring your binoculars. Also, don't forget your **Rain GEAR**. It always rains at Tishomingo when we are there. Information on making reservations will be found in this newsletter. Get your reservations in early.

We will definitely have a trip in southeast Mississippi and another in southwest Mississippi later this year. All future field trips will be announced in the next newsletter. Our fall meeting will be our annual business meeting where we will have election of officers.

Please mark your calendars for April 11, 12 and 13 and let's plan to have a good Mississippi Native Plant Week-end!

Faye

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ILEX IN MISSISSIPPI

Sidney McDaniel
Institute for Botanical Exploration and Dept. of Biological Sciences
Mississippi State University

Ilex, with approximately 400 species, is one of 2 or 3 genera in the family Aquifoliaceae. Hollies have a widespread natural occurrence, though they are lacking from the Arctic region. Species occur in both the temperate and tropical regions of both hemispheres. However, a majority of species occur in temperate and subtropical South America and eastern Asia. Some species, such as the English holly-Ilex aquifolium and several asiatic species long have been used as ornamentals. Paraguay tea or maté, Ilex paraguariensis, furnishes a caffeine containing beverage widely used in southern South America.

Shrubs or trees. Leaves alternate, evergreen or deciduous, entire, crenate, serrate or spiny. Flowers mostly in fascicles in the axils of the leaves; usually the female and male flowers on separate individuals; flower parts in 4's or 5-8's; petals white. Fruit red or black, less frequently yellow or orange, fleshy, with 2-8 hard seeds (nutlets). Flowering in early to late spring. Fruit maturing in late summer to November, often in some species persisting into or through the winter.

Key to Mississippi Species

1. Leaves evergreen, coriaceous.
2. Leaves spiny-dentate, rarely with only a single apical spine. I. opaca
2. Leaves entire or serrate to crenate.
 3. Leaves crenate throughout. I. vomitoria
 3. Leaves entire or toward apex crenate or few-toothed.
 4. Leaves mostly less than 1 cm wide, fruit red.
 5. Leaves 4-6 mm wide, entire. I. myrtifolia
 5. Leaves 7 mm or more wide, usually with a few teeth. I. cassine
 4. Leaves more than 1 cm wide, fruit black.
 6. Leaves crenate-serrate with rounded teeth, apex usually rounded; fruit bitter; a clonal shrub rarely exceeding 1-2 m, mostly of open drier areas. I. glabra
 6. Leaves entire or with a few divergent spinulose teeth toward apex, apex bristle-tipped; fruit sweet; a shrub or tree 2 m or more, mostly in dense wet thickets. I. coriacea
1. Leaves deciduous, varying in texture, but not coriaceous.
 7. Leaves broadest near apex. I. decida

7. Leaves mostly broadest near middle.

8. Pedicels greatly exceeding flowers and fruit (4X or more as long). I. longipes

8. Pedicels scarcely equalling to 3 X as long as flowers and fruit.

9. Leaves softly tomentose beneath, often rounded at base, serrulate.

I. amelanchier

9. Leaves glabrate to pubescent beneath, but not tomentose, attenuate at base, serrate, often sharply so.

10. Calyx lobes 4 or 5 (rarely 6), nutlets smooth; lowland areas often wet at times.

I. verticillata

10. Calyx lobes 5-8, nutlets ridged; drier slopes and sandy woods.

I. ambigua

Ilex ambigua (Michx.) Torr.

Carolina holly.

(See cover)

Shrub or small tree to 5 m. Fruit bright red. Dry to mesic slopes, often above seeps, and sandy pine woods. Mostly rather local. Coastal counties north to central MS. (Choctaw, Winston cos.) and less frequently to Tishomingo Co.

Forms northward with larger leaves have been referred to I. montana T. & G. (I. ambigua var. montana (T. & G.) Ahles).

Ilex amelanchier M. A. Curtis

Sarvis holly.

(Fig. F)

Shrub or small tree to 5 m. Fruit dull red to brownish red, large, maturing sporadically and persisting into winter. Titi swamps, hammocks, cypress drains, and bogs. Often locally abundant. Coastal counties (Harrison, Hancock, Pearl River and Stone). A very attractive shrub in fruit.

Ilex cassine L.

Dahoon.

Shrub or small tree. Fruit red. Savannas, Jackson Co., rare. Plants of MS. and AL with smaller narrower leaves have been called var. angustifolia Ait. This form needs further study.

Ilex coriacea (Pursh) Chapm.

Large Gallberry.

(Fig. C)

Shrub or shrubby tree 1-4 m tall. Fruit black, maturing late summer, falling rather quickly. Bogs, savannas and hammock, usually wetter areas than I. glabra. Coastal counties north to Greene Co.

Ilex decidua Walt.

Possumhaw, Deciduous holly. (Fig. E)

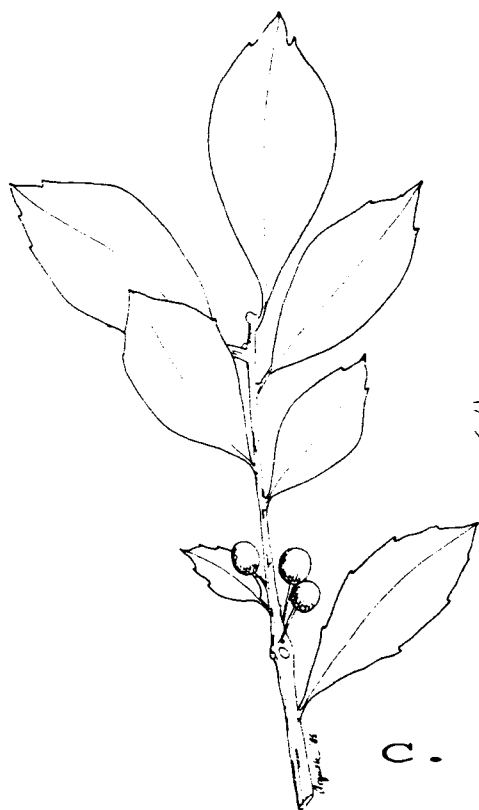
Shrub or tree to 10 m. Fruit red, persistent until early spring. Deciduous woodlands, fencerows, swamps and savannas. Common. Our most widespread species, found throughout the state.



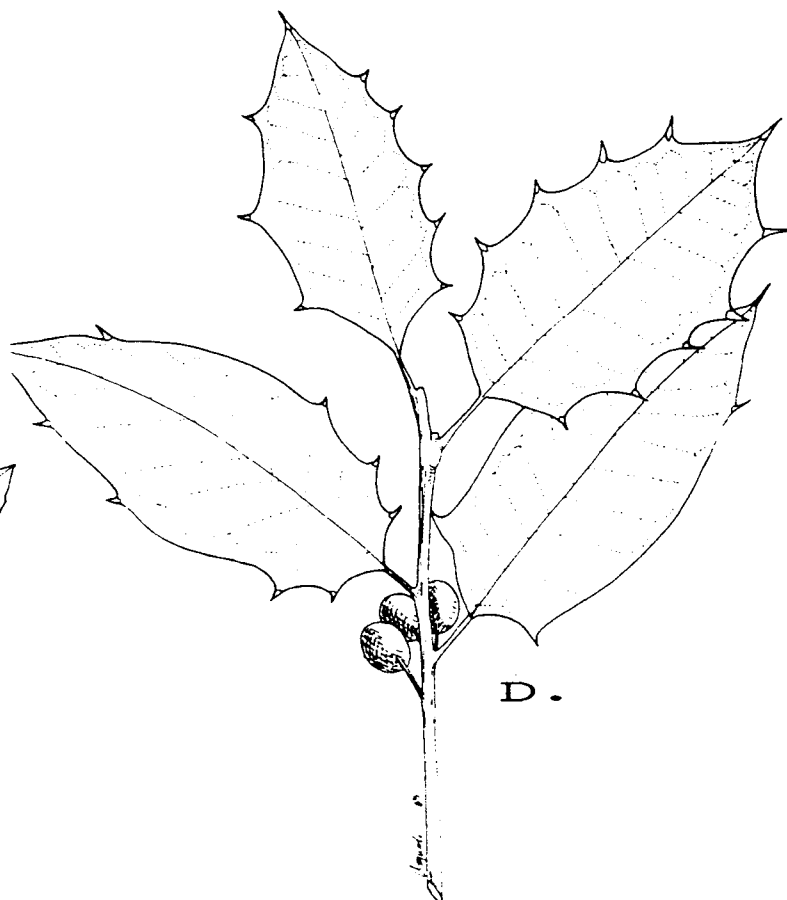
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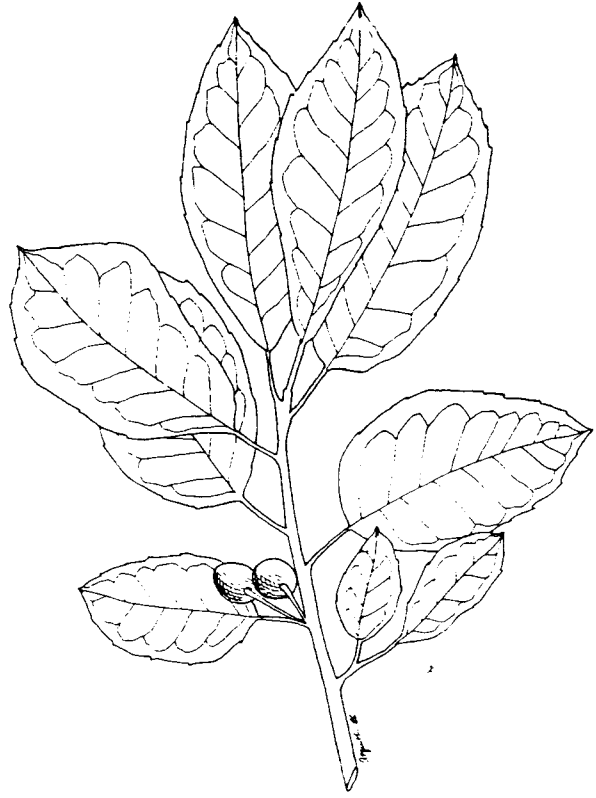
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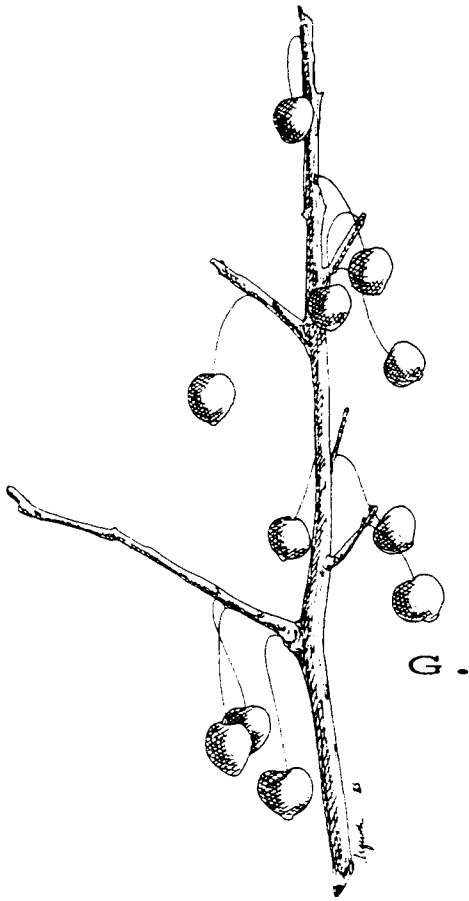
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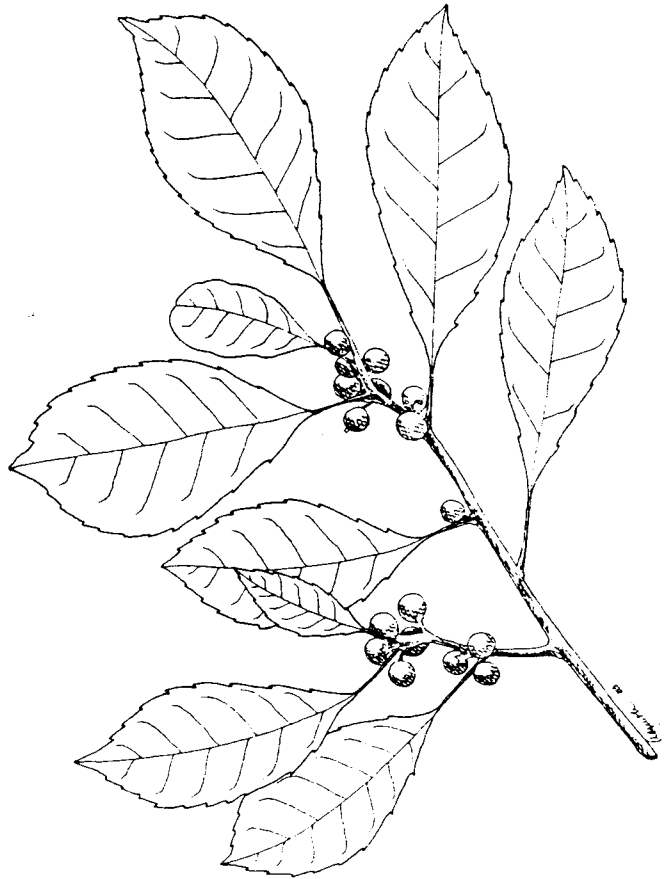
E.



F.



G.



H.

Ilex glabra (L.) Gray Gallberry.

Shrub to 2 m, often shorter, rhizomatous and forming clonal patches, a fire species. Fruit black or black-purple when mature, persisting into the winter. Common and locally abundant in coastal counties north to Wayne, Jones and locally to Lauderdale counties. Mostly open pine woods and drier edges of savannas and bogs.

Ilex longipes Chapm. ex Trel. Georgia holly. (Fig. G)

Shrub or small tree to 4 m. Fruit red, persistent, pendulant on long pedicels. Rich woods, ravines and hillsides. From Pearl River County northward at least to central MS (Webster Co.). Although considered by some to be a variety of I. decidua, this is a very distinct valid species. Worthy of cultivation.

Ilex myrtifolia Walt. Myrtle-leaved holly. (Fig. A)

Shrub or small tree to 5 m. Fruit red, persistent through the winter. Hammocks, pond cypress swamps, flatwoods, locally common. Coastal counties north only to Pearl River Co.

Ilex opaca Ait. American holly. (Fig. D)

Tree to 20 m. Fruit red, persistent through winter. Various habitats, often in mesic hardwoods, sometimes near streams or even at times in rather dry sites. Common through much of the state, very rare in Delta. A superb ornamental.

Ilex verticillata (L.) Gray Winterberry (Fig. H)

Shrub to 3 m. Fruit red. Bogs and spring heads, rarely more mesic sites. Southern MS (Pike, Pearl River cos.) north to Calhoun, Benton and Tishomingo cos., not west of North Central Plateau.

Ilex vomitoria Ait. Yaupon (Fig. B)

Shrub or intricately branched small tree to 5 m. Fruit red, persistent. Sandy woods, sand dunes, edges of marshes, and roadsides, locally abundant. Islands, coastal counties north to Neshoba Co. Commonly used as an ornamental, also used by Indians as a ceremonial drink.

GROWING NATIVE HOLLIES FROM SEED

William L. Giles

American holly (Ilex opaca), possumhaw (Ilex decidua) and yaupon (Ilex decidua) have very hard outer coats called endocarp around their seed. In addition to the physical deterrent to rapid germination, seed of American holly and probably seed of the other two species have embryos which are immature even when the fruits containing them are fully ripe. In order to germinate, holly seed must be in an environment which will promote the development of the embryo and hasten the deterioration of the hard coats. Some lots of seed require as long as three years to germinate while other lots may germinate much more quickly.

One method of providing an environment favorable to the germination of holly seed is that of stratification in moist peat in a home refrigerator for 90 to 120 days. Plastic

sandwich bags make excellent containers for the peat-seed mixture. Place a rubber band around the bag to prevent its unrolling. Be sure to put a label in the bag with the name of the holly and date placed in stratification written in pencil or water-proof ink.

Prepare peat by moistening and storing in a plastic bag two or three days ahead of use. The material should be moist, but not soaking wet. Limit the quantity of peat to approximately four times the volume of the seed to be stratified. After stratification, empty the peat-soil mixture on the top of a 6" plastic pot filed to within about one inch of the top with potting soil. Cover the pot with plastic to prevent drying, place it out of direct sun light and hold at 70° to 80°F. When germination begins, remove the plastic from the pot but continue to keep the contents moist by watering. As seedlings appear, transplant them to four inch pots. A good potting medium can be made by mixing approximately equal parts of peat, sand and perlite. Place pots in partial shade, water regularly and add nutrients through use of liquid fertilizer solutions. Move the seedlings up to larger pots as they grow. They can be planted in place at the end of the first growing season or the beginning of the second one.

Holly seedlings grow slowly at first, but make up for lost time when planted on favorable sites. We have American hollies twenty feet high planted ten years ago as one-year seedlings. Hollies prefer a moist, but not water-logged soil. They do best when shaded during the hottest part of the day.

If no seedlings appear after the stratified seed have been planted, do not give up. Bury the pot to within an inch of the top in the ground in near full shade. Cover the pot with screen wire and mulch with pine straw. Water regularly and check for seedlings.

A method of seedling production alternative to the one described above involves planting freshly harvested holly berries or cleaned seed on a small marked plot under pine or hardwood trees. Clear all litter from an area about 15" square, marking the corners with stakes. Plant the seed or berries on the soil surface, then mulch with pine straw or partially decayed leaves. Cover with poultry netting to deter rodents, then add more mulch. Water the plot during dry periods and check for the appearance of seedlings. Seedlings should be dug and potted as described before.

Not all species of Ilex produce seed that are difficult to germinate. Seed of a native Ilex verticillata (winterberry) collected in Kemper County germinate readily after 30 days or less in cold stratification. This holly, a deciduous shrub, produces flowers and fruits the second year after germination.

To clean holly seed, rub the berries between pieces of screen-wire to break the skins and loosen pulp. Repeated washing with clean water and macerating by hand will separate seed and pulp. Working with a shallow pan, the good seed will sink and the hollow seed and pulp float. With a little practice the unwanted material can be poured off and the pure seed retained.

I found that the process is more enjoyable when one imagines panning gold with the good seed as nuggets and the rest sand. May all you nuggets grow into glorious hollies!

[Note to MNPS Newsletter readers: If you wish to try Dr. Giles's suggestions and would like a source of seed, please write to IBE, Box EN, Miss. State, MS 39762. Several species should be available. No charge, just part of our "missionary" work.]

New Flora of Mississippi Project

The Crosby Arboretum Foundation has generously agreed to support the writing and publication of a manual of the Plants of Mississippi. This work will include keys to families, genera, and species, short descriptions, and illustrations of most species. Publication is expected in the winter of 1988-1989. The manual, under the editorship of Dr. Sidney McDaniel, will include written contributions of over a dozen botanists all with direct connections to Mississippi. Readers of the MNPS Newsletter and others who wish to help support this effort may send tax-deductible contributions to Institute for Botanical Exploration, Box EN, Mississippi State, Mississippi 39762.

The Cove

16 June 1984 was cloudy, hot, and humid, but meteorological conditions did not suppress the enthusiasm of 4 intrepid botanists (Wilma Mitchell, Travis Salley, Robert Stewart, and Wayne Morris). They entered the area from the north, traversing a woods road past several bearsfoot (Polymnia uvedalia) bushes. Travis led them to the yellow lady's slipper (Cypripedium calceolus) that he had found in April 1978. Although too late in the season to see the lovely flowers, the group was gratified to find this species at an accessible site within the state. Jack-in-the-Pulpit (Arisaema triphyllum) was common on the forest floor along the banks of the ravine. Ferns were abundant; the 5 species seen were broad beech-fern (Thelypteris hexagonoptera), Southern lady fern (Athyrium asplenoides), grapefern (Botrychium virginianum), Christmas fern (Polystichum acrostichoides), and resurrection fern (Polypodium polypodioides). Wayne's florotropic eyes also spotted pinesap (Monotropa hypopithys), dwarf crested iris (Iris cristata), and Dutchman's pipe (Aristolochia serpentaria).

After lunch the field trip members proceeded to the southwest end of the Cove and climbed down a steep bank to reach the creek. This area is approximately 200 ft wide with 60-to 100 ft banks that stand almost vertical in some places. In the cool, shaded arena could be seen a community of American beech (Fagus grandifolia), big leaf magnolia (Magnolia macrophylla), and tulip poplar (Liriodendron tulipifera) interspersed with understory species such as witch hazel (Hamamelis virginiana), American holly (Ilex opaca), and cucumber tree (Magnolia acuminata). On the floor of the ravine Robert found star vine (Schisandra glabra), an uncommon vine of damp woods.

When they had climbed out of the ravine, Butch (Wilma) led the group along its rim to a stream that has banks covered with maple-leaved viburnum (Viburnum acerifolium); this shrub is common in the Appalachian Mountains but is found only in disjunct locations this far west. A search ensued for pennywort (Obolaria virginica), which Travis had seen blooming in April, but none was located. Oak species found in the woods surrounding the Cove were northern red oak (Quercus rubra), scarlet oak (Q. coccinea), black oak (Q. velutina), Shumard oak (Q. shumardii), and white oak (Q. alba). Although most plants had already flowered, several vines were in bloom just outside the Cove. Coral honeysuckle (Lonicera sempervirens) was espied high in a tree; flowers of Virginia creeper (Parthenocissus quinquefolia) were seen for the first time by some group members.

Around 2:00 p.m. the botanical party ended the trip with an appropriate ceremony--drinking cold soft drinks and making tentative plans to return the following spring when the yellow lady's slipper blooms.

DR. WILMA ANN MITCHELL

**Anyone wishing to see this area may contact Wilma at 601-636-4896 (home) for a personally guided tour.

##The editor extends an apology to Dr. Mitchell for the late publication of this article.

NEWS AND NOTES

News and Notes was suggested by Dr. Sidney McDaniel and will appear in each newsletter as long as enough information is available to publish. News and Notes will include any information pertaining to the MNPS membership. Please send information to Dr. Steve L. Timme, Institute for Botanical Exploration, Box EN, Mississippi State, MS 39762.

Faye Swan: Faye is vice-president of the Oktibbeha Audubon Society for 1986. Part of her duties include arranging programs for the meetings. Faye will become a **Grandmother** in July.

Steve Timme: Steve received his doctorate in December, 1985 from Mississippi State University. His Dissertation is entitled "Bryophyte Floristic and Ecological Studies of the Amazon River Basin, Department of Loreto, Peru". He will be teaching in the Department of Biological Sciences, MSU through Summer 1986 and will be involved in the Mississippi Flora Project.

Wilma Mitchell: Wilma was promoted to Principle Investigator GS12 with the Corps of Engineers, Mississippi. She will be involved in environmental monitoring of habitat changes.

John Bruza: John was employed as a botanist with the U. S. Corps of Engineers in New Orleans, Louisiana.

Opal Dakin: Opal was recently hired by Hinds Jr. College, Raymond, Mississippi to teach biology. She is a 1984 doctoral graduate of Mississippi State University.

Gary Burrows: Gary received his B.S. degree in biology in December, 1985 from Mississippi State University. He is currently employed by Lakeland Nurseries in Jackson.

Gwen Perkins: Gwen and her husband have moved to Edisto Island, South Carolina where they will be engaged in Wildlife and Plant Studies for the next 3 years. They plan to return to Mississippi thereafter.

Wayne Morris: Wayne is an incoming graduate student in the Department of Biological Sciences, Mississippi State University working under Dr. Sidney McDaniel. His master's thesis will involve a floristic study of Grenada County, Mississippi. He has received a \$1600 fellowship from the Crosby Arboretum Foundation to help support his research.

DUE REMINDER

Membership dues are for the calendar year and should be paid by January of each year. Dues for 1986 are due now. The number on the mailing label of your newsletter indicates the last year for which you were paid. If you are one of the few that have not paid for 1985, your prompt payment for that year and this will be appreciated. Please indicate any change in name or address and the year (s) for which payment is being made. All correspondence pertaining to dues should be addressed to **Travis Salley**, 202 N. Andrews Ave., Cleveland, MS 38732. Telephone (601) 843-2330. Dues are STUDENT: \$2.50; INDIVIDUAL: \$5.00; FAMILY: \$7.50; LIFE: \$75.00. Higher categories of individual membership are SUSTAINING \$10.00 and CONTRIBUTIN: \$25.00. Make checks payable to Mississippi Native Plant Society.

Logo

Congratulations are extended to **Mary Norman Brown** for the winning logo for the Mississippi Native Plant Society. The logo will appear in the next issue of the MN^{PS} newsletter. Thanks go to all who contributed ideas.

OF INTEREST

The Department of Biological Sciences will host a number of botanical seminars this spring semester that may be of interest to members of MN^{PS}. These seminars are held at 12:00 noon on Fridays in Harned Biology Building, Room 119 (lecture hall), MSU. The following seminars are scheduled:

February 21: Dr. Elsie Quarterman. Vanderbilt University Tennessee. "Cedar Glades-What Good Are They?"

April 18: Dr. Paul Redfearn, Jr. Southwest Missouri State University. "Plant Geography and Botanical Exploration in China"

May 2: Dr. Steve Timme. Mississippi State University. "Bryological Studies in the Amazon River Basin"

THANKS

The editor wishes to thank the director (Dr. Sidney McDaniel) and staff of the Institute for Botanical Exploration for their help in getting the Newsletter folded, stamped and mailed.

Mississippi Native Plant Society

Steve L. Timme

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