
Mississippi Native Plant Quarterly

Mississippi Native Plant Society

May 1994

I found an orchid in my lawn!!!

by Vic Rudis

It was an ordinary Saturday morning in early November. The only remarkable thing was that Starkville had its first hard frost the night before. As is my custom, I walked around my yard to inspect nature's handiwork before tackling the weekend chores. I was particularly interested in inspecting the "experimental area" -- a periodically mowed, troublesome section of lawn that I had "let go" to see what it could produce on its own.

Out of the corner of my eye, I noticed a small white spike of unopened flowers which I immediately associated with asters, another species in bloom at the time. On hands and knees, I noticed that the eight-inch spike of unopened flowers was not an aster, but oddly resembled an orchid!

By now I was excited. I ran back to the house and reference books to confirm my suspicions. My wife asked, "What's got you so thrilled!" Tingling all over, I told her of my latest find. Because one often cannot buy native orchids due to the difficulty in reproducing them, native orchids often are associated with primeval natural, rather than man-made, ecosystems.

After the whole family had a chance to see it and take some pictures, I planned to cut it and preserve it for future reference. I thought the flower stalk would



Spiranthes magnicamporum

keel over and die, as a harder freeze was predicted the next evening.

My son, Jeffrey, stopped me. He saw the scissors and said, "You're not going to cut it! Don't kill it!" Luckily, I took my son's advice. The orchid not only failed to be affected by the 24 degree F. temperature, but bloomed during a warm spell over the next two weeks. On an exceptionally warm day I detected a faint sweet odor from the flowers and saw it pollinated by bumblebees.

To explain how the orchid "happened" to appear in my yard, let me explain the habitat. The

lawn where I found the orchid is established on about six inches of clay underlain with calcareous or chalky soil. In winter, though this section of lawn is on a slope, the soil remains soggy for several days after a rain. Moss is present, although noticeable only in winter. In summer the soil is bone-dry. Deep cracks appear during periodic drought. Soil pH is about 7.5. North Starkville, Pontotoc, Lowndes County and adjacent counties of Alabama, and other parts of Mississippi near Jackson have similar habitats.

Maintenance: In late summer 1992 I burned the area. No supplemental watering ever. I have been periodically mowing and weedwhacking since 1991, about once every six months. Since occupying the lot in 1987, I added granular fertilizer and a light broadcast of white clover in 1988. A grass killer has been used in spots primarily to eliminate Johnson grass and reduce the fescue population. This year I've thrown in some seeds of Rudbeckia Spp., Echinacea purpurea, Coreopsis and Oenothera tetragonia.

Bermuda grass, centipede grass and white clover present in other areas of the lawn are rare in the experimental area. During summer 1993, the section was dominated by fescue which grew to two feet, and seed heads which grew even taller. In late fall of 1993, this section was about 50 percent fescue, 30 percent broad-leaved miscellaneous forbs (Oenothera speciosa, Aster spp., Coreopsis lanceolata, Rudbeckia hirta and other non-grasses), 10 percent Johnson grass and 10 percent exposed soil.

As you can see, "lawn maintenance" borders on neglect, save for occasional cutting. Contrary to popular belief about orchids, periodic disturbance is one of the factors associated with habitats where many of the small native orchids appear.

Based on its flowering time and presence on calcareous soil, Sidney McDaniel suggested it is Great Plains Ladies'-tresses (Spiranthes magnicamporum), perhaps the latest-blooming, cold-hardy herbaceous plant in Mississippi. Named in 1973 as distinctly separate from another late-blooming species on more moist, boggy areas (Nodding Ladies'-tresses, S. cernua) S. magnicamporum occurs in calcareous areas from Indiana to North Dakota and south to Alabama and New Mexico. In Mississippi S. magnicamporum grows to 20 inches and has been found in Clay, Jasper, Lowndes and Oktibbeha counties. Sidney has seen it in calcareous outcrops at the Botanical Garden in Sessums, typically in areas burned in previous years.

For those not blessed (or cursed) with calcareous soil, nine other Spiranthes are known to occur in Mississippi: S. cernua, S. lacera, S. laciniata, S. longilabris, S. odorata, S. ovalis, S. praecox, S. tuberosa and S. vernalis. The most common, S. vernalis, is found between May and July in moist pastures and infrequently-mowed areas. In Illinois it is found on dry, broomsedge (Andropogon)-dominated old fields. Disturbances typical of the habitat where it is abundant include light grazing, periodic mowing or burning.

If you're got a terrible lawn in need of reseeding, or know of areas that have been periodically disturbed, keep a lookout for these wonderful gems of nature.

Instead of weekly mowing, fertilizing and weed killing, why not try letting a small section of lawn "go wild"? You can always weedwhack it down or (with a permit where needed) burn it if you don't like the effect. Give nature a chance to show what she can do.

Native orchid culture, particularly germination and life-cycle of species under field conditions, is not well known. Many native orchids are associated with fungi and live a subterranean existence during most of the year. The presence of selected amino acids released by disturbance may be involved in precipitating germination or flowering. I'd appreciate hearing about cultural experiments and experiences with disturbances that foster the appearance of native orchid flowers.

For more information on orchid species and habitats, check the following references:

Morris, M. Wayne. 1989. Spiranthes (Orchidaceae) in Mississippi. *Selbyana*. 11: 39-48.

Sheviak, Charles J. 1974. An introduction to the ecology of the Illinois Orchidaceae. Illinois State Museum Scientific Papers XIV. Springfield, IL: Illinois State Museum. 89 p.

For a list of uncommon species of chalky soils in Miss. see: Morris, Michael Wayne; Bryson, Charles T.; Warren, Randy C. 1993. Rare vascular plants and associated plant community from the Sand Creek chalk bluffs, Oktibbeha County, Mississippi. *Castanea*, 58 (4): 250-259.



NEW T-SHIRTS HERE!!!
You might mark how long you've been in the MNPS by how many different society t-shirts you've had. The current design, shown at left. These are great looking shirts!!! For information on ordering, see page 11.

Your help is vital to promote artificial marshlands for wastewater treatment

by Becky Gillette

The last two issues have focused on how artificial marshland wastewater treatment (AMTS) systems can be used to purify air and wastewater. It's frustrating to me that even though these systems are not only good for the environment but can save the taxpayers literally millions, they are still being ignored by many communities in Mississippi.

For example, currently both the Harrison County Wastewater District and the cities of Bay St. Louis and Waveland are developing plans to enlarge their wastewater treatment facilities to handle population growth on the Coast. Instead of considering AMTS, both of these counties have chosen to waste literally millions of dollars by expanding existing energy-gobbling mechanical treatment systems. Harrison County, for example, is spending \$37 million to upgrade its sewage collection and treatment system.

Part of the reason for the need to expand treatment plants in Harrison County serving Biloxi and Gulfport is that storm water is intruding into the system, taxing the capacity of the existing treatment systems. Artificial marshlands are very flexible in absorbing excess storm water, and are tremendously more cost efficient than upgrading sewage collection systems to prevent storm water intrusion. For example, in Picayune it was estimated that upgrading sewage collection lines and constructing a new mechanical treatment system would have cost \$10 million. Instead, the city built an artificial marsh for only \$1.2 million. Similar cost savings could be seen elsewhere in the state.

Here's another example of government waste in action: The City of New Albany had a proposal for a new conventional sewage treatment system that would cost \$6 to \$8 million with annual operation and maintenance costs of \$300,000. AMTS expert Dr. Bill Wolverton presented them with a proposal showing how an AMTS could do the same job for only \$1.5 million with annual operation and maintenance cost of \$18,000. The result? The city is going ahead with the \$6 million option. This is, quite simply, a disgrace.

The reason why AMTS are losing out is simple greed. Economic interests associated with the mechanical plants--engineering firms, contractors and companies that sell mechanical treatment systems--stand to lose millions if AMTS is used.

Besides the cost savings to ratepayers, there are numerous other advantages to the AMTS. At a time when the amount of natural marshlands are shrinking due to development pressure, artificial marshlands can mitigate the effects of development on wildlife.

Some cities may argue that there isn't enough space for artificial marshlands, but that simply isn't true. For example, the wastewater from the City of Ocean Springs is pumped north of Interstate 10 for treatment at an artificial marshland and land treatment facility on Seaman's Road. Even when you have to pump the

water, the cost and energy savings are still tremendous.

If you want to save money on your sewer bills, and do a good deed for wildlife, please tell your city and county elected officials that you favor the artificial marshland alternative. We've included the following resolution for your use which can be reproduced and presented to your city or county officials. And follow up by putting pressure on the officials to make the right choice. A video on the subject is also available for free rental by calling or writing me. My address is listed on page 11.

Resolution favoring artificial marshland wastewater treatment

Authorities could save taxpayers a large amount of money if they would expand their system with artificial marshland wastewater treatment systems (AMTS) instead of expanding conventional mechanical treatment systems. AMTS, which use aquatic plants to "farm" human wastewater, have the following advantages:

1. The initial cost of AMTS is at least 60 percent less than conventional mechanical treatment systems.

2. AMTS are environmentally sound, natural systems that use far less energy to operate than mechanical treatment systems.

3. AMTS are more reliable and flexible than mechanical systems, and have greater capacity to handle storm water intrusion into the sewer system. Constructing AMTS is much less expensive than upgrading sewage collection to eliminate storm water intrusion, plus there is the benefit of treating storm water runoff prior to discharge.

4. Annual operation and maintenance costs with AMTS are 95 percent less than with mechanical treatment plants. Most of the savings are due to lower power bills.

5. AMTS are less susceptible to mechanical breakdown and shockloading.

6. AMTS provide excellent habitat for birds and other wildlife. At a time when the amount of natural marshlands are shrinking due to development pressure, it is increasingly important to provide for the needs of wildlife. AMTS are a way to mitigate the effects of development on wildlife.

Artificial marshland treatment systems are a win-win proposition. They are easy on the pocketbook, good for the environment and the money not spent on mechanical treatment can be used to address other pressing infrastructure needs. The Southeast Miss. Resource Conservation and Development Council can present a program on the benefits of AMTS. For more information, call Glen Powell at 601-545-2753.

Horn Island trip stormy, but rewarding

Horn Island is a wilderness mecca for nature lovers, and we had a good compliment of such on the MNPS trip to Horn April 30. Storm clouds threatened all day, but didn't actually get us wet until late afternoon.

Horn Island is the largest Mississippi island in the chain of barrier islands that make of Gulf Islands National Seashore (GINS), the largest national seashore in the country. GINS is Mississippi's number one tourist attraction, with 5.2 million visitors per year.

The following MNPS members made the trip: Gail Barton and Karen Partlow, Flowerplace Farms, Meridian; our new sec./treas., Ron Wieland, and his wife, Halima, Jackson; Bob Bruzak and friend, Picayune; Edward and Colleen Bagley, Picayune; Terri and Maya Bewig, Covington, La.; Malcolm Anderson, Decatur; Jarie Bassett, Newton; and Becky Gillette, Ocean Springs.

Despite the beauty of the dunes and beaches on Horn Island, the variety of plants on the island is much lower than found on the mainland, according to Dr. Lionel N. Eleuterius, author of *Tidal Marsh Plants*. Besides isolation from the mainland, he says the reason for fewer species of plants on Horn and other barrier islands is harsh conditions: strong winds, heavy storms, blowing sands and salt spray.

Dr. Eleuterius, who conducted a study of Horn Island for the U.S. Park Service in the late 1970s, describes five plant communities on the islands: 1. Beach dunes. 2. Relic dunes. 3. Marshes. 4. Meadows or high marshes. 5. Woodlands.

There isn't space in this issue for a complete look at the plant life on Horn Island. We'll publish more in a future issue including concerns about barrier island erosion. The barrier islands are eroding on the east end, losing ground every year, while the natural westward movement of the islands is being prevented due to maintenance of shipping channels. Dr. Eleuterius recommends using vegetation on the east ends of the islands to reduce rates of erosion.

The following are some interesting tidbits courtesy of Dr. Eleuterius:

- *The average life span of pine trees on Horn Island is between 30 to 40 years.

- *Plant communities in the north-central portion of Horn Island are the most stable due to a high, protective dune ridge.

- *Woodlands have the most stable plant communities.

- *Plant diversity is greater where salinity is less.

- *Protection from airborne sand appears to be the most important factor in plant stability.

- *Hurricanes and storms have catastrophic effects due to direct forceful impact and flooding.

- *Rare vascular plant species include Concordina canescens, (the rarest species on the island, not found anywhere else in Mississippi), Ceratiola ericoides, Solidago pauciflorescens Michx. and Bauldiuna augustifolia.



HORN ISLAND trip participants saw big rollers coming in off the Gulf of Mexico, but the rain held off until late afternoon. The dynamic barrier islands may look like solid land, but they are actually constantly on the move, moving westward with the action of wind, waves and currents.



Wild Medicinal Plant Conference

Sponsored by Miss. Native Plant Society

Discover the incredible reservoir of plants with medicinal qualities in Mississippi. Learn how herbs can be used to optimize health and prevent disease. Also the need to preserve native plants and native plant systems will be discussed.

Friday, June 3, 6-9 p.m. Ocean Springs Community Center, 512 Washington Ave., next to Walter Anderson Museum of Art: Tour herb garden at Five Seasons health food store near community center. Slide show presentations by Carol Stockton and Becky Gillette on growing and using herbs. Admission free; open to public.

Saturday, June 4, 9 a.m. to 4 p.m., J.L. Scott Marine Ed Center, Point Cadet, Hw. 90., East Biloxi, right before Ocean Springs bridge:

Dr. Jim McChesney, noted national authority on medicinal plants, "Medicinal plants: Remedies of the past and the future."

Lois Weeks, naturopathic physician, herbs for ridding body of toxins, cancer prevention and PMS. Also will discuss traditional healing.

Darryl Martin, expert on Miss. medicinals, spiritual aspects of medicinal plants and plant alchemy.

Dr. Jim Puckett, Hattiesburg physician, folk medicine remedies.

Also there will be fantastic gourmet vegetarian lunch, herb taste testing, herb teas, demonstrations on making tinctures and poultices, and a native plant sale. Optional dinner banquet Sat. night for \$5.50.

Cost for Saturday program and lunch is \$10 plus suggested donation of one plant (native and/or herb preferred) for plant sale. Pay at door; space is limited so **you must preregister before May 30** by contacting Becky at 601-872-3457, 6104 Olvida Circle, Ocean Springs MS 39564. Becky can also give you info on the least expensive lodging on the Coast. Or for regular hotels, call 1-800-237-9493. Casinos keep hotels booked weekends, so reserve early.

Calendar of Upcoming Events

9 a.m., Saturday, May 21: Tour of Botanical Garden of the South, the Institute for Botanical Exploration's 80-acre reserve in Sessums. Call Dr. Sidney McDaniel at 601-325-7570 or leave message at 601-324-4685. If you've not been there before, meet at the Sessums crossroad which formerly had a General Store.

3 p.m., Sunday, May 22: Crosby Arboretum sponsored a Pinecote walk with Tony Wilder, fire management specialist with the Sandhill Crane National Wildlife Refuge. Tony will discuss the importance of fire management in natural ecosystems. More info: (601)-799-2311.

9 a.m., Saturday, May 28: Field trip to Holly Springs National Forest. This trip was rescheduled from early May. For more info, call Sidney at the same numbers listed above.

Friday and Saturday, June 3 & 4: Wild Medicinal Plant Conference, Ocean Springs and Biloxi. (More info on page).

Sunday, June 12: Crosby Arboretum sponsors hillside bog tour. Reserve or get more info by calling (601)-799-2311.

Question and Answer Column suggested

Shelley Crawford, one of our newest members, suggested a question and answer column so that members can write in to obtain advice from others. So send those questions in and we'll get it started. Along those lines, Vic would like to offer an e-mail service to those members with access to Internet. Vic's internet address is "Vrl@ra.msstate.edu". Don't expect a quick reply as Vic doesn't check the "box" more than two to four times a month.

MNPS helps with school nursery project

This Spring 1994, 45 students from two sections of Mrs. Lisa Pinkerton's fifth grade science class at the Rosa Stewart Elementary School participated in establishing a garden nursery.

More than 100 plants (Coreopsis, Aesculus pavia, Quercus alba) are growing in pots which students will take home with them or plant at the school. Quick-growing radishes are also part of the project.

MNPS helped with the purchase of soil and donation of Coreopsis seeds and pots. The USDA Forest Service donated red buckeye and white oak seeds and the Oktibbeha Audubon Society donated pots and the use of a truck used to help prepare planting beds. Individuals assisted included Margaret Copeland, OAS Newsletter editor, USDA Forest Service employees Patrick Miller and Blossie Boyd, and Vic Rudis, MNPS President and USDA Forest Service employee, who helped coordinate the effort and continues to water the nursery on weekends.

The society received the following thank you letter concerning the project:

Dear members,

Thank you for your generous contribution to our classroom "nursery". The soil, seeds and pots you helped supply made this project possible. The kids have been working hard on this, and it's great to see them so excited about a learning project.

Thanks again for your help.

Lisa Pinkerton

Crosby Arboretum publishes Native Trees for Urban Landscapes in the Gulf South

The Crosby Arboretum has recently developed a brochure identifying the best 40 native trees to use for street and garden plantings along the Gulf Coast. These trees were chosen for their ability to thrive in just about any urban landscape condition, from compacted soils to parking lots.

Many of the trees identified in the brochure are already familiar features of Southern landscapes such as live oak and Southern magnolia. However, there are many native species that are not often seen but have real garden potential, such as indigo bush (Amorpha fruticosa Linnaeus), which has showy spring lavender flower spikes with yellow stamens, or swamp dogwood (Cornus stricta Lamark), which is a good substitute for the hard-to-grow flowering dogwood.

The trees listed in the brochure were chosen not only for their ability to grow just about anywhere, but each was assessed for their ornamental qualities, wildlife value, and ease of culture and maintenance. Robert Brzusek, Curator of Pinecote at The Crosby Arboretum, developed the brochure with assistance from two landscape architects, John Mayronne from Covington, La. and Robert Poore from Flora, and wildlife specialist Bill Tomlinson from Vicksburg.

"We've developed a list of trees than any homeowner or landscape professional along the Gulf Coast can plant with a degree of confidence," says Brzusek. "So many plants being sold in nurseries today require special care for them to live. These hardy native trees are survivors that should be used much more."

In addition to listing the trees, the brochure has a short description of the plants which lists their maximum size, native habitats and associated plants, flower and fruit characteristics, environmental preferences, wildlife value and landscape use.

The brochure was developed with a grant from the America the Beautiful program of the Mississippi Forestry Commission. Each of the trees listed in the brochure are identified along pathways at Pinecote, the Interpretive Center of the Crosby Arboretum, located in Picayune. Brochures are available for a \$1.50 shipping and handling fee by writing to: The Crosby Arboretum, P.O. Box 190, Picayune, Miss., 39466, or by calling (601)-799-2311.

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New MNPS t-shirts are hot!!!

The new MNPS are so great looking that the editors sold two off the clothes line! To non-members at that! The new t-shirt design is shown on page . The shirts are good quality 50% cotton-50% polyester, white, and the design contains five colors: black, green, yellow, red and purple. Sizes M,L & XL are \$10; XXL is \$12.

T-shirts and the book Wildflowers of Mississippi are available at some of our meetings. If making a request by mail, please include an additional \$1.50 per shirt of \$4 per book for postage and shipping costs. Allow 4-6 weeks for delivery.

Wildflowers of Mississippi, softcover edition, is for sale at a cost of \$20. Send book and t-shirt orders to MNPS, P.O. Box 2151, Starkville MS 39759.

Please do not send membership renewals or articles for the newsletter to the Starkville address. Instead, send renewals and questions about society activities directly to: Ron Wieland, MNPS Secretary/Treasurer, Miss. Museum of Natural Science, 111 North Jefferson St., Jackson MS 39201. Phone: (601)-354-7303.

Send newsletter comments and items for publication director to Editors Becky Gillette & Roger Danley, 6104 Olvida Circle, Ocean Springs MS 39564. The next issue will focus on medicinal plants. Deadline August 1.

Membership Application or Renewal

_____ New member	_____ Renewal
_____ Student, \$5.00	
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All members receive MNPS Quarterly. Life members also receive Wildflowers of Mississippi. Return form and check to: Miss. Native Plant Society, P.O. Box 2151, Starkville MS 39759. Include the following info with your payment:

Name _____ Address _____

Telephone: _____
_____ If Mississippi, county _____

Mississippi Native Plant Society

The purpose of the Native Plant Society is to further knowledge about the native and naturalized plant species of Mississippi, and to encourage an attitude of respect and appreciation for these species.

Programs include field trips to locations throughout state and lectures, seminars and slide shows by native plant experts, ecologists, landscape experts, knowledgeable amateurs and gardeners.

The goal of the society is to gather and disseminate knowledge about the native and naturalized plant species and their habitats in Mississippi. The society works for the preservation of these species and conservation of their habitats. We inform the public about these species and habitats, including their propagation, importance, ecology and need for protection, and encourage the propagation and use of native plants and habitats in designing residential, commercial and public landscapes.

We also facilitate the study of state flora and monitor nature preserves through newsletter announcements, networking and awarding small research and education grant. Other projects include plant and seed exchanges, maintaining displays for public education and plant rescues in areas about to be developed.

Mississippi Native Plant Society
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