



Mississippi Native Plants and Environmental Education

Newsletter of The Mississippi Native Plant Society and the Mississippi Environmental Education Alliance



Volume 25 Number 3 *Winter is an etching, spring a watercolor, summer an oil painting and autumn a mosaic of them all.* ~ Horowitz Fall 07

The **Mississippi Native Plant Society**, is a non-profit organization established in 1980 to promote the preservation of native and naturalized plants and their habitats in Mississippi through conservation, education and utilization

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The **Mississippi Environmental Education Alliance** promotes environmental education, supports the work of environmental educators and encourages the adoption of earth-friendly lifestyles leading to the sustainability of natural resources.

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Welcome to Oxford by Hilary Shughart, President, ECMNPS

What an honor for Oxford to host the 2007 Mississippi Native Plant Society Annual Meetings! This is a growing community striving to incorporate sustainable landscape practices into the civic infrastructure. The back-of-the-business-card translation of sustainability is land stewardship, and the Lafayette-Oxford-University community is actively engaging in this land ethic: the County funded a Rain Garden at the public library for soil and water conservation; the City removed noxious alien invasives, promoting biodiversity; the University is propagating native plants for local projects; the Greater Oxford Lafayette Community Foundation funded the Lafayette County and Oxford Public Library Native Plant Garden and Outdoor Classroom; the Oxford Lafayette Preservation Alliance has mobilized to preserve our natural heritage, and the Tree Board is forging partnerships with the Native Plant Society, the Oxford Garden Club, Master Gardeners, and the Natural Resources Initiative. **Native plants are on the agenda, and the East Central Mississippi Native Plant Society extends a hearty welcome to all.**

Directions to MNPS Meeting Site

Directions to the Lafayette County & Oxford Public Library, 401 Bramlett Blvd, Oxford, MS 38655, Phone: 662-234-5751; Exit Hwy 7 at University Avenue/Downtown Oxford, turn right at third light (Burger King). The Library is located one block west of the intersection of University Ave. and Bramlett Blvd. behind Chaney's Pharmacy.

The MNPS Annual Meeting Speakers

Edward Croom was a scientist for 18 years with the Research Institute of Pharmaceutical Sciences in the National Center for Natural Products Research. His research focused on traditional uses of plants as foods, fibers, fragrances, soaps, and medicines and the enhancement of human health and the environment. He directed a World Health Organization project to cultivate sweet Annie (known as Quing hao in China; *Artemisia annua* L.) for the isolation of the antimalarial drug artemisinin. His interest in sustainably increasing the supply of the anticancer drug Taxol, initiated a research program supported by the National Cancer Institute, the United States Department of Agriculture, and the Bristol-Myers Squibb, Co. Dr. Croom is currently a consultant and adjunct Associate Professor of Pharmacognosy at UM.

Sherra Owen is a Mississippi Master Naturalist and veteran teacher. She was instrumental in the development of the Wildlife Teaching Garden at Crows Neck EE Center, Chairman of the William Faulkner Literary Garden at the Union County Heritage Museum in New Albany and serves as Chair of the Mississippi Garden Clubs Historic and Memorial Gardens.

Sherra and husband Ken maintain a backyard native garden, featured in *Mississippi Gardener* March 2006, and a one mile trail through the woodlands at "Wildside", their home along the Pontotoc Ridge in New Albany. The Mississippi Native Plant Society will join her for "A Walk on the Wildside" field trip in April 2008.

Robert Poore has a down-to-earth attitude that probably developed as he grew up in his father's landscaping business in Flora, Mississippi. He is a landscape ecologist, ecological planner and Landscape Architect with a background in Art. He and wife Jean own Native Habitats, a landscape ecological consulting and design firm directed toward resource management and ecological modification. Robert is an inspiring speaker who has been known to move an audience to tears. He was instrumental in developing The Crosby Arboretum. His

recent projects include landscape design at the Mississippi Museum of Natural Science, The Steamboat Park in Vicksburg and The Wetland Exhibit at the North Mississippi Fish Hatchery in Lake Enid. His other projects and professional awards are innumerable!

Kristin Lamberson has been the Interpretive Gardens Specialist at Strawberry Plains Audubon Center in Holly Springs for over four years. She began working at Strawberry Plains as a volunteer while employed by Morgreen Nursery in Collierville, Tennessee. She takes her garden design cues from nature, which is also her source of solace, learning and joy. Her philosophy is that “By allowing the wild into our life through the venue of the home landscape we give ourselves the opportunity to experience magnificence in the small and grandeur in the common, enabling our souls to sing.”

MNPS Annual Meeting Notes and Directions to Maynard Quimby Medicinal Plant Garden

1. Hilary Shughart will coordinate an **early morning** field trip to the Maynard W. Quimby Medicinal Plant Garden. If you plan to participate in this field trip contact her at shughart@watervalley.net or at 662-816-3459 **by October 20**.
2. A light lunch will be served at the library including sandwiches, baked goods, etc. from the Friends of the Library. If you would like to contribute, contact Gail Barton at gail@gailbarton.com or 601-483-3588 by October 20.
3. **Our organization is perilously low on funds.** I am really excited about the annual meetings and about the field trip this past year. I urge everyone to pay any outstanding dues. Check the mailing label for the expiration date and please remit.
4. Every dues paying member present will receive a Raffle Ticket. Additional tickets may be purchased on site. We plan to have a wide array of prizes including garden art, gardening books and plants.
5. We will host a plant swap, so bring some plants, and an Author's Table for your perusal.

The three acre **Maynard W. Quimby Medicinal Plant Garden** is directed by the National Center for Natural Products Research at UM. Hundreds of species are grown as part of a living reference collection for rare medicinal plants. A seed bank is maintained.

Directions from the intersection of Hwy 6 and Highway 7 (Oxford): (NOTE: Do not use mapquest or other internet map websites). If lost first call the office number 662-915-1597 and someone will be there a bit early!

Take Hwy 6 WEST (toward Batesville). Pass Lamar Blvd and the Old Taylor Road exits to the Coliseum Exit (right hand). At end of exit ramp, turn RIGHT (onto campus). Get in the left lane and turn left onto Hathorn Road at the first intersection (4 way stop). You will immediately pass the Gillam Women's Sports Complex/soccer field on your LEFT and the softball field on your RIGHT. After the soccer field there is a paved road on your left (a frontage road) - go past this but SLOW DOWN and put on your left blinker. The next driveway (just after a wooded lot with a chain link fence also on your left) is the driveway for the Medicinal Plant Garden. Turn left into the drive and you will note the sign "Coy Waller Laboratory Complex" - there are three buildings in this complex. If you turn left at top of driveway you will see the small wooden building with the cupola and weathervane and little porch. This is the Garden office and a big sign by front door reads "Offices of Medicinal Plant Garden and Plant Acquisitions Program." Park in front or to the side. NOTE: The road will turn sharply to your right just after the entrance to the Garden, and if you go too far the Physical Plant complex (big building with white columns and red metal roof) will appear on your left! Turn around!

Dear MNPS,

It has been a privilege serving as prez of the MNPS for the past two years and we have enjoyed outstanding conferences and some great field trips - you will remember going on field trips was one thing I had hoped to accomplish during my term - and we have been on some good ones! I am pleased to have a new chapter joining us in the north and a second chapter is forming in Hattiesburg. In fact this year's meeting is being organized by our newest chapter and that is really exciting! Welcome aboard East Central Mississippi Native Plant Society and thank you for what promises to be an outstanding meeting! In parting I will say concisely:

- read the newsletter, and help Peg and John out by writing an article,
- renew your membership and help Debora out (note your membership expiration on the newsletter label),
- purchase an additional membership for a friend, and help them in and
- attend the annual meeting in October, helping yourself!

I look forward to seeing you on field trips and at our annual meetings,

Your MNPS Prez, Marc Pastorek

Dear MEEA,

These long hot days of summer make me long for my favorite season – fall. I'm sure many of you anticipate the arrival of this coveted transition time; cooler nights, migrating birds, harvest of the earth's bounty and of course the brilliant change of deciduous leaves. MEEA is experiencing a seasonal change of its own as we nurture and grow our organization. We are in the process of expanding and diversifying our board of directors; developing and preparing our new website for launch to the public; and planning for our annual fall conference. Save the date for the fall conference this November 9th and 10th at Rainwater Planetarium and Observatory near French Camp; we will keep you posted on the details and developments. As we wait for fall, let's step out of our air conditioned environments and experience the beauty and power of this season. Visit a National Wildlife Refuge or State Park in the cool of the morning or canoe one of our many lakes or rivers in the afternoon. Witness the awe of annual bird migrations by inquiring about many

nature festivals around the state. In the heart of the southern delta near Vicksburg, TARA will be hosting the annual Mississippi River Nature Festival, August 25th and 26th. In the northern hills near Holly Springs, Strawberry Plains famous Hummingbird Festival will take place September 7th, 8th and 9th. As summer comes to a close let us enjoy the surprises that it has to offer, so that when fall arrives we many look back and say we long to hear the cicada's song in the moist humid air.

John DeFillipo, MEEA President

Mississippi Environmental Education Alliance Conference and Call for Papers

Meet us at the **Rainwater Observatory in French Camp** on **November 9 & 10** for what is shaping up to be a "don't miss" conference! Rainwater houses Mississippi's largest collection of telescopes and largest telescope! Astronomer Jim Hill's presentations at two MEEA conferences have been very popular so expect this conference, at his facility, to be outstanding! Please send a short description and title of the session you wish to present to Terri Jacobson at terri_jacobson@fws.gov.

Harvester Ant Update

As a direct result of the article on harvester ants in our last newsletter Joe MacGown and JoVonn G. Hill have reported that four additional harvester ant sites in Mississippi were identified by Tom Mann, zoologist with the Mississippi Natural Heritage Program and our secretary-treasurer's husband.

Harvell and Pellerree Jackson Sandhills Preserve Field Trip – September 15

Location: NNW of Lucedale, end of Palestine Gardens Road (Follow signs for Palestine Gardens). From US Highway 98 just west of Lucedale, take N Bexley Road for 3.5 miles. Take a right at Ford James Road (which becomes Palestine Gardens Road) and travel to the end (1.5 miles), just beyond Palestine Gardens. Date: 15 September 2007 Time: 9 A.M.--noon

The Jackson Sandhills Preserve is a new, 108-acre addition to the Nature Conservancy's holdings near Lucedale. Probably the remnant of ancient coastal sand dunes, the site seems out-of-place in inland Mississippi, with such rare plants as beach rosemary, scarlet basil, Gulf rockrose, and sandhill beakrush. The site has longleaf pine and turkey oak and a dense understory of saw palmetto and sand heath (*Ceratiola*). At the edge of the sandhill, there are seepage areas with the scentless bayberry and buckwheat tree. The site is also next door to Palestine Gardens, and participants may elect to visit those gardens in the afternoon. Information about Palestine Gardens and online maps may be found at: <http://www.palestinegardens.org/>. For more information contact MNPS member Mac H. Alford, Ph.D., Assistant Professor and Curator of the Herbarium, USM; 601-266-6531 or e-mail: mac.alford@usm.edu, www.usm.edu/biology/. Let Gail Barton know if you will be participating.

Mississippi Native Plant Society Annual Meeting Agenda

Functional Flora Creating Native Plant Landscapes to Nurture, Teach and Heal

Friday 10/26 7:00 p.m. Gail Stratton – Spider Walk for those arriving early. Meet at entrance to Oxford Public Library.

Saturday 10/27 8:30 a.m. Pre-Conference Tour (members only). Dr. Aruna Weerasooriya will lead a tour of UM's Maynard W. Quimby Medicinal Plant Garden. Meet at the site. See the Field Trip Description for Directions. RSVP to Hilary Shughart.

9:30 - 10:00 Conference Registration at entrance to Oxford Public Library; Plant Swap Table. View prizes for Membership Raffle.

9:45 Early admission to the Library for those needing to set up exhibits

10:00 Library Opens

10:15 -10:20 Welcome & Announcements – **Marc Pastorek**

10:20 -11:10 *Traditional Uses of Southern Plants* **Edward Croom**

11:10 -11:55 *Wildside – Learning in Nature's Classroom* **Sherra Owen**

11:55 – 1:05 Lunch Break / A light lunch or snack – Plant Swap / Visit Author's Table

1:05 – 1:10 Announcements, etc / Winners of Raffle Announced

1:10 – 2:00 Natural Garden Design **Robert Poore**

2:00 – 2:45 *Allowing Beauty and the Interconnectedness of all things to infiltrate our hearts and yards* with **Kristin Lamberson**

2:45 – 3:00 Business Meeting – Elect Officers, etc.

3:00 Caravan to Field Trip at Willis Property and adjourn from the site.

Post-Meeting Field trip to Joe and Merrill Willis' Garden in Oxford, Mississippi

Joe and Merrill Willis are Mississippi plant collectors. Their garden is home to an extensive variety of plants from wet to dry habitats. The garden was built around a peat bog, lake and natural spring. There is also a museum on the property. Merrill, a retired Elementary teacher, instructs third graders in an 1860's classroom using native plant inks. Joe, at retired engineer, shares his knowledge of Mississippi tribes and their use of plants with fourth graders. Children learn the names of plants and animals in the native Choctaw / Chickasaw languages.

The Willis garden is about 15 minutes from our meeting site. Maps will be available to guide MNPS members to the site for a late afternoon walk. This tour will be the perfect ending for the Mississippi Native Plant Society 2007 Annual Meeting.

Mississippi Treasures by Jo Meyerkord

Mississippians cherish their native plants. Even though only four plants in the state are listed on the Federal Endangered Species List, the Center for Plant Conservation's Participating Institutions are currently working with 13 species throughout the state, trying to stay ahead of the curve and secure them against extinction.

Headquartered in St. Louis, CPC is a network of 36 botanical institutions involved in the study, preservation, conservation and restoration of the nation's imperiled native plants. The network of botanists has been studying imperiled plants for more than 20 years. CPC's goal is to recover all imperiled plants across the country, so that native plants are thriving again.

Although there are not yet any CPC Participating Institutions located within the boundaries of Mississippi, CPC's surrounding institutions are working with a number of native Mississippi plants. Many of the endangered plants of Mississippi also occur in other states. Due to similar geography and habitats the range of a particular species may extend through multiple regions. Many scientists from highly-regarded botanical institutions are able to work together to research, cultivate and restore some of these Mississippi plants. Some of these institutions include the Missouri Botanical Garden, North Carolina Botanical Garden, North Carolina Arboretum, Mercer Arboretum and Botanic Gardens in Texas, Chicago Botanic Garden, The Morton Arboretum in Illinois, The Holden Arboretum in Ohio, New England Wild Flower Society, Brooklyn Botanic Garden, and The Arnold Arboretum of Harvard University.

CPC Participating Institutions are working in your communities monitoring, securing seed and working with the local and federal agencies to restore habitats and rare populations. These partnerships with the Mississippi Natural Heritage Program and similar organizations make it possible to make a difference on the ground within the state. Find those working in Mississippi in our Conservation Directory at www.centerforplantconservation.org.

Currently, the Missouri Botanical Garden is maintaining a collection of pondberry, *Lindera melissifolia*, seeds and is attempting to grow the plants from seed. The plant, related to the spicebush, was once common throughout Mississippi, but now only one population is known. This single site has escaped destruction because it is within a natural area managed by the U.S. Forest Service. Although pondberry plants produce mature fruits, no seedlings have been found at any sites, and this is a major problem for the long term survival of the species. Although the plants can reproduce clonally by sending out shoots, sexual reproduction is important for ensuring genetic diversity and healthy populations for the future. With the help of the botanists at the Missouri Botanical Garden, research on the pondberry continues hope for sustaining long-term viability.

Anita Tiller, botanist at Mercer Arboretum and Botanical Garden in Houston focuses on plant restoration throughout the Gulf States. Tiller is currently working with the Master Naturalist training program; a program dedicated to developing well-informed volunteers to provide education, outreach, and service dedicated to the beneficial management of natural resources and natural areas within their communities. Educating volunteers has proved to be a great vehicle in spreading CPC's message to the masses and recruiting good workers for monitoring and restoration projects.



Anita and her helpers are partners in working with the Louisiana Quillwort (*Isoetes louisianensis*.) This species is one of the most primitive vascular plants. It is seedless and reproduces by spores. This fern relative roots a few feet under the water of cool, clear streams or lakes, especially those with low nutrient content. Unlike other plants, quillworts lack stomata, so they take in carbon dioxide from the soil, collecting it through four cylindrical air chambers within the leaves. Making its home in sand and gravel, through the dry season the plant is dependent on small springs for water. Known from only a few populations throughout Mississippi and Louisiana this aquatic plant is threatened by timber harvesting practices, which lead to erosion and runoff degrading its clean water habitat. Gravel mining also significantly transforms forest communities and alters stream quality and dynamics, posing a serious threat to some populations. Recently, the Mercer Arboretum has rescued an entire population of the Louisiana Quillwort from its creek home disturbed by a construction project. They are currently holding the plants waiting for the site to be prepared for restoration efforts. Although the 2005 hurricane season set the team back significantly, they hope to get the plants back in their natural habitat soon.

These institutions are working with CPC's scientific standards and protocols to make a difference for Mississippi's vulnerable plants. Collaboration is necessary to succeed in restoring these species and CPC is all about partnerships! There is a role in support, education, and volunteerism for everyone who wants to help. CPC has established a plant sponsorship program to build sustainable funding for vulnerable plants. For each sponsored species, funds are provided annually to assist in restoration efforts. These funds have already significantly worked for the pondberry. The Louisiana Quillwort is not fully sponsored. If you'd like more information about CPC or plant sponsorship visit our website www.centerforplantconservation.org or call 314-577-9450. Let's work together to make sure Mississippi's imperiled plants populations are restored for future generations!

Jo Meyerkord is communications coordinator for the Center for Plant Conservation, a network of botanical institutions across the country working to recover America's vanishing flora.

A Foray into the Forest or Eat a Tree by John Guyton, Ed. D.

When the redbud (*Cercis canadensis*) trees are in bloom it is fun watching peoples' expressions when I grab a handful of the flowers and pop them in my mouth. Recently, I brought a couple sugar pine (*Pinus lambertiana*) cones home from Oregon and soon discovered the reason for their name - everything they had come in contact with was sticky! So I roasted them - and no, this did not make them edible, but their sweet sticky sap dripped onto the aluminum foil and hardened. Having heard John Muir preferred sugar pine sap to maple syrup I naturally sampled the "hard candies" and found them quite agreeable.

When I think of forest diversity my best experiences with *cultural* diversity seemed to suggest, quite naturally, food - my favorite way to get to know another's culture! If you didn't eat cactus in Mexico, try kava in Fiji and dine on kangaroo in Australia barbecued over blue gum eucalyptus you just have to go back! So, lets go to the forest and see what's to eat. But be forewarned, I am only a curious hungry amateur and you should *not* use this article as your principle source or authority. After listing what I could remember I consulted my notes, and a few of my favorite books, checked with several friends and then dropped by the Internet for a short visit. Our society and country have a long history of tree eating. In the Christian tradition we find this reference in Deuteronomy 20:19 "...you shalt not destroy the trees thereof by forcing an axe against them: for thou mayest eat of them, and thou shalt not cut them down..." Early explorers in America reported large areas of trees with the bark peeled off. In fact, the Adirondack Mountains were named for the *Adirondack* Native Americans that in their language this means, "tree eater." Now, off to the buffet!

Fruit is a no brainer, there are so many to pick from: apples, pears, peaches, plums (*Prunus americana & umbellata*), oranges, mangos (*Mangifera indica*), dates (*Phoenix dactylifera*) and olives. If you haven't had a date nut milkshake... call me and we will make up a batch - I am ready. Wild cherries (*Prunus serotina & virginiana*) are excellent in jellies, wine and as a flavoring in brandy. Persimmons (*Diospyros virginiana*) are the most commonly eaten fruit in the world and the roasted seeds are good. Ripe pawpaws (*Asimina triloba*) are too soft to carry in your pockets (thanks Felder). Red mulberry (*Morus rubra*) fruit is used in jellies, jams and drinks. Maple seeds can be boiled and eaten. Palmetto palm fruit is good raw. There is a lesser known but edible pear-shaped cashew apple, from the tree more famous for cashews, that can be made into jam, marmalade, candy, juice or an alcoholic beverage. Sumac (*Rhus copallina*) berries makes a soothing lemonade with a little honey added. Elderberries (*Sambucus canadensis*) are good in wine and pies. Black cherry's bitter berries are also good in jelly or wine. The purple berries on serviceberry have a sweet taste. Sea grapes (*Coccoloba uvifera*) is a scrubby tree along the Florida coast that produces a deliciously acidic grape. Hawthorn (*Crataegus*) seeds can be roasted as a coffee substitute and the fruit used in jellies supporting its moniker as the "bread and cheese tree." Acacia seed pods are edible. Young tender Carob (*Ceratonia siliqua*) pods are edible raw, boiled or pulverized and cooked as a porridge. Carob is also a chocolate substitute. Young cottonwood pods are also edible. Black pepper (*Piper nigrum*) is the world's most commonly used spice and was Christopher Columbus's excuse to sail the ocean blue. Honey locust (*Gleditsia triacanthos*) fruit has been used to make an alcoholic drink. Coffee (*Coffea arabica*) berries, from a woody vine, were originally enjoyed by goats, then an observant Ethiopian goat herder, now everyone. The Jackfruit, the largest tree-borne fruit in the world (up to 80 pounds/36 inches long and 20 inches in diameter), smells like banana and pineapple. Chunks can be boiled in lightly salted water until tender, cut from the rind and served as a vegetable; The bulbs can be dried and fried in oil and salted like potato chips or boiled in milk to form an orange custard. Climbing a tree and picking grapefruit on a Florida vacation, during my earliest years, remains a favorite childhood memory and flavor. Wax myrtle (*Myrica cerifera*) fruit makes a candle with a most pleasing aroma for the dinner table. Toothache tree or prickly ash (*Zanthoxylum clava-herculis*) berries have been used to lower the gas pressure and chewing a berry or piece of bark has a numbing effect on the mouth. And who could forget the breadfruit (*Artocarpus altilis*) Captain Bligh was supposed to transport from Tahiti to the Caribbean as an incredible food crop. Breadfruit can be eaten unripe as a vegetable, ripe as a fruit, the pulp fried or stuffed with coconut, baked steamed, deep fried and of course fermented - what else do you need.

Nuts – one of my all time favorite desserts is pecan pie. Jordan Almonds and Almond M&Ms, 'nuf said. Can't discuss nuts without mentioning cashews. Beechnuts (*Fagus grandifolia*) are quite a delicacy and their oil rich sweet white kernels have been used since prehistoric times so there are many uses: roast and grind as a coffee substitute; mash and boil then skim the delicious oil off the water; or mash, dry and grind for a nutty tasting flour. Mesquite seeds (*Prosopis glandulosa* and others) are edible raw, tasty toasted or can be ground to flour or fermented into a wine. Redbud seed oil has a peanut like flavor and has been used as a seasoning. Ground palmetto palm seeds make a fine flour. Bitternut (*Juglans cinerea*) is poplar in cakes and candies. Oak acorns (*Quercus*) are good after several changes of water, to remove the tannin (white oak acorns are better - trust me), and may have been one of the first mainstays for humans. Gulf Coast pioneers made cooking oil from live oak acorns. Hickory nuts have been made into a "butter" (like peanut butter). Can you imagine gin without juniper berries (*Juniperus virginiana*). The juniper berries can be eaten raw or roasted for a coffee substitute or crushed for an interesting meat seasoning. The pungent and spicy white pine seeds (*Pinus strobus*) were cooked with meat by the Native Americans. Black walnuts (*Juglans nigra*) are well worth the trouble to crack and pick out! A tree in my grandparents back yard remains healthy and fruitful. Everyone should know where the nearest black walnut tree is. Hazelnuts (*Corylus americana*) and hackberries (*Celtis*) are both edible. Chinkapins (*Castanera*) have an underused sweet nut and can be used as a coffee or chocolate substitute. Chestnuts are good raw or roasted over the open fire. They have sustained humans since prehistoric times and are considered the most revered tree food in the world. Native Americans taught the pilgrims how to grind them into a gluten free bread flour and cook them in stews. The Italians soak them in wine before roasting. They can be dried, mashed, pickled, chopped, minced, or sliced and added to grain dishes, casseroles, salads, puddings and soups. The keys of the developing

seeds of the sycamore have a sweet coating that children enjoyed sucking before suckers with refined sugar were invented. Crushed red buckeye (*Aesculus pavia*) seeds were used by Native Americans to stun fish. The Mayans and Aztecs made a drink they called "xocoatl" from the beans of the cacao tree (*Theobroma cacao*). In Aztec legend, cacao seeds were brought from Paradise and wisdom and power are gained from eating the chocolate. I have long suspected that the wandering Genoese navigator, Christopher Columbus, wooed Queen Isabella with a "hot" chocolate (infused chili peppers in grand Aztec tradition), resulting in King Ferdinand V sending him back to the New World to get him away from the queen! To freshen your breath try sucking on a few anise seeds (*Illicium verum*). And pistachios, those delightful green nuts found in baklava, Turkish delight, ice cream, puddings, rice dishes, soaked in brine or raw have fed people for at least three times as long in the B.C. as we are into the A.D. The Queen of Sheba is said to have believed pistachios were a powerful aphrodisiac and reserved the harvest of the best trees for herself and her special guests, whom she also plied with mead. There is even a rumor that Nebuchadnezzar II built the hanging gardens of Babylon, one of the Seven Wonders of the World, to keep his wife Amyitis supplied with pistachios!

Flowers including: acacia, apple, orange and lime blossoms make an attractive garnish and are edible. Elderberry flowers (*Sambucus canadensis*) can be sprinkled on salads, make a good tea, a delicate wine known as elder blow wine and vinegar if you blow it. Elderberry flowers can be soaked for about 8 hours and discarded and the water consumed. Cloves have many uses from toothache relief to spice. Figs, oooh can you imagine a world without fig preserves? Those wonderfully seductive inside out flowers, from the tree the leaves of which Eve found useful, have apparently been a favorite for all time. The French used the fragrant dried flowers of basswood (*Tilia americana*) or Linden to make a tea and bees produce a most desirable honey from its flowers. Kapok (*Ceiba pentandra*) flowers are used in curries. Protein rich red alder's (*Alnus rubra*) male catkins, white birch, quaking aspen (*Populus tremuloides*) and cottonwood catkins are good raw, cooked or used in salads. Large poplar buds were used in a cough syrup preparation. The Judas tree's (*Cercis siliquastrum*) acidic flowers are a delicious addition to salads and in fritters.

Bark, Twigs, Wood and Fiber are all-time kitchen favorites. Cinnamon (*Cinnamomum zeylanicum*) is probably the best known edible bark. Black birch (*Betula lenta*), juniper twigs, slippery elm (*Ulmus rubra*) bark and pine needles make good teas. Birch bark and the inner bark of white pines (*Pinus strobus*) have been called famine foods. White pine inner bark was used to make candy in an earlier day and can be dried or boiled as a forest "noodle." Slippery elm (*Ulmus rubra*) bark, the inner bark of the cottonwood tree (*Populus fremontii*), aspen (*Populus tremula*), birch, willow (*Salix* spp.) and pine can be dried and ground to make a flour. The slippery elm inner bark can be used to make a tea. Young red mulberry twigs can be eaten raw or cooked as a vegetable. Tulip tree bark (*Liriodendron tulipifera*) or yellow poplar can be used as a flavoring. The inner bark of birch, basswood, aspen, tamarack and maple (*Acer saccharum*) is edible. The innerbark of quaking aspen is sweet. The bitter inner bark of the black willow is steeped for a soothing tea that contains salicylic acid or aspirin. The inner bark of hemlock can be baked or steamed and pressed into cakes with cranberries for a palatable meal. Maple and sycamore have been used to make spoons and other kitchen implements; sycamore, mulberry and willow make great whistles (whistle for your beer) and willow is still used to make tables and chairs. American beech is used in cutting boards and barrels to age beer. Honey locust (*Gleditsia triacanthos*) thorns have been used as pins to fasten clothes. White oak barrels are thought to impart a smoothing quality to whiskey and wine and vanillin molecules, leached from the oak is a factor in the aging process. Porous red oak bungs are useful in preventing the kegs from exploding while their contents ferment and wine corks are made from cork oak (*Quercus suber*) bark. Tonic water, of gin and tonic fame, was allegedly concocted to make quinine, from the bark of the cinchona tree, more palatable. Chewing prickly ash bark may be useful for toothache resulting from eating trees. If eating bark gives you a headache take the original aspirin - chew on a willow twig. If eating all this bark has given you halitosis, twigs of dogwood (*Cornus*) stripped of the bark or white elm (*Ulmus americana*) can be used as toothbrushes and the powdered inner bark of the black walnut can be used for toothpaste. Elderly women, during our youth, preferred blackgum twigs, chewed to a "frazzle" and dipped into snuff, to suck on and use as a tooth powder to "preserve" their teeth. "Dental" snuff is still available. Now, that should give new definition to putting fiber in your diet!

Roots are not eaten as often since their consumption costs a whole tree, but there are some delicious roots. Sassafras roots (*Sassafras albidum*) can be used to make a spice or a delicious and fragrant deep red tea. An infusion of the roots and root bark can be used to make a delicious jelly. Red mulberry roots (*Morus rubra*) also make a good tea. Cassava roots (*Manihot esculenta*) can be fried or used to make tapioca. Spruce beer, made from spruce roots, was a popular preventative for scurvy consumed by early northern explorers. Sumac roots are edible and the cabbage or horse-radish tree's young roots (*Moringa oleifera*) can be used as a spice. The Moringa or "miracle tree" (*Moringa oleifera*) roots are edible after the bark is removed and in fact the entire tree is edible and could be a partial solution to Africa's food shortage problems. Cuipo tree roots (*Cavanillesia platanifolia*) can be harvested for their potato flavored water. The gummy roots of the red buckeye (*Aesculus pavia*) were used by pioneers as a soap substitute so you can wash your hands before dinner.

Leaves add much to the diet beginning with the edible beech (*Fagus grandifolia*), wax myrtle (*Myrica cerifera*), red bay (*Persea borbonia*), young maple leaves and acacia (*Acacia farnesiana*). The dried powdered leaves of the sassafras (*Sassafras albidum*) are the famous gumbo filé and I offer our thanks to the Choctaws for its discovery. The leaves can be brewed into a tea with the roots or rootlets. My introduction to the Oregon myrtle (*Umbellularia californica*) involved crushing a large handful of leaves cupping them in my hands and inhaling deeply, wow! They have a similar use as bay leaves but are much stronger. Persimmon and basswood (*Tilia*) leaves make pleasing teas. Arbor vitea (Tree of Life) tea sustained French Canadian trappers while stranded in the woods during

prolonged snowstorms, and such conditions were necessary to make them useful! The vitamin-rich tea prevented scurvy. The leaves of the saltbush (*Atriplex halimus*) have a salty taste and when lightly steamed retain their flavor. Try wrapping around corn, while roasting, to salt the corn. Basswood and hawthorn (*Crataegus monogyna*) buds are particularly tasty. Small young hawthorn leaves have a nutty flavor. Sycamore leaves have been used under pastries when baking. Young white birch leaves can be added to a salad or meat and vegetable dishes. Tamarind (*Tamarindus indica*) leaves can be used in soups. Crystals of sugar sometimes form on the tips of douglas fir needles and can be used as a sweetener or with the needles in a tea. Fresh wintergreen leaves contain salicylic acid and are good for toothaches. Moringa leaves may be the ultimate famine food and have the potential to significantly reduce malnutrition worldwide. You might collect some pine needles on your foray for a refreshing after-dinner bath!

Sap from shagbark hickory (*Carya ovata*), sugar pine, sugar maple (*Acer saccharum*), box elder, ash, cherry, balsam poplar and sweet gum (*Liquidambar styraciflua*) are all edible. An elderberry twig with the pith pushed out makes a fine spigot for collecting sap. The Native Americans taught us to reduce maple sap to a thick syrup by tossing heated stones into a bucket full, thus evaporating the water. Sycamore sap (*Acer pseudoplatanus*) has been used to make ale and wine and seal wounds. Birch sap (*Betula* spp.) has been made into syrup, vinegar, oil extracted from the birch is sold as wintergreen and used in Teaberry gum and as the principal ingredient in birch beer or other cooling drinks. Red alder sap (*Alnus rubra*) can be made into vinegar or crystallized sugar. For a good chew, there are some alternatives: ancient Greeks chewed the resin of the mastic tree, the Mayans used chicle from the sapodilla tree, Native Americans enjoyed spruce sap, and southern boys favored dried pine resin and liquidambar (sweet gum) sap. After Santa Anna conquered the Alamo he relinquished all land north of the Rio Grand to the US as Mexico's president and was then exiled to the US where he became wealthy marketing gum made from sap made from chicle. The evergreen white santal (*Santalum album* - chandana in the ancient Sanskrit), the source of Sandalwood incense and oil, has been popular since the 5th century. Frankincense and myrrh, gifts of the Wise Men, are both resins, the dried sap from the *Boswellia* (frankincense) and *Commiphora* (myrrh) trees.

Smoke has been a food flavoring since the beginning. Hickory smoke was almost responsible for an international religious incident some years back. I was barbecuing a few pork tenderloins over hickory with a vinegar based sauce next door to the Muslim student center where three young men were doing yard work. You guessed it, hickory smoked pork is a people magnet and it wasn't long before they were salivating over my grill. In typical southern tradition I offered them a sample. One eagerly ate his sample and the second, slowly chewing a piece, commented it was the best lamb he had ever eaten. Really, I forgot. When I mentioned, "It should be, thousands of years of evolution have greatly refined and distanced the hog from lamb," the third handed me back his untasted sample, the second delicately spit his out and the first gave me that approving grin and a shrug that let me know he understood the southerners appreciation of hickory smoked barbecue! The four of us often exchanged friendly greetings and a good laugh after that day. I value my relationship with my Muslim friends and would never do anything to offend them but was recently surprised to learn that many now eat pork - correctly pointing out other foods we commonly eat that we shouldn't! Unfortunately, I moved before I could cook the lamb they suggested would benefit from the hickory smoke! Hickory is also my favorite for smoking hams, sausage and bacon. Apple, cherry, juniper, pear, pecan, holly, birch, mesquite and oak smoke are also good for flavoring food, maybe one would be good for lamb. When confined to an electric range during cold winters, or when making jerky, that smokestack distillate, liquid smoke, is a welcome addition!

Smoking is a long practiced after-dinner tradition. There are many tree parts that substitute for, or supplement, tobacco: sumac, beech, and hawthorn leaves; juniper, willow and dogwood bark and crushed cloves; but there is one forbidden tree of which you may not partake...

Wood fires, since before recorded history, have been used for cooking and they add a certain ambiance to dinner. The epoch of fire must have left an indelible marker in the human genome as is evident in the attraction of people of all cultures to a fire. The ambiance can be enhanced with a little forethought and collecting. The resin-rich fat pine lighter knots, once used in the spotlights atop the pilot houses on paddle wheelers, allows the knowledgeable fire builder to start a fire in a driving rain or display adeptness at building fires at home. Different woods produce characteristic fires: hot, cold, fast, slow, smoky, clean, kindling, sustaining, crackling and aromatic. Just as cooks fine tune meats using a particular wood or blend of woods, early fire builders were the original aroma therapists. We save a cedar log for special occasions and it gives the room a warm pleasant atmosphere with wonderful sparks. Apple and cherry are also great. Osage orange, or bois d'arc to the French, burns almost as hot as coal so if you are in a hurry for dinner... It's also our favorite Christmas Eve firewood because of the sparks it produces! You might also enjoy placing a few green magnolia leaves on the coals for that staccato sound of a string of firecrackers. It is fun to experiment with different blends. Try a combination of apple, cherry and cedar. A forester friend commented that moon shiners preferred dry cedar to fire their stills since it burns virtually smokeless and is therefore harder for the revenuers to spot. Cottonwood makes a good summer firewood since it provides light and minimal heat.

Eating trees gives a whole new meaning to... make that, reminds us of, the sustainable forest. Forests have sustained our species since time immemorial and warrant our continuing attention and conservation. We need diverse forests and we need plantations to satisfy our insatiable taste! I think it is time for a slice of pecan pie and a date nut milkshake!

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***Meet the Editors and See Stars at MEEA's Conference on Nov 9 & 10 at Rainwater Observatory in French Camp
You will not want to miss the MNPS meeting this year - Saturday October 27! See inside...***

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