

The Palmetto

**A Bog by
the Highway**

**Unique Flora
Faces an
Uncertain Future**
Pages 2 and 6



**American Black
Nightshade**

**The Wildflower
Garden Series**
by Rufino Osorio
Page 9



A Bog by the Highway

More on page 6

A view of the Fowler's Prairie bog in April. Bogs are one of Florida's increasingly rare natural communities. Most have disappeared due to the drainage required to create roads, subdivisions, and various types of croplands, including pine plantations. And surprising as it may seem for a wet habitat, fire is important in maintaining a bog. Fire eliminates competitive woody species that can change the light regime and result in increased transpiration, thus lowering the water table and enabling even more plant species invasions.

Photos by
Paul

Southern club-moss,
Lycopodiella appressa,
grows nearly straight up
in the muck.



Active management of bog lands is necessary to control the encroachment of woody plant species that over time, transform the area into an entirely different type of plant community. At left, an area being taken over by loblolly bay (*Gordonia lasianthus*) and below by blooming titi (*Cyrilla racemiflora*) and wax myrtle (*Myrica cerifera*).





THE PURPOSE of the Florida Native Plant Society is to preserve, conserve, and restore the native plants and native plant communities of Florida.

OFFICIAL DEFINITION OF NATIVE PLANT For most purposes, the phrase *Florida native plant* refers to those species occurring within the state boundaries prior to European contact, according to the best available scientific and historical documentation. More specifically, it includes those species understood as indigenous, occurring in natural associations in habitats that existed prior to significant human impacts and alterations of the landscape.

ORGANIZATION Members are organized into regional chapters throughout Florida. Each chapter elects a Chapter Representative who serves as a voting member of the Board of Directors and is responsible for advocating the chap-

BOARD OF DIRECTORS

Executive Officers

President Bob Egolf

Past President Kim Zarillo

Vice President Admin. Joan Bausch

Vice President Finance David Lei

Secretary Améé Bailey

Treasurer Susan Thompson

Committee Chairs

Communications Cindy Liberton

Conference 2008 Leslie Pernas-Giz & Kim Zarillo

Conservation Suzanne Kennedy

Development Jo Anne Trebatoski

Education Martin "Marty" Main, Ph.D.

Governmental Policy Cynthia Plockelman

Landscape Awards 2005 Matt King

Membership Jim & Teddi Bierly

Public Land Anne Cox

Science Advisory Board Shirley Denton

Publications Richard Wunderlin, Ph.D.

Directors at large

To join or for inquiries contact your local Chapter Representative (see *Where to Find FNPS*), call, write, or email FNPS, or visit our website.

Florida Native Plant Society
PO Box 278
Melbourne FL 32902-0278
Phone: (321) 271-6702
info@fnps.org • www.fnps.org

Contract Services

Accounting Services Joslin & Hershkowitz

Administrative Services Just Cause

Fall 2004



Features

6 A Bog by the Highway: a Unique Flora Faces an Uncertain Future

by Dr. Francis Jack Putz and Paul Corogin

A hidden example of an increasingly rare plant community. Can the

9 American Black Nightshade

The Wildflower Garden: Number 2 in the Series

by Rufino Osorio

Creative native landscape designers should find a place in the

12 Cordia

Discovering Florida's Ethnobotany: Number 12 in the Series

by Dr. Dan Austin

Another fascinating laundry list of human uses and some rather

19 The Lantana Mess: A Critical Look at the Genus in Florida

by Roger Hammer

Lots of lantanas everywhere, and rarely a native in the lot. We ask and

Departments

5 FNPS Officers & Others

8 Letter from the Editor, *FNPS Publications: Where Do We Go From Here?*

10 Editorial Policy: Plant Names & Their Status

10 Century Pioneer Family Farm Program: Landowner Recognition

11 Book Review, C. McCartney, *Wild Love Affair: Essence of Florida's Native Orchids*

15 Call for Endowment-Funded Research Proposals

15 FNPS Research Endowment Program: a Sample of Projects from 2003-2004

18 Special Contributors to FNPS

20 Where to Find FNPS

ABOUT OUR COVER : The showiest of Florida's many carnivorous plant species, pitcher plants (*Sarracenia* spp.) occur as far south as Okeechobee County, but the greatest concentrations are found in northeast and northwest Florida. This is one of the clumps in the bog at Fowler's Prairie. Photo by Paul Corogin.

Lower left: The rose pogonia (*Ophioglossoides*) a ground orchid also called snake mouth, has a delicate, fruity fragrance. Photo by Paul Corogin. See article

The Palmetto (ISSN 0276-4164) Copyright 2004, Florida Native Plant Society, all rights reserved. No part of the contents of this magazine may be reproduced by any means without written consent of the editor. The Palmetto is published four times a year by the Florida Native Plant Society (FNPS) as a benefit to members.

The observations and opinions expressed in attributed columns and articles are those of the respective

authors and should not be interpreted as representing the official views of the Florida Native Plant Society or the editor, except where otherwise stated.

Editor: Cameron Donaldson, email cammiedonaldson@earthlink.net, phone (321)951-2210. Mailing address: 2112 Helen St, Melbourne FL 32901-5914.

Editorial Questions: We have a continuing interest in articles on specific

native plant species and related conservation topics, as well as high-quality botanical illustrations and photographs. For submittal guidelines, deadlines and other info, please contact the editor.

Advertising Questions: Advertising directly related to the FNPS mission is welcome. Examples include but are not

Printed on recycled content paper.

AQUATIC PLANTS FOR FLORIDA

Field Grown Herbaceous Plants - Native Grasses & Trees
 Sea Oat Growers - Contract Growers - Livers & Containers
 30-Acre Certified Wetland Farm - Pond & Mitigation Installations
 Fountains & Azimuth Systems



Ph: 800-266-1272

Fax 941-378-0020

**AQUATIC
 Plants
 OF FLORIDA INC.**

8120 Blake Ct, Sarasota, FL 34230

William F. Bissett

Landscape Architect

Nancy J. Bissett

Horticulturist



(863) 422-6664
 FAX (863) 421-6520
 E-MAIL natives@jgals.net

17 native grasses
 including wiregrass
 trees, shrubs, & flowers
 for the restoration
 landscape architect

growing plants of natural Florida

Tampa Bay Area

SPECIMEN NATIVE PLANTS



- Quality
- Expertise
- Experience

80% of our inventory
 was raised locally
 in 1/2, 1, & 20 gallon
 Terra-Cotta, Plastic, and
 wood planters. We offer
 quality trees & shrubs
 from the Central Florida
 Native Plant Society. 20 years
 of industry experience,
 award winning employees,
 51,000+ square foot
 retail nursery, and
 more than 40,000 trees.



Best of the Best Nurseries
 Awarded by the Florida Native
 Plant Society for 2002

1-800-449-CFNF



ALL NATIVE
 Plant What Works

Formerly
**Central Florida
 Native Flora**

PALM BEACH COUNTY

Indian Trails Native Nursery

Fifteen acre native nursery
 Wholesale/Retail over 80 species

Email: IndianTrails@afnn.org

Phone: 561-641-9488

FAX: 561-641-8309

6316 Park Ln W, Lake Worth, FL 33467-6806

DPI REG # 0078884

*Tropical Plant
 and Seed Locators*

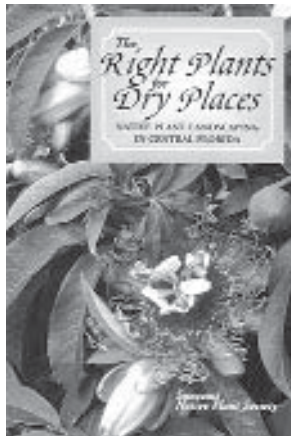


SAVE THE DATE! Annual FNPS Conference May 12-15, 2005

Celebrate our Silver Anniversary:
25 YEARS OF PRESERVATION, PROGRESS AND PROMISE!

Beat the Drought:

Xeriscaping for Florida Homes by Monica Moran Brandies tells how to use Xeriscape basics in concert with Florida's seasons and climate. Organic gardening principles are emphasized. Size 8 1/2" x 11", 184 pages, paperback, photos, index, plant charts, bibliography, \$18.95



The Right Plants for Dry Places, by FNPS Suncoast Chapter members, has color photos and growing information for over 40 drought-tolerant trees, shrubs, vines, groundcovers and wildflowers. Size 6" x 9", 112 pages, paperback, index, bibliography, plant chart, \$12.95

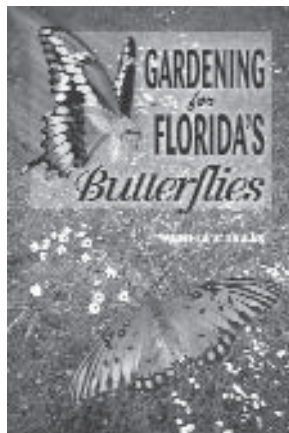
Available at native plant

Visit our website at www.floridabooks.com

Make Your Garden a Butterfly Haven!

This book discusses the butterfly life cycle, how to raise butterflies and how to transform your yard into butterfly habitat. It tells how to identify, grow and propagate flowering nectar plants to attract butterflies and host plants to support caterpillars.

- ✿ Describes 23 butterfly species, those most likely to be seen in gardens
- ✿ Profiles over 50 colorful, native wildflowers that feed butterflies and caterpillars
- ✿ Over 100 color photographs of butterflies, caterpillars, chrysalises, larval and nectar plants
- ✿ Bibliography, index, resource list, reference charts
- ✿ *Gardening for Florida's Butterflies*, by Pamela F. Traas (FNPS member!), size



Visit our website at www.floridabooks.com

FNPS Officers & Others

- Bailey, Amée**, Secretary, (813) 206-3439, aturtle2c@aol.com
- Bausch, Joan**, Vice President Administration, (772) 219-8285, jclb@gate.net
- Bierly, Jim & Teddi**, Membership Co-Chairs, (352) 382-3365, jbierly@tampabay.rr.com
- Buhrman, Judith**, Director at Large, (727) 398-3799, jbuhrman@aol.com
- Cox, Anne**, Public Lands Committee, (561) 744-9531, annecox@bellsouth.net
- Denton, Shirley**, Science Advisory Board, (813) 986-6485, ecotypes@myrapidsys.com
- Donaldson, Cammie**, Editor, The Palmetto and FNPS Administrative Services, (321) 271-6702, info@fnps.org
- Egolf, Bob**, President, (941) 351-2961, begolf@pcsonline.com
- Jubinsky, Greg**, Director at Large, (850) 539-9681, greg.jubinsky@dep.state.fl.us
- Kelly, Eugene**, Director at Large, (352) 754-8945, gkelly@gate.net
- Kennedy, Suzanne**, Conservation Chair, 321-452-2009, aragonizade@earthlink.net
- King, Matthew**, Landscape Awards Chair, (561) 585-0114, opuntia2@msn.com
- Lantz, Peggy**, Editor of *Sabal minor*, (407) 293-3676, peglantz@bellsouth.net
- Lei, David**, Vice President Finance, (561) 588-1054, warrioreagle@bellsouth.net
- Liberton, Cindy**, Communications Chair, (352) 583-2384, liberton@earthlink.net
- Main, Martin "Marty,"** Education Chair, (239) 658-3400, mbma@mail.ifas.ufl.edu
- NeSmith, Peter**, Director at Large, 1065 NE 13th Pl, Gainesville 32601-4567, 904-378-5712, shine09@aol.com
- Pernas-Giz, Leslie**, Conference 2005 Co-Chair, (321) 724-0592, birdwench@aol.com
- Plockelman, Cynthia**, Government Policy Chair, (561) 585-1278, cplocke@mindspring.com
- Thompson, Susan**, Treasurer, (772) 567-9006, sue@pa-services.com
- Trebatoski, JoAnne**, Development Chair, (239) 466-6711, plantnative@msn.com
- Woodbury, Lynka**, Director at Large, (305) 238-7551, ftgherb@fiu.edu
- Wunderlin, Richard**, Publications Chair, (813) 977-6484, rwunder@chumal.cas.usf.edu
- Zarillo, Kim**, Past President and Co-Chair, Conference 2005, (321) 255-5074, kearthwalk@aol.com

NOTE: Contact information for Regional/County Chapters is listed in the Where to Find FNPS section on page 20. Should you require a mailing address for

How wonderful it is that nobody need wait a single moment before starting to improve the world. —Anne Frank

A Bog by the Highway

A Unique Flora Faces an Uncertain Future

By Paul Corogin and Francis E. Putz, University of Florida

WE COULD FEEL THE WHOOSH OF PASSING TRUCKS ON FLORIDA STATE ROAD 20 AS WE CRAWLED THROUGH THE THICKET of catbrier vines (*Smilax laurifolia*), blackberry canes (*Rubus argutus*), and sweetspire shrubs (*Itea virginica*) hiding the pitcher plant bog at Fowler's Prairie. After a few minutes of soggy, scratchy struggle, we emerged into the bright May sunlight to behold a flooded landscape highlighted

by a profusion of hooded pitcher plants (*Sarracenia minor*) and rose pogonias (*Pogonia ophioglossoides*). The pitcher plants were in full bloom, their curious nodding yellow flowers shining in the sun among clumps of young pitchers rising from the frost-burned wreckage of last year's growth. Erect stems of bright-green club-mosses (*Lycopodiella appressa*) poked up everywhere from the muck, among bushy tufts of yellow-eyed grass (*Xyris spp.*), bog buttons (*Syngonanthus flavidulus*), water-lily pads (*Nymphaea sp.*) and emerging equitant-leaved Carolina redroot (*Lachnanthes caroliniana*). The elegant, tiny yellow and purple flowers of carnivorous bladderworts (*Utricularia spp.*) were unavoidably underfoot, and chest-high St. John's wort (*Hypericum brachyphyllum*) brushed our sleeves as we slogged about. Dense clumps of shrubs and small trees dotted the open expanse and a wall of woody plants crowded in upon it from the edges.

Bogs like the one at Fowler's Prairie were once a common sight across the southeastern coastal plain, especially in the "bog belt" bordering the Gulf of Mexico, but now they are rare and vanishing due to drainage, overgrazing, and fire suppression. All such bogs are special, but this one is particularly so because of the extraordinary heights of the pitchers (up to 65 cm tall, big for *S. minor*) and due to its location well south of the bog belt. And most urgently, this bog calls out for attention because it is adjacent to a main thoroughfare scheduled for widening. So as we waded about the bog, marveling at its

botanical treasures, we wondered, with some consternation, what would become of it.

Although they are called "pitcher plant bogs" after their most striking botanical inhabitants, these fascinating wetlands are actually home to quite a number of uniquely adapted plants that have evolved to tolerate the extremely stressful conditions created by long-term flooding, low nutrient availability, and bright sunlight. While they tolerate some physiological stresses very adeptly, these plants are fragile, succumbing rapidly to hydrological changes (either drainage or impoundment). And having solved some of their nutrient access problems through insectivory, the sundews (*Drosera spp.*), pitcher plants, bladderworts, and butterworts (*Pinguicula spp.*) are particularly sensitive to the fertilization effect of increased runoff such as might result from a road-widening project. Also, these

plants will not grow well in the shade of shrubs and trees that slowly encroach when fires are suppressed. A recent study in Florida state parks, for example, revealed that many pitcher plant bogs are in poor condition and pitcher plant populations are declining due to altered hydrology and invasion of woody species due to fire suppression (Johnson 2001).

Indiscriminate plant collecting can also spell doom for many of the more showy bog species, particularly pitcher plants and orchids. The current lack of a path into the bog at Fowler's Prairie and its abundance of orchids suggest that illegal collecting has not yet been a problem. Fortunately, drivers roaring down Route 20 currently cannot see into this fantastic bog. We draw attention to it with trepidation, but in recognition that



***Sarracenia minor*, hooded pitcher plant, a bog resident. Five of Florida's six pitcher plant species are state listed as threatened or endangered.**

Photos by Paul

Flowers and new pitchers rising from frost-burned wreckage of the previous year's growth.



it needs help if it is to survive for much longer, with or without road widening. Some public attention is needed, but not of the wrong kind.

Fowler's Prairie, a wet-prairie ecosystem, covers approximately 1100 acres near the border of Putnam and Alachua Counties in north central Florida, but only the southernmost 60-100 acres still has an intact bog flora. Before Route 20 was built through it in 1910, it is likely that the bog flora covered a much greater area than it does today. Years of heavy cattle grazing on the prairie north of the road could be the reason why we saw no pitcher plants, orchids, bog buttons, or sundews there. Ironically, it might be the highway itself that protected the bog that remains. Although the remnant bog is still glorious, it is badly in need of management, particularly the resumption of frequent fires that would restrain the encroachment of shrubs and trees. Loblolly bay (*Gordonia lasianthus*), red maple (*Acer rubrum*), wax myrtle (*Myrica cerifera*), fetterbush (*Lyonia lucida*), titi (*Cyrilla racemiflora*), and dahoon holly (*Ilex cassine*), not to mention tangles of smilax vines, are steadily claiming the open space. Many of the clumps of pitcher plants are already noticeably suffering in the shade of these encroaching woody invaders.

Our concern over the fate of the bog at Fowler's Prairie motivated us to call Pete Southall, environmental scientist with the Florida Department of Transportation (FDOT). He assured us that SR 20 is planned to be widened only to the north, where there are currently no pitcher plants. FDOT was alerted to the bog's existence some years ago and the threatened status of *S. minor* mandates that it be protected whenever possible. Interestingly, it was the presence of the threatened spoonleaf sundew (*Drosera intermedia*), which we have not yet seen there, that originally drew their attention to the site. But whether or not FDOT expands the road in such a way that

there are no direct effects on Fowler's Bog, the pitcher plants, sundews, and orchids will not persist much longer without some active management. Bogs like this are worth saving not only because of their odd carnivorous botanical denizens, but because many scientific lessons in ecology and evolutionary biology can be learned by studying them. Finally, bogs are part of Florida's natural heritage; future generations of Floridians deserve opportunities to enjoy them.

Perhaps we should have kept the secret of Fowler's Bog, but wouldn't it be wonderful if the widening of SR 20 became an opportunity rather than a risk? That's how representatives of Plum Creek Timber, the current owners, view the situation. They share our concern about the welfare of the bog and want to be sure that it is well managed. Management of the small remnant bog to the south of the road will clearly involve hardwood control and maintenance burns, but what about the much larger expanse of former bog to the north? Could bog vegetation be restored and fireproof boardwalks and interpretive signs installed? Can plant collectors be dissuaded from doing damage to this precious place? Road widening is still a few years off, so there is yet time to make some plans and save this bog by the highway. ✱

USEFUL REFERENCES

- Ellison, A. M., and N. J. Gotelli. 2001. *Evolutionary ecology of carnivorous plants*. TRENDS IN ECOLOGY & EVOLUTION 16: 623-629.
- Folkerts, G. W. 1982. *The Gulf Coast pitcher plant bogs*. AMERICAN SCIENTIST 70: 260-267.
- Johnson, E. D. 2001. "Pitcherplants and their habitats in the Florida State Park system, resource conditions, trends, and management needs." *Resource Management Evaluation Report*. Florida Department of Environmental Protection, Division of Recreation and Parks, Tallahassee, FL. 102 pp.
- Schnell, D. E. 2002. *Carnivorous Plants of the United States and Canada*. Timber Press, Portland, OR.

FNPS publications: Where do we go from here?

In our October-November 2004 *Sabal minor* (pg. 4), FNPS Vice President of Finance David Lei presents the rising costs for our two publications, *The Palmetto* and *Sabal minor*, which together constituted 21% of the 2004 budget. In 2004, FNPS spent \$26,500 on *The Palmetto* (\$21,300) and *Sabal minor* (\$5200). Many years ago, the FNPS Board of Directors established policy that no more than 25% of membership revenues could be used for *The Palmetto* (and if anyone has a copy of this policy in writing, we would be most grateful to obtain it). No such restriction has been placed on the *Sabal minor*. Advertising income for *The Palmetto* amounted to \$2500.

To reduce these costs and put more funds into other important projects, David has proposed, as one option for member consideration, that FNPS cease distribution of the publications in paper form, instead providing digital copy to chapters. Chapters could choose their own distribution methods (including email and printing). This would reduce the lion's share (perhaps as much as 75%) of the publications' current budgets, and offset some costs to the chapters.

Recently, a subset of the Communications Committee met with Bob Egolf, FNPS President, to discuss our publications (this discussion included the FNPS website as a publication).^{*} Our goal was to identify strengths and weaknesses of these publications and how we can evolve them to better serve our membership, yet remain within our operating budget.

We also needed to more clearly distinguish the roles of the two publications, something which is often not clear to readers. We agreed that the *Sabal minor* should serve to showcase the best practices of FNPS – those projects and actions which we can all learn from and apply in our work as advocates, conservationists, and educators. The *Sabal minor* already serves to communicate Society and chapter activities, we just need a little more help from our chapters in broadcasting the amazing things you do. By incorporating more of our “best practices,” the *Sabal minor* can serve to assist and inspire us all in our FNPS work.

The Palmetto is our flagship publication. We've established an attractive, authoritative format with a mix of articles to serve the interests of amateur botanists, environmentally concerned gardeners and landscapers, and those interested in Florida's natural and cultural history as it relates to native plants. We could use more articles on endangered plants, plant-animal connections, restoration issues, scientific research, horticultural studies involving native plants, and showcase landscape projects.

Shirley Denton has overhauled the FNPS website and apparently sleeps only two hours a night so that she can constantly update

and upgrade the site. Cindy Liberton has been her right-hand aid. The FNPS website is our most public face, and is also becoming ever more important as a tool for communications and collaborative work among board members and chapters. Slowly but surely, all FNPS information will be archived on the website. The site will become more important to individual members as we add information and capability.

All of these publications are important in terms of the niches they fill, and all take considerable resources to produce. It is very unlikely that our printed publications can continue in their current format because of the rising costs of production. This is especially so for *The Palmetto*, which faces a strict budget policy. We discussed a variety of options for *The Palmetto*, including:

- Reducing the number of pages in each issue to 16 (largely by eliminating advertising and supporter listings, so editorial content could be maintained)
- Reducing the frequency of issues (perhaps three times a year or one large annual issue)
- Going to an all black and white format

The cost savings associated with these measures are yet to be determined. These kinds of changes are best accomplished in concert with changes in the *Sabal minor* (more attractive format and better content), so that our members continue to receive a high level of service from their publications. We also discussed a desire to have a more consistent look across all three publications and hope to accomplish a redesign of the *Sabal minor* and the website in the next year.

Now, to throw yet another idea into the pot: we've been contacted by the Ladybird Johnson Wildflower Center, which produces a quarterly magazine, *Native Plants*, that “seeks to educate people about how native plants affect our lives, not only through their beauty but also through the benefits they provide to ecosystems everywhere – benefits like cleaner air and water and nourishment for wildlife. Popular, journalistic writing and vivid four-color nature photography makes the science of native plants easy-to-understand and inspires readers to use them and to act in ways that help preserve them.” The Center welcomes a partnership that helps us recruit more new members and better serve those of our members eager for that pretty, popular approach to native plant topics. Possibilities include offering a subscription to *Native Plants* for \$15/year or incorporating our regionally-specific information as an insert (and they take over printing and mailing).

DEAR MEMBERS, WE NEED TO HEAR FROM YOU. What ideas do you have with regard to your member publications (and any others). How do you feel about the ideas presented, including electronic distribution, reduced publication frequency, the elimination of color,

^{*}This group included Shirley Denton, FNPS Webmaster and Chair, Science Advisory Board, Cammie Donaldson, Editor of *The Palmetto*, Peggy Lantz, Editor of *Sabal minor*, and Cindy Liberton,



Cameron M.
Donaldson

American Black Nightshade

Number 2 in the Series

by Rufino Osorio

Two species of black nightshade are native to Florida, *Solanum americanum*, the American black nightshade (also known as common or glossy black nightshade), and *Solanum chenopodioides*, the goosefoot black nightshade. *S. americanum* has shiny black fruits that are held erect and are so glossy as to appear coated with varnish, whereas *S. chenopodioides* has nodding, dull black fruits. In general, black nightshades are ignored by gardeners and are regarded as weedy annuals of little horticultural merit.

Being common weeds, I did not pay any more attention to the black nightshades occurring in Florida than I did to black nightshades growing in Chicago alleys or in waste ground in Puerto Rico. However, my negative views changed when, on an impulse, I rescued a seedling of *Solanum americanum* growing in a lawn in downtown West Palm Beach. The seedling was established in a pot of sandy soil, and, when it was well-rooted, planted in a sunny, moist spot in the garden. American black nightshade occurs in nearly every county in Florida in a wide variety of both upland and wetland sites. Therefore, I had no doubts that it would be easy to grow and easy to propagate from cuttings and seeds, and that indeed turned out to be the case.

The seedling soon grew into a bushy plant nearly 3 feet high and almost as wide, bore innumerable little flowers, and became laden with an equal number of showy, glossy black fruits. Growing in close proximity in the garden, I was able to carefully observe this plant and learned that this much maligned weed had many virtues.

Solanum americanum is a fast-growing pioneer plant that helps to stabilize recently disturbed soil — an important ecological role. In the garden, it plays the useful role of attracting a wide variety of wildlife. Most *Solanum* species, including American black nightshade, have flowers adapted for pollination by bees. Each anther

opens by a tiny pore at its tip and the pollen is inaccessible to most insects. Bees, however, are able to shake the pollen out of the anthers by grasping it with their legs and buzzing their wings. The resulting vibrations cause the pollen to spill out of the anthers in the same manner that shaking a salt shaker causes salt to spill out. Once the fruits are set and begin to ripen, the plant becomes attractive to larger animals — 31 birds and a dozen mammals have been recorded as eating the berries of American black nightshade.

Like many other plants, American black nightshade has its flaws and three stand out in particular. Being an annual or short-lived perennial, plants are not permanent in the garden and must be periodically replaced. Secondly, as with all plants, it is sometimes afflicted

by pests, the most frequent being aphids and leaf miners, but occasionally tobacco or tomato hornworms may make a meal of foliage. I tolerate aphids and leaf miners because they contribute to the diversity of wildlife in my yard and I leave hornworms alone because they grow into hawkmoths, important pollinators of native plants whose flowers open at dusk. Lastly, large plants with masses of black, glossy berries may seem out of place among gayly colored wildflowers and look as if they



would be more at home in the herb or vegetable garden.

Since black nightshades can become serious agricultural weeds, I was worried that the seedling I rescued would overrun my garden. Fortunately, black nightshades are specialized for colonizing open, disturbed ground and, in my experience, the seeds will not germinate if the ground is covered in any way, such as by mulch, fallen leaves, or other plants. Thus, in spite of both the original and subsequent plants producing huge crops of berries, less than two dozen seedlings have spontaneously appeared in my garden in four years.

Some gardeners may hesitate to grow American black nightshade because it is frequently encountered on lists of poisonous plants. However, and rather paradoxically, it is just as frequently encountered on lists of edible plants! Strong evidence of its edibility

has come from feeding experiments with cattle that ultimately were unable to demonstrate any toxicity (Rogers & Ogg 1981). Additionally, there are numerous instances of the leaves and ripe berries being used as food both by aboriginal and modern cultures throughout its range. Recently, *Solanum americanum* has received attention as a vegetable worthy of domestication to supplement the nutrition of poor, rural, Central American communities. The plant is already a component of the everyday diet of such communities and scientific investigations have shown that American black nightshade grows rapidly, adapts well to a wide range of altitudes and soils, and has more protein, calories, fiber, calcium, iron, B vitamins, and vitamin C than spinach (De Macvean & Pöhl 2002). Because of the conflicting reports of its toxicity, there is some speculation that perhaps both toxic and nontoxic races exist. This theory is supported by observations that some plants have bitter leaves and unpleasant tasting berries while others have bland leaves and mildly sweet berries.

Conservation Note: Florida's only other species of black nightshade, *Solanum chenopodioides*, while common in most parts of Florida, is listed as critically imperiled in southern Florida by the Institute for Regional Conservation. As a result, care should be taken not to endanger south Florida populations of *Solanum chenopodioides* by collecting plants or removing cuttings or seeds. ✱

REFERENCES

- De Macvean, A.L. and Pöhl, E. 2002. *Ethnobotany* (Chapter 8). In: Vozzo, J.A. (ed.) TROPICAL TREE SEED MANUAL. U.S. Department of Agriculture, Forest Service. Agriculture Handbook No. 721.
- Rogers, B.S. and Ogg, A.G. 1981. *Biology of Weeds in the Solanum nigrum Complex* (Solanum Section Solanum) in North America. U.S. Department of Agriculture, Agricultural Reviews and Manuals, ARM-W-23.

Editorial Policy for The Palmetto

Plant Names and Status (Native or Not)

by Cameron Donaldson, Editor

The Palmetto uses the *Guide to the Vascular Plants of Florida*, Wunderlin and Hansen, Second Edition, 2003, as a standard for scientific names (but not common names) and the status of plants as natives, endemics, or exotics. All articles are checked against this standard. Authors are asked to follow this standard unless they disagree with it, in which case an explanation is requested and will be provided for readers. Differences of opinion, new information, and corrections are expected and serve as education for our readers. For common names, we expect authors to use their knowledge of the most frequently used or appropriate common name based

Attention Long-time Landowners Century Pioneer Family Farm Program Recognizing Your Contribution to Florida History

With less than 2 percent of Americans now living on farms, not many can trace their agricultural heritage back 100 years. European agriculture began in Florida with the founding of St. Augustine in 1565, 44 years before Jamestown was founded. The oldest farms and the oldest farm families in the United State are Floridians. Florida was first in agriculture but frequently overlooked in American history because it was a Spanish colony and not one of the 13 British colonies.

The Florida Department of Agriculture and Consumer Services (FDOACS) wants to honor Floridians who have maintained at least 100 years of continuous family farm ownership by certifying them as Century Pioneer Family Farms. "These families ... have been through good times and trying times; experienced freezes, droughts, deluges and pest invasions. They know about hard work and the satisfaction it brings," noted Charles Bronson, FDOACS Commissioner. Florida has 176 certified Century Pioneer Family Farms in the program, which was initiated in 1985 and is now administered by the Florida Agricultural Museum. FDOACS is asking families that have continuously owned a farm or ranch since 1905 to contact the department and request an application form. (Please do so even if you are not currently engaged in significant farming or ranching activities.)

The property must have remained in the family throughout the period for the family to be eligible for recognition. An abstract of title is the best evidence of continuous family ownership. Current title to the property must reside with a blood relative of the original owner or a legally adopted child of a descendant. In addition to receiving a certificate, Century Pioneer Family Farms also receive a sign that can be posted on the property denoting its significance.

For information about the Century Pioneer Family Farm program or to request an application form:

EMAIL: famuseum@pcfl.net

OR WRITE:

Charles Bronson
Commissioner of Agriculture
1850 Princess Place Road
Palm Coast, Florida 32137

ATTN: ECONOMIC & TOURISM DEVELOPMENT COUNCILS

"Why not cut out all the imitation stuff? The greatest tourist spots are made by sticking to native trees and shrubbery ... The palms transplanted here are not native, look out of place, and are not nearly as attractive as the beautiful oaks, dogwood, and other native growth. Anyway, the tourist prefers naturally to visit the original and not the imitation."

February 1927 - George Horace Lorimer, Editor, SATURDAY EVENING POST, addressing a Mississippi business group interested in stimulating tourism

by Chuck McCartney, Broward Chapter

WILD LOVE AFFAIR:

ESSENCE OF FLORIDA'S NATIVE ORCHIDS

When a person makes a life-altering discovery, it is human nature to want to share that experience with others. For author and photographer Connie Bransilver, that discovery was the swamps of Southwest Florida, especially the deep, alluring cypress and pond apple forests of the fabled Fakahatchee Strand, home of the legendary Ghost Orchid featured so prominently in Susan Orlean's best-selling book, *The Orchid Thief*.

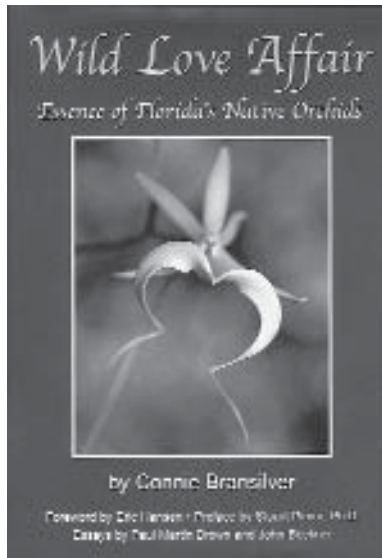
Bransilver's zeal for her newfound paradise first manifested itself in the book, *Florida's Unsung Wilderness: The Swamps* (2000, Westcliffe Publishers), which she co-authored with Larry W. Richardson. Now she focuses, in both words and pictures, on one element of those beloved swamps – the orchids that make their home there.

The result is *Wild Love Affair: Essence of Florida's Native Orchids*. The first part of the title captures the romantic ardor with which Bransilver approaches her subject in this coffee table-style book of 128 pages featuring 148 of her photographs of mostly native orchids and their habitats. These photographs are the book's major reason for existence. They are its strength – or its weakness, depending on your point of view.

The book's large 9 x 12 inch format allows the photographs of the flowers to be presented larger than life, and the pictures are printed on high-quality glossy paper, giving them a wonderful richness of tone. And some of the photographs are quite beautiful, from the Ghost Orchid (*Dendrophyllax lindenii*) facing the contents page (a different, less successful shot appears on the cover on the dust jacket) to the portrait of the Clamshell Orchid (*Prosthechea cochleata* var. *triandra*) on page 104 toward the end of the book. And Bransilver's page 102 photograph of the tiny flower of *Prosthechea pygmaea* is an amazing close-up. (A caption on an earlier photo of the same species calls it "the smallest of Florida's orchids," which is not correct. That distinction more properly belongs to *Harrisella porrecta* or the elusive *Lepanthopsis melanantha*.)

Despite the handsome photographic reproduction and the occasional winners among the pictures, many of the photos are presented in a gauzy, super-soft focus that would make a field photographer cringe. Close-up photography of flowers in the wild is always a chancy endeavor, affected by such variables as sunlight and wind – not to mention deep swamp water and alligators. But many field photographers, who generally aim for crisp focus, might be reluctant to show photographs like some of Bransilver's in public.

Orchid enthusiasts accustomed to sharply focused photos showing as much botanical detail as possible will have to look elsewhere. This book is not intended as a field guide. Instead, Bransilver's



impressionistic approach serves Art, sometimes at the expense of showing off the subject of the photo in its best light.

Bransilver explains her approach in a note at the beginning of the text: "In my photographs and in my writing, I try to move beyond the confines of perfect focus and into the realm of the spirit, for in life things are never completely clear. Realists may not like my photos. Dreamers will."

The text of five short chapters also reflects this approach, jumping from fact and description to personal impressions and insights to interviews and anecdotes. Some might call it kaleidoscopic in its method. Others might consider it a shotgun approach.

The book features a forward by Eric Hansen, author of *Orchid Fever*, a preface by ecologist Stuart Pimm, and short essays of varying usefulness from orchid specialists Paul Martin Brown, author of *Wild Orchids of Florida*, and John Beckner of the Marie Selby Botanical Gardens in Sarasota, Florida.

The back of the book offers a useful list of South Florida's native and naturalized orchids compiled by Brown and a one-page bibliography. Noticeably missing is an index, which would have made the book more user-friendly.

The book, as passionate and inspiring as it may be, is not without its gaffes. Two of the three photos on pages 44 and 45 appear to be misidentified. A caption talking about epiphytic orchids in Madagascar shows what looks for all the world like a terrestrial *Spathoglottis* species from Southeast Asia. And above the facing caption, which talks about orchids native to the montane forests of Sulawesi in Indonesia, there is a photograph of what appears to be a New World reed-stemmed *Epidendrum* of the *Epidendrum secundum* type.

Rather than preaching to the choir, that is, to those people who already know and understand the beauty and ecological importance of Southwest Florida's swamps and their orchids, Bransilver is trying to reach an entirely different audience, mainly the uninitiated. This book is aimed at them, and with luck, the author's romantic zeal and artistic rather than realistic photographs will imbue them with a better understanding or appreciation of these mysterious, beautiful places.

ABOUT THE REVIEWER: Chuck McCartney is one of our favorite orchidophiles and a recognized expert on the genus in Florida. A fine photographer, wildflower hunter, eminent qualified guide, and highly entertaining dinner companion.



In the early 1970s, bloodberry (*Cordia globosa*) was one of the rarest shrubs in the pinelands of Miami-Dade and Monroe Counties. Then, the butterfly enthusiasts discovered the plants and *C. globosa* appeared everywhere in cultivation. These devotees may well have invented the name bloodberry, because it is not in any of the older literature. The same people, or their horticultural friends, surely created the more recent name, butterfly sage.

Bloodberry is perhaps based on *yerba de la sangre* (blood herb, Cuba) or maybe *sanguinaria* (for the blood, Cuba). The red fruits following the small clusters of white flowers make the names seem appropriate. However, the Spanish versions were based on medical uses. In Cuba and Hispaniola, a decoction of the plants is highly esteemed as an astringent and hemostat in case of pulmonary hemorrhages. Throughout the range of the species, the main application is for lung problems (Roig 1945, Liogier 1974, Morton 1981). That use holds through the range of *C. globosa* in southern Florida, the Bahamas, Cuba, Hispaniola and Puerto Rico to Aruba, Bonaire, Curaçao, and Margarita, from there onto mainland Venezuela, Colombia, and in Central America through Belize, Guatemala,

ABOVE: Close-up of the flower of *Cordia globosa*, traditionally called blood-berry. Popular naturalist and flower lover Roger Hammer has taken credit for the newer, more attractive common name: butterfly sage.

El Salvador, Honduras, Nicaragua, Costa Rica, and north to Mexico (Yucatán, Chiapas, Campeche, Morelos, Quintana Roo). Jamaicans use a tea for colds and tightness of the chest. The same use is made in the Grenadines as a remedy for colds, chest congestion, and for menstrual cramps (Morton 1981).

The name *butterfly sage* is also related to black sage (Caymans, Jamaica), man black sage (Jamaica), and wild sage. Those are simply English variants on Spanish *salvilla cimarrona* [*savilla cimarrona*] (wild sage). People everywhere have learned that *Salvia* (LAMIACEAE) is a useful medicine, and any plant that resembles it may have “sage” applied. The leaves of bloodberry are somewhat fragrant, providing some rationale for using this common name.

Many of the other common names have more or less obvious references to medical applications. Several plants in the French Antilles are called *bonbon* (candy), with different modifiers, and some are medicinal. *Cordia globosa* is *bonbon rond* (round candy, Guadeloupe and Martinique). The Jamaican gout tea may be a valid name (and use), or it may be a misunderstanding of the French *guérit-tout* (cure all, Guadeloupe, Martinique, Trinidad). Several Caribbean medicinal plants are named after people, maybe because they were renowned healers. For bloodberry, it is John Charles [John Charley] (Jamaica) or *Juan prieto* (black John, Dominican Republic).

There may be more than one message in *rompe camisa hembra* (female torn shirt, Cuba). That is especially true since the antonym is *rompe camisa macho* (*Turnera diffusa*). *Turnera*, known in the herbal industry as *damiana*, is touted as an aphrodisiac. Maybe *C. globosa* is also used that way.

Several other names are probably allusions to herbal medicines. Avocado (*Persea americana*) is used medicinally and so the Venezuelan name for cordia, *aguacatico* (little avocado), surely denotes the plant's use in medicines. Some names comparing the shrubs with VERBENACEAE include *caraiquito negro* (black Lantana, Venezuela), and *caraiquito de sabana* (savana lantana, Venezuela). Maybe the inclusion of indigenous words such as *saraguaso prieto* (black saraguaso, maybe Taino, Puerto Rico) complicates this imperfectly known name. No translation has been found for *ateje* (Taino?, Cuba), but it is used for more than one *Cordia* species.

Both *copillo* (little cup, Puerto Rico) and Curaçao bush (British Antilles) allude to medicines. However, it is not clear what is meant by *cuajajinta* (coagulates ink [or coffee], El Salvador), unless it is an allusion to a terrible



Cordia globosa (left). a. Flowering branch. b. Flower. c. Flower longitudinally dissected. f. Pistil. g. Flower on right. Drawn by Priscilla Fawcett. From Correll and Spongberg, 1963, *Flora of the Virgin Islands*, University of Florida Press.

taste. Other names with obtuse allusions are *herbe à boue* (filth herb, Guadeloupe and Martinique), *muñeco* (doll, Dominican Republic), *palo negro* (black stick [tree]), and *papita* (little potato, Cuba).

Bloodberry is also used against fever (Ayensu 1981). For that problem, a decoction is made with it, fever grass (*Andropogon citratus*) and bamboo (*Bambusa vulgaris*). A



Photo by J. Lange



er bud. c. Flower from above. d. Flower, side view.
l diagram. h. Fruit in cluster on left, enlarged fruit
and Correll 1982. Reproduced here with permis-

simple decoction of bloodberry has been used in Cuba and elsewhere as a depurative for troublesome skin eruptions (Roig 1945). This mixture is used internally and in baths. In Jamaica, the plant decoction is used as a beverage. People in Yucatán employ the leaves as seasoning in cooking armadillo to improve its flavor.

It is hard to see how *mierda de gallina* (chicken feces, Cuba) or *zompopo* (simpleton or a species of ant, El Salvador) might indicate any human use, but perhaps they do. *Cenigal* (*ceniza*, ash, with the suffix *-al*, an ash-colored thicket, Dominican Republic) may also suggest a use or simply be descriptive. The names *diente de chucho* (dog's tooth) and *diente de perro* (dog's tooth) surely refer to the distinctive leaves. In Maya, the name is simply a mention of a pest, *hauche* (*hau* [haw], open the road, *che'*, tree, Maya). This is given because the trees grow frequently in paths and need to be removed.

No further information was found on *achehive* [*achechibe*]; it seems to be an indigenous name. I would not be surprised if the name had not been derived from *anacabuite*, a Mexican name originally given to *C. boissieri* and then to *C. sebestena*.

Cordia globosa is not the only *Cordia* species that people have used. Linnaeus placed three species in *Cordia* in 1753, and two of these had reputations as medicines. The one best known in Europe was the Old World *C. myxa* (Grigson 1986), which Linnaeus had grown at the botanical garden in Uppsala. He had previously reported on it in his book *Materia Medica* in 1749.

A first-hand report of American species was made by Hans Sloane, from the time he

spent in Jamaica. Although Linnaeus visited Sloane in Chelsea in 1736, he was dismayed that the herbarium was bound up in books and could not easily be studied. Linnaeus created names based on Sloane's publications work and not from his herbarium.

Due to the difficulty and time needed to browse through the 265 volumes of Sloane's specimens, perhaps it is understandable that Linnaeus did not mention what is now called

Cordia

Trees or shrubs with entire (in Florida), persistent petiolate leaves and persistent naked buds. Flowers in terminal determinate inflorescences with the seemingly lateral flowers borne alternately on opposite sides of a pseudoaxis and sometimes appearing like a raceme (scorpioid) or branched cymes, the 5-lobed calyx tubular or bell-shaped, the 5-lobed corolla funnel-shaped (or tubular outside Florida), white or colored. Ovary with 4-locules, the style two-branched near the middle, each branch two-parted. Fruits drupes (or dry outside Florida) that are partly enclosed in the calyx.

This is a pantropical genus in the family BORAGINACEAE containing ca. 320 species. The West Indies has perhaps 100 species, with 80% of them endemic. There are two well-known species in Florida: *C. globosa* and *C. sebestena*. Although *C. globosa* is listed as endangered by the Florida Department of Agriculture and Consumer Services, it is widely cultivated. Oddly, the less well known, and even rarer, native

ABOUT THE NAME, CORDIA: The *Cordia* genus was named by Linnaeus in honor of the German botanist and pharmacist Valerius Cordus, 1515-1544, one of the fathers of pharmacognosy. The original title of this article was Bloodberries and Dog Tits, two of the more colorful common names for *C. globosa* and *C. sebestena*.

C. globosa being among them. On the other hand, perhaps he did not know what to do with it. In such cases, he simply kept quiet.

Sloane's illustration of *Caryophyllus spurius inodorus, folio subrotundo scabro* [false odorless carnation, with almost round scabrous leaves] served as the basis of what Linnaeus called *C. sebestena*. We have to wonder if Linnaeus knew the meaning of the Arabic name *sebestena* (from *seg pistan*, dog tits, Grigson 1986), but I will bet he did.

The other reference Linnaeus used for *C. sebestena* was Mark Catesby. In his text, Catesby (1734-1747) reported that the wood of that tree, "...contains much Gum, in Smell and Appearance resembling Aloes, and is by the Inhabitants of the Bahama Islands (where it grows) called Lignum Aloes." Even today, aloe-wood remains a common name for *C. sebestena* in the Bahamas.

The tree's similarity with the Mexican species, *C. boissieri*, has caused it to be known by the Náhuatl name for that species, *anacahuite* [*anacahuita*, *anacagüita*, *anaconda*] (paper-tree, Yucatán,



A. Edwards

A fulvous hairstreak butterfly nectars on butterfly sage. The host plant for this introduced butterfly is one of our most prominent pest plants, Brazilian pepper.

Cuba, Puerto Rico). The Maya of Yucatán call it *kopté* [*copté*, *sak-k'opté*, *zak-k'opté*, *zac-copté*] (*sak*, white, *k'opté*, with a hard center). The Spanish *siricote* [*ciricote*, *zircote*] (Yucatán, Guatemala, Belize) or *siricote blanco* (white *ciricote*, Yucatán) is surely a corruption of the Maya. These names are used for the tree whose wood is hard, and whose fruits are used for food (Rico-G et al. 1990). To be eaten, they are made into preserves or jam, and have a good flavor. The fresh fruits directly from the tree are considered edible, but are not good. Apparently, sweetening and preserving fruits improves the taste.

In the Lesser Antilles, *C. sebestena* is called *bois râpe* (rough tree, because of the sandpaper leaf surface, Guadeloupe and Martinique), *manhage* (Aruba, Bonaire, Curaçao), scarlet accordia (Dutch Antilles), scarlet flower (Dutch Antilles), *sébastienier* (Guadeloupe and Martinique), and *ti-soleil* (little tea, French Antilles). It is also called *caujaro Español* [*cawara spaño*, *karawaara spanjool*] (Spanish *caujaro*, Aruba, Bonaire, Curaçao). *Cordia alba* in Venezuela was the original *caujaro*, perhaps a name of Arawakan language origin.

Cordia sebestena is also in Florida, but it is questionably native. The legend says that John James Audubon gave it the name "Geiger tree" because of the specimens that 19th century ship captain John Geiger planted at Key West (Little 1979). According to Acevedo-Rodriguez (1996), the species is only native to the Greater Antilles, the Bahamas, and the Virgin Islands. He considers it introduced elsewhere as an ornamental. Indeed, it has been taken widely through the Americas and elsewhere where it is cultivated for its orange-red flowers and white fruits. Some of the plants may also have been grown for the edible fruits and medicinal traits. Certainly, the species has a venerable reputation for both. *Cordia sebestena* is listed as non-native in the Flora of Florida development and currently represented in the Florida Vascular Plants of Florida by W. S. Gardner & Hansen,

REFERENCES

- Acevedo-Rodriguez, P. and Collaborators. 1996. *Flora of St. John U.S. Virgin Islands*. The New York Botanical Garden, Bronx, NY.
- Akhtar, A.H. and Ahmad, K.U. 1995. *Anti-ulcerogenic evaluation of the methanolic extracts of some indigenous medicinal plants of Pakistan in aspirin-ulcerated rats*. JOURNAL ETHNOPHARMACOLOGY 46(1): 1-6.
- Ayensu, E.S. 1981. *Medicinal Plants of the West Indies*. Reference Publishers, Algonac, Michigan.
- Basu, N.G., Ghosal, P.K. and Thakur, S. 1986. *Some structural features of an arabinogluconan from the fruits of Cordia dichotoma Forst.* CARBOHYDRATE RESEARCH 146(2): 350-351.
- Bieber, L.W., Krebs, H.C., and Schafer, W. 1994. *Further meroterpenoid naphthoquinones from Cordia corymbosa*. PHYTOCHEMISTRY 35(4): 1027-1028.
- Bieber, L.W., Messana, I., Lins, S.C.N., Silva Filho, A.A. da, Chiappeta, A.A., and Mello, J.F. de. 1990. *Meroterpenoid naphthoquinones from Cordia corymbosa*. PHYTOCHEMISTRY 29(6): 1955-1959.
- Coile, N.C. and Garland, M.A. 2003. *Notes on Florida's Endangered and Threatened Plants*. Florida Department of Agriculture and Consumer Services, Contribution No. 38, 4th edition, Gainesville, FL.
- Fun, C.E. and Svendsen, A.B. 1990. *The essential oil of Cordia cylindrostachya Roem. and Schult. grown on Aruba*. JOURNAL OF ESSENTIAL OIL RESEARCH 2 (4): 209-210.
- Grigson, J. 1986. *Exotic Fruits and Vegetables*. Henry Holt and Co., New York.
- Hayashi, K., Hayashi, T., Morita, N., and Niwayama, S. 1990. *Antiviral activity of an extract of Cordia salicifolia on herpes simplex virus type 1*. PLANTA MEDICA 56(5): 439-443.
- Hodge, W.H. and Taylor, D. 1957. *The Ethnobotany of the Island Caribs of Dominica*. Webbia 12(2): 513-644.
- Isoet, J.R., Marston, A., Gupta, M.P., and Hostettmann, K. 1998. *Antifungal and larvicidal meroterpenoid naphthoquinones and a naphthoxirene from the roots of Cordia linnaei*. PHYTOCHEMISTRY 47(5): 729-734.
- Liogier, A.H. 1974. *Diccionario Botanico de Nombres Vulgares de la Española*. Impresora University Nacional Pedro Henríquez Ureña, Santo Domingo.
- Little, E.L.J. 1979. *Checklist of United States Trees (Native and Naturalized)*. United States Department of Agriculture, Washington, D.C.
- Marston, A., Potterat, O., and Hostettmann, K. 1988. *Isolation of biologically active plant constituents by liquid chromatography*. JOURNAL OF CHROMATOGRAPHY 450(1): 3-11.
- Morton, J.F. 1981. *Atlas of Medicinal Plants of Middle America, Bahamas to Yucatán*. Charles C. Thomas, Springfield, Ill.
- Nakamura et al. 1997. Nakamura, N., Kojima, S., Lim, Y.A., Meselhy, M.R., Hattori, M., Gupta, M.P. and Correa, M. 1997. *Dammarane-type triterpenes from Cordia spinescens*. PHYTOCHEMISTRY 46 (6): 1139-1141.
- Rapisarda, A., Ragusa, S., and De Pasquale, A. 1993. *Hepatotoxic effect of the leaves of some Cordia species*. ACTA HORTICULTURAE 332: 237-242.
- Rico-G., V., Garcia-F., J. G., Chemas, A., Puch, A., and Sima, P. 1990. *Species composition, similarity, and structure of Mayan homegardens in Tixpeual and Tixcacaltuyub, Yucatán, México*. ECONOMIC BOTANY 44: 470-487.
- Roig y Mesa, J.T. 1945. *Plantas Medicinales Aromáticas o Venenosas de Cuba*. Ministerio de Agricultura, Habana.
- Sertie, J.A.A., Basile, A.C., Panizza, S., Matida, A.K., and Zelnik, R. 1990a. *Anti-inflammatory activity and sub-acute toxicity of artemetin*. PLANTA MEDICA 56(1): 36-40.
- Sertie, J.A.A., Basile, A.C., Panizza, S., Oshiro, T.T., Azzolini, C.P., and Penna, S.C. 1990b. *Pharmacological assay of Cordia verbenacea. III. Oral and topical antiinflammatory activity and gastrotoxicity of a crude leaf extract*. JOURNAL OF ETHNOPHARMACOLOGY 31(2): 239-247.
- Srivastava, S.K. and Srivastava, S.D. 1979. *Taxifolin 3,5-dirhamnoside from the seeds of Cordia obliqua*. PHYTOCHEMISTRY 18(12): 2058-2059.
- Tiwari, K.P. and Srivastava, S.S.D. 1979. *Chemical investigation of the stem bark of Cordia obliqua*. PLANTA MEDICA 36(2): 191-192.
- Velde, V.V., Lavie, D., Zeinik, R., Matida, A.K., and Panizza, S. 1982. *Cordialin A and B, two new triterpenes from Cordia verbenacea DC*. JOURNAL OF THE CHEMICAL SOCIETY. Perkin transactions I. Organic and Bio-organic Chemistry 11: 2697-2700.

While no chemical studies seem to have been made on either of these Florida plants, several other *Cordia* species have been examined. There are multiple biologically active compounds in those species, including arabinoglucan, essential oils, terpenes, meroterpenoid naphthoquinones, and taxifolin (Srivastava and Srivastava 1979, Velde et al. 1982, Basu et al. 1986, Bieber et al. 1990, 1994, Fun et al. 1990, Nakamura, N. et al. 1997). Other studies have shown these and other cordia extracts to be antifungal, anti-inflammatory, anti-ulcer, anti-viral, hepatotoxic, and larvicidal (Tiwari and Srivastava 1979, Marston et al. 1988, Hayashi et al. 1990, Sertie et al. 1990a, b, Rapisarda et al. 1993, Akhtar and Ahmed 1995, Ioset J.R. et al. K. 1998).

A Lesser Antillean name summarizes the utility of cordia (although it refers directly to *C. sebastena*): *Mapou rouge* (red *mapou*, Guadeloupe and Martinique), which contains a Cariban

ABOUT THE AUTHOR : A member of FNPS since 1981, Dan now lives in Tucson, Arizona, where he works in the Conservation & Science Dept. of the Arizona-Sonora Desert Museum and serves as the Book Review Editor for ECONOMIC BOTANY. Look

ADDITIONAL THANKS : for the great photos to Palm Beach member Alana Edwards (a Florida butterfly guru), Broyard

FNPS Research Endowment Program: a Sample of Projects from 2003-2004

THE FLORIDA NATIVE PLANT SOCIETY has an established Research Endowment Program which every year funds a small number of modest grants to support scientific native plant research. The FNPS Science Advisory Board has worked with a number of excellent graduate students, faculty, and other science professionals on these projects. The following are excerpts from proposals funded by the Research Endowment Program during the past two years.

2003 Endowment Awards

Demography and Phenology of the Endangered Fern, *Ophioglossum palmatum*, at the Tosohatchee State Preserve

Eliane Norman, Professor emeritus, Stetson University and Sandra Carnival, Field Biologist, Tosohatchee State Preserve

This study is intended to provide an idea of the longevity of hand fern and enable researchers to relate phenological patterns in leaf growth, spike production, and maturation to seasonal variation at the Tosohatchee State Preserve. The tasks include:

1. Locate host trees previously identified as bearing *Ophioglossum palmatum*. Note number of ferns per palm and locate side(s) of tree where epiphyte grows, height at which it grows and any signs of fire.
2. Survey for additional host trees and collect above data.
3. Monitor, on a monthly basis, temperature, relative humidity, and light available at three different locations where the ferns are found. Obtain monthly rainfall data.
4. Study the growth pattern of one hundred hand ferns, selected randomly from different sites. Each plant as well as each leaf will be tagged. The following parameters will be measured or observed four times a year: length of stipe, length and width of blade, number of lobes, number of fertile spikes, size of fertile spike and stage of maturation, and percent of damaged leaves.

The *Illicium parviflorum* Michx. ex Vent. (ILLICACEAE) Paradox: an Endangered Florida Endemic and its Role in the Horticultural Trade

Ashley B. Morris, Department of Botany, University of Florida and Pamela S. Soltis, Florida Museum of Natural History

This rare species is quite popular in the horticultural trade, and is commonly sold as far north as North Carolina and as far west as Arkansas. It is common practice in plant nurseries to increase their inventories by propagating cuttings, resulting in a genetically homogeneous stock. In addition, many nurseries obtain their original cuttings from the same source, resulting in homogeneity among nurseries. Such practices may have serious consequences for natural populations exhibiting self-incompatibility.

The goal of this study is to assess levels of genetic diversity in natural populations of *I. parviflorum*, as well as that of horticultural stocks. This information can then be used to determine the feasibility of the introductions outlined above.

The Genetics of Gender Flexibility in Passionflower

Cindy Bennington, Associate Professor of Biology, Stetson University

The purpose is to test ideas related to the evolution of andromonoecy in
continued on page 17

CALL FOR PROPOSALS Research Endowment Fund Awards

MARCH 15, 2005 DEADLINE

The Florida Native Plant Society (FNPS) is now accepting proposals to fund research on Florida native plants.

INSTRUCTIONS: The proposal must contain the following:

1. Description of project (three page limit)
2. Budget (not to exceed \$1000)
3. Project time schedule (normally one year)

Applications must be submitted by e-mail as an attachment in Adobe PDF or MS Word format. The "cover" e-mail message must clearly state the following:

1. Submitter's name
2. Snail mail address (good for at least three months)
3. Telephone number

Applications must be received by March 15, 2005. Awards will be made on the basis of the relevancy of the proposed research to the goals of FNPS. Preference will be given to members of FNPS, but this is not a requirement. Awards will be announced at the 2005 FNPS Annual Conference (May 12-15, 2005) in Melbourne, Brevard County.

A report to the Awards Committee shall be made by the recipient at the termination of the awarded period. Presentation of a paper at the annual FNPS conference and/or contribution of an article to *The Palmetton* on the results of the research is encouraged.

Email questions and proposals to:

Shirley Denton, Science Advisory Board Chair

NORTH OF BRADENTON IN PALMETTO

Accent Trees & Nursery

Featuring

Wholesale & Retail • Free-1-800-368-9800

Saw Palmetto & Simpson Stapper (3 & 7 gal)

Blue-eyed grass, Cassia, Gaillardia,
Goldenrod, Necklace pod & Salvia - all 1 gal

Phone **(941) 729-5959**

Fax **(941) 721-3949**

1/2 mile south of 775 off Hwy 41, apt 516 Palm Bay, Manatee County

Breezy Oaks Nursery



Francis L. Alsbrook
Landscaping
NATIVE DESIGN, F.L.A.

(352) 481-3795

Native Plant Art

Botanical illustration watercolours,
limited edition giclee prints
and photographs

by Susan Trammell

352-495-8723

tramm1777@aol.com

www.SusanTrammell.com

East of Sarasota

Florida Native Plants, Inc.

Retail Nursery
Landscaping Planning Installation
Mitigation & Restoration
Tree & Shrub • Groundcover
Wildflowers • Grasses

941-322-1915 • 941-322-0208 fax

730 Myakka Rd • Sarasota FL 34240

fnplants@aol.com • www.floridnativeplants.com

FLORIDA LANDSCAPE PAINTINGS

FINE ART POSTERS & REPRODUCTIONS

(821) 951-1741

spenceguerln@earthlink.net

www.spenceguerln.com

MasterCard & Visa Accepted

Florida Native Plants for Landscape & Wildlife

(321) 729-6857

Sharon & Brent Dolan

www.maplestreetnatives.com

2808 Maple St. West Melbourne FL 32904

Maple Street Natives

NATIVE GREEN CAY

Experience, Expertise, Excellence

Field and Container Grown
Native Florida Trees and Shrubs

(561) 496-1415

Michael Jamison

Sylvia Winsberg

1275 E. Egan Park Rd. Boynton Beach FL 33427

Wholesale to the Trade, all Monies promptly returned

PALM BEACH COUNTY

passionflower by examining the response of gender expression to resource limitation (imposed through herbivory) in 64 plants from 16 distinct populations grown in pots in an experimental array. There are three main questions which will be addressed:

1. Is fruit production limited by the number of cosexual flowers produced by a plant? By describing the relationship between the number of hermaphrodite flowers and number of fruits produced, determine the extent to which fruit production is limited by whole-plant female function.
2. Is there genetic differentiation among populations in the proportion of male flowers per plant? Based on previous research and observations, extant populations are expected to harbor individuals that differ in the proportion of male flowers produced by individuals when plants are grown under similar conditions.
3. Is there genetic differentiation among populations in the degree to which floral gender is influenced by the environment? Genetic differences among populations may be fixed or plastic. Plastic genetic differences exist when individuals respond differently (in direction and/or magnitude) to some environmental variable.

Effects of Invasive Exotic Trees on the Seedling Demography of the Endangered Bromeliad, *Catopsis berteroniana*

Philip A. Gonsiska, Florida International University

South Florida is subject to invasion by exotic species, such as Australian pine (*Casuarina* spp.), Brazilian pepper (*Schinus terebinthifolius*), and melaleuca (*Melaleuca quinquenervia*). These species have the capacity to invade habitats, such as mangrove and buttonwood communities (Hammer undated), where *Catopsis berteroniana* is found. Since Australian pine, Brazilian pepper, and melaleuca have the capacity to exclude native vegetation in the habitats they invade, if they are less suitable epiphyte hosts than native tree species, the possibility exists for the decimation of Florida's epiphyte communities. This could result in the extirpation of endangered epiphytes such as *C. berteroniana*.

The purpose of the observational portion of this project is to determine the fate of *C. berteroniana* seedlings during their first year of life on their naturally occurring native host species. The experimental portion of this study will determine the effects of host species on seedling recruitment and thereby demonstrate potential effects of invasive woody species on bromeliad communities in south Florida.

Demography and Ecology of *Paronychia chartacea*

Jenny Schafer, Intern, Archbold Biological Station

Disturbed firelanes provide an open, unstable, and less fire-dependent habitat for many scrub endemics. Some species show different demographic trends between populations in natural scrub habitats and firelanes (Quintana-Ascencio et al., in preparation). *Paronychia chartacea*, papery whitlow-wort, is a state endangered and federally threatened plant endemic to Florida. This project will determine the effects of time-since-fire on growth, reproductive output, and seedling recruitment of *P. chartacea* ssp. *chartacea*. Quarterly demographic data will be collected for comparison of populations of the species in rosemary scrub and firelanes.

2004 Endowment Awards

Evaluation and Conservation of a Threatened Carnivorous Plant, *Pinguicula ionantha*, Godfrey's Butterwort

Herbert 'Tug' Kesler, Dept. Biological Sciences, Auburn University

Pinguicula ionantha R. K. Godfrey (LENTIBULARIACEAE) is a recently described species endemic to a 25 mile radius in the panhandle of Florida. Due to its shrinking population size, *P. ionantha* was listed as threatened by the United States Fish and Wildlife Service on July 12, 1993 and is currently listed as Florida State endangered. In this study, we propose to conduct field and laboratory experiments to gain information needed to conserve federally threatened *P. ionantha* populations in the panhandle of Florida. The results of both types of research will be integrated to create a better understanding of 1) the current status of all 62 known populations, 2) how the survival and fecundity of wild *P. ionantha* populations are directly effected by prescribed fire, and 3) whether a soil seed bank exist for this species. The goal of the project is to develop recommendations for conservation and management practices that will ensure the long-term survival of federally threatened and Florida endangered *Pinguicula ionantha* populations.

Trophic Cascades: Influences of Herbivory and Predation Influence on Post-Fire Succession

Tania Kim, University of Florida, Department of Zoology

The direct effects of prescribed fire on plant communities have been extensively studied yet little is known about the effects of fire on other trophic levels and trophic interactions. Interspecific interactions, such as herbivory and predation, play important roles in maintaining ecosystem function, however very little is known about their roles in post-fire succession. Predators may indirectly benefit plant communities by alleviating intense herbivory pressures typically associated with post-fire habitats. If predator top-down controls are strongly felt by plant communities, then herbivory and predation play extremely important roles in post-fire succession.

The goal of this research project is to determine whether insect herbivores and vertebrate predators play significant roles in influencing plant growth and reproduction following fire in longleaf pine sandhills. The project will set up insect herbivore and vertebrate predator exclosures in longleaf pine sandhill habitats throughout two reserves in north-central Florida.

Morphological and Molecular Systematics of the *Tillandsia fasciculata* (BROMELIACEAE) Complex: Biogeographical and Evolutionary Implications

Brian J. Sidoti, M.S. Graduate Student, Department of Biological Sciences, Florida International University

The purpose is to gain greater insight into the speciation and radiation of species within the *Tillandsia fasciculata* (BROMELIACEAE) complex that occur in Florida and Cuba. Specifically, anatomical, morphological, and molecular studies will be used to examine the *T. fasciculata* complex in order to support taxonomic decisions and species boundaries. Baseline data can then be used to construct and solidify conservation measures.

Special Contributors to FNPS

Membership and Contributions. FNPS membership categories are: Donor \$250, Supporting \$100, Business \$100, Not-for-Profit \$50, Contributing \$40, Family/Household \$30, Individual \$25, (full-time) Student \$15, and Library (subscriptions to the Palmetto only) \$15. Higher level memberships provide important assistance to special educational activities. Contributing memberships include a \$10 donation to the FNPS Endowment Fund, which annually grants vital native plant research projects. Donor, Supporting, Business, and Not-for-Profit members are listed in each issue of the Palmetto Contributing memberships, and special contribu-

Sally & Hal O'Connell, Cocoplum Chapter
 Ferguson & Gayle Peters, Eugenia Chapter
 Brett Pigon & Cathy Corbeil, Conradina Chapter*
 Mandy Rhead, Tarflower Chapter
 Jonathan D. Rich, Tarflower Chapter
 John W. Rippon, PhD, Pinellas Chapter
 Barry & Donna Robbins, Pinellas Chapter
 Jacqueline Rolly, Tarflower Chapter
 Raymond G. Sage, Lyonia Chapter
 John Stites & Anne Schmidt, Nature Coast & Hernando Chapters
 Gwladys & Eugene Scott, Dade Chapter
 Claire Hilliker & Lesa Sward, Tarflower Chapter
 Harry Scott Taylor, Serenoa Chapter
 Susan D. Thompson, Eugenia Chapter
 Fred & JoAnne Trebatoski, Coccoloba Chapter
 Linda & John Williams, Magnolia Chapter
 Martha Jane Williams, Pinellas Chapter
 John C. Winn, Paynes Prairie Chapter
 Steve & Debbie Young, Hernando Chapter

Orange, Pawpaw Chapter
 Gaia's Garden 'n Gallery, Shelly J. Langshaw, Mary Esther, Longleaf Pine Chapter*
 Gourd Garden & Curiosity Shop, Randy Harelson, Santa Rosa Beach, Longleaf Pine Chapter
 Great Outdoors Publishing, Jan Allyn, St Petersburg, Pinellas Chapter
 Green Images, David M. Drylie, Jr., Christmas, Tarflower Chapter
 Green Mansions, Jeffrey Rosberg, Sanibel, Coccoloba Chapter*
 Hackberry Hammock Wholesale, Andreas Daehnick, Fort Pierce, Lakela's Mint Chapter
 Halfmoon Growers, Bruce McElroy, Newbury, Paynes Prairie Chapter
 Harmony Gardens, Gainesville, Paynes Prairie Chapter*
 Hayslip Landscape, Norman E. Hayslip, Fort Pierce, Lakela's Mint Chapter
 Hickory Hammock Native Tree Farm, Terry Sanders, Fort Myers, Coccoloba Chapter
 Insty Prints of Belleair, Jeanne Husted, Belleair Bluffs, Pinellas Chapter
 JB Starkey & Flatwoods Adventures, Jay & Marsha Starkey, Odessa, Nature Coast Chapter
 Keyser & Woodward, P.A., Timothy Keyser, Interlachen, Paynes Prairie Chapter
 Lotspeich & Associates, Renee Thomas, Winter Park, Tarflower Chapter
 Lucido & Associates, Morris A. Crady, Stuart, Cocoplum Chapter
 Maple Street Natives, Sharon & Brent Dolan, West Melbourne, Conradina Chapter
 Masuen Consulting, Michele Masuen, Okeechobee, Eugenia Chapter
 Meadow Beauty Nursery, Donna Leone & Carl Terwilliger, Lake Worth, Palm Beach Chapter
 Mesozoic Landscapes, Richard Moyroud, Lake Worth, Palm Beach Chapter
 Micanopy Tree Farm, Micanopy, Paynes Prairie, Renewed
 Nancy Prine Landscape Architect, Nancy A. Prine, Orlando, Tarflower Chapter
 Native Creations, Gary Barnett, Tavares, Lake Beautyberry Chapter
 Native Green Cay, Mike & Sylvia Jameson, Boynton Beach, Palm Beach Chapter
 Native Tree Nursery, Hugh Forthman Jr., Goulds, Dade Chapter
 Natural Treasures, Heather Blake, Newberry, Paynes Prairie Chapter*
 Nature Scapes Landscape Garden Center, Richard & Marylou Baiata, Bunnell, Pawpaw Chapter
 O'Donnell Landscapes, Albert O'Donnell, Estero, Coccoloba Chapter
 Ornamental Plants & Trees, David Dickerson, Hawthorne, Paynes Prairie Chapter
 Perkins Nursery, Danny W. Perkins, LaBelle, Coccoloba Chapter
 Pine Breeze Nursery, Harald Riehm, Bokeelia, Coccoloba Chapter
 Plant Creations, Rob L. Campbell, Homestead, Dade Chapter
 Rigsby Nursery, Barbara Rigsby, Fort Myers, Coccoloba Chapter
 Runway Growers, Jamie Hayes, Fort Lauderdale, Broward Chapter
 Scientific Environmental Applications, Kim A. Zarillo, Melbourne, Conradina Chapter
 Steven Chase Gardens, Steven Chase, Greenacres, Palm Beach Chapter
 Sun Landscape of Florida, Tom Losec, Santa Rosa Beach, Longleaf Pine Chapter
 Sweet Bay Nursery, Tom Heitzman, Parrish, Serenoa Chapter

The Natives, William & Nancy Bissett, Davenport, Heartland Chapter
 Tropic Traditions, Jim Fleming, Gainesville, Paynes Prairie Chapter
 Tropical Treeworks, Bart Coia, Miami, Dade Chapter
 Walt Disney World Hort Resource Ctr, Janet Wyatt, Lake Buena Vista, Tarflower Chapter*
 Wilcox Nursery, Bruce K. Turley, Largo, Pinellas Chapter
 Wild Flowers of Florida, Terry Zinn, Alachua, Paynes Prairie Chapter

Not-for-Profit Members

Audubon of Southwest Florida, Fort Myers, Coccoloba Chapter*
 Barataria-Terrebonne NEP, Deborah Schultz, Thibodaux
 Big Pine Key Botanical Society, Big Pine Key, Dade Chapter
 Bird Rescue Center, Andrea Lux, New Smyrna Beach, Pawpaw Chapter*
 Brandon Regional Library, Brandon, Suncoast Chapter
 City of Boca Raton, Steve Bass, Boca Raton, Palm Beach Chapter
 City of St Pete Beach, Tami Nicholas, St Pete Beach, Pinellas Chapter
 Corkscrew Swamp Sanctuary, Sally Stein, Naples, Naples Chapter
 796 CEG/CEOML Self Help Center, Gerry Faircloth & Irma Harlacher, Eglin AFB, Longleaf Pine Chapter
 Florida Oceanographic Society, Stuart, Cocoplum Chapter
 Florida Wildlife Federation, Patricia L. Pearson, Tallahassee, Magnolia Chapter
 FNGLA (Fla Nursery, Growers & Landscape Association Inc.), Ben Bolusky, Orlando, Tarflower Chapter
 Friends of Oscar Scherer Ross, Delaney Osprey, Serenoa Chapter
 Garden Club of Indian River County, Vero Beach, Eugenia Chapter*
 Garden Club of Stuart, Majory Holland, Port St Lucie, Cocoplum Chapter
 Halifax River Audubon Society, Robinson, Daytona Beach, Pawpaw Chapter*
 Heathcote Botanical Garden, Fort Pierce, Lakela's Mint Chapter
 Institute for Regional Conservation, Keith Bradley & George Gann, Miami, Dade Chapter
 Jupiter Farm Environmental Council, Gregory K. Hepler, Jupiter, Palm Beach Chapter
 Key West - Recreation Dept, Cynthia D. Snell, Key West, Dade Chapter
 Marine Lab, Dana Wingate, Key Largo, Dade Chapter*
 Martin County Audubon Society, Stuart, Cocoplum Chapter*
 MCC Venice Earth Club, Denise Bristol, Venice, Mangrove Chapter*
 Mounts Botanical Garden, R. Allen Sistrunk, West Palm Beach, Palm Beach Chapter
 North Beach Association of St. Lucie City, Fort Pierce, Lakela's Mint Chapter*
 Oxbow Eco-Center, Sandra Bogan, Port St Lucie, Lakela's Mint Chapter
 Pasco County Coop. Extension Service, Jeannie Hayes, Dade City, Nature Coast Chapter
 Preservation Foundation Palm Beach, Neil Schuler, Palm Beach, Palm Beach Chapter
 SCCF Native Plant Nursery, Beth Degrauwe, Sanibel, Coccoloba Chapter
 Space Coast Audubon Society, Elizabeth Bishop, Cocoa, Sea Rocket Chapter*

Business Members

LesAlderman, North Ft Myers, Coccoloba Chapter
 Jake Ingram, Santa Rosa Beach, Longleaf Pine Chapter
 Accent Trees, Leslie Larmon & Joan Bowling, Palmetto, Serenoa Chapter
 A.J. Title Services, Cecilia D. Catron, Winter Park, Tarflower Chapter
 Alexander Landscaping & Plant Farm, Bryan A. Tozzie, Davie, Broward Chapter
 All Native Garden Center, John Thomas Sibley, Fort Myers, Coccoloba Chapter
 All Native Flora, Brightman S. Logan, San Antonio, Nature Coast Chapter
 Beck's Landscape Solutions, Port Orange, Pawpaw Chapter*
 Beeman's Nursery, Forest Beeman, New Smyrna Beach, Pawpaw Chapter
 Biosphere Consulting, James M. Thomas, Winter Garden, Tarflower Chapter
 Bonita Bay Group, Kim Fikoski, Bonita Spring, Coccoloba Chapter
 C & N Environmental, Cheryl M. Carpenter, Jupiter, Palm Beach Chapter
 Casey's Corner Nursery & Landscaping, Susan Casey, Homestead, Dade Chapter
 Central Florida Lands & Timber, Marvin Buchanan, Mayo, Magnolia Chapter
 Chiappini Farm Native Nursery, David & Marilyn Chiappini, Melrose, Paynes Prairie Chapter
 Croyle Landscape, Todd Croyle, Hobe Sound, Cocoplum Chapter
 De-vine Landscape, Frank Sedmera, Lake City, Paynes Prairie Chapter*
 Doug Ingram & Sons Nursery, Robbie Binder, Homestead, Dade Chapter*
 Elata Natives, Kara & Sergio Alfaro, Fort Myers, Coccoloba Chapter
 Environmental Consultants, Michael Czerwinski, Crystal River, Citrus Chapter*
 Environmental Resource Solutions, Nancy C. Zyski, Jacksonville Beach, Paynes Prairie Chapter
 Environmental Services, Mary Lindgren, Jupiter, Palm Beach Chapter
 Environmental Services, Jacksonville, Paynes Prairie Chapter
 Florida Native Plants, Sarasota, Serenoa Chapter
 Florida Sportsman Magazine, Sheila Wickstrom, Stuart, Cocoplum Chapter
 Four C's Nursery, Mike Crews, Palm Bay, Conradina Chapter
 Full Moon Nursery, Marvette Bagwell, Port

Donor Members

Francis & Lauren Alsobrook, Paynes Prairie Chapter
 Leslie Clarke, Palm Beach Chapter
 Allen N. & Mary L. Jelks, Jr., Longleaf Pine Chapter
 Raymond Lee Jungles, Dade Chapter
 David W. Lei, Palm Beach Chapter
 Magdalena Plewinska, Dade Chapter

Supporting Members

Peter & Carolyn Abdalla, Tarflower Chapter
 Bob & Doris Bareiss, Nature Coast Chapter
 John & Ellen Barrett, Dade Chapter
 Lisa Blackwelder, Dade Chapter*
 Mary Neale Blake, Paynes Prairie Chapter
 June Brittingham, Conradina Chapter
 Rev. & Mrs. C. Frederick Buechner, Cocoplum Chapter
 Sonja & Sidney Cook, Longleaf Pine Chapter
 Michael E. Drummond, Paynes Prairie Chapter
 Mike & Gail Duggins, Pawpaw Chapter
 Thomas & Martha Farabee, Heartland Chapter
 Nadine Foley, Lake Beautyberry Chapter
 John & Marilyn Fredley, Pawpaw Chapter
 Ethan H. Freid, Suncoast Chapter
 Jupiter Island Garden Club, Cocoplum Chapter
 Marjorie M Gasser, Cocoplum Chapter
 Allyn L. Golub, PhD, Dade Chapter
 Barbara Hoelscher, Sea Rocket Chapter
 Larry Green & Deborah Hopkins, Coccoloba Chapter
 Lynn H. Huber, Palm Beach Chapter
 Teri Jabour, Palm Beach Chapter
 Cheryl & William Jones, Longleaf Pine Chapter
 Robert Kimzey, Pinellas Chapter
 Roberta & Arnold Kleinick, Palm Beach Chapter
 Robin Krivanek, Coccoloba Chapter
 Amy Leonard, Dade Chapter
 Carolyn & Henry Littleton, Coccoloba Chapter
 Mary Beth & Ted Lundgren, Coccoloba Chapter
 Jean & Carlton Lynn, Conradina Chapter
 Chuck McCartney, Broward Chapter
 Lee R. Miller, MD, Suncoast Chapter
 Carlos A. Nunez, Dade Chapter*

Special Contributors to FNPS

St Lucie County Environmental Resources Division, Amy Mott, Ft Pierce, Lakela's Mint Chapter*
 St Lucie County Master Gardeners, Laurie S Hart, Fort Pierce, Lakela's Mint Chapter
 The Disney Wilderness Preserve, Petra Royston, Kissimmee, Heartland Chapter
 The Simple Living Institute, Tia Silvasy, Orlando, Tarflower Chapter
 U.S.G.A. Green section, John & Shelly Foy, Hobe Sound, Cocoplum Chapter
 Venice Area Garden Club, Shirley Smith, Nokomis, Serenoa Chapter*

Contributing Members

Karen & Jim Ahlers, Paynes Prairie Chapter; John (Jay) Allen, Suncoast Chapter*; Brooks & Nancy Armstrong, Serenoa Chapter; Jeanette Lee Atkinson, Naples Chapter; Frank & Dorothy Backes, Pawpaw Chapter; Jeff Blakley, Dade Chapter; Nancy Blumstein, Eugenia Chapter; Joan F. Borsik, Conradina Chapter; William & Margaret Broussard, Conradina Chapter; Judith B. Buhrman, Pinellas Chapter; Doris Cain, Lake Beautyberry Chapter; Claudia Cannon, Serenoa Chapter; Dorothy Clark, Lake Beautyberry Chapter; Marcie Clutter, Citrus Chapter; Mary E. Collins, Dade Chapter; Christine Crawford, Conradina Chapter; Ken Creel, Paynes Prairie Chapter; Mary Cross, Suncoast Chapter; Mary Davidson, Paynes Prairie Chapter; Ron & Patricia Davis, Paynes Prairie Chapter; Lee Day, Eugenia Chapter*; Sandra & Steven Deese, Nature Coast Chapter; Doris M. Dehler, Tarflower Chapter; Peter C. Drummond, Paynes Prairie Chapter; Trish & Bob Egolf, Serenoa Chapter; Charles Ernst, Coccoloba Chapter; Jim & Nancy Escoffier, Sea Rocket Chapter; Julie M. Essman, Dade Chapter; Ivan E. & Sandra Felton, Dade Chapter; David & Jolene Flaughter, Heartland Chapter; Kristin Fletcher, Paynes Prairie Chapter; Robert & JoAnne Fowler, Coccoloba Chapter; Dan & Karen Fraley, Serenoa Chapter; Marc & Terry Godts, Tarflower Chapter; Judy & Travis Gordon, Pawpaw Chapter; A.H. & Joyce Gray, Lake Beautyberry Chapter; Deborah S. Green, Tarflower Chapter; Peggy & Michael Gretchen, Nature Coast Chapter; Annie & Tom Grewe, Coccoloba Chapter*; Cristopher Griffiths, Broward Chapter; Bette & James Haeger, Eugenia Chapter; Jo S. Hanson, Serenoa Chapter; Deb Harmon, Tarflower Chapter; Dale C. Henderson, Paynes Prairie Chapter; Judith Hinds, Pawpaw Chapter*; Roddi Hoefert, Dade Chapter; Elisabeth Hoffman, Palm Beach Chapter*; Peggy & Bill Horsfield, Conradina Chapter; Charlie Houder, Paynes Prairie Chapter; Gloria S. Hunter, Palm Beach Chapter; Robert & Donna Ing, Paynes Prairie Chapter; Joy & Julian Jaffe, Pinellas Chapter; Ann F. Johnson, Nature Coast Chapter; Eugene Kelly, Hernando Chapter; Marta Kendrick, Eugenia Chapter*; Reese & Helen Kessler, Tarflower Chapter; Craig E. Kolthoff, Dade Chapter; John & Kathi Lange, Broward Chapter; Elizabeth & Michael Langston, Longleaf Pine Chapter; Tom Leahy, Citrus Chapter; Donna Legare & Jody Walthall, Magnolia Chapter; Caroline L. LeGette, Coccoloba Chapter; Francis L. Lenard, Paynes Prairie Chapter*; Patricia Linley, Lakela's Mint Chapter; Don & Lorraine Margeson, Pinellas Chapter; David L. Martin, Eugenia Chapter; Lee & Scott Massey, Dade Chapter; Allan McCarthy & Lee Rathbun, Eugenia Chapter; Kim, Kirby &

Chris McVoy, Palm Beach Chapter*; James & Joyce Moore, Eugenia Chapter; Vince Morris, Hernando Chapter; Patricia Murphy, Pinellas Chapter; Reed Noss, Tarflower Chapter; Yvonne Nuzzo, Heartland Chapter; Mary Ann O'Daniel, Paynes Prairie Chapter; Jane L. Olsen, Pinellas Chapter; Ronald & Cheryl Oswald, Dade Chapter; Carol S. Palmer, Tarflower Chapter; Scott & Dara Park, Broward Chapter; Alyce C. Parsons, Citrus Chapter*; Ed Bowman & Patrick Lucy, Magnolia Chapter; Gary A. Patterson, Naples Chapter; Jesus & Leslie Pernas-Giz, Conradina Chapter; Phyllis & Hal Peters, Dade Chapter; Cynthia H. Plockelman, Palm Beach Chapter; Elizabeth Pugh; * Michael E. Raiden, Heartland Chapter; Jennifer Richards, Dade Chapter; Tom Ryan, Dade Chapter; Eva H. Schliesser, Naples Chapter; Paul A. Schmalzer, PhD, Sea Rocket Chapter; Arthur F. Schreiber, Longleaf Pine Chapter; Jay & Erin Seber, Dade Chapter; Bill Showalter, Pinellas Chapter; Cina & Andy Smith, Magnolia Chapter; Virginia & Terry Smith, Conradina Chapter; Robert H. Smith, Dade Chapter; Suzanne B. Speer, Palm Beach Chapter; Diane & Richard Stees, Sea Rocket Chapter; Paul Austin & Martha Stuart, Conradina Chapter; William & Lenna Stone, Suncoast Chapter; William & Sally Stone, Lake Beautyberry Chapter; B. Stinson & A. Taylor, Magnolia Chapter; Gordon & Doris Thomas, Tarflower Chapter; Victor & Ethel Tompkins, Pinellas Chapter; Stephen & Susan Tutko, Coccoloba Chapter; Nancy G. West, Serenoa Chapter; Judith & Roger Wetherbee, Tarflower Chapter; Meg Whitmer, Cocoplum Chapter; Mary H. Wigton, Nature Coast Chapter; Anne Wilson, Nashville, Dade Chapter; Mariana Yi Davie, Broward Chapter; Regina Yuhus, Conradina Chapter 2003 Annual Fund

Annual Fund

\$100
 Larry Green & Deborah Hopkins Green, Coccoloba Chapter
 Magdalena Plewinska, Dade Chapter

\$25
 Belinda M. Chase, Serenoa Chapter
 Glenda S. Wood, Pinellas Chapter

Endowment Fund

\$50 - 100
 Rev. & Mrs. C. Frederick Buechner, Cocoplum Chapter
 Peggy & Don Lantz, Tarflower Chapter
 Cheryl & William Jones, Longleaf Pine Chapter

\$20-50
 Keith A. Aleo, Broward Chapter
 Sally Braem, Pinellas Chapter
 Gwen M. Burzycki, Dade Chapter
 Dr. & Mrs. William H. Bashaw, Serenoa Chapter
 Sam & Deborah Dawson, Dade Chapter
 W. Clements & D. Haines, Palm Beach Chapter
 Dale C. Henderson, Paynes Prairie Chapter
 Joyce King, Pinellas Chapter
 Elizabeth & Michael Langston, Longleaf Pine Chapter
 Beth Torbert & Ardell O'Neal, Suncoast Chapter
 Russell & Maryanne Owens, Serenoa Chapter
 Marc Stewart & Germaine Ploos, Dade Chapter

Jennifer Richards, Dade Chapter
 Regis & Susan Simasek, Tarflower Chapter
 Bob Stamps & Loretta Satterthwaite, Tarflower Chapter
 John Stites & Anne Schmidt, Hernando & Nature Coast Chapters
 Victor & Ethel Tompkins, Pinellas Chapter
 Fred & JoAnne Trebatoski, Coccoloba Chapter
 Diane W. Willis, Pinellas Chapter
 David G. Wilson, Mangrove Chapter

\$20 and under
 Judy Avril, Eugenia Chapter; Cathy J. Ball, Pinellas Chapter; Lola I. Brett, Pinellas Chapter; Richard Cobb, Naples Chapter; Carl Crosson, Suncoast Chapter; Mel & Toby Davidow, Dade Chapter; Marjorie Dodge, Pawpaw Chapter; David A. Feagles, Serenoa Chapter; Eric Fairlee, Coccoloba Chapter; Judy & Travis Gordon, Pawpaw Chapter; Dana & Nancy Griffin, Paynes Prairie Chapter; Lois & James Higman, Paynes Prairie Chapter; Carol Horvitz, PhD, Dade Chapter; Christine Lockhart, Palm Beach Chapter; Patrick Mahoney, Magnolia Chapter; Lee R. Miller, MD, Suncoast Chapter; Carolyn L. Moore, Coccoloba Chapter; Dominick & Renee Montanaro, Conradina Chapter; Carolyn Murphey, Coccoloba Chapter; Nancy Ogden, Pinellas Chapter; Veronica S. Pantelidis, PhD, Eugenia Chapter; Liane M. Pizzo, Tarflower Chapter; Mary Rizzotte, Pinellas Chapter; Jay & Erin Seber, Dade Chapter; Ann & Timothy Seidenkranz, Serenoa Chapter; Matthew King & Kristinea Serbesoff-King, Palm Beach Chapter; Brigitte Lichy & Ted Shaffer, Dade Chapter; Robert H. Smith, Dade Chapter; Ellen Tannehill, Palm Beach Chapter; Barbara & Charles Venuto, Sea Rocket Chapter; Regina Yuhus, Conradina Chapter.

General Fund

\$500
 David W. Lei, FNPS Vice President for Finance, Palm Beach Chapter

\$50 - 100
 Rev. & Mrs. C. Frederick Buechner, Cocoplum Chapter
 Carol S. Palmer, Tarflower Chapter
 Betty Wargo, Suncoast Chapter

\$20 - 50
 Ginger & Daniel Metraux, Broward Chapter
 Bob Stamps & Loretta Satterthwaite, Tarflower Chapter
 Harold C. Wiedemann, Palm Beach Chapter
 Chris Bittle, Magnolia Chapter
 Amelie C. Blyth, Longleaf Pine Chapter
 Gwen M. Burzycki, Dade Chapter
 Bob Funari, Pinellas Chapter
 Christina B. Purinton, Eugenia Chapter
 John Stites & Annie Schmidt, Hernando & Nature Coast Chapters
 Harry Scott Taylor, Serenoa Chapter
 Steve Urse, Magnolia Chapter
 Lisa Anne Warren, Dade Chapter
 Richard Cobb, Naples Chapter
 James & Mary Helmers, Tarflower Chapter
 Amy Kimball-Murley, Dade Chapter
 T.S. & Patricia Pennington, Lake Beautyberry Chapter
 Melody & John Staunton, Pinellas Chapter
 Audrey & Jape Taylor, Paynes Prairie Chapter
 Gregg & Asli Walker, Tarflower Chapter

Under \$20
 Lola I. Brett, Pinellas Chapter; Cherie E.

Bryant, Longleaf Pine Chapter; Mel & Toby Davidow, Dade Chapter; Marjorie Dodge, Pawpaw Chapter; Rick & Permelia Ehle, Tarflower Chapter; Doug & Barbara Elvers, Citrus Chapter; Eric Fairlee, Coccoloba Chapter; David A. Feagles, Serenoa Chapter; Ivan E. & Sandra Felton, Dade Chapter; Emily Ferguson, Suncoast Chapter; Marc & Terry Godts, Tarflower Chapter; Dana & Nancy Griffin, Paynes Prairie Chapter; John F. Jordan, Longleaf Pine Chapter; Jonathan Jordan, Paynes Prairie Chapter; Caroline Lewis, Conradina Chapter; Barbara J. Liberman, Palm Beach Chapter; Patrick Mahoney, Magnolia Chapter; Dominick & Renee Montanaro, Conradina Chapter; Nancy Ogden, Pinellas Chapter; Liane M. Pizzo, Tarflower Chapter; Joanne Shrewsbury, Pinellas Chapter; Roy & Ellen Simmons, Sea Rocket Chapter; Jacquelyne Tate, Tarflower Chapter; Ellen Tannehill, Palm Beach Chapter; Susan D. Thompson, Eugenia Chapter; Mariana Yi, Broward Chapter.

ANNUAL FUND : The Annual Fund is a special annual fundraising campaign held each fall. Funds are deposited in the General Fund.

ENDOWMENT FUND : The Endowment Fund is an interest-earning fund, and the interest is used to fund native plant research scholarships awarded at the annual conference. For more information on Endowment Fund research projects, please contact Shirley Denton, Science Chair, or Dr. Richard P. Wunderlin (see FNPS Officers & Others section in this magazine).

GENERAL FUND : The General Fund constitutes general revenues for FNPS and is spent at the discretion of the FNPS Board of Directors on advocacy, communications, conservation, education, and science programs. The FNPS annual budget is developed each fall by the Board of Directors, with proposals from committee chairs and chapter representatives coordinated through the FNPS Vice President of Finance. CONTRIBUTIONS may be made at any time, not just when you join or renew your membership. Send us a check payable to FNPS or send us

The Florida Native Plant Society is registered as a charitable organization with the Florida Department of Agriculture & Consumer Services (FDACS) (Reg. No. CH3021). A copy of registration and financial information is available by calling toll free

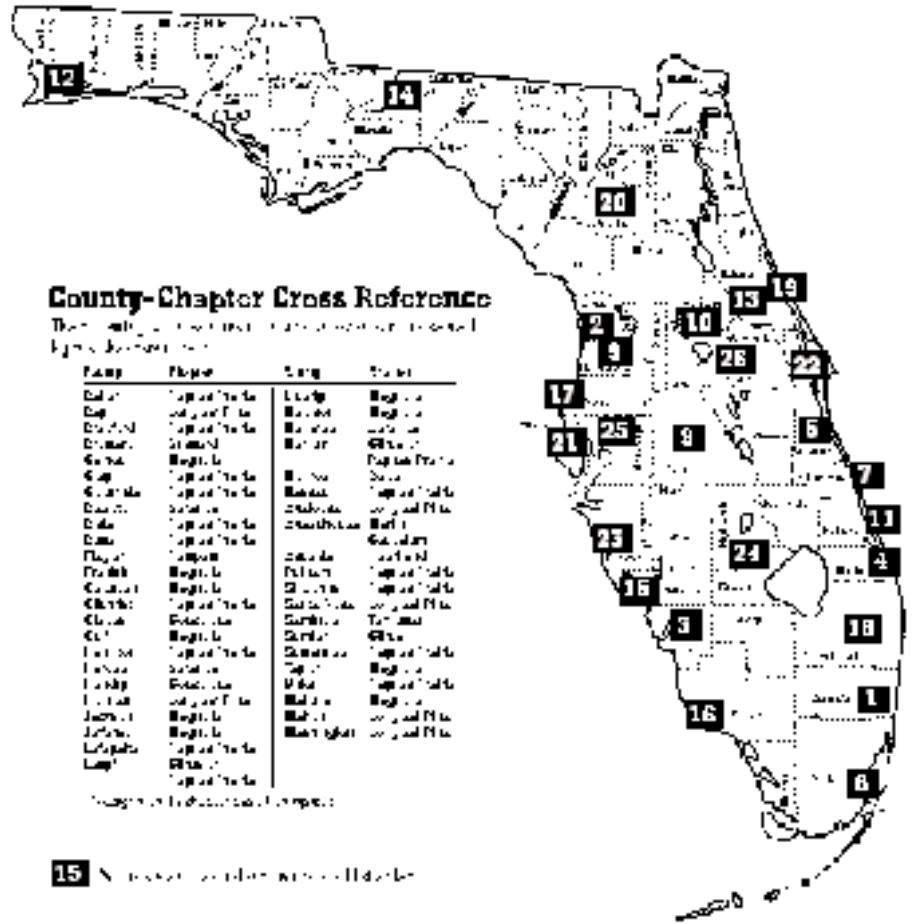
*Designates new members.

FNPS CHAPTERS. FNPS is organized into 26 regional chapters, each serving one or more counties. Some counties, such as Brevard, Marion, and Sarasota Counties, are served by more than one chapter. Each chapter has a unique name representing the region or a local important native plant. Most chapters meet monthly, with educational programs open to

- 1. Broward Chapter:** Meets 2nd Tues. 7:30 pm, Secret Woods Nature Center, 2701 W. State Rd 84, Fort Lauderdale. Contact: Ann Murray, 954-523-0288. Chapter Rep: Molly Taylor, 954-989-1417 or motaylor@broward.org
- 2. Citrus Chapter:** Meeting locations vary. Contact Jim Bierly, Chapter President, for directions: 352-382-3365 or 527-4300, jbieerly@tampabay.rr.com.
- 3. Coccoloba Chapter:** Meets 2nd Thurs., 7:00 pm (Sept-May); for meeting locations see www.fnps-coccolobachapter.org. Contact: Chapter Rep Mark Miller, 239-275-6891 or Celia Beamish, cecilia.e.beamish@aphis.usda.gov
- 4. Cocoplum Chapter:** Meets 4th Tues., 7:00 pm; Environmental Center, 2900 Indian River Dr, Jensen Beach, just south of Ocean Breeze Park and Jensen Beach Blvd. Chapter Rep: Joan Bausch, 772-219-8285 or jclb@gate.net.
- 5. Conradina Chapter:** Meets 2nd Mon. of Sept-Nov. & Jan.-May, 7:00 pm, Melbourne Public Library on Fee Ave in downtown Melbourne. Chapter Rep: Travis MacClendon, 321-254-9769 or tmacclendon@cfl.rr.com
- 6. Dade Chapter:** Meets 4th Tues., 7:30 pm; Corbin Bldg., Fairchild Tropical Garden, 10901 Old Cutler Rd, Miami. Contact: Patty Phares, 305-255-6404. Chapter Rep: Steve Woodmansee, stevewoodmansee@bellsouth.net, www.fnps.org/chapters/dade.
- 7. Eugenia Chapter:** Meets 3rd Thurs., 7:30 pm; Boathouse of the Florida Medical Entomology Lab., 200 9th ST SE, Vero Beach. Contact: Judy Avril, 772-567-1565, jfavril1@comcast.net. Chapter Rep: Sue Thompson, sue@pa-services.com
- 8. Heartland Chapter:** Will meet 1/11, 3/8, 5/1, 7/1/2005 at 6:30pm, Pines Board Room, United Way, Highland City, 5605 US 98 S, between Lakeland and Bartow. Call Carrie Plair, 863-683-8094 or email Keely Pesch kpesch@earthlink.net for more info.
- 9. Hernando Chapter:** Meets 1st Mon. of every month at 6:30 pm, Hernando County Cooperative Extension Office, 19490 Oliver St, Brooksville. Contact Cindy Liberton, 352-583-2384 or liberton@earthlink.net. Chapter Representative: arivrsingr@earthlink.net
- 10. Lake Beautyberry Chapter:** Meets at Ag Center Auditorium, Extension Bldg. 30205 SR 19, south of Tavares, 2:00 p.m. on third Sun. of Jan., Mar., May, Jul., Sept., & Nov. Field trips on alternating Saturdays. Chapter Rep: Nadine Foley, 352-669-2398, diney37@aol.com.
- 11. Lakela's Mint Chapter:** Meets 2nd Tues., 6:00 pm, at Oxbow Learning Center, 5400 NE St. James Dr (S 25th St), Port St. Lucie (approx. 1.5 mi. south of Midway Rd or north of Airoso Blvd.). Chapter Rep: Amy Mott, 772-466-3042 or amyemott@aol.com.
- 12. Longleaf Pine Chapter:** Meets 2nd Thurs., usually 6:30 pm, Tryon Branch of West Florida Regional Library, 5740 N 9th Ave, Pensacola. Contact: Vicky Butts, 850-492-7692 or Cheryl Jones at 850-476-6166
- 13. Lyonia Chapter:** Meets 2nd Tues., 7:00 pm, Volusia County Ag Center, SR 44. Contact

- Randall Sleister, 386-574-6239 or sleister@totcon.com. Chapter Rep: Ray Jarrett, jarrett@doacs.state.fl.us or 386-760-8351
- 14. Magnolia Chapter:** Meets 1st Thurs., 7 pm; Brokaw-McDougall House, 329 N Meridian St, Tallahassee. Chapter Rep: Nia Wellendorf, 850-1893-4229 or nijole.wellendorf@gmail.com
 - 15. Mangrove Chapter:** Meets 2nd Tues., 7:00 pm, the Oct-May at Lemon Bay Park, 570 Bay Park Blvd., Englewood. Chapter Rep: Bobbi Rodgers, 941/505-8243. Contact Al Squires, 941-697-3710, bugdr@sunline.net
 - 16. Naples Chapter:** Meets 4th Mon (except holidays) Oct-May, 7:30 pm; Conservancy Nature Center, 1450 Merrihue Dr, Naples. Contact Chapter Rep Duane Repp, dlrman@aol.com or 941-262-4270.
 - 17. Nature Coast Chapter:** Meets 2nd Tues., 7:30 pm; St. Marks Presbyterian Church, 7922 State Rd 52, Hudson. Chapter Rep: Gene Schell, 727-857-1211 or kg64834@aol.com
 - 18. Palm Beach County Chapter:** Meets 3rd Tues, 7:30 pm, Mounts Botanical Garden, 531 Military Trail, West Palm Beach. Chapter Rep: Cynthia Plockelman, 561-585-1278, cplocke@mindspring.com
 - 19. Pawpaw Chapter:** Meets 3rd Tues., 7:00 pm; Sica Hall Community Center, 1065 Daytona Ave, Holly Hill. Chapter Representative: Don Spence, 386-441-4104, spence@spence.com
 - 20. Paynes Prairie Chapter:** Meets 2nd Tues., 7:30 pm, Doyle Conner Bldg, 1911 SW 34 St, Gainesville. Does not meet Jun.-Aug. or Dec. Chapter Rep: Erick Smith, edsmith@ufl.edu, 352-380-0648. Also contact Claudia Larsen, 352-

- 466-3880, clarsen@mail.ifas.ufl.edu.
- 21. Pinellas Chapter:** Meets 1st Wed., 7:30 pm, Moccasin Lake Nature Park, 2750 Park Trail Ln, Clearwater. Info line: 727-544-7341. Chapter Rep: Debbie Chayet, djc1@earthlink.net. Also contact Cathy Quindigan, 727-864-4242 or cquindaga@aol.com
 - 22. Sea Rocket Chapter:** Meets 4th Wed., 7 pm; Brevard County Extension Service, 3695 Lake Dr, Cocoa. Chapter Rep: Eileen Szuchy, 321-634-5248 or bidensz1@yahoo.com. Also contact Paula Berntson, 321-459-3606 or jepasm.3@juno.com
 - 23. Serenoa Chapter:** Meets 3rd Mon., 7:00 pm; Selby Botanical Gardens, 811 Palm Ave S, Sarasota. Chapter Rep: Mike Kenton, envequity@comcast.net or 941-355-1267. Also contact Bob Egolf, 941-351-2961 or begolf@pcsonline.com
 - 24. South Ridge Chapter:** Meets 1st Sat. at varying times & locations; call Norman Cook, 863-414-4729, normansnativeplants@yahoo.com
 - 25. Suncoast Chapter:** Meets 3rd Wed., 7:00 pm, Learning Gate Charter School, 16331 Hanna Rd, Lutz. Chapter Rep: Amée Bailey, aturtle2c@aol.com or 863-206-3439. Contact: Dick Wunderlin, rwunder@chumal.cas.usf.edu. Chapter website: www.fnps.org/chapters/suncoast
 - 26. Tarflower Chapter:** Meets 1st Tues., 7:00 pm; Harry P. Leu Gardens, 1920 N Forest Ave, Orlando, except for June. Chapter Rep: Gregg Walker, 407-359-0506 or asligregg@aol.com.



The Lantana Mess

A Critical Look at the Genus in Florida

By Roger L. Hammer

There is much controversy, concern, and confusion when it comes to the native, naturalized, and cultivated members of the genus *Lantana* in Florida. First of all, there are only three species that are definitely native to the state. *Lantana canescens*, or hammock lantana, is a bushy shrub with very small heads of yellow-centered white flowers. This West Indian species occurs along hammock margins of Miami-Dade County and is extremely rare. *Lantana involucrata*, or wild sage, is a bushy or upright shrub with yellow-centered white flowers that are often blushed with violet. It too is a West Indian species with a natural range that extends into Florida where it is common in the central and southern counties, including the Florida Keys. And then there's *Lantana depressa*, a variable shrub with yellow flowers that is endemic to Florida.

Roger Sanders, who studied the genus *Lantana* extensively in Florida and authored "*Identity of Lantana depressa and L. ovatifolia (VERBENACEAE) of Florida and the Bahamas*" (SYSTEMATIC BOTANY [1987], 12:[1], pp. 44-60), described three distinct varieties of *Lantana depressa*. The typical variety, *Lantana depressa* var. *depressa*, or rockland lantana, is a low-growing shrub that is endemic to pine rockland habitat of southern Miami-Dade County. *Lantana depressa* var. *floridana* is a large bushy yellow-flowered shrub that is endemic to sandy shorelines and relict inland dunes of Florida's east coast. And then there is *Lantana depressa* var. *sanibelensis*, a large bushy yellow-flowered shrub that occurs along Florida's west coast and also occasionally inland.

Richard Wunderlin included these last two varieties as synonyms of the invasive exotic *Lantana camara* in the *Guide to the Vascular Plants of Florida* (University Press of Florida, Second Edition, 2003). Earlier authors (J. K. Small, 1933; Long & Lakela, 1976) referred to them as varieties of *Lantana ovatifolia*, a species now regarded as endemic to the Bahamas. Whether they are considered to be varieties of *Lantana depressa* or varieties of *Lantana camara*, these two bushy, yellow-flowered lantanas appear to be endemic to Florida. Therefore, resource managers should treat these as endemic taxa regardless of the current taxonomic uncertainty. To avoid confusing these taxa with the typical *Lantana camara*, they will be referred to in this article, per Sanders' study, as varieties of *Lantana depressa*.



Wild lantana, *Lantana involucrata*. Drawing from Coastal Dune Plants, Gumbo Limbo Nature Center, 1991, and reproduced here with permission of the artist, Palm Beach Chapter member Penelope Honychurch Billingham.

The leaves can also cause acute liver problems to dogs. The plant is so toxic that it is banned in much of Africa to help protect valuable livestock. Getting caught with a plant on one's property in some African countries can result in fines, incarceration, and beatings. Millions of dollars have been spent searching for biological agents to control *Lantana camara* and it even has the dubious distinction of being the most studied weed in the world. In Australia, it is regarded as the most troublesome poisonous plant in agricultural areas. Curiously though, *Lantana camara*, in all of its myriad color forms, remains a very popular landscape plant in Florida and other warm regions of the United States. Perhaps gardeners disregard its poisonous properties because it thrives in dry, poor soils where other landscape plants fail, and the colorful flowers attract a multitude of butterflies.

Lantana camara is not only naturalized throughout much of Florida, it also has contaminated the gene pool of all three varieties of Florida's endemic *Lantana depressa* through hybridization. Indeed, it is becoming increasingly difficult to find unadulterated *Lantana depressa* because most populations have *Lantana camara* growing wild among them. The leaves of hybrids are often squared off (truncate) at the base to some degree, sometimes on only one side of the leaf blade. The flowers of hybrids open yellow but turn pinkish orange with age, and the marginal teeth on the leaves of hybrids

The problem species in Florida is *Lantana camara*, which is thought to have originated in the West Indies but is now a cosmopolitan weed of tropical, subtropical, and warm temperate regions. It is highly variable with possibly as many as 650 named hybrid varieties worldwide (many of these may be synonyms). As a species, it is very complex and taxonomically confusing, and is even thought to have originated from interbreeding between two or more tropical American species. The resulting hybrids have then been variously referred to as separate species, subspecies, varieties, forms, biotypes, and cultivars. This goes a long way toward explaining its taxonomic complexity and the resulting taxonomic confusion.

Lantana camara is notoriously poisonous and deaths have been reported throughout its range, including Florida. The green, unripe fruits can be fatal to humans if eaten (but ripe fruits are harm-

tend to be more numerous. Sanders' study showed that on each side of the leaf blade of *Lantana depressa* var. *depressa* there are mostly 3-10 teeth, *L. depressa* var. *floridana* has mostly 10-15 teeth, *L. depressa* var. *sanibelensis* has mostly 8-13 teeth, and the hybrids have marginal teeth numbering from 10-25 per side. *Lantana camara* has 15-30 marginal teeth per side.

MOUNDS OF GOLD

The low-growing lantanas with yellow flowers most often seen in cultivation in Florida are *Lantana camara* hybrids, and are sold under such trade names as 'Gold Mound,' 'New Gold,' 'Gold Rush' and 'Banana Yellow.' To achieve the low, mounding or trailing growth habit, *Lantana montevidensis* is sometimes used as a parent in hybridizing (although some cultivars of this species in Florida appear to be sterile). This South American species has a trailing growth habit and white-centered lavender flowers but, through crossing and back-crossing with *Lantana camara*, a number of colorful hybrids have been achieved for the nursery trade. Hybridization often results in sterility, which is good for gardeners because sterile plants are more floriferous, and good for the environment because they cannot escape cultivation. Bijan Dehgan of the University of Florida, Institute of Food & Agricultural Sciences (IFAS) found, for instance, that 'New Gold' is not only male sterile but also practically female sterile. His research has also showed that many other lantana cultivars are sterile as well.

The greatest confusion and controversy exists in the yellow-flowered trailing or mounding plants that are sold in the Florida nursery trade. 'Gold Mound' is the plant that is most often sold to an unwitting public as Florida's endemic *Lantana depressa* var. *depressa*. 'Gold Mound' appears to be sterile and has cheery golden yellow flowers that practically cover the plant. As its cultivar name implies, it forms mounds of stems that spread outward from the central trunk. 'Gold Mound' is now, however, giving way in popularity to 'New Gold,' a cultivar selected out of a research trial at Texas A & M University because of its advertised "seedless nature, long and profuse bloom period, compact growth form, and relative cold hardiness." At maturity, 'Gold Mound' and 'New Gold' reach 18-24" tall and 3-4' wide or more.

Another low-growing hybrid called 'Cream Carpet' has yellow-centered creamy white flowers that become solid white. And then there is 'Banana Yellow,' a hybrid with two-toned yellow flowers that turn creamy white with a yellow center.

TROUBLE IN PARADISE

When asked by the editor to research lantanas in Florida for this article, my intent was to finally lay to rest whether or not *Lantana depressa* var. *depressa* is, in fact, cultivated in Florida. After visiting a number of large wholesale and retail nurseries in Broward and Miami-Dade counties that grow lantana, each nursery had what they call *Lantana depressa* var. *depressa*, but many of the plants had obvious differences—not only from nursery to nursery, but also within the same batch of plants labeled *Lantana depressa*. Some had very coarse teeth along the leaf margins while others had very shallow serrations (almost scalloped). Many had leaves that exceed the size limits of true *Lantana depressa* var. *depressa* and I never saw a single fruiting plant in any nursery.

The nurseryman who was the most adamant about the correct identity of his *Lantana depressa* stock showed me plants with yellow-centered creamy-white flowers. Surprisingly, a search for *Lantana depressa* on the Internet revealed quite a number of nurseries advertising this very plant, which, if I had to make an educated guess, is

'Cream Carpet.' I also recall seeing this plant being sold at Florida Native Plant Society state conferences by nurseries that specialize in Florida native plants. Whatever it is, it certainly is not native to Florida. One other nurseryman who was "pretty sure" that he was growing *Lantana depressa* var. *depressa*, had rows of bright yellow-flowered plants with very fine serrations on the leaf margins that looked practically identical to the leaves of *Lantana montevidensis*. It was definitely a hybrid of some sort—perhaps a *Lantana montevidensis* cross with some form of *L. camara*. Yet another nurseryman opined that the original material of his stock plants of *Lantana depressa* var. *depressa* was "wild collected in Broward County" which, incidentally, is well outside its natural range in Florida. Also, because of the widespread contamination of the *Lantana depressa* var. *depressa* gene pool in Miami-Dade County pine rocklands, nurserymen who claim to have gotten their stock plants from the wild within its natural range may actually have collected material from hybrids.

My most disturbing discovery on the Internet was a University of Florida, IFAS, website that reported their Spring 2003 Field Trials for *Lantana depressa* var. *depressa*. There were five photographs showing the growth rate of the plant, but the problem is that what they were growing turned into a very bushy white-flowered plant that looked to be around 4 feet tall. So if IFAS researchers can misidentify a lantana they are testing, it is not surprising that there is so much confusion in the nursery trade.

DON'T SHOOT THE MESSENGER

Because the low-growing, yellow-flowered lantanas in cultivation vary so much in leaf characteristics, growth habit, and other dissimilarities, I remain very skeptical whether or not pure unadulterated *Lantana depressa* var. *depressa* is being cultivated in the mainstream Florida nurseries. Roger Sanders' study showed that *Lantana depressa* is diploid and Florida populations of *Lantana camara* are tetraploid. A 2003 management status report by the Australian Centre for International Agricultural Research showed that several varieties of *Lantana camara* in Australia are triploid, one is diploid, and one is pentaploid. In order to clear up this mess in Florida, genetic testing needs to be conducted, not only on wild populations of lantana, but cultivated material as well. Then, and only then, could nurseries and their customers be confident that what they are growing, selling, and purchasing are truly native plants.

But there's still another problem. Simply because a plant is native to Florida does not mean that native-plant enthusiasts and native-plant nurseries should be propagating and disseminating Florida native plants well outside of their natural range. Remember that native plants can escape cultivation too. Take, for example, West Indian Mahogany (*Swietenia mahagoni*) and Royal Palm (*Roystonea regia*), which are both native to parts of southern Miami-Dade County but have now escaped cultivation (often from street plantings) outside of their historic natural range within the county. They now have to be controlled in natural areas by resource managers.

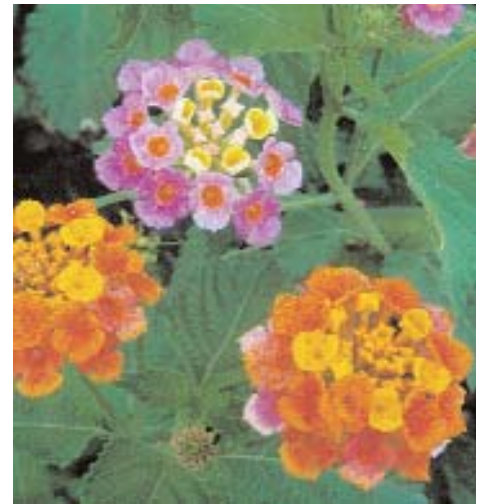
So consider this: *Lantana depressa* var. *depressa* is endemic to pine rocklands of southern Miami-Dade County and, therefore, should not be propagated in commercial quantities for sale and distribution all over Florida, much less in Texas, Arizona, and elsewhere. The Institute for Regional Conservation, based in Miami-Dade County, is even promoting the concept of planting species that are native to your Zip Code, which would go a long way



Lantana depressa var. *depressa* photographed in the wild on Long Pine Key in Everglades National Park. It is endemic to southern Miami-Dade County pine rocklands.



Lantana depressa var. *floridana* photographed in the wild on Key Biscayne in Miami-Dade County. It is endemic to eastern coastal Florida and inland relict dunes.



Lantana camara, a species believed to be of hybrid origin that is now widespread in warm regions of the world. Naturalized in Florida, widely cultivated, and used to create many colorful hybrids. The two color forms in the photo are from separate wild plants in Florida.



'Cream Carpet,' a *Lantana camara* hybrid that is often erroneously sold as Florida's endemic *Lantana depressa* var. *depressa*. Note the 2-toned flowers.



'Gold Mound,' a very popular *Lantana camara* hybrid that is the most controversial lantana in Florida because it is widely offered as the endemic *Lantana depressa* var. *depressa*. The good news is that it's sterile.



'Banana Yellow,' a *Lantana camara* hybrid that is relatively new to the Florida nursery trade. Note that the flowers change from 2-toned yellow to white with a yellow center.

toward keeping native plants within their natural range in Florida.

Because there is so much confusion and controversy in the nursery trade over what is *Lantana depressa* var. *depressa* and what is not, native-plant enthusiasts and nurseries specializing in native plants should avoid low-growing, yellow-flowered lantanas entirely and use the widespread native *Lantana involucrata* or some other suitable species instead.

I realize that this opinion will not be popular among the many fine members of the Association of Florida Native Nurseries but there are a lot of lantanas being sold as Florida natives that are clearly not, and there appears to be no indisputable distinction between the plants being sold as *Lantana depressa* var. *depressa* and the known *Lantana camara* hybrids. So if you are a native-plant aficionado, it is better to err on the side of caution when it comes to this lantana mess. ✱

Lantana montevidensis, a trailing species native to South America. It is naturalized and cultivated in Florida and used in hybrids for the nursery trade.



NOTE: The author would like to thank George Gann (Institute for

The Lantana Mess: A Critical Look at the Genus in Florida PAGE 21

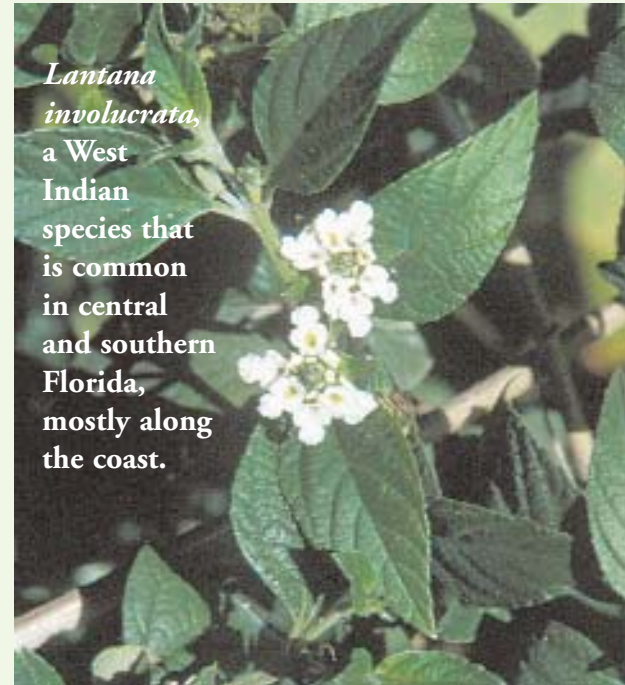
And what a mess it is. We asked Dr. Richard Wunderlin, University of South Florida Institute of Systematic

Lantana involucrata, one species that doesn't seem to have an identity or heritage problem.

Botany, how to sort out all the "native" lantanas now sold in the nursery trade. He referred us to Roger Hammer as the individual who had "done the most work [research] on this." Roger has, in turn, done his usual excellent job, although few may be pleased with the bottom line. On the other hand, perhaps we can look forward to increased availability of



Lantana canescens, a very rare West Indian species restricted in Florida to only a few hammocks in Miami-Dade County.



Lantana involucrata, a West Indian species that is common in central and southern Florida, mostly along the coast.

Cordia

BLOOD-BERRY OR BUTTERFLY SAGE?

These photos show how *Cordia globosa* got its traditional common name, blood-berry (not very pretty but much better than some of the rather crude names given to another common cordia in Florida, *C. sebestena*, now thankfully known to most of us as Geiger tree).

MORE: Page 12

Discovering Florida's Ethnobotany



R.

The Florida Native Plant Society
PO Box 278
Melbourne FL 32902-0278

NEW FNPS Phone (321) 271-6702

Non-Profit Organization
U.S. POSTAGE PAID
Melbourne FL
PERMIT NO. 495