New Mexico's Voice for Native Plants

NEWSLETTER

of the

Native Plant Society of New Mexico

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Winter Botanizing

These are macro photographs of lateral bud and leaf scars, which can serve as species' wintertime "fingerprints" for those who want to botanize year-round. Left, *Ailanthus altissima*; below, *Fraxinus velutina*. Photos by Russ Kleinman.

Read more, pages 8–9.

Inside This Issue

From the President

by Tom Antonio

On behalf of the NPSNM I would like to extend my best wishes for a very happy new year. We have again sent out our annual appeal letter asking you to contribute to the Jack and Martha Carter Conservation Fund. I hope you will consider sending a generous tax-deductible donation. You may donate online at http://npsnm.unm.edu/conservation_fund.html.

Each year the Society provides funds to support five major herbaria: University of New Mexico, New Mexico State University, Western New Mexico University, San Juan College, and University of Texas–El Paso. The dried plant specimens in these herbaria give us much more than the current name of a particular plant. These specimens also provide data on form and variation, geographical range, ecological range, flowering and fruiting times, potential usefulness, chemical analysis, pollen, anatomical and molecular study, as well as a record of what grows in our area. The platitude that a picture is worth a thousand words is particularly true of plant identification. If you can compare the plant you are trying to identify with previously identified sheets, the task becomes far easier and much more accurate. Building an herbarium takes time, dedication, and persistence, and, just as with a library, the herbarium's usefulness increases with its size.

How are these herbarium specimens used? Scientists use them for comparison and classification, to write identification manuals, to study form and structure, to make geographical comparison, to find and compare uses, and to make historical and evolutionary inferences. The herbarium is far more than cabinets filled with pressed plants; it is a dynamic, actual record of the structure of living plants. In short, *herbaria are conservators of the knowledge of the vegetation of the earth.* These herbaria are open to students, researchers, and the general public, and much of their data are available via the Internet. Herbaria are undervalued and need our continued support.

A reminder: January 29–30, 2011, we will hold the annual winter board meeting of the NPSNM at the UNM Sevilleta Field Station, which is 60 miles south of Albuquerque and a spectacular setting. This is our best chance for all local chapter presidents and representatives, committee chairs, and all members of the NPSNM to discuss and plan for the upcoming year. Please contact Renee West (keywestern@hotmail.com) to reserve a space in Sevilleta cabins. I urge you all to attend.

In this newsletter, check out page 5 for the first installment in a new series, "The Voice of Native Plants," which will feature stories of chapter activism. We hope members will contribute news of their chapters' activities that express the principles of the Society. Send in your articles to the newsletter editor, Sarah Johnson, sarita@wildblue.net.

In closing, I want to express the Society's thanks and appreciation to our website editor, Jane Mygatt. After many years of service to the Native Plant Society, Jane is retiring from her position as collections manager of the UNM herbarium. She is literally moving to greener pastures—Oregon. Jane has made a tremendous difference to our website. It now contains a wealth of information about plant biology, conservation, systematics, maps, photographs, PowerPoint plant lectures, and donation forms. We will greatly miss her expertise. Please join me in wishing her the best of luck in Oregon. ❖

Landscape Design Course in February

by Sandra Lynn, Albuquerque chapter

The Albuquerque chapter is offering a course in designing landscapes with native plants on two weekends in February 2011. While the course will emphasize designing with natives in central New Mexico, it is open to anyone interested in design principles and how-to-do-it information. The course is scheduled for the Friday evenings of February 11 and 18, followed by all-day sessions on Saturdays February 12 and 19.

Among the landscape-design topics covered are drawing the plan, using hardscapes, attracting pollinators, creating habitat, improving soil conditions, designing for difficult areas, irrigating, planting for color, and determining whether to use gravel or grass. Classes take place at Albuquerque Academy in the city's Northeast Heights. Presenters include landscape designers and plant experts George Miller, Judith Phillips, Carolyn Dodson, Wes Brittenham, Jim Brooks, George Radnovich, Beth Herschman, and Virginia Burris.

The course is limited to 100 participants. For the course schedule and registration information, go to http://npsnm.unm.edu/whats_new.html. You will be able to register online and pay through PayPal, or you can use the form on the back page of this newsletter and register by mail. ❖

Botany: The Death of a Science in American Education

by Jack Carter, Gila chapter

Over the past century there has been a steep decline in the knowledge the average citizen has of the green plant. This is at a time when botanical understanding is critical to addressing problems pertaining to climate change; preservation of ecosystems; conservation of threatened species and the control of invasive species; increasing food production, distribution, and safety around the world; and, finally, the oxygen we breathe.

In 1900, 85% of the U.S. population lived in a rural setting and 80% of the total population relied on local agriculture for their food supply. Two-thirds of the U.S. population raised half their own food or ate what had been raised within 50 miles of their homes.

Prior to World War II, botany was a required course for graduation, along with zoology, in practically every high school in the country. In 1939 botany was required for graduation in the schools of California. Beyond botany, one to three years of agriculture were offered in Kansas and Oklahoma schools. In 1943 I graduated from the eighth grade and was required, along with all the other kids in Kansas public schools, to complete a one-semester course in agriculture. Requirements in this course included identifying and examining a number of local weeds and local trees of eastern Kansas, studying the parts of a seed, and learning planting dates for garden species of the area. How times have changed.

Today fewer than two percent of college graduates complete a course in the plant sciences. In fact, in a recent national survey of universities, faculty reported that 20% of the universities had eliminated the basic botany course in the past five to ten years.

The same study, which included 1,500 respondents, of whom 400 were university faculty, reported a reduction of botanical degrees. In 1988, 72% of the nation's top fifty most-funded universities offered advanced-degree programs in botany. Today, more than half these universities have eliminated their botany programs, and many, if not all, related courses. Statistics from the U.S. Department of Education reveal that undergraduate degrees earned in botany are down 50% and advanced degrees earned in botany are down 41%.

Another part of the study showed that neither students nor faculty were aware of the coursework requirements for employment as a federal botanist—24 credit hours in botany. The study revealed that, given course offerings at many academic institutions, where today most or all of the botany courses have been eliminated, it is likely that many students considering careers as federal botanists will graduate without meeting coursework requirements for federal hiring. In all sectors of the study, the five most serious reported shortcomings of students, in rank order, included poor communication skills, poor plant-identification skills, limited basic botany and ecology, and limited field experience.

In the move to study molecular biology, including deoxyribonucleic acid, ribonucleic acid, chloroplasts, and mitochondria, we have replaced and neglected the study of the entire plant. Plant studies in geography, pollination, and ecology, and the study of the distribution of fungi, lichens, bryophytes, ferns, gymnosperms, and angiosperms have been dropped from the curriculum in most colleges and universities. It would be interesting to know how many graduate students at the masters or PhD level are being trained in these fields in New Mexico universities.

A recent national survey reported that 20% of the universities had eliminated the basic botany course in the past five to ten years.

The nation's herbaria, our only hope for maintaining historical records of plant distribution and movements over the planet, are being closed down and the scientists are being fired or told to move into molecular biology, where funding from NSF and NIH is much better. University administrators are so tied to federal dollars that they have forgotten they work for New Mexico, including the flora and fauna. The tail is wagging the dog in the plant sciences, while our system of higher education is dropping out of the study of plant conservation and long-term studies of the environment. Perhaps "dollar wise and pound foolish" best describes the leadership in colleges and universities today.

This idea of discarding large areas of knowledge and skills is not new in the history of American universities. In 1960, the year I completed my PhD, the University of Iowa was on the path to eliminating its small but distinguished botany department, and by 1980 that destruction was complete. This was in favor of developing a much larger department of biology. With the expansion of DNA research, not only were studies in higher plants and cryptogams dropped, but studies in ornithology, mammalogy, and invertebrate zoology went by the wayside, especially where field studies were concerned. This is not difficult to understand as

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The Newsletter of the NPSNM

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Next deadline is March 1, 2011. Articles and high-resolution artwork are enthusiastically welcomed and can be submitted to the editor, Sarah Johnson, at ***sarita@wildblue.net***, or PO Box 53, Gila, NM 88038.

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THE VOICE OF NATIVE PLANTS

Being in the Right Place at the Right Time

by Lolly Jones, Albuquerque chapter

Placitas is a small, unincorporated community located between Albuquerque and Santa Fe. In 2003 a group of highly motivated volunteers started working on their dream to have a library in Placitas. That vision resonated with many people and by 2004 they had found an old rental space, which they filled with books.

The community was overwhelmingly in support of building a permanent facility and funds were raised through federal and state grants along with gifts from corporations and individuals in the community. Construction was completed in December 2009, community volunteers helped move the contents of the old library to their new home, and the library opened in April.

The old library

At this point you may be saying, "Nice story, but what does this have to do with native plants?" Well, here is the best part. Placitas resident Bill Dunmire was asked to join the library board in January 2009, just as the architect completed the landscape plan. Bill is a long-time NPSNM member. Many of you have his books, *Gardens of New Spain, Wild Plants of the Pueblo Province* (coauthored with Gail Tierney), and *Wild Plants and Native Peoples of the Four Corners.* Most recently he coauthored (with Carolyn Dodson) *Mountain Wildflowers of the Southern Rockies.*

Bill took one look at the landscape plan and said, "What an opportunity—we should convert this plan to one using all native plants." He took his idea to the library board and was told, "Go for it." Bill called Judith Phillips (*New Mexico Gardener's Guide, Southwestern Landscaping with Native Plants, Plants for Natural Gardens,* and *Natural by Design*). In an afternoon the two of them, along with members of the library landscaping committee, created a new plan that called for using solely plants that are native to the Placitas area. Bill helped secure funding from several individuals and organizations, including a $700 grant from the NPSNM.

Interpretive plaques with information on native plants will be installed, and tours will be given to allow locals to see how beautiful native plants can be and to encourage them to use natives in their own landscaping. All the elements needed to apply for a Wildlife Certification certificate have been included in the plan.

To me, Bill Dunmire fully incorporates the philosophy of Ram Dass, who says, "Be Here Now—Pay Attention." ❖

The new library

Chapter Activities & Events

For further information on the following events, notify the contact person listed, or visit the chapter's Web page: first go to http://npsnm.unm.edu; click on Local Chapters; then select the chapter. **Hikers** should always bring plenty of water, hat, sun protection, lunch and/or snacks, field guides, and wear sturdy shoes, suitable for rough, uneven ground.

Albuquerque

All scheduled monthly meetings are first Wednesday of the month at 7 p.m. in the NM Museum of Natural History, 1801 Mountain Rd. NW. For more info contact Jim McGrath, sedges@swcp.com, 505/286-8745.

Jan 5 Meeting. Speaker TBA.

Feb 2 Meeting. Speaker TBA.

Feb 11–12 and 18–19 Native Plant Landscaping Design Course. Course takes place at Albuquerque Academy with cost of $95 ($105 after Jan. 20). Registration forms and information on NPSNM website (http://npsnm.unm.edu/whats_new.html).

Mar 2 Meeting. Speaker TBA.

El Paso

All programs are second Thursdays at 7 p.m. (coffee social at 6:30) at El Paso Garden Center, 3105 Grant Ave. All society events are free unless otherwise noted. Nonmembers are always welcome. Info: Jim Hastings, 915/240-7414.

Jan 13 Meeting. Not Your Mamma's Nopalitos. Cooking with *opuntia* by Jim Hastings, the Gringo Gourmet. Nontraditional recipes based on prickly pear pads will be prepared and shared.

Feb 10 Talk. Six Penstemons from Western Chihuahua. Richard Spellenberg, professor emeritus of biology at NMSU.

Mar 10 Botany in a Buick: Identifying Grasses at 50 mph. Kelly Allred, former professor of range science at NMSU.

Gila (Silver City)

All programs are free and open to the public. Meetings are third Fridays at 7 p.m. at WNMU's Harlan Hall, with refreshments following the program. Activity updates and further details will be posted on www.gilanps.org.

Jan 21 Talk. Beans in the Basura: The Impacts of Human Translocation on the Evolutionary History of *Leucaena* (Fabaceae). Donovan Bailey, assoc. prof. of botany at NMSU.

Feb 18 Talk. Troublesome Weeds of New Mexico. John O'Loughlin, Noxious Weed Coordinator for southwest New Mexico.

Mar 18 Talk. Plant Collecting in the Tropics, and an Introduction to Tropical Botany. Patrice Mutchnick, biology lab director at WNMU.

Las Cruces

Meetings and workshops are second Wednesdays (unless otherwise noted) at 7 p.m. in the conference room of the Social Center at the University Terrace Good Samaritan-Village, 3011 Buena Vida Circle, Las Cruces. (On the right, while traveling east on BuenaVida from Telshor.) Field trips are Saturdays; most last into the afternoon. Participants must sign a release-of-liability form. Children must be accompanied by their parents. Programs and field trips are free; nonmembers always welcome. Contacts: Carolyn Gressitt, 575/523-8413; Al Krueger, 575/532-1036.

Jan 5 Workshop. How to prepare photos for a PowerPoint presentation. Ray Bowers. Those presenting their photos on Jan. 12 might wish to attend.

Jan 12 Meeting. Share images from nature taken in 2010. Refreshments.

Jan 15 Workshop. Devoted to Flowers. Lisa Mandelkern. Bring blank postcards and/or T-shirts and items to embellish them with, e.g., pressed flowers. Fabric paint, acrylics, brushes, and stamps provided. Bring an apron. 9 a.m.–Noon.

Feb 9 Meeting. Native Plants on the Move: How New Mexico's Grasslands, Shrublands, and Forests Expand and Contract in Response to Climate Change. Curtis Monger, professor of agronomy and horticulture at NMSU.

Feb 12 Field Trip. Alamo Mt./Otero Mesa. Medium difficulty, some climbing, but not lengthy. Meet 8 a.m. at east end of the Rio Grande Bank parking lot, corner University and Telshor.

Mar 9 Meeting. Following the Flowers from Spring to Fall: A Botanical Transect Across Northern California. Donovan Bailey, associate professor of botany at NMSU.

Mar 12 Field Trip. Mossman Arroyo, near Bishop's Cap. Meet 8 a.m. at east end of the Rio Grande Bank parking lot, corner University and Telshor.

Otero (Alamogordo)

For field trip information, contact Eric Metzler, metzlere@msu.edu, 575/443-6250; or Helgi Osterreich, hkasak@netmdc.com, 575/585-3315. More info should be available by the beginning of each month.

Jan 23 Talk. Hildy Reiser and Ranger Ward will do a presentation (part 2) on their trip to Africa. 3:00 p.m., 1010 16th St., Alamogordo.

Feb 13 Talk. Current work at NMSU (TBA). 3:00 p.m., 1010 16th St., Alamogordo.
Mar 12 Field trip. Valley of Fires, Carrizozo. Meet 9:00 a.m. at the Y in Tularosa. Bring water and lunch.

San Juan (Farmington)

Meetings are third Thursdays at 7 p.m. at San Juan Community College. For more info, contact Donna Thatcher at 505/325-5811.

San Juan (Southwest Colorado)

The San Juan/Four Corners Native Plant Society is part of the San Juan chapter of the NPSNM and has 15 field trips and 6 programs each year. Complete details available at http://www.swcoloradowildflowers.com/San%20Juan%2Four%20Corners%20Native%20Plant%20Society.htm or you may contact Al Schneider, coloradowildflowers@yahoo.com or 970/882-4647. All activities are free and open to everyone, members and non-members. Field trips for the 2011 season will begin in late March.
Jan 22 Learn about and assist with the herbarium plant collection. No experience necessary. This is a service program to help put the new herbarium in order. 10 a.m., Fort Lewis College Herbarium.
Mar 15 Talk. Using Native Plants Around Your Home. Southwest Seeds Company. 6:30–8:30 p.m., Lyceum Room, Center of Southwest Studies, Fort Lewis College.

Santa Fe

Meetings are third Thursdays at 6:30 p.m. at the meeting room of the REI store, 500 Market Ave. For more information, contact Tom Antonio, tom@thomasantonio.org, 505/690-5105; or Carol Johnson, gcjohnson@comcast.net, 505/466-1303.
Jan 13 Talk. Why Do Names Change? Examples from Brassicaceae. Patrick Alexander, PhD candidate at NMSU.
Feb 17 Talk. Rare Plants of New Mexico and Southwest Colorado. Ken Heil, professor at San Juan College.
Mar 24 Talk. TBA.

Taos

Meetings are first Tuesdays at 7 p.m. at the Kit Carson Electric Co-op Conference Room, 118 Cruz Alta Rd. Check Web link for this chapter to get updates. Chapter members will get e-mail or USPS mail notification.
Jan–Mar No programs scheduled.

New and Recent Books: *Cactáceas de Chihuahua*

Toutcha Lebgue Keleng and Gustavo Quintana Martínez
ISBN 978-7788-34-8; Soft Cover $25

After years of extensive collecting, Dr. Toutcha Lebgue Keleng and Gustavo Quintana Martínez have completed their book *Cactaceas de Chihuahua: Tesoro Estatal en Peligro de Extinction* (Cactaceae of Chihuahua: State Treasures in Danger of Extinction). Using methodical field surveys, two of México's leading botanists have compiled an easy-to-use field guide to the cacti of Chihuahua. Following biogeographical descriptions of Chihuahua's regional diversity, they provide descriptions of 145 species and 22 varieties of cactus with synonyms, distribution, and habitat descriptions. While keys to genera and species are lacking in this edition (to be included in future editions), and photos clearly showing diagnostic traits would be helpful, this work describes the diversity of cacti within a larger region known to have the greatest concentration of cacti species and endemic genera. The book is written in Spanish, but is easily understood by English speakers with a basic understanding of Spanish. Published in México, the book can be purchased by contacting Robert Armijo at rarmijo@yahoo.com. ❖

CONSERVATION CORNER

Fall and Winter Botany (or Plant Forensics)

by Jim Nellessen, NPSNM Conservation Committee Chair

You know you have become a true botanist once you can recognize and identify dead plants! Heading into the winter months seemed like a good time to address the topic of dead-plant identification. True, we all love to see green growing plants and blooming flowers and enjoy their beauty. This does not mean we need to stop observing plants during the fall and winter. In addition to the summer, I do field work in late fall and winter and have been doing so for years.

When you can recognize white-bristle stickseed (*Lappula redowskii* or *L. occidentalis*), spectacle pod (*Dimorphocarpa wislizenii*), golden crownbeard (also called cowpen daisy, *Verbesina encelioides*), and annual goldeneye (*Viguiera annua*) from what appear to mere sticks, with partial remnants of flowering parts still attached—you have made it to winter botany. These are all annuals that are often fully shriveled up by autumn, certainly by winter. And yes, I have seen these same plant species numerous times in full growth mode with flowers. But I am out in the field enough that I can recognize them any time of the year. Identification of dead plants is a good skill for all plant enthusiasts to develop. It means keeping your eyes attuned to the constantly changing appearance of each species all through the year.

If you can recognize galleta grass (*Pleuraphis jamesii*) from its autumn color tones and characteristic leaf curl—great! It's that "gestalt" recognition you get from seeing the same species again and again that allows you to see the difference between a small clump of needle-and-thread grass (*Stipa* sp.) or Indian ricegrass (*Oryzopsis hymenoides*), or a three-awn grass (*Aristida* sp.), even when no flowering stalks remain.

I grew up in Minnesota, learning winter botany and being formally educated in identifying woody plants in winter. Snow covers all the grasses and forbs in a Minnesota winter, but the trees and shrubs are fair game. Wintertime identification keys have been devised for woody plants using only twig and bud characteristics. Similarly, winter botany of woody plants can be applied in our high-elevation mountains of New Mexico, while at lower elevations all dead plants can be studied.

What does all this have to do with conservation? To me it means: Do not stop botanizing just because the plants are brown and it is cold. I like to stay aware of my surroundings year-round. I love to observe plants and their habitats anytime. There is beauty to observe in the bare branches of cottonwoods and the brown leaves and stalks of grasses. There need not be any downtime in contemplating our environment. ❖

Don't Let Winter Get You Down!

by Russ Kleinman, Gila chapter

We live in a state in which it is possible to study flowering plants outdoors for nearly nine months of the year. That leaves three months during which the weather is just too uncooperative and the usual plants are dormant. What's there to do?

We still can have fun with plants in the winter! Did you know that it is possible with a little practice to identify most woody plants and trees with just a small, leafless twig? It is the leaf scars, bud scales, and vascular bundles on the twigs that give the identity of the plant away. They are like woody plant "fingerprints." Each plant will have a different, unique pattern to these features. How does one find information about what these leaf scars and vascular bundles look like? Check out the webpage dedicated to them at the "Winter Twigs" link at www.gilaflora.com.

In addition, most people don't realize that there are hundreds of species of diminutive green plants that can be collected and identified during the winter—the mosses. These intriguing little plants take some time to get to know, but they are nearly as diverse in shape and form as flowering plants and they can be found in the winter as well as the summer. Importantly, they don't lose their leaves as most

Continued next page

Don't Let Winter Get You Down *(continued from p. 8)*

flowering plants do. Mosses are challenging—you'll need access to both a dissecting scope and a compound microscope to learn the mosses, as well as guidance by someone who can get you started.

And lastly, don't forget that you can use those cold, blustery days and evenings to read up on topics that just seem to get ignored when it's more fun to be outside. Use the time to study up on plant anatomy, photosynthesis, and physiology. How does chlorophyll work? There are some great books out there that will help round out your knowledge of plant form and function.

Here are a couple of titles:

- *Plant Physiology* (3rd ed.), by Taiz & Zeiger (2002), Sinauer Associates
- *Plant Systematics: A Phylogenic Approach* (3rd ed.), by Judd, Campbell, et al. (2008), Sinauer Associates

So go out and have fun with native plants this winter! ❖

Above, a moss, *Polytrichum juniperinum*.
Previous page, a winter twig of *Fraxinus velutina*.
Photos by Russ Kleinman

New and Recent Books

Biological Control of Invasive Plants in the United States
Edited by Eric M. Coombs, Janet K. Clark, Gary L. Piper, and Alfred F. Cofrancesco
Oregon State University Press. 467 pages.

Review by Donald H. Heinze

This is a book that belongs in the library of every land management office, public or private, in the United States and Canada. Operators of game refuges, farms, and ranches will find it of great interest also. The book has no fewer than 71 authors, editors, and contributers who work in locations scattered from northern New York to central California and from Washington State to Florida. Out-of-country contributers hail from Switzerland, Argentina, Brazil, and Australia. People employed by the United States Department of Agriculture based in France have also assisted in compiling this book. The book is separated into three parts: (1) "The Theory and Practice of Biological Control," (2) "Target Plants and the Biological Control," and (3) "New and Ongoing Biological Control Projects in the United States."

It would be wise not to contemplate biological control of unwanted plants until one is familiar with the information included in part 1. This knowledge includes pertinent data from the ecology of biological control through gaining a permit to use biological controls, handling of control agents before release, monitoring them after release, nontarget impacts, and the International Code of Best Practices for Biological Control of Weeds.

Part 2 provides information on 34 plants, 13 of which are listed as noxious weeds by the State of New Mexico Department of Agriculture. Also included in these 34 are puncturevine (*Tribulus terrestris* L.) and Russian thistle (*Salsola tragus* L.). These two are not considered noxious in New Mexico, but they still are supremely pesky! A biological sketch of each plant is given, which includes plant habit, reproduction, vegetative structures, flowers, reproduction, infestations, impacts, and other pertinent information. This is followed by the available biological agent(s) that are used to control the plant and their biology, effect, release history, and other required information on the agents.

Part 3 discusses the work that is presently being done to expand our knowledge of biological controls, to include plants that heretofore had no acceptable control agents. One New Mexico Watch List species and two noxious species are included here.

Herein lies a weakness in the book. It is four years old, and in all probability the work on some of the involved agents is completed and should be either added to Part 2 (e.g., the Dalmation Toadflax Stem Weevil) or dropped if the work has not borne fruit. Therefore an addendum should be included. Still, the book is excellent and I heartily recommend it. ❖

Dropseeds, Burrograss, Wolftail

by Arthur Boardman, Deming, NM

Grasses grew here before the cattle—men
Herding them—came to graze, and soon they went
Into the cattle and mainly did not
Come back. Sand came, blowing into small dunes
At times; mesquite was next, and four-wing salt
Bush, catclaw, tumbleweed, and other plants
Not growing here before or only just,
And later yet some cultivated crops,
Chile, onions, cotton, melons, pecans,
In fields and orchards on the valley floor.

The grasses aren't completely gone. They grow
In summer plentiful and high along
The verge of roads—dropseeds and burrograss
And wolftail some of them—until they're mown
Down short. In tended fields they're seen as weeds,
And crews walk up and down the rows of crops
With hoes; in gardens too they're looked upon
Askance by most who garden. Land let go
For years acquires a growth that's slightly green,
Then yellow while the summer slowly ends.

Botany: The Death of a Science *(continued from p. 3)*

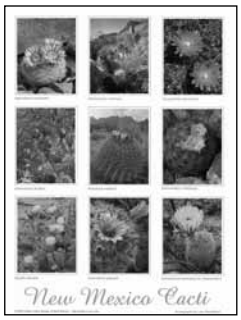
retirements take place and new faculty are added to new subsets of biology. Each voting member of a faculty simply votes to expand his or her clone of the science. At the same time, if that is where the huge government dollars reside, the university administration is thrilled to death. And so it goes. For a more complete discussion of this historical transition please read David Ehrenfeld's (1993) *Beginning Again: People and Nature in the New Millennium*.

Several years ago, in a survey conducted by the NPSNM, a high percentage of middle school and high school teachers reported that less than 10% of their course time was devoted to the study of the green plant. A number of teachers reported that the study of plants had been removed completely from the curriculum. Some did report that the teaching of botany was now being included in the middle school curriculum. At the same time many teachers said they did not feel qualified to teach botany and that they needed more training in the plant sciences. Some teachers reported that their students were more interested in studying animals, and that they were now required to teach up to six weeks—or in some schools, a semester—of molecular biology. When it came to teaching a field course in botany, most teachers said they had a limited knowledge of the local flora. It was interesting that several of the teachers who had been teaching for many years said they would like to return to teaching field botany. Practically all teachers reported there was no time, transportation, or funds for teaching a field course. The irony of this is that a national study showed that the time students spend riding on buses has increased by 50% since 1970. One cannot but wonder what percent of the total funds for transportation in our schools is used in carrying students to athletic events, including the band and cheerleaders.

Is it any wonder it is impossible to locate funds and time for education and research in the plant sciences? These types of inadequacies have developed and continue to increase at a time when forests and prairies are being scraped and the earth is rapidly being covered by asphalt and cement. How can we ever become a nation committed to conservation, while the flora that provides the oxygen we breathe continues to be destroyed, and where the ever-increasing human population can't identify even a small part of the flora that surrounds them in their daily lives? Doesn't higher education have a key role to play in addressing these issues? ❖

The 93-page report, How Prepared Is the U.S. to Meet Future Botanical Challenges? *by the Chicago Botanical Garden and Botanic Gardens Conservation International's U.S. office, in collaboration with the Botanical Society of America, is available at http://www.bgci.org/usa/bcap as a downloadable PDF.*

Membership in the NPSNM is open to anyone supporting our goals of promoting a greater appreciation of native plants and their environment and the preservation of endangered species. We encourage the use of suitable native plants in landscaping to preserve our state's unique character and as a water conservation measure. Members benefit from chapter meetings, field trips, publications, plant and seed exchanges, and educational forums. Members also qualify for membership in New Mexico Educators Federal Credit Union. A wide selection of books dealing with plants, landscaping, and other environmental issues are available at discount prices. The Society has also produced two New Mexico wildflower posters by artist Niki Threlkeld and a cactus poster designed by Lisa Mandelkern. These can be ordered from our poster chair or book sales representative.



New Mexico wildflower posters: $8 (nonmembers, $10)
Cactus poster: $5 (nonmembers, $8)

NPSNM Membership Application

Name(s) _____

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City **State** **Zip** _____

Telephone _____

E-Mail/Fax _____

I (we) wish to affiliate with the checked chapter: (Please check only one)

- ❑ Albuquerque
- ❑ El Paso, TX
- ❑ Gila (Silver City)
- ❑ Las Cruces
- ❑ No affiliation
- ❑ Otero (Alamogordo)
- ❑ San Juan (Farmington and Southwest Colorado)
- ❑ Santa Fe
- ❑ Taos
- ❑ *I am interested in forming a new chapter in* _____

Annual Dues:

Individual	$ 25
Family	30
Friend of the Society	50
Sponsor	100
Patron	250
Life Member	1,000
Limited Income, Students, and Seniors (65+)	15

Total: $ _____

Remember that 25% of contributions above regular dues are returned annually to the individual chapters!

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Download PDFs of this and recently archived issues at the NPSNM website:

http://npsnm.unm.edu

Landscape Design Course

February 11 & 18 (evenings) + February 12 & 19 (all-day sessions)

(See full description of the course on page 2.)

WORKSHOP REGISTRATION

Please send a separate form for each attendee.

Forms and checks go to:

NPSNM Albuquerque Chapter, PO Box 35388, Albuquerque, NM 87176-5388

Checks should be payable to: **NPSNM Albuquerque Chapter**

Name _____

Address _____ City _____ State _____ Zip _____

(Area Code) Telephone _____ E-Mail _____

Registration fee includes all 4 days' presentations, Friday and Saturday lunches and snacks.

Please select: Vegetarian _____ Non-Vegetarian _____

Registration Fee—$95.00; Late registration after Jan 20—$105.00

Cancellation policy: $70.00 refund if cancelled by January 20, 2011

Questions? Lolly Jones 505/771-8020 or ljones20@comcast.net

Enrollment limited—register early!