

NEWSLETTER

of the

NATIVE PLANT SOCIETY OF NEW MEXICO

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Agave parryi, Century Plant Lisa Mandelkern

The Newsletter of the Native Plant Society of New Mexico

January-March 2020, Vol. 45 No. 1. This newsletter is published quarterly by the Native Plant Society of New Mexico (PO Box 35388, Albuquerque, NM 87176) and is free to members. The NPSNM, a nonprofit organization, is composed of professional and amateur botanists and others with an interest in the flora of New Mexico. Original articles from the newsletter may be reprinted if attributed to the author and to this newsletter. Views expressed are the opinions of the individual authors and not necessarily those of NPSNM.

The next submission deadline is February 1, 2020. Articles and high-resolution artwork supporting the NPSNM's mission are welcomed and can be sent to the editor, Margaret Ménache, *npsnmnewsletter@gmail.com*.

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Mission The Native Plant Society of New Mexico (NPSNM) is a non-profit organization that strives to educate the public about native plants by promoting knowledge of plant identification, ecology, and uses; fostering plant conservation and the preservation of natural habitats; supporting botanical research; and encouraging the appropriate use of native plants to conserve water, land, and wildlife.

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From the President

Botanizing

by Tom Stewart

I knew what Botany was, but I had never heard the verb "to botanize" before my girlfriend in graduate school used it, casually referring to a pastime she and her friends enjoyed in the outdoors. I was surprised to find that it was actually in my 1981 New Collegiate Dictionary, described as the study of plants in natural habitats, or exploration for botanical purposes. I tried it myself and it has been downhill for me ever since.

Even though it is legitimized in the dictionary, botanizing remains almost as obscure to the public as is the boson, a subatomic particle, found on the same page. In contrast, birders abound. The sale of binoculars, bird guides, apps, and birding tours is a significant industry. I count myself among bird enthusiasts and I think most botanizers share at least some interest in birds, insects, fungi, aquatic life, geology, and everything else in the wild. Lets face it, botanizing is a gateway drug.

A large number of birders do not seem to share a reciprocal interest in native plants, yet there are a lot of similarities between the two passions. They get us out on healthy walks in nature, although some species can be either appreciated or resented in our own yards. Experiencing both birds and plants helps us rise above our everyday existence. We learn to identify them, and while birders formalize the life list, botanizers do make lists and envy each other's discovery of wildflowers they have only seen in books.

Birds put on gorgeous breeding plumage; plants display unique flowers in their time as well.

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Do you have an idea for an article for our newsletter?

Do you have information about an event or activity that would be of interest to our membership?

Have you read a compelling book, an educational article?

Have you visited a thought-provoking website? Have you been on an exciting hike?

Do you have photographs, drawings, paintings of favorite or unusual plants?

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The differences matter. Birds are lively and even come near you if you are patient. Then again, once you find a plant it holds still while you examine it, take a picture or sketch it. There is time to talk about traditional

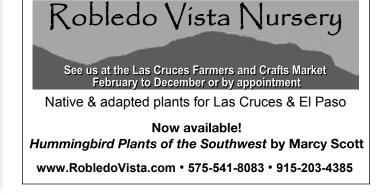
uses. You may be able to find the same individual the next year and see its progress, its struggle or its offspring. Bird sounds vary from lovely to raucous. Plants disperse aromas from divine to unpleasant. You can touch plants. Then again, I have never know a bird to cause itching and swelling!

A game changer for many folks may be the naming. Few birders know the scientific names of the birds they find, and don't have to. Common names are widely known, made easier because those names have been standardized. A song sparrow is known as song sparrow from Maine to California.

While a poet may say a rose is a rose is a rose, the "common" names of even showy, widespread wildflowers change from one source or place to another, and are not so common after all. With that and the fact that there are more plant species than bird species, we have little choice but to use scientific names. This rubs newcomers on a field trip the wrong way, I fear, and gives the impression we are elitists. Not so. We are only trying to be consistent and unambiguous.

Continued page 9





Conservation Corner

by Rachel Jankowitz, NPSNM Conservation Committee Chair

Another exotic Morning Glory that needs

no introduction is Common Bindweed

(Convolvulus arvensis). This evil, insidious

plant is a major pest of agriculture.

Native or Not: Morning Glory

In the Convolvulaceae family, several of the genera are commonly called Morning Glory. There is of course *Ipomoea pu*-

purea, the old-fashioned garden annual ornamental vine. Its native range is in Mexico and Central America. The wild type is a deep purple, but horticultural Morning Glories are now available in a wide

range of colors. It reseeds itself and can be weedy and invasive, but is easily pulled up by the roots. Another exotic Morning Glory that needs no introduction is Common Bindweed (*Convolvulus arvensis*), whose original range is in Europe and Asia. This evil, insidious plant is a major pest of agriculture. Its strategy for success is to reproduce by copious seed production, a taproot (up to 20 feet deep), lateral roots (up to 10 feet out), or by pieces of lateral root broken up from tilling.

Allred and Ivey's Flora Neomexicana lists 23 species in the genera Convolvulus, Evolvulus and Ipomoea, 20 of them native to our state, mostly from southern NM. My little personal herbarium includes Dagger Bindweed (C. equitans) collected at Silver City; Hairy Morning Glory (E. nuttalianus) collected in southern Grant County; Silky Morning Glory (E. sericeous) collected in the Burro Mountains; and Bush Morning Glory (I. leptophylla) collected at Sand Ranch in southeastern New Mexico. In my north-central NM yard, I find the native *I. coc*cinea, Scarlet Morning Glory, with its lovely orange-red elongated flowers, and an inconspicuous, delicate, vining species with white to pale lavender flowers which is likely *I. hederacea*, another species from the tropical Americas. The very diverse Convolvulaceae also includes sweet potato and the parasitic dodders (genus Cuscuta). Internet search results are contradictory about nomenclature, possibly revealing a certain amount of confusion around the taxonomy of this family.

Morning Glory plants have a high content of alkaloid chemicals. Alkaloids are compounds of plant origin which have pronounced physiological action on humans. Plant al-

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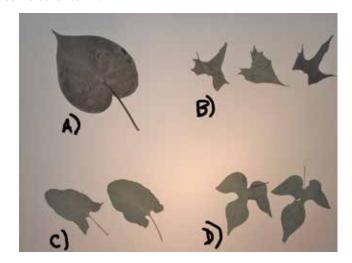
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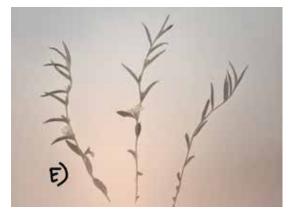
Hunter Ten Broeck

kaloids include many drugs (morphine, quinine) and poisons (atropine, strychnine). Some species in the *Ipomoea* genus,

including *I. purpurea*, are psychoactive, due to the presence of ergot alkaloids related to lysergic acid diethylamide (LSD). The seeds of Morning Glory were used traditionally

for this purpose in its native range. Should you decide to try this at home, use seeds from your garden since the ones in the store-bought packet may have been treated with fungicide or some other toxin.





Leaf shape variation among Morning Glory species: A) Ipomoea pupurea, B) Ipomoea coccinea, C) Convolvulus arvensis, D) Ipomoea hederacea, E) Evolvulus sericeous.

Forest Plan Comments

Three of New Mexico's five National Forests simultaneously released draft revised Forest Plans and associated Draft Environmental Impact Statements at the beginning of September. In our comment letters, NPSNM recommended to all three

that they each hire a Forest botanist. We also expressed support for the designation of specific Special Management Areas (SMAs) and Wilderness expansions that would enhance habitat connectivity for plants and animals and protect ecologically important vegetation communities and rare plant species.

In addition, we thanked the Santa Fe NF for including practices designed to mitigate the effects of burn piles from forest thinning projects, and suggested a few additional best management practices. We asked the Carson NF to add the NM Rare Plant Conservation Strategy to their list of information resources for Forest flora; we approved of the prohibition of domestic sheep and goats in occupied bighorn sheep habitat. The primary reason for this prohibition is to prevent the transmission of disease to the bighorns, but it may also serve to protect high-altitude alpine plant communities, already under stress from climate change, from additional trampling and overutilization.

NPSNM has been active in the Cibola NF Shared Stewardship Collaborative, and in several Cibola NF Ranger District collaboratives. In response to their draft Forest Plan, we supported SMAs and Wilderness expansions to enhance habitat connectivity, and for purposes of public recreation and environmental education, and conservation of good condition grasslands. We drew special attention to Little Water Canyon in the Mount Taylor Ranger District, which our Albuquerque chapter has been working to conserve through improved management. Our recommendations included designating Little Water Canyon a Research Natural Area, in consideration of unique aspects of its intact native riparian vegetation, and providing an alternate water source for the cattle on that grazing allotment. We also encouraged the Cibola to provide more detailed specifications for how they will manage invasive weeds.

Pesticide Control

After an eight-year court battle, the US Environmental Protection Agency reached a settlement in October with the Center for Biological Diversity and the Pesticide Action Network North America, which sets firm deadlines from 2021 to 2024 for EPA to analyze the effects of eight common pesticides on Threatened and Endangered plants and animals, nationwide. Four of the chemicals are rat killers, two are insecticides and two are herbicides, including atrazine, the second most commonly used herbicide in America.

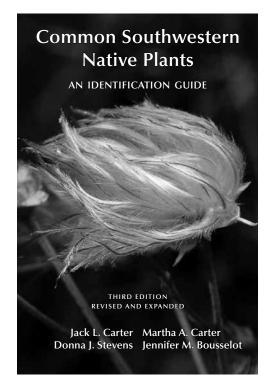
Each year, 75 million pounds of atrazine are used in this country. Atrazine is particularly toxic to amphibians and has documented negative effects on aquatic plant communities. It has been banned in the European Union for over ten years. EPA is already required to analyze the listed species effects of glyphosate, the most commonly used herbicide, as the result of a separate legal case. The evaluations are intended to inform EPA's decisions about re-registration of these chemicals under the Federal Insecticide, Fungicide and Rodenticide Act, which, despite the title, does also cover herbicides.

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6 January-March 2020 New Mexico's Voice for Native Plants www.npsnm.org

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 www.npsnm.org; 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 normally the first Wednesday of the month at 7:00 p.m. in the NM Museum of Natural History, 1801 Mountain Rd. NW. For more information on programs contact Jim McGrath at sedges [at] swcp.com or George Miller at goxfordm1844 [at] yahoo.com. For field trips, contact Carol Conoboy, carolconoboy [at] gmail.com, 505/897-3530. For meeting places indicated [A] through [H] see website.

Jan 8 Meeting. "Design for wildlife: how to create your back-yard refuge." Judith Phillips, landscape designer and writer.

Feb 5 Meeting. "Build it and they will come: attracting wild-life to the garden." Wes Brittenham, farm and landscape manager at Los Poblanos Historic Inn and Organic Farm.

Mar 4 Meeting. "The use of native grasses for evapotranspirative landfill covers at Sandia National Laboratories." Denise Bleakly, geospatial analyst, Sandia National Laboratories.

Mar 20-21 Overnight field trip. Rockhound State Park and Little Florida Mountains. Details TBA.

El Paso

Meetings are at St. Alban's Episcopal Church, 1810 Elm Street (Elm at Wheeling, off Piedras). Programs are second Thursdays at 7:00 p.m. (coffee social at 6:30) unless otherwise noted. All events free unless a fee is specified. Nonmembers always welcome. Info: John White, 575/640-7555; jmwhite [at] utep.edu.

January "Passive Water Harvesting to Improve the World Around You" by Mr. Michael Gaglio, owner of High Desert Environmental Design and Installation. Mike will be speaking about the principles of passive water harvesting for the Chihuahuan Desert of the El Paso area. By using native desert native plant material placed in the design, water use needs will be minimal. Examples of passive water harvesting will be explained from simple to complicated plans.

February "The Unrecognized Benefits of Native Plant Gardens for the El Paso Region" by Dr. Kevin Floyd, Garden Curator of the Chihuahuan Desert Gardens at UTEP. Dr. Floyd will discuss benefits people receive from using native plants in their landscape. If more people would use native desert plants, tremendous results could be achieved in local landscape design. A paradigm shift must take place for this to work. Advocacy for Native Plants needs to begin with nursery production through to design, installation, and maintenance of landscapes.

March "Native and Adapted Trees to the El Paso Landscape" by Mr. John White, ISA Certified Arborist and retired Garden Curator. John will be discussing selecting and planting trees for our landscapes. Many of the failures with local trees are poor species selection, planning, design, installation, and mainte-

nance. John would like to break some of the myths about tree care that many El Paso residents have come to accept.

Gila (Silver City)

All programs are free and open to the public. Meetings are held on third Fridays from October to May (except December) at 7:00 p.m. at WNMU's Harlan Hall, Rm. 219, with refreshments following the program. Field trips are third Sundays (April to September). Each field trip will be to a different location in order to explore the diversity of our native plants. Meet at 8:00 a.m. at the south parking lot next to the Fine Arts Center Theatre on the WNMU campus for carpooling. For more information, go to www.gilanps.org/Events/programs.

Jan 17 Meeting. Naava Koenigsberg will speak on the ethnobotany of medicinal herbs. Naava is the owner of Bear Creek Herbs, and she and like-minded friends will be creating a medicinal plant area in our Silva Creek Botanical Garden.

Feb 21 Meeting. "Madagascar: The Red Island ... A Naturalist's Paradise", presenter Zachary Rogers. Madagascar, as the 4th largest island in the world, is home to tens of thousands of na-

tive species of plants and animals that only occur there. Over millions of years, these fascinating endemic species have evolved specialized, often unique, adaptations for survival, in isolation from ancestors living on nearby landmasses like Eastern Africa, India, and small Indian Ocean archipelagos. Sadly, Madagascar also has one of the most highly threatened floras and faunas in the world. Join us along with New Mexico State



Zachary Rogers collecting specimens

University plant scientist, Zachary Rogers, who will guide the group on a virtual tour of the island surveying its "mega-bio-diversity", while showcasing recent taxonomic plant research and new conservation efforts aimed at protecting the rarest, most threatened species. Zachary is Herbarium Curator in the Animal and Range Sciences Department at New Mexico State University. He also worked for many years for the Missouri Botanical Garden and has done extensive botanical research in Madagascar.

Mar 20 Meeting. "Spring Blooms in the Southwest: Not Just Creosote Bush," presenter Donna Stevens. Not to disparage Creosote Bush, of course, which is one of the best smells on the planet. While spring in the Southwest is not the same as in the East, it still offers much to celebrate. If November is any predictor of winter precipitation, the spring 2020 bloom will be glorious. And if November turns out to be an anomaly, there

will still be plenty of wildflowers to enjoy in the spring. This presentation will feature some of the most common spring wildflowers in southwest New Mexico. Donna Stevens is a coauthor of Common Southwestern Native Plants: An Identification Guide. Her idea of a good time is going on a hike to observe our beautiful native flora.

Las Cruces

Meetings are second or third Wednesdays (unless otherwise noted) at 7:00 p.m., in the NMSU Herbarium, at the Biology Annex on the NMSU campus. Field Trips are usually on the Sundays following the Wednesday meeting; most last into the afternoon. Bring lunch/snack, water, sun protection, and wear good walking shoes. Please check each listing for when and where to meet. Participants must sign a release of liability form. Children must be accompanied by their parents. Programs and field trips are free, unless we are going a fee area; non-members are always welcome. Contact: Carolyn Gressitt, 575/523-8413. Leave a message so we can get back to you.

Jan 15 Meeting. NMSU Herbarium 7 p.m. Lisa Mandelkern presents "Organ Mountain Desert Peaks National Mounument, Southern New Mexico's outdoor jewel." The monument offers excellent weather for hiking during fall, winter and spring. Wildflower enthusiasts can view diverse desert plant communities and photographers will find spectacular scenery, wildlife and wildflowers.

Jan 19 Sunday Field Trip. Walk from Dripping Springs Visitor Center to La Cueva. \$5/car fee area. Easy walk on well-maintained trail of about one mile round trip. Meet 9:00 a.m. First National Bank 1870, corner University/Telshor, for carpooling. Feb 12 Meeting. NMSU Herbarium 7:00 p.m. Dr. Akasha Faist presents "Rangeland restoration ecology: working to overcome barriers to success in the Chihuahuan desert."

Feb 16 Sunday Field Trip. Robledo Mountains, South Slot Canyon. Easy-medium difficulty, a few gentle slopes with some very minor scrambling, lasting into mid-afternoon, 2-mile round trip walk. Meet 9:00 a.m. Parking lot east of Telshor 12 Cinema by former K-Mart lot.

Meeting. NMSU Herbarium 7:00 p.m. Dr. Richard Spellenberg presents "Knowing daisies, sunflowers, asters, and their kin in New Mexico." Dr. Spellenberg's and Zucker's book "The Sunflower Family: A Guide to the Family Asteraceae in the Contiguous United States" will be for sale and signing, \$50, after the talk.

Mar 15 Sunday Field Trip. Sierra Vista Trail from parking lot off Soledad Canyon Road. Easy walk on trail of approximately two miles round trip with views of Organ Mountains. We should see poppies and early blooming cacti. Meet 9:00 a.m. First National Bank 1870, corner University/Telshor, for carpooling.

Otero (Alamogordo)

For workshop and field trip information, contact Elva Osterreich, echoofthedesert [at] gmail.com, 575/443-4408, or Jennifer Gruger, jengruger [at] gmail.com, 505/710-2924. More information will be available on the website or by contacting Elva or Jen by the beginning of each month.

Jan 25 Sergio de Tomas Marin, a student at New Mexico Tech, will speak on "The Effect of Invasive Russian Olive on Soil Chemistry Along the Middle Rio Grande" at 11:00 a.m. at the Unitarian Universalist Fellowship, 1010 E. 16th St. Alamogordo. He will be talking about his studies and progress he has made on his Otero Chapter funded research. Sergio received his grant in November 2018 to investigate soil nitrogen cycling as a tool for native vegetation restoration.

Feb 15 NMSU Herberium tour and talk. Meet at the Herberium at NMSU at 10:00 a.m. NMSU (in Las Cruces) herbaria resources represent the premier reference collection for the entire southern half of New Mexico, surrounding areas and elements of northern Mexico. The herbaria include more than 80% of all vascular plant type specimens housed in the state. Directions and Parking: Exit Interstate 10 or 25 at University Ave. From Interstate 10 proceed east 0.5 miles along University Ave, turn right on Espina and left on Horseshoe. From Interstate 25 follow University Ave west ca. 1.5 miles to Espina and turn left, then left on Horseshoe.

Mar 14 Valley of Fires recreation area. Meet at 8:30 a.m. at the Y in Tularosa (Intersection of Highways 54 and 70). Four miles west of the Town of Carrizozo on US 380, Valley of Fires Recreation Area is located immediately adjacent to the Malpais Lava Flow. The site is managed by the Bureau of Land Management. Approximately 5,000 years ago, Little Black Peak erupted covering 125 square miles of the Tularosa Basin with molten rock up to 160 feet thick. From a distance, Valley of Fires appears as barren rock but when you walk along the nature trail there are many varieties of flowers, cactus, trees and bushes typical of the Chihuahuan desert. Animals include bats, roadrunners, quail, cottontails, mule deer, barberry sheep, and lizards.

Santa Fe

Meetings are third Wednesdays at 6:30 p.m. at Christ Lutheran Church, 1701 Arroyo Chamiso (in the triangle of Old Pecos Trail, St Michael's Dr., and Arroyo Chamiso). For more information, contact Tom Antonio, 505/690-5105. Meetings and talks are free and open to all.

Taos

Meetings are third Wednesdays at 6:00 p.m. in Kit Carson Electric Cooperative boardroom, 118 Cruz Alta Rd. Free, open to the public. Videotaped. Videos of past meetings are at https:// tinyurl.com/TaosNPSvideos. Check NPSNM website or Facebook for updates, or phone Jan Martenson at 575/751-0511.

No events in January or February.

Dr. Joseph Morton of Santa Fe will speak on "The Wacky Wonderful World of Fungi." Dr. Morton is a professor emeritus of Environmental Microbiology, University of West Virginia. This will be the first of a two-part series to be continues at our April 15 meeting.



People and Native Plants, A Journey Through Time

2020 Native Plant Society of New Mexico Conference hosted by NPSNM Otero Chapter

New location: Sqt. Willie Estrada Memorial Civic Center Alamogordo, NM

Otero Chapter of NPSNM is our host for this year's conference, featuring the 11,000-year history of the Tularosa Basin and surrounding mountains. Speakers, field trips and workshops will be presented in chronological order to reveal the interwoven story of people and native plants in this fragile and fascinating Chihuahuan Desert region. Prehistoric Three Rivers, Apache, early Spanish, American expansion, and contemporary Southwestern cultures and land uses frame the topics of the weekend's events.

Friday's activities include speaker presentations and a reception. Saturday morning and Sunday will offer a variety of workshops and guided hikes to points nearby and farther afield, and will include a number of options for those who prefer less strenuous activity. Saturday afternoon promises more speakers and wraps up with the traditional banquet.

Otero chapter member LeAnne Roberts, Chair of Speakers and Field Trips Committee, has confirmed over 80% of the presenters and 75% of the field trips at press time. Her recruiting successes include the new keynote speaker, paleoethnobotanist Pamela McBride, whose work includes many archaeological sites in the Tularosa Basin and Sacramento Mountains.

The small but highly effective Otero Conference team is polishing up the details of an exciting conference. Watch for the program and registration form in the Spring Newsletter issue.

Meanwhile, Otero needs our help. To help on committees or with sponsorships please contact Jennifer Gruger jengruger [at] gmail.com.

Donate silent auction items by contacting Jane Huisingh jhuisingh8 [at] gmail.com.

Recent Educational Activities and Initiatives of the Gila Chapter of the NPS

by Don Graves, Gila Chapter

The Gila Native Plant Society (GNPS) regularly participates in a wide variety of community events. During this year's Earth Day events in Gough Park, volunteers offered books for sale and sold a wide variety of native plants to community members. The highlight of the event was watercolor painting for kids, who used their creativity to make colorful, original bookmarks decorated with native plants.

For this fall's Gila River Festival, member Les Brandt painted a wonderful backdrop of the Gila River for our booth that invited kids of all ages to paint a wide variety of pollinators. They were then invited to display their pollinators on the large canvas. In addition, Betsy Kaido led a tour of the Silva Creek Botanical Garden during the Gila River Festival.



Les Brandt leads kids of all ages in painting pollinators at the GNPS booth at the Gila River Festival. Les painted the Gila River background.

GNPS is working with art and science teachers at G.W. Stout Elementary School in Silver City to help their students learn about native plants, to add native plants to their school garden, and to produce native plant art. Their artwork will be made into note cards displaying their work. Stay tuned!

Member Naava Koenigsburg from Bear Creek Herbs has begun the planning process to add an herbal/medicinal bed at Silva Creek Botanical Garden. Several GNPS members are participating. The new bed will highlight traditional medicinal uses of local native plants by the Hispanic and Apache cultures in the community. Soil preparation is underway with planting scheduled for next spring and summer.

GNPS participated with SWNM Audubon Society, Grant County Beekeepers, and Grant County Archaeological Society on a mural celebrating pollinators, native plants, and addressing the issue of climate change. The dedication of the mural was on October 27th and included a native plant give-away, where over 400 native plants went home with happy partici-



pants. High School students from Aldo Leopold High School produced the colorful mural, with input from the sponsoring organizations. See photo on back cover.

On five Tuesdays this October, GNPS sponsored an Asteraceae workshop which featured our treasured local botanists Russ Kleinman, Richard Felger and Bill Norris. This workshop included both field and laboratory components and we had twelve participants. That is a pretty good student to teacher



A work crew hauls wheel barrow loads of dirt for the new herbal/ medicinal bed at Silva Creek Botanical Garden.

President's Letter, Continued from page 3

Common names can be horrible PR for perfectly respectable plants. Many have "weed" in their names or "wort," too easily associated with "wart." These are combined with other unpopular things, resulting in names like snakeweed, skunk bush, scorpion weed, or lousewort, to name a few. How about bastard toadflax? On the other hand, musk is a very expensive ingredient of fine perfumes, yet musk thistle is an invasive foreigner. Maybe some day we will scrap the old confusing and derogatory names from pioneer days and settle on ones everyone can remember.

Millicent Rogers Museum: Native Plants and Art: Native Plants Can Deepen Our Cultural Art Experience

article and images by Dr. Richard Rubin, Taos Chapter

Many traditional Native and Hispanic artistic and cultural creations are derived from natural materials; for example, in devotional objects, weaving dyes, basket material, and pottery paint. The Millicent Rogers Museum protects and displays thousands of such heritage treasures, appreciated by Taosenos and visitors since 1956.

The recent development of our native plant gardens expands understanding of the cultures and brings to life the

formative art experiences. As I describe several garden exhibits, think about the ingenuity of these ancestors. Allow yourself to experience a closer relationship with these native plants that still have vitality for us, in both organized gardens and in the wild. In small ways, these experiences can help our fears of environmental destruction. Aldo Leopold had pioneering ecology experience in Arizona and New Mexico. As he articulated, when we take care not to dominate, we can live ethically in community with the land and all things.

On entering the courtyard of Millicent Rogers Museum (photograph on back cover), you can see Creeping Mahonia (Mahonia repens), Rocky Mountain Iris (Iris missouriensis), and Big Sagebrush (Artemisia tridenta) which produced yellow, brown, and green dyes for early Rio Grande and Navajo weavings. The blooms of Rabbit Brush (Ericameria nauseosa), very common around our homes and fields, were also a source of textile dyes. See MRM Galleries 2 and 8 for early weaving exhibits. But sheep wool has natural oils that prevent dyeing, so skillful weavers used Soapweed Yucca (Yucca glauca) to first



wash the wool. And while at it, the fronds yield excellent basket material. Looking carefully in Gallery 13, many Apache and Hopi yucca baskets have woven black designs. These come from the seed pods of Devil's Claw (*Proboscidea parviflora*), also known as *Martynia*. Growing wild in drier areas south of Taos, it was a common Native trade item. After three years of my trying to cultivate an example in the MRM gardens, one annual plant agreed to become an educational exhibit.

Continuing around the

Courtyard, Blue Flax (*Linum lewisii*) was woven into linen, and the flowers made coloring. It is said that Cortez was amazed at the beautiful clothing worn by the Aztecs. Growing proudly in a courtyard tall pot, now the third generation of these seeds, Rocky Mountain Bee plant (*Cleome serrulata*) has been used by middle Pueblo artisans to produce the black paint for polychrome pottery, as in Gallery 4.

Not to overlook the shrubberies, Red Osier Dogwood (*Cornus sericea*) grows here at the southern end of its range, and I'm told can be found high on Pueblo Peak. The Midwestern Potawatomi people created "dreamcatchers," using the flexible red stems for frames. Our local tribes similarly employed it in basketry.

Last in this selective tour, the humble Mountain Mahogany (*Cercocarpus montanus*) produced a red dye used for early Navajo and Rio Grande weavings, but was soon replaced by stronger commercial, albeit still natural, trade dyes: East Indian Indigo and Meso-American cochineal beetle extract.

Consider this a living learning experience exhibit. Now you can recognize them all around us, cultivate them yourselves, produce artful creations, and appreciate their qualities in our shared world.

Dr. Richard Rubin lives in Arroyo Seco and has worked with the Native Plant Society Taos Chapter to develop gardens at the Millicent Rogers Museum, the US Forest Service at the Aldo Leopold Mi Casita, and the Taos Land Trust Rio Fernando Park restoration.



What Do You Mean, "Native?"

by Kathleen Hall, Albuquerque Chapter

We love and protect native plants. They earned their place in the cliffs, canyons, and deserts of New Mexico by evolving under the influence of our limited rainfall, warm summers and cool winters, sand, clay, or forest floor humus. Or did they?

In a January 2019 talk sponsored by Albuquerque Chapter of NPS, ethnobotanist Bill Whitehead posited that Agave palmeri, a native favorite of desert landscapes, was introduced to New Mexico by early Apache culture - the Mescalero "people with mescal sugar". Agave and its use in traditional cooking and ritual travelled north in the Chihuahuan bioregion with its cultivators. Its observed range in New Mexico is the range of the people who use it. Native, or introduced?

Animals transport seed in digestive tracts from one bioregion to another, leaving a bit of nutrient with the deposit. Burrs, sticky pods, and other specialized dispersal mechanisms carry seeds to new ranges. Rhizomes explore the edges of a plant's home soil, expanding its possibilities. Drought or increased moisture, heat or cold, pH change, a flash flood or deposition of loess can fray the edges of distinct ecological regions. And flora and fauna have no respect for a state line or national boundary. How do we decide what deserves to be considered native?

Brian Hanson plans and executes small restoration projects at Rio Grande Nature Center State Park with the help of other volunteers. He chooses his bosque understory plant palette from a 1912 survey ("Plant Geography of North Central New Mexico", Watson, J.R., Botanical Gazette, Vol 54, No. 3, University of Chicago Press.) The flood events that generated and sustained Rio Grande Cottonwood bosque no longer occur due to human manipulation of the river, so the natives selected by Brian may adapt, or perhaps be supplanted by upland natives, by invasives like the Siberian Elm, or by naturalized species.

A local herbalist describes "naturalized" flora as introduced plants that don't take the place of natives: they become part of the ecosystem, diversify it, make it healthier. Do those include the four sisters - corn, squash, beans and cleome?

A few blue corn seeds were tossed into the backyard, and a



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few stalks bore a few cobs of glossy, almost-iridescent kernels. They lay outside where the ground squirrels could make use of them, and the following summer a dozen caches of squirrel chow became hills of blue corn plants in a garden bed. If a squirrel plants it, is it native?

Some organisms evolve in situ, some are transported into an ecoregion to settle into a niche, and the plant community hums along until predation, environmental disruption, or some other imbalance disrupts it. If a native species is unable to self-sustain, becomes garden-cultivated, or propagated by humans for re-colonization in the wild, is it still native?

What is a native?



How Do You Define Native?

We often take definitions for granted, yet this article shows that there are a number of ways to think about what makes a plant native. Send us your thoughts so we can expand this discussion in the next issue of the newsletter.

Email us at: npsnmnewsletter@gmail.com

NPSNM Would Like to Thank...

... all members who have made monetary contributions above their regular dues. This list, which covers December 1, 2018 through November 30, 2019, includes those who sent in extra contributions with their memberships. It doesn't recognize by name the other financial contributions people make throughout the year or the contributions of cooperation and energy from the wonderful members of this volunteer organization. The NPSNM thanks all of you for your support, whatever form it takes.

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... all who have contributed to the Jack & Martha Carter Conservation Fund from December 1, 2018 through November 30, 2019. This fund was created to assist the NPSNM in maintaining a balanced budget while continuing to increase the funds available for research and educational grants to individuals and organizations. It is a long-term endowment fund and your contributions enable the NPSNM to expand its support of programs, research and education for those involved in the study of native plants. Every dollar we receive is important and we deeply appreciate your support.

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NM Close-Up Agave parryi - Century Plant

by Lisa Mandelkern, Las Cruces Chapter

The Black Range in southern New Mexico is usually associated with mixed conifer and oak forest. However, some southwestern-facing slopes are open, rocky, and steep. These slopes seem the ideal habitat for the succulent *Agave parryi*.

A few years back, Russ Kleinman met the Las Cruces chapter at the base of one of these slopes in the Black Range to view a native flame flower. That day, we were either too early or too late to see the flame flower in question, but we were rewarded with another experience—an entire hillside populated with beautiful specimens of Agave parryi!

Our unnamed slope in the Black Range was covered by a huge colony of Agave parryi, and from our vantage point we could just make out the "Kneeling Nun" rock formation on the distant horizon.

We returned the following year in June to find many agave plants blooming in synchrony. Agaves are well regarded for their bold stemless rosettes, which make them wonderful subjects for the succulent garden, or for growing in a large planter. Their branched flower stalk is equally impressive, rising about 12–15 feet tall. Agave parryi occurs over an extensive range and can tolerate cold temperatures. More information on this species can be found in Agaves, Yuccas, and Related Plants: A Gardener's Guide by Mary and Gary Irish.



Agave parryi, Century Plant Lisa Mandelkern

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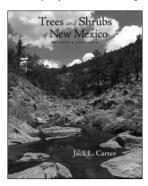
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The Gila Native Plant Society is committed to promoting the education, research, and appreciation of the native flora Society of the southwest; encouraging the preservation of rare and

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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. The Society has also produced a New Mexico wildflower poster by artist Niki Threlkeld and a cactus poster designed by Lisa Mandelkern. These can be ordered from our poster chair—check out http://www.npsnm.org/posters/





Wildflower poster: 22"×34", \$8 (nonmembers, \$10) Cactus poster: 18"×24", \$5 (nonmembers, \$8)

Contributions to the Jack & Martha Carter Conservation Fund

The generous financial support from so many NPSNM members and friends of the flora of New Mexico will make it possible for the Board to approve more funding for workshops throughout the state, additional basic research on a variety of critical plant taxa, continued support for the state's major herbaria, and hopefully for the development and support of more early education programs from K–12 in New Mexico schools.

Use the form provided below, or contribute through Pay-Pal on the website, www.npsnm.org. Every contributed dollar is being used to protect the flora of New Mexico well into the future.

~Jack & Martha Carter

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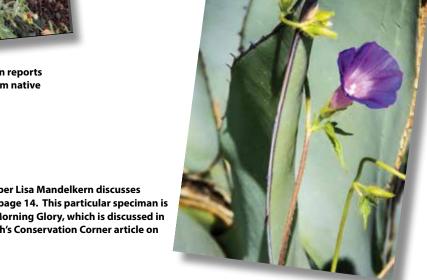
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The Gila Chapter had over 150 people show up for the dedication of the new pollinator mural and for a native plant giveaway in Silver City. Don Graves reports more about Gila's activities on page 9.



Taos member Dr. Richard Rubin reports on the Millicent Rogers Museum native plant gardens on page 10.



Las Cruces member Lisa Mandelkern discusses Agave parryi on page 14. This particular speciman is embraced by a Morning Glory, which is discussed in Rachel Jankowich's Conservation Corner article on page 4.