

# GILA NATIVE PLANT SOCIETY

*A CHAPTER OF THE NATIVE PLANT SOCIETY OF NEW MEXICO*



## BULLETIN

**JANUARY, FEBRUARY, MARCH 2011**

EDITOR: CHARLES HOLMES

## PROGRAMS

All programs are free and open to the public. Meetings are usually the third Fridays at 7:00 pm at WNMU's Harlan Hall, with refreshments following the program. Activity updates and further details will be posted on our website [www.gilanps.org](http://www.gilanps.org).

***Friday, January 21, 7:00 pm, Room 100, Harlan Hall, WNMU Campus.***

Donovan Bailey, Associate Professor of Botany at New Mexico State University, will give a presentation on "Beans in the Basura – The Impacts of Human Translocation on the Evolutionary History of the *Leucaena* (*Fabaceae*)." Donovan's research focuses on understanding patterns of diversification in the *Fabaceae* and *Brassicaceae*, with particular interest in the role of hybridization and genome duplication in plant speciation. He will be emphasizing the role human beings have played in the changes the genes have undergone over time.

***Friday, February 18, 7:00 pm, Room 100, Harlan Hall, WNMU Campus.***

John O'Loughlin, Noxious Weed Coordinator for Southwestern New Mexico, will speak to us about "Troublesome Weeds of New Mexico." He will discuss which plants are considered deleterious, what he is doing about the issue, and how all of us can help in the control of noxious weeds.

**Friday, March 18, 7:00 pm, Room 100, Harlan Hall, WNMU Campus.**

**Patrice Mutchnick, Biology Lab Director at Western New Mexico University, will present a program entitled "Plant Collecting in the Tropics, and an Introduction to Tropical Botany."**

**Patrice holds an MS in Environmental Studies from Ohio University, and she has served as botanist and plant collector for the Smithsonian Institute's Diversity of the Guianas Program. She will talk about the particular rigors, challenges, and rewards of collecting plants in the tropics. She will also give a brief introduction to tropical plant families and unique characteristics of tropical trees.**

## **EDUCATIONAL OPPORTUNITIES**

### **G N P S WORKSHOP**

#### **MOLDS, MILDEWS & MUSHROOMS, AN INTRODUCTION TO FUNGI**

**Our new Vice President, Keller Suberkropp, will offer this workshop on Tuesday evenings from 6:00-7:20 pm on February 1, 8, 15, 22 in Harlan Hall, room 222.**

**It will consist of presentations and discussions of the characteristics and roles of fungi, particularly as they relate to higher plants. The first two evenings will concentrate on characteristics of fungi and their major groups. The last two evenings will focus on interactions with plants – as pathogens, mycorrhizae, and lichens.**

**The cost will be \$5.00 per attendee. Sign up by contacting Keller Suberkropp at 313-1518 or [keller65@signalpeak.net](mailto:keller65@signalpeak.net)**



Powdery mildew growing on a leaf. The [ladybird](#) is an Orange Ladybird ([Halysia sedecimguttata](#)) which feeds on the mildew.



A bowl of moldy strawberries after being left in a room for several days.

*Spore-bearing surface under cap*



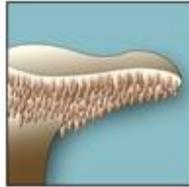
**Gills:**  
wide and thin sheet-like plates radiating from stem



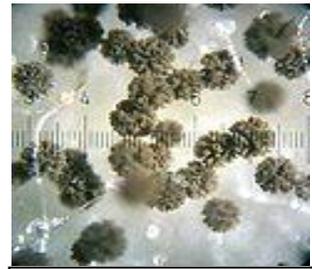
**Pores:**  
many small tubes ending in a spongy surface



**Ridges:**  
short, blunt elevated lines on stem and under cap



**Teeth:**  
many small finger-like projections



Mold grown from a nasal mucus sample. 10× objective, 15× eyepiece;

*Gill attachment*



**Adnate** - gills widely attached widely to stem



**Adnexed** - gills attached narrowly to stem



**Decurrent** - gills running down stem for some length



**Emarginate** - gills notched immediately before attaching to stem



**Free** - gills not attached to stem



**Seceding** - gills attached, but breaking away from stem at margin (often older specimens)



**Sinuate** - gills smoothly notched and running briefly down stem



**Subdecurrent** - gills running briefly down stem

*Cap morphology*



**Campanulate** - bell-shaped



**Conical** - triangular



**Convex** - outwardly rounded



**Depressed** - with a low central region



**Flat** - with top of uniform height



**Infundibuliform** - deeply depressed, funnel-shaped



**Ovate** - shaped like half an egg



**Umbilicate** - with a small, deep depression



**Umbonate** - with a central bump or knob



[Stilton cheese](#) contains edible mold.



Black mildew can affect a wide variety of plants,

**ANNOUNCEMENTS**

**2011 PLANT SALE COMING SOON**

**Our sale in 2010 was a great one!**

**We are counting on all of you to make the 2011 sale even better. The pre-sale will be on March 13<sup>th</sup> and plant-pickup will be April 22<sup>nd</sup> followed by our Earth Day sale on April 23<sup>rd</sup>.**

**This year we are excited that we will have the plants available for sale visible on our own website and will be able to take orders on the web. We will, of course, need lots of volunteers, so put these days aside if you are able to help.**

**Pam Bryant & Betsy Kaido**

## REPORTS

On Friday, October 15<sup>th</sup>, Kiva Rose, an herbalist and curandera from the Reserve area, spoke to us about "Herbalism in the Southwest."

She has a particular interest in wild native plants used by native people, especially for medicinal purposes. Nine such plants are emphasized, most of which are readily recognized by the more knowledgeable people in our group. Possibly first among them is *Artemisia*, especially the *ludoviciana* species. Though bitter, it is widely used to cure digestive problems and muscle aches and pains. A tincture of the leaves of *Alnus oblongifolia* (Alder) is applied to wounds and infections to reduce inflammation. The tinctures are made from flowers or bark, or twigs, or combinations thereof.

*Monarda fistulosa* (Wild Bergamot) is found to be relaxing as a euphoric to deal with respiratory ailments, whereas parts of *Prunus virginiana* and *serotina* (species of Chokecherry) are made into syrups for coughs, and as tension relievers, and digestive relaxers. Various species of *Populus*, especially *angustifolia*, (Cottonwoods, especially the Narrow Leaf) provide oils for anti-inflammation and anti-microbial problems. The dried berries of *Sambucus nigra* (Blue Elderberry) are made into elixirs for anti-viral treatments and head colds. To relieve stress, they might use the nutrient rich parts of the Nettle (*Urtica dioica*) to add to teas and as herbs in foods. Finally, bark and berries of *Mahonia* (Barberries) are used to deal with bad breath and chronic allergies. I guess they had no Colgate!

On Friday, November 19<sup>th</sup>, Manda Jost from the Department of Natural Sciences at WMNU, talked to us about "Invasive Geometrid Defoliation in New Mexico – the Grim History of a Recent Conifer Epidemic."

The geographical focus of the problem was the Sacramento Mountains around Cloudcroft and Ruidoso. The problem, itself, was an infestation of new insects that was totally unprecedented. Speculation as to the cause of this outbreak has not yet given us an irrefutable answer, though many fingers point to human causation. The issue is highly controversial. However, the worst culprit is obviously *Nepytia janetae*, a very obscure moth, suspected to have a native range at higher elevations somewhere in Southwestern New Mexico, and also possibly in Southeastern Arizona.

This moth's caterpillar feeds on conifer needles, but its manner of feeding is very distressing. It takes a single small bite out of the needle near its base and then moves on to the next; this kills the needle. With thousands of such caterpillars, the needles of hundreds of trees will die, and this moth is not the only insect doing this.

Eventually, authorities and local residents decided to use a biological non-toxic spray over much of the affected area. It seems to have generally worked, but the final assessment has not been made.

## SPECIAL FEATURE

### ***A New Moss for the West!***

***by Russ Kleinman***

***Brotheraleana*** is a rather inconspicuous moss that grows on rotting stumps. It has a rather disjunctive worldwide distribution, meaning that it seems to be found in many widely separated areas of the world. It is well known from many areas of Asia, as well as Malawi and South Africa. It was actually first described in Eastern North America, and is found in most states in the eastern half of the United States.

Signal Peak in the Pinos Altos Range of the Gila National Forest seemed like an unlikely place for ***Brotheraleana***. But a moss collected from a rotting stump on November 18, 2010, near the bottom of Signal Peak Road sure looked like it. The specimen had the long, thin vegetative leaves along the stems and the spherical masses of smaller brood leaves near the tops of the stems that are characteristic of ***Brotheraleana***. They break off easily to form new plants.

The specimen from Signal Peak took a quick trip to Las Cruces the very same evening it was collected. Kelly Allred consulted on the identification of the mystery moss. He felt that it was indeed ***Brotheraleana***. Dr. Allred sent a bit of the moss on to Dr. Bruce Allen who is an expert on mosses at the Missouri Botanical Garden Herbarium. Dr. Allen also agreed that the moss was ***Brotheraleana***. That portion of the specimen has been added to the collection at the Missouri Botanical Garden.

Signal Peak in the Gila National Forest is the first reported location for ***Brotheraleana*** west of states that border the Mississippi River Valley. The closest specimens are from Iowa and Arkansas, easily over 500 miles from here.

Mosses can be collected and studied all year long, even in the winter when weather permits in places where they are not covered by snow. Let's get out and find some more new ones!



## Multiple Choice Herbarium Quiz by Angela Flanders

What is an Herbarium? Choose one:

- a. a greenhouse where native plants are grown and studied
- b. a greenhouse where herbs are grown
- c. cabinets full of dried plants to be used for study and for culinary purposes
- d. cabinets full of sheets of pressed dried plants

**Congratulations if you know what an herbarium is, but there are many people who do not know! The answer is d, cabinets full of sheets of pressed dried plants. The Dale A. Zimmerman Herbarium at WNMU is such an herbarium, and currently contains almost 20,000 mounted plant specimens. This herbarium is a regular recipient of funding from the Gila Native Plant Society and the Native Plant Society of New Mexico.**

**Herbarium collections contain carefully pressed plants on heavy 11 inch by 17 inch archival sheets of paper. Typically folders are used to organize the sheets in alphabetical order according to major group, family, genus, and species. Each sheet is affixed with a label which contains important information including the date of its harvest, details of the surrounding area including plant community, soil type, elevation, and pollinators. Labels include the location (which is today more exact with the use of GPS devices). Other information on the label includes plant family, genus, and species name, habitat information, annotations, collector's name, identifier's name, and sources cited.**

**That sounds pretty easy, and fun too! So why aren't we all doing it? Plant materials must be carefully collected so that label information is accurate. Plants must be fumigated or frozen so that no insects are brought into the herbarium. When pressing plants, specimens are carefully arranged to allow clear examination of flowers, leaves, fruit, seed, root, stem, and any other plant features including variations. Affixing specimens to their sheets is a skill which takes considerable practice to acquire competency. Before a specimen is ready for the herbarium, its identity is verified by an expert botanist. Once the specimen finally reaches its home in the herbarium, the Collection Manger or Curator is responsible for making annotations as needed.**

**The herbarium is a source of accurate information for researchers, teachers, students, plant book authors, State Cooperative Extensions (especially for noxious weed control), Veterinary Diagnostic labs, the U. S. Forest Service and other various agencies of governments.**

**Most of the major herbaria of the world have been, or are being, data-based allowing us to better understand the distribution of plants over the earth. They will in the future tell us the story of plant migration due to climate change**

**Luca Ghini (1490, Casalfiumanese – May 4, 1556) was an Italian physician and botanist. Ghini was born in Casalfiumanese and studied medicine at the University of Bologna. By 1527 he was lecturing there on medicinal plants, and eventually became a professor. Ghini moved to Pisa in 1544, while**

maintaining his home in Bologna. He created the first herbarium (*hortus siccus*) in that year. He developed his herbarium by drying plants while pressing them between pieces of paper, then gluing them to cardboard.

Organization of an herbarium generally follows a system originated by Carl Linnaeus. Before Linnaeus, species naming practices varied. Plants were given Latin names which could be altered at will. Scientists comparing two descriptions of species might not be able to tell one specimen from another. You can easily imagine the ensuing confusion! Matters became worse as more world exploration and plant specimen collection occurred. Linnaeus simplified naming of plants by designating one Latin name to indicate the genus, and one as a "shorthand" name for the species. The two names make up the binomial ("two names") species name. For instance, in his two-volume work *Species Plantarum (The Species of Plants)*, Linnaeus renamed the briar rose *Rosa canina*. This binomial system rapidly became the standard system for naming species. The oldest plant names accepted as valid today are those published in *Species Plantarum*, in 1753. Linnaeus was not the first to use binomials, however he was the first to use them consistently. Latin names that naturalists used before Linnaeus are not usually considered valid under the rules of nomenclature as described in the International Code of Botanical Nomenclature.

Today, there are many websites, such as [msb.unm.edu/herbarium](http://msb.unm.edu/herbarium) and [swbiodiversity.org](http://swbiodiversity.org), that can show you herbarium sheets. These sites are very helpful, but there is really nothing like getting a close look at the specimens themselves. Herbaria contain a wealth of information about the natural world and its history. They give us a glimpse into the future.