Native Plant Society of New Mexico

NATIVE PLANT SOCIETY OF NEW MEXICO NEWSLETTER

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BOTANICAL LATIN

Dr. Fanny-Fern Davis
Excerpted from The Columbine, Nov. 1989

For centuries, people of all nations and races, creeds and colors, have been admiring (and in some cases worshipping), using, describing, and in one way or another naming the plants known to them in order to communicate to others all information and useful facts or superstitions available about them. This is true of the Indians of North and South America, the peoples of the Old and New Testament, the primitive peoples of Australia and Africa and scholars of the Far East, as well as of our Western Civilization. In some cases, the same species is found and used around the world at comparable latitudes and is called by as many names as there are spoken languages. A case in point is the grass known in Florida as Bermuda grass.

Early Botanists

In our Western Civilization we think of Theophrastus as the Father of Botany. In the fourth century B.C. he taught his students in a garden in Athens which he inherited from Aristotle. In 370 B.C. he knew, named anci described 500 different kinds of plants. Except for the traveling physician in Asia Minor, Diascordes, who recognized the natural order of plants to the extent of actually describing two of our present day families of plants - the Umbelliferae and the Solanaceae - publishing his knowledge in 64 B.C. in MATERIA MEDICA, and the pharmacist, Galen who was medical advisor to Marcus Aurelius and who made some significant contributions to the knowledge of plants in his published work in 200 A.D., little was accomplished for 18 centuries. By 1600, there still were only some 2,000 named plants and these were given long descriptive names consisting of three to five Latin adjectives. You will remember that during those 18 centuries all scholarly work was done in Greek and Latin.

Linnaeus

There followed, during the 17th Century, a great upsurge of interest in plants expressed by the herbalists in most of the European countries as well as by the scholars, who were primarily priests, protestant clergymen and doctors. All of the information and ideas culminated in the 18th century in the work of a preacher-doctor-writer-professor at the University of Upsala, Sweden, known to us as Linnaeus through his approgimately 180 books written during his lifetime (1707-1778). To the people of his time, however, he was Carl Linne . His great Latin books were written under his Latinized name, Linnaeus.

Binomial System of Nomenclature

Linnaeus established the binomial system of nomenclature for naming both plants and animals. Two names - genus and species - place the plant in relationship to other plants. Related species are placed in one genus and related genera are placed in one family. For these names Latin or Greek words were used, which are recognized and understood by botanists and zoologists around the world. Others before him had recognized that genus and species names should be established and used, but it was Linnaeus who established the system for all time through his tireless efforts in the study of plants brought to him from all parts of the world by his contemporaries. He accurately described from first hand study 1,105 genera of plants in the fifth edition of his GENERA PLANTARUM in 1754 and 7,300 species from many parts of the world in his SPECIES PLANTARUM (1,200 pages) published in 1753 (at the age of 46) He also published the descriptions of 4,236 species of animals. Prior to Linnaeus, for instance, catnip had been called Nepeta floribus interrupte spicatis pedunculatis, which is a brief description of the plant in Latin. Linnaeus described it under the genus Nepeta and gave it the specific name cataria which means "pertaining to cats". Today it is still listed in the family Labiata as Nepeta Cataria L. The L. tells us that Linnaeus is the author of that name for that plant.

In the 20th century there have been numerous international Botanical Congresses to determine rules and regulations allowing for changing names as plants are studied more carefully and new

Inside.....

genera, new species or rarely new families are established (the first in Vienna in 1905, the second in Brussels in 1910, the fifth in Cambridge in 1930, etc.)

Because of the inevitable synonomy resulting from taxonomic studies, it is important where possible to include the author of the scientific name. The generic and specific name should always be italicized on the printed page because they are foreign words. The author's initial or abbreviation is never italicized. On the manuscript page those words which are to appear in italics should be underscored since this is the universally accepted editorial marking for italics.

The generic name is always a noun and the specific name is an adjective. You will remember that in Greek and Latin the nouns have gender - masculine, feminine or neuter, and the modifying adjective has different endings for each gender. For instance, the adjective meaning white is alba when modifying a feminine noun, albus when modifying a masculine noun, and album when mofifying a neuter noun. Likewise the adjective of black is nigra, niger or nigrum, as in Quercus nigra, Helleborus nigra and Solanum nigrum. The generic name is always capitalized initially and the specific noun is usually in lower case unless it drives from a proper noun.

The generic names may be used to commemorate persons by Latinizing their names, as for instance: Parkinsonia for Dr. Parkinson; Stewartia for John Stewart, Earl of Bute; or Euphorbia for Euphorbus. They may be descriptive terms such as Callicarpa, which means beautiful fruit, whence the common name "Beauty Berry". Or they may be Greek or Latin names for even unrelated plants such as Ilex - the Latin word for a "kind of oak".

As has been stated, the specific names are adjectives with endings corresponding to the gender of the noun which they modify. Sometimes they refer to the country or state where found originally, e.g. Americana, Canadensis, Japonicum or Virginiesis (pertaining to Virginia). Prefixes are very significant as biformis or two forms); biennis, microcephalus (small-headed); pyrifolius (pear-leaved); or subsessilis (nearly sessile). Suffixes are equally as meaningful, as for instance the suffixes fer and ger, which mean "bearing" as in fillifera (bearing threads) or barbigera (bearing barbs or beards). The

The **Newsletter** is published six times per year by the New Mexico Native Plant Society. The Society is composed of professional and amateur botanists and others with an interest in the flora of New Mexico.

Articles from the Newsletter may be reprinted if fully cited to author and attributed to the Newsletter.

Membership in the Native Plant Society of New Mexico is open to anyone supporting our goals. We are dedicated to promoting a greater appreciation of native plants and their environment, and to the preservation of endangered species. Members benefit from chapter meetings, field trips, publications, plant and seed exchanges and a wide selection of books available at discount.

We encourage the use of suitable native plants in landscaping to preserve the state's unique character and as a water conservation measure.

We maintain a register of business and professional people who are members and can supply information and services related to native plants. To be added to this roster or to request information, contact the Membership Secretary.

Advertising Schedule

Approved advertisements will cost $40 per year.

Schedule of Membership Fees

Dues are $10.00 annually for individuals or families. "Friends of the Society" include organizations, businesses, and individuals, whose dues of $25.00 or more provide support for long range goals. To join us, send your dues to Membership Secretary, 443 Live Oak Loop, NE, Albuquerque, NM 87122

Newsletter Contributions

Please direct all contributions for the newsletter to Tim McKimmie, editor.

Deadline for the next newsletter is JUNE 5.

suffix oides means ""like" or "resembling as in deltoides (like a delta or triangular) or jasminoides (jasminelike). Frequently the specific name refers to a person in which case either the genitive case of the name may be used, as in Rosa Banksiae (Lady Banks' rose) or the name may be put in the Latinized adjective form such as Aster Lamarckianas (Lamarck's aster).

All of this simply indicates that the binominal system of nomenclature not only provides descriptive names which can be understood by workers around he world, but it indicates the relationships between plants. On the contrary, common names may vary from area to area, cannot be understood in foreign countries and perhaps most of all, they ignore relationships. Conspicuous examples are "Asparagus fern" which really is a fern-like asparagus; "pepper-grass", which is not a grass; "fire-fern" which is an Oxalis and the "French mulberry" which is not a mulberry and it never came from France. The "blackberry lily" is an iris and the spider lily is an amaryllis. In a study many years ago I found that the ubiquitous grass known in Florida as "Bermuda grass" appeared in published articles under 35 different names in English-speaking countries alone, whereas, of course it is recognized the world around by grass enthusiasts as Cynodon dactylon L.

Let us all GROW in our abilities to recognize our native plants by their scientific binomial appelations.

NATIVE SEEDS/SEARCH

Based in Tucson the Native Seeds/SEARCH was begun in 1983. It is dedicated to preserving traditional plants used by native peoples of the southwest. SEARCH stands for Southwestern Endangered Arid-land Resource Clearing house. To date they have secured over 1,000 varieties of corn, beans, squash, melons, gourds, grains, greens, spices, and fiber and dye plants. The preservation of these genetic resources may add to future nutritional needs as well as adaptability of plants to arid lands.

Plants are grown in various sites in Arizona and the seed is cataloged, stored and grown out again to produce seed as well as fruits and other plant products. Some are even grown by backyard gardeners. Plans for New Mexico participation are in the works.

Contact POB 2869, Corrales, NM 87048 for information.

Some of the seed is available for sale. For a catalog or other information, contact Native Seeds/SEARCH, 2509 N. Campbell Ave., #325, Tucson, AS 85719.

TM

BIODIVERSITY

The Endangered Species Act is up for reauthorization. The ESA, passed in 1973, is considered the most powerful environmental law in the world. It has the power to restrain development in areas inhabitated by such species. Nevertheless, biologists estimate that each year, thousands of species of plants and animals are undergoing extinction worldwide. That means forever lost. Since passage of the law in 1973, nearly 600 species in the United States have been listed as being in danger of extinction.

While the importance of this issue seems apparent, the reauthorization is by no means a given. Due to the limitations protection may place on growth and development, many people want to see the law weakened. The current economic recession compounds this argument and leads some to believe that jobs must take priority over species. Such short term thinking may drive imperiled species over the brink. Any type of development should be sustainable. That is, we must insure that future as well as present needs are met, that our lands are not permanently scarred and changed, and that all species will continue to thrive. It is important in these times that we look at the long term consequences of our actions and have the courage to speak out. It is not just an isolated species that is important but its unique habitat. If the species is endangered, then the habitat is sick. This should alert us that our actions have been too severe. In the long run we are threatening our own existence as well.

Much of our undeveloped land is owned by you and I. Two agencies, the Forest Service and the BLM command 34% of the land in New Mexico for example. Public lands are our best chance to preserve the diversity of our many species of plants and animals. By law each Forest Service District must have a program for the protection of plants and animals. Unfortunately, these plans are often inadequate or altogether absent. The Fish and Wildlife Service, which has the authority of listing endangered species, moves so slowly that 34 species became extinct while undergoing the listing procedure. Of the 25,000 species of native plants in the United States, it is estimated that 3500 are threatened and 700 will become extinct in the next ten years. Only 19 plants were added to the list in 1989.

The bill to reauthorize the Endandered Species Act is HR 4045. Opposition to the bill by business and development groups is great. Despite the fact that the bureaucracy is very slow in implementing the mandate of the Endangered Species Act, its reauthorization is essential in curbing the ongoing losses of species and habitats.

As members of the Native Plant Society of New Mexico we have a role in protecting our native plants. Two books which are of interest to us in New Mexico are the *Handbook of Endangered Species in New Mexico* and *A Handbook of Rare and Endangered Plants of New Mexico.* TM

CALENDAR

OTERO

May 9 Plant Sale. 9am-1pm. Garden Center at 10th and Oregon across from Public Library.

June 6 Chihuahuan Desert Research Institute Videos. 2 pm. Tularosa elementary school.

June 27 Picnic. Pereas Bed and Breakfast in Cox Canyon.

July 25 Holcomb Ranch in Monument Canyon. Meet at Timberon Lodge at 10 am.

GILA

May 17 Smoothing Iron and Roberts Park. 9 am.

May 28 Sharman Russell, author of *Songs of the Flute Player* will discuss grazing issues. 7 pm. Carter House

June 25 Jack Carter speaks at Carter House. 7 pm.

June 28 Bead Spring, Mogollon Mountains. 8 am.

SANTA FE

May 2 Plant Sale. Sambusco Market Center. 500 Montezuma. 10 am to 2 pm.

LAS CRUCES

May 13 Reldon Beck. Rangelands of New South Wales. Ag Building Room 190. 7:30 p.m.

May 16-17 Field trip to Gilas. Camping optional. Meet at campground to be announced.

June 10 "Xeriscaping". Bob Reeves and Tom Wootten. Ag Building Room 190. 7:30 p.m.

June 14 Field Trip to La Luz. Leave Pan Am at 7 a.m.

July 8 Practical Uses of Medicinal Herbs. Paul Harmon. Ag Building Room 190. 7:30 p.m.

July 12 Field Trip to Hillsboro Box and Nutt. Leave Pan Am at 7 a.m.

View from the South

(one member's opinion)

What is "way of life"? Time after time we are asked to forego environmental protection because it will destroy someone's "way of life". Rarely am I accused of being a philosopher, but I was thinking about this question as I talked with a friend recently. "Way" is defined as "a manner of living or acting". Perhaps I have been unfair in feeling that some historical perspective was involved in the statement "preserve my way of life". Even so, taken on a current basis, everyones way of life is changing daily. How do you prevent this? Do you really want to prevent change?

The most vocal advocates of "no change", are some members of the livestock industry, the mining industry and the timber industry. I grew up on a cattle ranch and used to love to ride horseback to check the cattle during the summer, adjusting numbers from one windmill to another if the numbers became unbalanced. On the ranch I knew each of us was expected to participate in repairing fences, windmills etc., and we experienced a good deal of isolationism. Today's ranchers are relegated to pickups (little time for horseback riding), hiring outside crews for repairs, and frequently are off to meetings here or there. Same way of life, I think not. Change forced by environmental restrictions. I think not.

Mining was once done with a pick or spray of water in an isolated area. Disruption of land surface was present but overall, not major. Today we see tons of rock removed and the leveling of a mountain done so that a poisonous cyanide leach can be flowed over the rocks removing an extremely small amount of gold. Has a way of life been preserved? Changed by environmentalists ? I think not.

Layoffs in sawmills because of automation and the inability of older sawmills to handle smaller trees forced upon us because of excessive cutting of the larger trees has certainly caused a change in the "way of life" for some. Change because of environmental concerns ? I think not.

Rural way of living lost because of environmental pressures ? I think not. Try economic pressures which have caused farm and ranch consolidations, and therefore fewer employees. Try depletion of natural resources and major changes in methods of extracting the raw materials. Try a population explosion that is changing everyones way of living. If blame is to be placed for changing ways of life, look to those who seek to achieve short term benefits at the expense of irreplaceable assets.

Tom Wootten
4/10/92

CHAPTER REPORTS

Otero-Jean Dodd

2-29-92
Near LaUnion we met some of our ElPaso members and continued on to Tom Carillo's Tee Pee Ranch. Tom was involved in a government experiment with guayule as a source of rubber. Guayule, a relative of Mariola, has a life of about 10 years and the entire bush is used for extracting rubber. Experiments included stressing the plants, trying hybrids and different types of guayule to determine hardiness, growing conditions, and yield.

If you have never been to Hunt's Hole and Kilbourne Hole, they are large volcanic craters considered geological gems. Hunts's Hole is about 1 mile across and the larger Kilbourne Hole is about 2 miles wide. Olivene nodules were ejected from the earth's upper mantle during the eruption. The olivene bombs contain peridot, a semi-precious gemstone. These bombs are easily found as are small green pieces of peridot that glint in the sunlight, if you look for them carefully. Vern Thomas had brought a necklace made of peridot for us to see a finished commercial product. Wynn Anderson showed us how to distinguish between the peridot and green glass. Both men talked of how the craters came to be many years ago. It was too early to see blooming plants in that location even though it is not far from the Mexican border.

3-31-92

Just before arriving at the Tulie Gate on the White Sands Missile Range we saw a very large herd of oryx,the only time the whole trip! We were fortunate this year to have Jim Eckles, Public Affairs Officer at WSMR, go on the bus with us pointing out places of interest on the way. First stop, as always,was the southern end of the lava beds and across the highway a spring and marshy lands where we could see the endangered pup fish.
Pickleweed bushes of all sizes were beginning to green up in the lava beds. Later on we saw a relative-Suaeda. Saw evidence of Dalea formosa,pea bush; blackfoot daisies, Ephedra trifurca, Mormon tea-; and Coldenia canescens,, small ground hugging ,woody shrub seen especially where not much else grows.
Stopped for lunch at Mockingbird Gap named for the many birds of that name there at the time. The Gap is a break in the many hills and mountains resulting in the usual breathtaking New Mexico scenery.A few things were in bloom,blue flax, yellow Western Wallflower,Erysimum capitatum, annual Lotus,ground-hugging with teeny yellow-orange blossoms; one woolly loco- Astragalus mollissimus,;Lesquerella gordonii,yellow mustard. Saw a number of cacti but only one in bloom. Opuntia clavata, Echinocactus, Corypantha vivipara, Echinocereus fendleri(all in Ivey!)Opuntia macrocentra.
An overabundance of wild horses were seen in groups throughout the trip. There seemed to be more visible water than we had seen before including a pond favored by ducks next to the road on the way back to the gate. The final stretch of road used to be a favorite place to stop,full of wildflowers and the beautiful poliomentha that we saw one time. Road building with exceptionally wide shoulders has now wiped out all growth.

Las Cruces-Paul & Betty Shelford

Kelly Allred, professor of botany with the Animal and Range Science Department at NMSU talked on "Grasses and Their Habitats" at our March meeting. There are 460 species of grasses in New Mexico, 400 of which are found in the southern part of the state. His focus was on 31 common grasses of southern New Mexico in the four general categories of Weeds, Floodplains and Playas, Desert, and Grasslands. As his striking collection of slides portrayed, there are many beautiful grasses worthy of planting as ornamentals in gardens as part of landscaping other than lawns.

For our March field trip we went to the Anthony Gap area in the northern part of the Franklin Mountains. We only found four wildflowers in bloom: Fendler's yellow bladderpod, wedgeleaf drabna, a purple ranunculus, and a yellow composite. Many different cacti and succulents were observed, including the green-flowered rainbow (Echinocereus chloranthus), corncob escobaria (Coryphantha strobiliformis), and Turks head or eaglesclaw (Echinocactus horizonthalonius). Of special interest was the seldom seen Echinocactus uncinatus. Another surprise was a specimen of evergreen sumac. After leaving the area, we found a specimen of sand prickley pear (Opuntia arenaria).

Katie Skaggs, The Nature Conservancy's resident naturalist at the Dripping Springs Natural Area in the Organ Mountains spoke on The Nature Conservancy in New Mexico at our April meeting. The Dripping Springs area is home to nine rare plants, four of which are endemic to the Organ Mountains: Organ Mountain evening primrose, Organ Mountain pincushion cactus, nodding cliff daisy and smooth cucumber. The Nature Conservancy protects rare plants and animals by protecting the places they need to survive. The organization is committed to protection of ecologically significant areas and the diversity of life they support. There are ten such areas in New Mexico, including Dripping Springs which was originally purchased by The Nature Conservancy and then traded to the Bureau of Land Management with an agreement to maintain the onsite naturalist.

Our April field trip was to the Sacramento Escarpment south of Alamogordo. The group divided between San Andres Canyon,and Dog Canyon. Both groups saw the State Sensitive Alamo beard-tongue (Penstemon alamosensis). The San Andres group was joined by Horst Kunsler, discoverer of the Kunsleri cactus. Many varieties of cactus were observed, including: State Endangered Villard's pincushioncactus (Escobaria villardii), relatively rare Button cactus(Epithelantha micromeris), Ansistrocactus, and several bloomingTurk's head blue barrel or/Turks head cactus (Echinocactus Horizonthalonius,Var. curvispina). The Federal Endangered Sacramento pricklepoppy (Argemone pleiacantha) was seen in the streambed of San Andres Canyon.

Carlsbad Report: See Page 8

The Creosote Bush

By Shirley Weik and Guy Acuff
reprinted from the Plant Press, AZ NPS, Jan. 1988

Some creosote bushes (Larrea *divaricata* subsp. *tridentata)* growing in the Mohave desert in California are estimated to be as much as 11,700 yearc old! They are the oldest living things earth!
This information may come as no surpise to Pima Indians whose Creation Story teaches that life on earth began with a creosote bush: In the beginning there was nothing No sun, no moon, no sky, no stars or wind or rain. Nothing but darkness, The darkness gathered For ages and ages. It formed a great mass in which was the spirit of Earth God. He, like a fluffy wisp of cotton that floats upon the wind drifted to and fro without a place to fit himself. He knew his power. He built an abiding place. He took from his breast some dirt and made a flat cake of it. Then he thought deep within himself, "Come forth, come forth some Kind of plant". There appeared a creosote bush...

Today the creosote bush is the most common and most widespread of all our desert plants. What has enabled this rather amazing species of plantlife to survive for such an incredibly long time is its remarkable ability to adapt to various living conditions. It seems to have most all the survival techniques of desert plants rolled into one! What's more, those oldtimers in California seem to have had them right from the beginning. As in the Indian myth, they appear to have arrived as is. The story of evolution is one of adaptation to changing conditions through chance mutations over several generations.

But those California creosote bushes are still in their first generation! It's an amazing paradox that what was spawned in the cool, wet climate of maximum continental glaciation (as we know it to have been from fossil remains of plants and animals found in archaeological excavations in the southwest) is better equipped than most any other thing to live in arid conditions.
The forests that once covered much of the southwest have been replaced in many areas, over these last 11,000 years, by vast deserts. And the huge animals that fed on them — mammoths and mastodons and giant sloths — have long since become extinct. But those creosote bushes live on. And on. And on.

The features of the creosote bush are rather hard to categorize. The shrub is perhaps best known for its faintly acrid odor, most pronounced when the air is moist — as in early morning or after a rain. It grows in height anywhere from 18 inches to 23 feet, depending on available moisture. Its branches are scraggly or compact, covered year-round with olivegreen foliage, and in the spring, with showy yellow blossoms. However, in the heat of summer the leaves may no longer have their characteristic sheen, and the plant has been known to bloom just about any time of year. These differing features are simply the outward manifestations of the creosote's ability to adapt. A waxy coating on the leaves is thought to regulate evaporation, though, just how is a bit unclear. In times of extreme heat or little water the shrub has the ability to lose its leaves altogether (as does the ocotillo) and grows back smaller ones without the shiny surface. To ensure itself of an ample supply of moisture, the creosote (like the mesquite) sends down a long tap root, to take advantage of any available ground water. It also (like the saguaro) puts out a network of shallow roots designed to catch surface water.

The creosote bush is believed too to "wage chemical warfare" against both plants and animals. As with some other plants in stress situations, the roots release a toxic substance which enables it to kill off any seedlings — including its own — to protect its territory. Presumably, this helps to create the characteristic open spacing seen so often on the desert. Insects, and a reptile known as the chuckwalla, eat creosote twigs and foliage, though mammals tend to avoid them. Evidently the plant's defenses include something upsetting to their digestive tracks.

Still, in its struggle for survival, the creosote is not a bad neighbor for other desert life. It provides food for insects, a shady resting place for birds, and a home among its roots for burrowing creatures such as termites, ground squirrels and kangaroo rats, lizards snakes and toads, which, in turn, aerate the roots and thus help to ensure the plant's survival. The shrub also helps retard erosion (witness the sand hummocks that often build up around them). Even if Indians have nicknamed it "stinkweed," to people like biologist Edmund Jaeger, and us, its "memory-provoking odor" is *"distinctly* pleasant."
Indian people have long used it as a source of medicine for ailments ranging from arthritis to coughs, chills and even rattlesnake bites. Also a lac gum secreted in the bush by beetles has been used to waterproof baskets, and as a glue for mending. Modern scientists have extracted an anti-oxidant from the leaves which helps keep fatty foods from turning rancid. Experiments are now being conducted to determine the plant's usefulness in treating certain types of cancer. This long-lived plant may also someday contribute to the **longevity of** man.

THE NMSU BOTANICAL GARDEN

Las Cruces is fortunate in having a true botancial garden within its midsts. Located just west of Main Street on University Avenue the garden has been evolving since 1984. As part of the 40 acre Fabian Garcia Science Center, the garden offers a peaceful opportunity to view many plants both native and exotic. A recently completed Gazebo will be a centerpiece for expansion in the near future. The garden is open daily from sunrise to sunset.
Currently there are approximately 100 species of trees and other woody plants, 80 annuals and perennials, and 22 turf plots. These plants offer an opportunity for gardeners to see healthy specimens and determine which are right for their landscapes. Other parts of the Science Center contain research plots for studies on water use, cold tolerance, plant growth, and nutrition. One of the goals of the Garden is to foster the appreciation of native plants. It also provides hands on experience for students in horticulture classes as NMSU. Future plans call for the inclusion of more native desert specimens, a xeriscape garden, an herb garden, a vegetable garden, and other display areas. A Master Gardener Program is also planned. Flower shows, demonstrations, a library, and horticultural "how to" publications are also in the works. With all of these plans Las Cruces can look forward to a first class botanical garden.

Observing Nature

by Patrick Boles
reprinted from The Plant Press AZ NPS, Fall 1990

During a presentation on ecology that I gave before the Prescott Chapter of the Native Plant Society a few years ago, I stressed the importance of not overlooking the other "components" which make up an ecosystem when on a botanizing trip. During my talk, to make a point, I projected a slide showing the lower portion of a standing dead Ponderosa Pine trunk. I mentioned that a person should also look at other things around the particular plant they are interested in at the time, and as I changed to the next slide added, "look up...something might be watching you!" The next slide showed a brown bear at the top of a dead Ponderosa Pine. If you do not look, you may miss an important part of the total experience—such as bumblebees landing on thin-stemmed wildflowers and riding them to the ground as they search for nectar. My family and I observed this on a hike in the Prescott National Forest.

On a recent mountain bike ride I stopped to rest and ended up spending several minutes watching a foraging darkling beetle. I watched as it checked out and passed over such plant species as fairy duster *(Calliandra erioyhylla)*, spurge *(Euphorbia sp.)*, and Indian Wheat *(Plantago purshii)* before finally deciding on a narrow-leafed forb. Although I wasn't quite sure of the identification of this nondescript forb, the insect apparently was satisfied as to the identification it had made. The beetle proceeded to devour half of one of the leaves by starting along an edge and only eating to the central rib. It was interesting observing the feeding habits of this common insect, which is usually encountered on any outing in Arizona.

On another bike ride I noticed that ants were collecting skunkbush sumac seeds. I stopped and observed the large ant hill for a few minutes. A few orange-colored skunkbush sumac fruits were being carried toward the entrances. One of these fruits was abandoned a few inches from the entrance. About this same time another ant came out of the entrance carrying something orange, which looked like the peeled skin of a skunkbush fruit, and discarded it and returned to the hole. I took a stick and knocked the "abandoned" fruit into the entrance—a swarm of ants carried it out of sight within seconds. Elsewhere on the mound an ant was on top of a skunkbush fruit and appeared to be eating it.

My office in Prescott is next to a small creek (usually dry) with a fairly nice stand of cottonwoods along it. Early one morning in late July I found a cicada larva, still covered with bits of dirt, crawling around just inside the open doorway at the back of the office. It had evidently just emerged from the ground and instead of climbing up a tree it had made a wrong turn into my office. I picked it up and took it outside and placed it on the trunk of an elm tree at the back of the office building. Cicadas in the large Fremont Cottonwoods along the creek were loud. Within an hour the larva had climbed about two and one-half feet from where I had placed it to a point about seven feet from the ground, and had started molting. The wings were curled and emerald green. It emerged backwards, leaning out from the old shell. After another thirty minutes it was all the way out and was turned around and holding onto the old shell with fully developed wings spread out and drying (the wings were now bright green).

And then there was the time last summer that my son Matt and I stopped to watch the conclusion of a successful hunt. A tarantula hawk (a large black wasp with orange wings) was dragging its stunned victim across a paved road. We watched as the trek across the road was finally completed and the wasp searched for a nest site (hole) in which to deposit the spider. Later the wasp will lay its egg on the helpless spider and close the entrance to the hole. When the egg hatches, the larva will feed on the still-living tarantula.

The book *Sonoran Desert Spring* by John Alcock is full of observations on both plants and animals in a Sonoran Desert community near Phoenix during the early part of the year. During numerous visits to Usery Ridge, Dr. Alcock observed everything from flowering periods of palo verde to the mating habits of the great purple hairstreak. Included are fascinating observations on rattlesnakes, saguaros, digger bees, ants, birds, etc. The book is published by the University of Chicago Press and provides an excellent example of observing the many components of an ecosystem. Dr. Alcock has recently published *Sonoran Desert Summer* which follows the residents of Usery Ridge during their summer activities. This second book includes illustrations by Marilyn Hoff Stewart and is published by the University of Arizona Press. It presents observations on the ecology of a fallen saguaro, the relationship between empress butterflies and desert hackberry, prey/predator relationships, effects of fire, and mating habits of peccaries or javelina.

Rare Plant Conference Held

The Southwestern Rare and Endangered Plant Conference, held in Santa Fe March 31, April 1 and 2 opened with a stirring Keynote Address, "Plants: Competing for the Light" by Faith Campbell of the Natural Resource Defense Council. This was a fitting tone to set for the conference. Following the Keynote, papers were presented in the following catagories: Survey and Habitat; Population Biology and Demographic Studies; Distribution, Genetics and Systematics; Reproduction and Seed Biology; and Protection Stratagies. The conference concluded with a summary discussion led by a panel with representatives from Federal Agencies, academia, conservation organizations, and a private biological contractor. The presentations covered a wide variety of subjects which was fitting considering the equally wide range in interests and backgrounds of participants.

A special thank you should go to Bob Sivinski and Karen Lightfoot, from the NM Forestry and Conservation Division for yeoman work in organizing this conference and the Santa Fe Chapter of Native Plant Society which was so active in its support. Special thanks to Mimi and Phyllis.

NPS Board Meeting

The board met at the Bosqe del Apache on April and made the following decisions or business matters.

1. $100 to be donated to the NM Nature Conservancy.
2. Poster progress is slow as Niki has not been feeling well.
3. The mailing list may be released for native plant related purposes.
4. The NPS slides will be housed in Carlsbad, and available for loan. They show various trees and wildflowers and the slides of Dog Canyon are particularly good.
5. Board members are encouraged to arrange for a proxy vote if not attending a board meeting.
6. The 1992 state meeting will be held in Albuquerque or Santa Fe.
7. Nominations for 1993-94 NPS officers are open until June.

Chapter Reports Continued

Carlsbad- Mark Rosacker

March 7, 1992

The Carlsbad chapter went to Sitting Bull Falls in the Lincoln National Forest. We were led by Dean Ricer, Park Superintendent and horticulturist for Living Desert State Park.

Among the plants seen were peppergrass, bladder pod, herons bill, scrambled egg plant, Wrights and creeping verbena, algerita, and Penstemon cardinalis and barbatus. Woody plants included evergreen sumac, star leaf mexican orange, mountain laurel, one seed juniper, and Texas Madrone. In additiion we saw, Yucca torreyi, sotol, beargrass, feather dalea, and four ferns, the bulb cloakfern, Standley cloakfern, Purple cliffbrake, and little ebony spleenwort.

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