

The Plant Press

THE ARIZONA NATIVE PLANT SOCIETY

Vol. 13 No. 2, 1989

Native Plant Law Revision Becomes a Reality!!

By Barbara Tellman

Thanks to the hard work of Noel Hebets, a Phoenix attorney; Elaine Arena, Desierto Verde lobbyist; Eva Patten, Nature Conservancy lobbyist; many ANPS Conservation Committee members; and all of you who wrote and phoned your legislators, our revisions of the Arizona Native Plant Law have become reality with few substantive changes. Our success would only have been possible with the cooperation and support of Senator James Sossaman and Representatives Herb Guenther and Bill English who made sure the bill progressed through the necessary committees.

Some highlights of the new law:

1. Encouragement of Plant Salvage. A new purpose of the law is to "encourage the salvage of native Arizona plants to the greatest extent feasible by preserving their existence through and after the process of real estate development." Before plants can be bulldozed on private land, the owner must notify the state 20 days before destruction of less than one acre, 30 days before destruction of between 1 and 40 acres and 60 days before destruction of 40 acres or more. The state then notifies plant salvagers who have annual permits and who have paid to be on a mailing list and who then have an opportunity to salvage the plants. The landowner does not have to allow salvage, but it will usually be economically desirable to do so. There is an exemption of individually owned land of less than ten acres when house construction has begun.

2. Destruction of Plants by State Agencies. The state must also report planned

destruction. If highly safeguarded plants are involved, scientific studies must be done and the Commission must specify alternatives to preserve the taxon.

3. Protected Plant Categories. Five categories of plants are established. "Highly safeguarded" (plants listed as endangered or whose survival is in jeopardy); "Salvage restricted" (plants not highly safeguarded, but which are subject to high potential for theft or vandalism); "Salvage assessed" (plants not in the above groups, but with sufficient value to support the cost of salvage tags); "Harvest restricted" (plants not in above categories, but subject to overdepletion if exportation is permitted). Each category is subject to different regulation. The plants to be placed in each category will be established by rule and subject to annual review after public input. All of this replaces the present listing system which lists plants by name in the law. ANPS botanists considered the old lists obsolete and inadequate.

4. Prohibition of Theft. Except for the above, it is illegal to destroy, dig up, etc. parts of or entire protected plants without getting a permit.

5. Export of Plants. Export of protected plants is discouraged (even if legally gathered) unless a genuine effort has been made to sell them within the state.

6. Plant studies. The Commission may conduct studies of status of native plant species. This section opens up the opportunity for the state to accept federal funds and hire a qualified state botanist.

Continued on next page

Notes from the President

The spring and summer field session of 1989 is upon us and great field trips have been planned. I hope all of you will have the opportunity to relax and enjoy the cool Arizona uplands. The Phoenix Chapter Monument Valley field trip and the Tucson Chapter Chiricahua Workshop are summer events not to be missed.

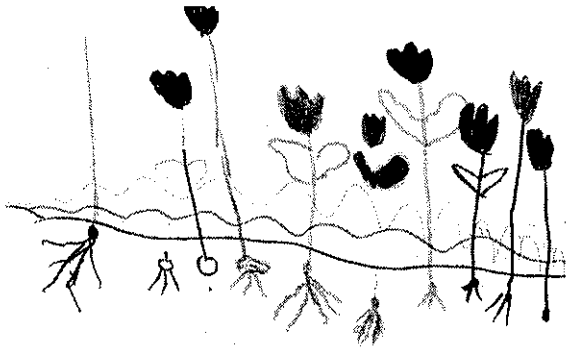
Members of the state board are currently drafting guidelines for field trip ethics. As you wander through mountain meadows filled with orchids or search for wild beans in dry arroyos you might also consider what our responsibility as a society is to minimize our impact on the environment during field trips. If you have an opinion about how we affect our surroundings on group trips, now is the time to offer us your thoughts.

The 1989 Annual Meeting will be hosted by the Tucson Chapter on Columbus Day weekend this October, scheduled for three days. The topic will be on vegetation change over the years in Arizona. We'll have an opportunity to meet the great botanists associated with the Tumamoc Hill Desert Laboratory and take a hard look at how our landscape has changed and continues to change. This is a timely topic considering the conservation committee is studying the impact of introduced noxious weed species in the state. We'll see if Tucson can outdo Phoenix for a terrific annual meeting!

A new Desert Shrubs brochure has been printed to coincide with the Desert Trees poster. Congratulations to the Urban Landscape Committee for their dedicated efforts in printing and distribution. Several posters and brochures are in the planning stages and related themes. Again, your help in distribution will be appreciated, so call Carol Shumaker.

The Arizona Native Plant Bill 1086 has been passed almost unanimously by both the House and Senate. Thanks to all of you for your calls and letters.

- Karen



Flowers by Laura Rose Nabhan

New Law, continued from front page

While this law does not keep our native plants from total destruction, it is a move in the direction of giving them added protection. We will have to monitor implementation of the law as the Commission of Agriculture and Horticulture, which is responsible for it, has been less than enthusiastic about this revision. Portions of the law will not be effective until June 1990, giving time for rule-making procedure.

Anyone can get a copy of the new law by contacting the Secretary of State, State Capitol, Phoenix, AZ 85007.

Shrub Brochure Wins Xeriscape Award

By Barbara Tellman

The Native Plant Society won an award from the Southern Arizona Water Resources Association for public education for the new Desert Shrubs brochure. We were honored along with an elementary school which had a school project of putting in a nature path near the school, taking advantage of the natural desert landscaping. Awards were also given for professionals and homeowners xeriscape projects.

The beautiful new Desert Shrubs is available for \$2.00 by writing the ANPS address or calling Carol Shumaker (325-6992). There are discounts for large quantities. Fifty desert-adapted shrubs are described, including Arizona rosewood, Hop bush, *Salvia greggii* and many others. Plants were chosen for their low water use, cold hardiness, growth rate, showy flowers and availability. Arizona native plants were preferred, although plants from other deserts were included if they met the criteria and were not liable to be invasive to native species. This new brochure features an all-new format, unlike the Desert Trees poster.

The Urban Landscape Committee, chaired by Greg McPherson, has done an outstanding job. Members Greg Starr, Mark Dimmitt, Rick Larke, Lou Martin, Andrea Pook, Carol Shumaker and Gene Joseph are already at work on the next project - Vines and Groundcovers.

ANPS has a new logo proudly displayed on the front page. A committee chaired by Martha Burgess worked for several months with the designer. New stationery and business cards also feature the logo. It attempts to represent native plants symbolically in the logo, without featuring any one species.

We hope you like it.

Arbor Day — Time to Plan Ahead

Reprinted from the Land Stewardship Project (14758 Ostlund Trail North, Marine, MN 55047)

1. Begin planning in the late summer for next spring's tree planting event. This gives you plenty of time to order trees, to line up land and get things organized.

2. If it is already well into February or March, you may be able to organize a mini-event by contacting the area forester and seeing if someone already has a plan drawn up, with the trees ordered and paid for. Tell them that your group can supply the labor.

3. Decide on how big a tree planting project you want to organize. We suggest that you start with a group of 25-30 fifth graders — the optimum age group for this type of project. You should have one adult for every 6-10 students. You can plan to plant about 250-300 trees in about 2 or 3 hours (including transportation, set-up, instruction, clean-up and snack). Maximum tree planting time should be 1-1/2 to 2 hours; the event should be fun for kids.

4. Decide where you want to plant trees — in a public place or on private land. Private land plantings give you some options about site preparation and maintenance., such as nonchemical weed control methods, mulch, etc.

5. Contact the local soil conservation service office and tell them what you want to do. Have them put you in contact with the area foresters and land owners who can help you plan and pull off the event.

6. Set a date (and a rain date) and a location for the event.

7. Ask the area forester if someone with a badge and uniform can be present to help supervise and instruct the kids.

8. Contact local organizations and enlist their support in funding, publicizing and carrying out the event. Suggestions include the following organizations: Kiwanis, Rotary, Boy Scouts, Girl Scouts, Lions, Audubon, 4-H, local banks, church groups, senior citizens groups, local sporting clubs.

9. Contact school teachers and principals, and enlist their help in letting kids out of

school to do the planting, in obtaining parental permission to do so, and in providing school buses to bring children to the site.

10. Line up equipment and resources. Depending on what resources you have available, you'll need planting bars, shovels, ice cream buckets, sawdust or corn cobs, and water. The district forester and SCS office will help you line these up, and show you how to use them. If you are doing a farmstead windbreak planting, before the children arrive you should put flags or stakes where each tree is to be planted.

11. Visit the site a couple weeks before the tree planting event so you can plan how the kids will be instructed and distributed. Develop a time table as to how the event will proceed and who will do what.

12. The landowner must understand that this is first of all an educational event and she or he may have to do some follow-up (i.e. giving a little TLC to the trees the kids planted).

13. At least one week before the event, compile a packet with tree planting information and your time-table, and send it to the teachers and adults who will supervise the kids. Your packet to the teacher should include the importance of pre-teaching the kids about why they are planting trees.

14. On the day of the event, the first priority is SAFETY.

15. Instruct the kids as to the proper methods, but don't dwell too long on this as it is something they will have to learn on their own. Check to see that the trees are planted properly and, when they are, give the kids positive reinforcement.

16. After the planting and clean up (allow 20 minutes for clean-up), have them sit down and imagine what the land was like when the Native Americans lived in the area — have them picture what their trees will look like when they are fully grown; stress the soil-saving and wildlife shelter benefits of trees. Let them know they have done something important and have contributed to good land management.

17. Be sure to do follow-up — send a "thank you" to everyone involved.

Summer Salvage of Native Shrubby Composites in Arizona

By Matthew B. Johnson

In recent years there has been increased effort to salvage native plants in southern Arizona. Little attention has been given to the smaller plants such as bursage and brittlebush. These shrubby composites, many with showy yellow or white flowers, are numerically very abundant with over 1000 individual plants per acre in some localities. Where these are desired for landscaping or revegetation, nursery grown container plants or hydroseeding are used. Cacti are frequently relocated bare-root and large trees such as mesquite, ironwood and palo verde are boxed and moved. This not only preserves the plants but provides mature landscape specimens.

A few commercial nurseries have field-dug and potted brittlebush, *Encelia farinosa*, in the winter months. Botanical gardens also have salvaged plants at this time of year. The plants are typically bare-rooted and cut back to compensate for the root loss.

The cool winter weather allows the plants time to reestablish before summer. In soils without much rock or caliche it is possible to remove a plant with a wedge of soil containing a portion of the root system. This is accomplished by inserting a shovel into the soil on opposite sides of the plant so that a wedge of soil is cut. The wedge of soil containing the plant is then gently

lifted out of the ground. The soil should be moist to facilitate digging and reduce the possibility of the soil wedge breaking up. The soil wedge may be carried carefully on the shovel to the location where the plant is to go. After the hole is prepared, the soil wedge is placed in the hole while still resting on the shovel. Soil is backfilled around the wedge and the shovel is gently removed. The plant is thoroughly watered immediately after planting.

It is not necessary to cut the plant back. If the plant has been carefully moved there are seldom any visible symptoms of transplant shock. Using this technique in the winter of 1985-86 I transplanted approximately 100 triangle leaf bursage, *Ambrosia deltoidea*. Only 3 of these failed to survive. Approximately 85 percent survival was observed for desert zinnia, *Zinnia acerosa*, using the same procedure.

Plants may be potted up in containers and allowed to establish for planting at a later time. After the soil wedge is removed from the ground it should be carefully trimmed to fit the size of the container into which it will be placed. The soil wedge can be slid gently into the container from the shovel and treated in the same manner as plants which are directly transplanted into the ground.

This procedure works well in the cool season when transpiration rates are low. Unfortunately, situations arise where plants must be salvaged in hot weather. In the summer of 1988 I had an opportunity to salvage native plants which were slated for destruction off of a beautiful parcel of desert vegetation on the east side of Tucson.

Approximately 225 cacti were relocated on the site. Numerous small native shrubs grew on the property. I was skeptical of the chances of saving any of these but decided to determine if any would survive being moved in the summer.

The soil was a sandy clay with a thin layer of caliche approximately 2 - 3 feet beneath the surface. The plants

Table 1. Summary of survival of 9 native shrubby composites at 4 months after transplanting into containers

Species	Common name	Transplanted (no.)	Surviving (no.)	(%)
<i>Ambrosia deltoidea</i>	triangle leaf bursage	1	1	100%
<i>Encelia farinosa</i>	brittlebush	30	27	90%
<i>Encelia frutescens</i>		4	4	100%
<i>Ericameria laricifolia</i>	turpentine bush	1	1	100%
<i>Isomera tenuisecta</i>	burweed	1	1	100%
<i>Machaeranthera pinnatifida</i>		1	1	100%
<i>Porophyllum gracile</i>	odora	5	5	100%
<i>Psilostrophe cooperi</i>	paperflower	5	5	100%
<i>Zinnia acerosa</i>	desert zinnia	23	17	74%
Total:		71	62	87%

were dug up and potted in the last week of July and the first week of August. Sufficient rain fell before and during the period to maintain soil dampness to a depth of 1 foot.

The same procedures previously used in the winter were used to put up the plants. Plants selected were healthy in appearance and averaged 6 inches to 1 foot in height and spread. All of the plants were transplanted into plastic 1-gallon containers. The greatest difficulty encountered was in getting the soil wedge into the container. The high sand content of the soil made it prone to break apart. Immediately after each plant was potted up the container was thoroughly soaked and placed in a shaded location.

At the end of each day the plants were transported to a nursery and placed in the shade of a mesquite tree. All of the plants were in active growth and several were flowering as a result of the rain. The only plants which were pruned were the *Encelia farinosa*. On these, all except the terminal 3 - 5 leaves were removed from each stem. Most of the plants were slightly wilted within 15 minutes of being dug. Most of these had regained turgor within 24 hours.

Many of the plants continued to grow and flower without apparent setback. They were watered twice daily for the first week and daily thereafter. The containers were fertilized monthly with a 15-30-15 water soluble fertilizer beginning approximately 3 weeks after transplanting. Very high survival rates were observed for all species.

Additional plants which were successfully transplanted in the soil wedges of the above species include: *Aristida glabrata*, *Digitaria californica*, *Sphaeralcea laxa*, *Ambrosia confertifolia*, *Datura discolor*, *Nicotiana trigonophylla*, *Dyssodia pentachaeta*, *Baileya multiradiata*, and *Euphorbia (Chamaescyce) sp.*

The success in transplanting these plants offers opportunities to the nursery industry, botanical gardens, conservation organizations and private individuals to consider salvaging native shrubs from land which is to be cleared for construction. Salvage plants are ready for planting from containers within weeks while plants which are propagated in containers from seeds or cuttings require months or years. Several attractive native shrubs which are seldom available commercially may be obtained by salvaging wild plants. Plants which otherwise are destroyed

can be preserved. The high survival rates that have been observed for transplanted native plants suggest that most plants can be successfully transplanted with the proper techniques and care. Many plant species remain to be evaluated for salvage transplant survival. Interested individuals should be encouraged to experiment with transplanting native plants from areas where they are threatened with destruction to promote their conservation.

Editor's note: It would be advisable to obtain a copy of the Native Plant Law from the Secretary of State to assure that you are complying with legal requirements.

Arizona Wilderness Bill Needs Your Help

By Dale S. Turner

Arizona's Congressional delegation have finished working on a wilderness bill and held hearings on it in early June in Phoenix and Lake Havasu City. Among the many supporters of wilderness designation who testified, Barbara Tellman ably represented ANPS.

As the first statewide wilderness legislation to emphasize BLM lands, this bill will be subject to national scrutiny and the results will have far-reaching implications. It is hoped that the final legislation will also include some Forest Service areas, such as the Guadalupe Canyon area, and National Wildlife Refuge lands, such as the Cabeza Prieta and Kofa NWRs.

Strong support from those who care for the health of the land will be extremely important in assuring the passage of a wilderness bill.

ANPS members have already made a difference. The delegation has gotten the message that at least one area, Ragged Top, has a constituency armed with solid facts on the valuable flora there needing protection. Keep it up, and let's do the same for some other areas. Like, say, Redfield Canyon, or Cabeza Prieta, or Gila Box, or . . .

Please write to the Arizona Congressional delegation today indicating your support of a wilderness bill for Arizona that reflects the need to protect these valuable lands for the future.

Underutilized Native Woody Legumes For Landscape Use

By Matthew B. Johnson

(Reprinted from 1988 Turfgrass and Ornamentals Research Summary, Series P-75, Cooperative Extension, Agricultural Experiment Station, University of Arizona, Tucson)

Many species of plants native to the Sonoran Desert region have not been extensively evaluated for their landscape potential. Often, plants have been grown on a limited scale but the information has not been published or is dispersed through the literature. The lack of awareness of plants with landscape potential and the lack of accessible information about them contributes to their limited availability and use.

Trees and shrubs of the pea family (Leguminosae) are a conspicuous feature of the vegetation of much of the Sonoran Desert region. These plants have several features which make them good candidates for use in landscaping in arid regions. Many legumes are able to fix nitrogen. This minimizes their need for expensive fertilizers. They are tolerant of hot temperatures and low humidity. Once established, they are able to survive for longer periods without irrigation than many traditional landscape plants from less arid regions.

Seven species of leguminous trees and shrubs which show potential for wider landscape use in the Southwest are: *Coursetia glandulosa*, *Erythrina flabelliformis*, *Eysenhardtia orthocarpa*, *Haematoxylon brasiletto*, *Lysiloma watsonii*, *Pithecellobium mexicanum*, and *Sophora arizonica*. These were evaluated for their methods of propagation, cultural aspects in the landscape and landscape potential.

Coursetia glandulosa (baby bonnets) is a medium to large shrub 2 to 4 m tall and broad. It is typically multiple stemmed and rather open. It has deciduous gray-green foliage and produces small flowers which are yellow and white with pink markings. The plant is readily propagated by scarified seed. Growth rates are moderate with supplemental irrigation. *C. glandulosa* is hardy to -6.5 degrees C (20 degrees F). No significant pest or disease problems have been reported. It can be used as a background or accent plant or as an informal screen. Plants may be observed near the entrance to the Earth Science Cave at the Arizona Sonora Desert Museum.

Erythrina flabelliformis (southwest coral bean) grows as a multiple stemmed shrub to 2 m tall in areas that experience freezing temperatures but may be developed into a small tree in warm areas and protected sites. The bright green, deciduous leaves are produced in the summer following the attractive scarlet flowers. The plant is easily propagated from scarified seed and will grow from cuttings. *E. flabelliformis* has a moderate rate of growth with supplemental irrigation. The stems will freeze at -2.2 to -4.4 degrees C (28 to 24 degrees F). The plant has no serious pest or disease problems in cultivation in southern Arizona. It has some potential for use in landscapes as an accent or background plant or as a specimen or small patio tree in warmer areas. The showy flowers attract hummingbirds. The scarlet seeds are reported to be highly poisonous if eaten. Cultivated plants are located in the Aviary and in the Demonstration Garden at the Arizona Sonoran Desert Museum and in the Demonstration Garden at Tohono Chul Park in Tucson.

Eysenhardtia orthocarpa (kidneywood) is an upright shrub 1 to 4 m tall or a small tree to 6 m tall. It is cold and drought deciduous and bears attractive inflorescences of small, fragrant white flowers in the spring and summer. The plant may be propagated by seed and by cuttings. Seed will germinate without scarification. Growth is rapid in a container or in the ground with supplemental irrigation. *E. orthocarpa* is hardy to at least -6.5 degrees C (20 degrees F). No pest or disease problems have been reported. The plant is suitable as a small patio tree due to its upright form. It can be used as a background plant or provide a vertical element in a landscape. Cultivated plants may be seen near the Demonstration Garden and in the Entry Plaza area at Tohono Chul Park in Tucson and in the wildflower garden at the Tucson Botanical Gardens.

Haematoxylon brasiletto (brasilwood) grows as a multiple stemmed shrub or small tree 4 to 6 m tall. The growth form is usually upright and dense. Young stems are zig-zag with a thorn at each node. The older stems are a unique characteristic of this plant. They develop irregular fluted ridges and furrows giving the stems a buttressed appearance. The attractive heart-shaped leaflets are cold and drought deciduous. Clusters of bright yellow flowers appear in the summer and autumn on

cultivated plants in southern Arizona. Plants will grow readily from scarified seed. Growth is moderate in the landscape with supplemental irrigation. *H. brasiletto* will suffer freeze damage at -4.4 to -5.5 degrees C (24 to 22 degrees F). Recovery is rapid in the spring. No pest or disease problems have been reported. The plant is suitable as a small patio tree in warm areas where it can be pruned to reveal the fluted stems. It can be used as a background, accent or specimen plant. Cultivated plants may be observed in the Demonstration Garden at Tohono Chul Park and at the Desert Botanical Garden in Phoenix.

Lysiloma watsonii (feather tree) grows as a dense shrub to 2 m tall in cold sites but will develop into a spreading tree to 6 or 8 m tall in warm areas of southern Arizona. The graceful, feathery, blue-green foliage contrasts with the brown bark. The leaves are retained in mild winters. Fragrant, cream colored flower heads are produced in profusion in the late spring. Scarified seeds germinate readily. The plant has a moderate to fast rate of growth with supplemental irrigation. *L. watsonii* will begin to suffer freeze damage -4 degrees C (25 degrees F). Recovery is rapid in the spring. No significant pest or disease problems have been reported. The plant has a tropical effect and is suitable in transitional plantings and as a patio tree. The dense foliage is effective as a screen. In colder areas it makes an attractive summer shrub. Cultivated plants may be seen at botanical gardens in southern Arizona and in landscapes in Phoenix and Tucson.

Pithecellobium mexicanum (Mexican ebony) is symmetrical, high-canopied tree growing to 10 or occasionally 15 m tall. The thin twigs bear pairs of small thorns. The deciduous foliage is gray-green. Attractive, fragrant, cream colored flower heads are produced in the spring. Scarified seed germinates rapidly. Growth is very fast with supplemental irrigation in good soil. The plant does not grow well in rocky soil or caliche. A large hole backfilled with clean fill alleviates this problem. *P. mexicanum* is hardy to at least -8 degrees C (18 degrees F). No pests have been reported. Pruning wounds can become infected with slime flux. The upright growth habit is ideal for use as a street tree or as a yard or patio tree. The foliage casts a light, filtered shade. Cultivated plants may be seen near the parking lot southeast of the old

visitor center at the Boyce Thompson Southwestern Arboretum, behind Webster Auditorium at the Desert Botanical Garden, and in the Demonstration Garden at Tohono Chul Park.

Sophora arizonica (Arizona sophora) is a dense, rounded, evergreen shrub 2 to 3 m tall. The foliage is an attractive blue-green color. Dense masses of fragrant, lavender to purple flowers are produced in March and April. The plant may be grown from scarified seed. Cuttings have been rooted with difficulty. Very high mortality of seedlings and young plants in containers frequently occurs. Using soil from areas where the plants naturally occur in the soil mix has produced encouraging results. Growth is slow and good drainage is necessary. *S. arizonica* is hardy to at least -17.7 degrees C (0 degrees F). The plant is occasionally infested by the pyralid moth leaf caterpillar. Plants in containers are frequently killed by root rot fungi. *S. arizonica* is a beautiful plant and would make an attractive landscape plant if a dependable method of propagation can be developed. It can be used as a screen or informal hedge, or as a specimen plant. The orange-red seeds are reported to be poisonous. Cultivated plants may be seen on the west side of the Friend's House at the Tucson Botanical Garden.

Ref: Johnson, M.B. 1988. Horticultural characteristics of seven Sonoran Desert woody legumes with potential for Southwestern landscaping. Masters thesis. The University of Arizona, Tucson, Arizona. 133pp.

Chiricahua Workshop

Labor Day Weekend
Friday evening through Monday morning

...natural history, late summer
mountain wildflowers, the works!

Mark your calendar,
and look for an upcoming
mailing with more details.

Selecting Plants for an Allergen-Free Yard

By Karen Enyedy Breunig

Do you or others in your family suffer from respiratory allergies? If so, the information in this article will help you understand those plants which contribute to this problem.

Pollen is the fine powdery material produced by the anthers or stamen heads of male flowers or male flower parts. Pollen granules come in all colors and vary considerably in shape, size and weight. Nearly all pollen granules have the potential to cause allergic reactions in sensitive people. And nearly all plants produce pollen. Why then, are some plants called "allergen-free"?

The answer to this question requires an understanding of plant fertilization strategies. Plants rely upon insects, wind, and occasionally upon animals to deliver pollen granules to the female stigmas of flowers. Insect-pollinated plants (entomophilous plants) produce relatively small amounts of heavy pollen. Their pollen granules fall to the ground near the plant and do not easily become airborne. It is therefore unlikely that a pollen-sensitive person will inhale enough pollen from such plants to develop an allergic reaction.

The pollen of wind-pollinated plants (anemophilous plants) is lightweight and designed to become airborne. Because their fertilization strategy relies upon the chance distribution of a pollen granule to the female plant stigma, wind-pollinated plants must produce large amounts of pollen. Thus it is most often the abundant, airborne pollens of wind-pollinated plants that are inhaled at quantity levels capable of producing allergic reactions.

The allergen (allergy-producing substance) in a pollen granule is a chemical, usually a protein. A person with an immune system sensitive to a particular pollen chemical will produce antibodies to that chemical. The production of antibodies triggers the release of histamines which swell respiratory tissues and cause congestion. Mucous production allows the body to expel some of the offending chemical through coughing and sneezing.

Sensitivity to allergens is not spontaneous; it is usually acquired after repeated exposure. Thus a pollen-sensitive person may move to a new geographic region, be free of allergic reactions for a while, and then come to suffer again as time passes.

People sometimes feel they are allergic to plants with strong fragrances, such as citrus. But fragrance - and also bright colors - are plant strategies to attract insects and generally indicate a plant that is insect-pollinated. Fragrances are made of volatile oils and these oils are not considered capable of producing respiratory allergies. Individuals who suspect they are allergic to citrus are more likely reacting to a pollen from an inconspicuous wind-pollinated flower which blooms during the same season as the more noticeable citrus flowers.

If you suffer from allergies, you should select your landscape plants carefully. While the three most offensive plants used locally (mulberry trees, olive trees and common Bermuda grass) happen to be exotic plants, certain native plants may also cause allergic reactions.

When selecting a plant it is sometimes useful to know its sex, as pollen can only be produced by male flowers or flowers that contain male parts. Some plant species have bisexual flowers, composed of both male and female parts (hermaphroditic plants); others have both female flowers and male flowers on the same plant (monoecious plants); and still other species are heterosexual, with only female flowers on some individuals and only male flowers on others (dioecious plants). A female individual of a dioecious species will always be allergen free.

Following is a list of plants with known pollen allergens, and some information about them.

Common Landscape Plants with Allergenic Pollens

Arizona ash (*Fraxinus velutina*) - Individual trees of this species have either male or female flowers but not both on the same tree. The male trees of this Arizona native produce pollen particularly during March.

African sumac (*Rhus lancea*) - An exotic from the arid regions of South Africa, this tree produces pollen from November through March.

Bermuda grass (*Cynodon dactylon*) - Common Bermuda grass is a serious problem for allergy victims. Its lightweight pollen may be born for over fifty miles on our dry Arizona winds. Bermuda pollen is produced nearly all year, from February through November, peaking in

August and September. Hybrid Bermuda grasses such as "Tiff Green" have been developed. These hybrids are pollen free, but must be planted as sod or in plugs.

Bursage (*Ambrosia deltoidea*) - This hardy Sonoran desert shrub produces its pollen from February through April, and again in October and November.

Cottonwood (*Populus fremontii*) - Male individuals of this native tree produce pollen from January through March. Females are pollen-free but because their cotton-like seeds are a little problem, most nurseries sell only male individuals.

Eucalyptus spp. - Many different species of Australian eucalyptus trees have been planted throughout the southwest. Eucalyptus pollen is found in Arizona air during every month of the year, though not in great quantities.

Mesquite (*Prosopis* spp.) - Mesquite relies primarily upon insects and only partially upon wind for pollination. Arizona mesquites, and exotic mesquites from South America, are fast-growing, drought-tolerant trees with beautiful canopies. Mesquite pollen, produced from March through May, is less offensive than most other pollens on the list. Still, it would be best not to plant a mesquite near the bedroom window of an allergic person.

Mulberry (*Morus alba*) - Female individuals of this fast-growing Asian tree produces messy fruits. For this reason, nurseries most often sell "fruitless mulberries" which are simply male mulberry trees. The males produce large quantities of offensive pollen from March into mid-May and have been banned from use in Tucson.

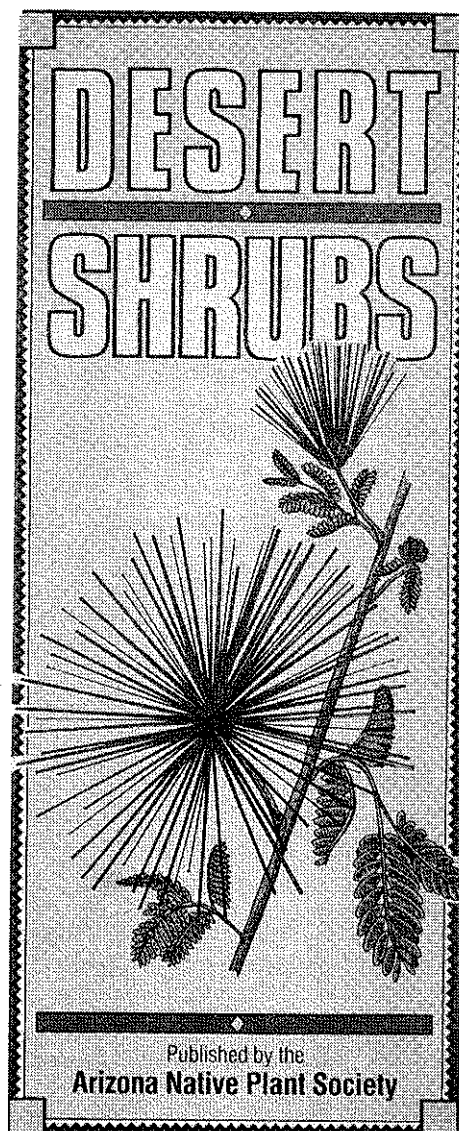
Olive (*Olea europa*) - These Mediterranean trees are primarily wind-pollinated although insects do play a minor role in pollinating their flowers. Olive pollen, produced from February through May, is fairly voluminous; and Tucson has also banned these trees from use. However, a new pollen-less and fruitless variety, "Swan Hill," has been cultivated recently.

Pine (*Pinus* spp.) - All pines are wind pollinated. Depending upon the species, pines produce pollen from February through August.

Privet (*Ligustrum* spp.) - A common landscape shrub from Asia, privet produces pollen from April through June.

Saltbush (*Atriplex* spp.) - Saltbush, or quail bush, produces pollen from June through October.

Salt Cedar (*Tamarix* spp.) - An aggressive pest from the Middle East and North America, Salt Cedars or Tamarisk trees are replacing native trees along streams throughout southern Arizona. Salt Cedar (Tamarisk) produces pollen from July through October.



Our new brochure
(see page 2)

Arizona Native Plant Society News

Tucson Events

By Barbara Tellman

Surveying salt cedar, hiking a proposed wilderness area, learning plant taxonomy, influencing Tucson's revegetation policies, and many other activities have been keeping Tucson members active this winter and spring. Although there haven't been many wildflowers in Pima County this year, there have been things to do and see.

A trip to Pima County's Cienega Creek Preserve, in cooperation with the Pima County Flood Control District, resulted in a map of the creek's salt cedar trees. While this may not sound like what ANPS usually does, the map will form the basis for an eradication plan for this rare stretch of flowing water (see related article by Julia Fonseca).

Six people made the rugged hike to Ragged Top Mountain near Marana. This area is one of the many proposed for wilderness status (see related article by Dale Turner). This is the eastern range of the Golden Hedgehog cactus, which was just coming into bloom. A female bighorn was also reported.

Twenty people were enrolled in beginning taxonomy, taught by Dr. Charles Mason, eminent botanist and curator of the UA Herbarium. Proceeds from class fees of \$20 will go to purchase books for the herbarium.

When the City of Tucson recently proposed an ordinance, sponsored by Councilwoman Janet Marcus, to require revegetation with native plants on areas bulldozed, but not utilized by a certain time, ANPS was there. We strongly supported the concept and the requirement that the builder post a bond to cover the costs, but urged the City to draw up guidelines and standards. Our concerns were twofold - not all land is suitable for successful revegetation and token revegetation would be common but not successful. They passed the ordinance and formed a committee to develop the standards. Dan James (Western Sod and ANPS Central) has been instrumental in providing the necessary information to the City for those guidelines, which have now been adopted. They include a performance guarantee to be met before the bond is returned.

Hortense Miller Memorial Tree

Hortense Miller, wife of Horace Miller, died last January after a long illness. Hortense was one of the founding members of ANPS, a botanical researcher and a real inspiration to many people. In her memory, ANPS

will plant a tree at the Boyce-Thompson Arboretum. Members who wish to contribute to this memorial are invited to send checks to ANPS - Hortense Miller Fund, P.O. Box 41206, Tucson 85717.

Lysiloma thornberi Notepaper

Notepaper featuring Lucretia Breazeale Hamilton's drawing of *Lysiloma thornberi* is again available from ANPS. Choose from green print on white paper (20 notes and green or white envelopes), blue print on buff paper (15 notes and matching envelopes of Classic Crest Text writing paper), and green print on blue paper (15 notes and envelopes of Strathmore Writing Text). Order by mail to ANPS, P.O. Box 41206, Tucson, AZ 85717). Cost per package is \$5.00, and all proceeds go to the Lucretia Hamilton scholarship fund at UA, which was established after her death in 1986.

Lucretia Hamilton has been recognized for her outstanding work as a botanical illustrator. More than 800 publications contain her drawings. She spent most of her life in Tucson and was an active member in the Tucson chapter. The scholarship is available annually to a student who shows talent in botanical illustration, as evidenced by performance in Dr. Donald Sayner's class, Scientific Illustration 418, and is dedicated to a career in scientific illustration. As Dr. Sayner said, "We have to replace Lucretia, but it may take a hundred years to do so." The current scholarship recipient is Theresa Reindl, who is doing independent study under Dr. Sayner.

Members who support this ideal are invited to contribute to the scholarship fund by writing to J.J. Humphrey, Director of Scholarships and Financial Aid, University of Arizona, Tucson 85721.

Endangered Species Display

The Tucson Endangered Species Fair, in March, was a resounding success, with more than 4,000 visitors. ANPS participated with a superb display on Endangered Plants. Sue Rutman, Meg Quinn, Barbara Tellman and Andrea Pook collaborated on this unusual professional quality display. The display was shown at a botanical meeting in Texas in April and at several local plant sales and landscaping meetings.

Also available are displays on the Pinacates, Trees for Desert Landscapes, and (coming soon) Shrubs for Desert Landscapes. The basic display is a four-part folding, self-standing board, suitable for table tops.

Individual displays attach with velco strips. Up to two displays can be used simultaneously, using both sides.

Local chapters or members may borrow the displays for local use by contacting Barbara Tellman, 792-4515. The display is large, so please request as soon as you decide you want to use it, so that we can find someone going your way to deliver it if possible.

Cienega Creek Tamarisk Count

By Julia Fonseca
Senior Hydrologist, Pima County Flood Control District

On Saturday, February 11, thirteen members of the Arizona Native Plant Society inventoried tamarisk along eight miles of riparian habitat within the Cienega Creek Natural Preserve. Locations of mature individuals, as well as stands of immature tamarisks, were marked on aerial photographs in order to give the Pima County Flood Control District and the Parks and Recreation Department information on the extent of tamarisk invasion.

Pima County is considering whether attempts to control tamarisk should be continued. The County has in the past cut sapling tamarisks at ground level in an attempt to prevent non-native tamarisks from competing with native riparian vegetation. However, ANPS Field Trip chairman Andy Laurenzi had indicated that a more effective means of control would be to remove the mature tamarisks which produce the seeds. Natural Resource Manager Mark Brosseau of the Parks and Recreation Department expressed concerns regarding the removal of tamarisk, so a joint decision was made to inventory the tamarisk.

Results of the survey show that there are many stands of immature tamarisks along the main channel of Cienega Creek, although many other riparian trees, such as Goodding willow and cottonwood are also present. There are also several widely-spaced clusters of mature tamarisks that represent seed sources. One major tributary that was surveyed, Davidson Canyon, had very few immature tamarisk and only one mature tamarisk.

Pima County is still in the process of determining whether any further tamarisk control efforts are warranted.

The Cienega Creek Natural Preserve was purchased and established by the Flood Control District in 1986 as an area of riparian habi-

tat preservation. The Cienega Creek Natural Preserve has in addition to deciduous riparian woodland, mesquite bosques, sedge-dominated aquatic habitats, and upland habitat representative of both the Chihuahuan and Sonoran deserts. ANPS members noted that despite the Preserve's rather low elevation, both juniper and California buckthorn were present. Access to the Preserve is by permit, available at no cost from the Pima County Parks and Recreation Department at 882-2690.

MEMBERSHIP INFORMATION

The Arizona Native Plant Society, incorporated as a non-profit tax-exempt organization in 1976, is recognized throughout Arizona for its leadership in promoting a better appreciation of our native flora, in protecting and preserving these plants and in encouraging their use for landscaping and improving our environment. Membership is open to any interested person, family, or other group. Please use the membership application located below.

MEMBERSHIP APPLICATION

Membership classes:

<input type="checkbox"/> Lifetime	\$1000.00
<input type="checkbox"/> Patron	100.00
<input type="checkbox"/> Sponsor	50.00
<input type="checkbox"/> Commercial	50.00
<input type="checkbox"/> Institution, including clubs & societies	25.00
<input type="checkbox"/> General, including individuals & families	15.00
<input type="checkbox"/> Senior Citizen & Student	10.00

Chapter affiliation:

<input type="checkbox"/> Flagstaff	<input type="checkbox"/> Phoenix
<input type="checkbox"/> Prescott	<input type="checkbox"/> South Central
<input type="checkbox"/> Tucson	<input type="checkbox"/> Yuma

Name: _____

Address: _____

City, State, Zip: _____

Telephone: _____

Clip and mail this form together with proper remittance to:

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NEWSLETTER CONTRIBUTIONS

Contributions of articles, artwork and letters to the editor are gladly received. Please direct all contributions to the newsletter to:

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NEXT DEADLINE IS:

September 1, 1989

Please direct all other inquiries regarding the Arizona Native Plant Society to the Secretary at our official address:

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