Native Plant Society of New Mexico newsletter

VOLUME I, NO. 6

NOVEMBER - DECEMBER 1980

MEMBERS:

1981 dues are payable, except those of new members who have joined since August, whose payment carries through 1981.

DELINQUENT MEMBERS:

~~This is the last issue going to several~~ persons who have thus far failed us for 1980. Please!

NON-MEMBERS:

This newsletter comes to you with our hope that you will consider joining the Native Plant Society, a group active in the enjoyment, study, use, and protection of New Mexico's flora. (If you're not interested would you please pass this copy to someone who might be?)

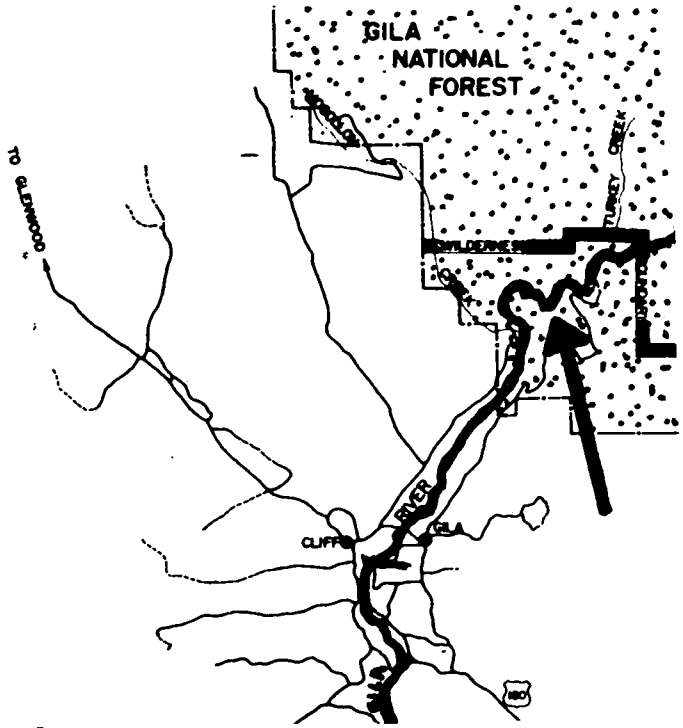
ALL: Dues are $6 per year; or $8 for families, $4 for students and seniors. Write to Dorothy DeWitt, 1414 Old Pecos Trail, Santa Fe 87501

November 13	Las Cruces Chapter. Roger Steeb says he wants some help identifying his wildflower slides. Room 156, Agriculture Building, NMSU; 7:30 p.m.
November 19	Albuquerque Chapter. (No data received.)
November 19	Santa Fe Chapter. Phyllis Hughes will show slides and describe Indian uses of plants for crafts, foods, ceremonies. Laboratory Bldg. 122, St. John's College; 7:30.
November 22-30	Botanical Art Show, Desert Botanical Garden, Phoenix. (Sorry we missed the September deadline for submissions.)
December 11	Las Cruces Chapter. Charles Woerner will show wildflower slides. Room 156, Agriculture Building, NMSU; 7:30 p.m.
December 15	Deadline--more or less--for news, articles, reports for January newsletter. Please, y'all!
December	Santa Fe Chapter. No meeting.
December 17?	Albuquerque Chapter. (No data received.)
"By Christmas"	Current projection for publication of Martin and Hutchins, Flora of New Mexico.
January 21	Santa Fe Chapter. Linnie Kellahin will show wildflower slides with comments on transplanting natives. St. John's.

NATURE CONSERVANCY TO PROTECT KEY GILA LANDS

A $200,000 appeal for funds to purchase the best remaining riparian area in the Gila River drainage was launched October 20th in Albuquerque by The Nature Conservancy. William Draper Blair, Jr., Conservancy President, said that the funds are "urgently needed" to acquire 126 acres in southwestern Grant County, about 30 miles northwest of Silver City. The area, known as the Gila Riparian Project, was selected after long study by the N.M. State Heritage Program as an area of regional significance, not already represented in the large inventory of public lands receiving some level of protection.

The three tracts containing 126 acres were placed on the market for possible subdivi-



Even within Gila Forest boundaries riparian lands are mostly private below site of proposed Hooker Dam (arrow). Gila Riparian Project is in this crucial area.

sion, and will again be offered for sale if the Conservancy does not raise the funds and exercise its options by December 15, 1980.

In addition to one of the best Arizona sycamore stands, these lands have extensive groves of large Fremont cottonwoods, and of Goodding willow, Arizona walnut, velvet ash, and live oak. Sixty percent of the bird species found in New Mexico either nest in or use the area.

The Conservancy will acquire the three privately-owned tracts for $155,000 with the remaining $45,000 to be used for surveying, fencing, and to provide an endowment for caretaking of the preserve area. Conservation easements and management agreements are being sought for an additional 200 acres, with the potential of preserving approximately 2.5 miles of the ecologically important riparian ecosystem.

Although The Nature Conservancy has for several years been involved in preservation of valuable sites in New Mexico (including one at the mouth of Turkey Creek --see map--turned over to the Forest Service), the Gila Riparian Project will be the first Conservancy-owned preserve in the state. Plans for its use include long-term study of the riparian ecosystem, field experience for supervised groups of students, and passive recreation such as birdwatching, hiking, and photography.

Albuquerque businessman Robert B. Anderson and Santa Fe businesswoman Judy K. Jones, volunteer members of the fund-raising group, request that tax-deductible donations be mailed to The Nature Conservancy, 610 Gold Ave., SW, Albuquerque 87102.

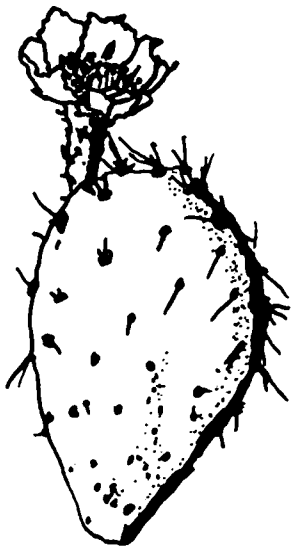
--Marlis Hadley

NATIVE PLANT SOCIETY ADDRESSES

State Coordinator:	Melissa Savage P.O. Box 5917 Santa Fe 87502 983-1113 (home)
Albuquerque Chapter:	Judy Phillips P.O. Box 395 Tome 87060 262-1785 (M,W,Th)
Las Cruces Chapter:	Bob Reeves 475 La Colonia Las Cruces 88001 646-1799 (office)
Santa Fe Chapter:	Phil Pennington 945 Canyon Road Santa Fe 87501 988-3142 (home) 983-4831 (office)
Southcentral Chapter:	Bill Mayfield Star Route Bent 88314 671-4617
Membership:	see page 1
Newsletter:	Roger S. Peterson P.O. Box 5917 Santa Fe 87502

XEROXING CACTI

Cactophilia has more acute symptoms than does the less serious phytophilia that most of us share. Cactophiles tend to want not only views, photos, and memories, but also the plant itself, growing at home. Unprincipled dealers harvest by the truckload to supply this market. Yet another such horror story, from Texas, is in the current (Sept.-Oct.) Cactus and Succulent Journal. One-fourth of U.S. cactus species are already rare or endangered according to Lyman



Opuntia phaeacantha, X 0.3

Benson in Extinction Is Forever (1977). And we threaten foreign species: some 7,000,000 cacti and succulents are imported each year according to the U.S. Dept. Agriculture.

Arizona has "cactus cops" to enforce its strong plant-protection laws. New Mexico has neither police nor good laws in this area.

Bill Isaacs, the man in Santa Fe paid to worry about this prickly problem, says its solution lies in innovative cactus culture, not in field enforcement. If diverse cacti are inexpensive enough, rape of the landscape won't pay.

Beside whole-plant and offset transplants, cacti are grown (1) from seed, (2) from stem cuttings, (3) from axillary buds, and (4) from tissue culture.

James Mauseth (1979; C & S Jour. 51: 186-187) points out difficulties with each method. Seeds may be rarer than plants, and for many species growth is unreliable. Cuttings of many species can't be made to root. Sterile cultures of cactus tissue are easy to establish, but making them produce buds (and thence, plants) is still chancy. He does cite success of Kolář et al. in Czechoslovakia with Mammillaria woodsii (1976, Experimentia 32: 668-669).

Prof. Mauseth's article mainly concerns bud culture. Like other plants, cacti have buds at would-be leaf bases. But cactus buds develop into areoles, the leaves into spines. Areoles become inactive but with hormones--cytokinins--can be induced to grow again in sterile culture. The article details a method; write J. D. Mauseth, Dept. of Botany, University of Texas, Austin TX 78712.

Dian Petty and Jim Weedin detail a simple technique for growing cactus seed in the current issue (#8) of Chihuahuan Desert Discovery (Chihuahuan Desert Research Institute, P.O. Box 1334, Alpine TX 79830).

They say it is important to collect mature seeds; fleshy fruits (such as prickly pears) become soft as the seeds approach maturity. Hard-coated seeds can be separated from the fruit in a blender, straining off the seeds.

Seeds with especially hard coats (again such as prickly pear) need scarification --most simply, nicking or notching with pin or knife. A useful "mini-greenhouse" is a clay flower-pot with a piece of glass on top; or construct a polyethylene moisture chamber. The medium, whether artificial mix or native soil, should allow good drainage and aeration--pure soil seldom fills the bill. Suitable combinations include 1 part peat moss to 1 part blasting sand; or 1 part soil to 1 part sharp sand; or 1 part peat to 1 part soil to 1 part blasting sand; or a commercial potting mix.

To control damping off it is good to sterilize the medium in an oven at 180-200°F. for half an hour. Fungicides such as Captan and Banrot can be used to drench the medium after sowing when damping off is a problem. Plant seeds at a depth twice their diameter. The soil should be kept moist but not soaked. Once seedlings are up, the glass or plastic cover should be opened progressively to allow greater air circulation and to prevent disease.

COTTONWOODS: PRÉCIS, PLAINT, PLEA

Whelmed over by reactions (two!) to last issue's treatment of the cottonwood menace --vox populi pro populum--I here review the cottonwoods of New Mexico. Even if a body didn't like shade or birds, he must care about the principal source of bee glue.

A great leap forward in understanding los álamos is James Eckenwalder's 1977 work, "North American cottonwoods (Populus, Salicaceae) of sections Abaso and Aigeiros," Jour. Arnold Arboretum 58: 193-208. The names used here--based partly on Eckenwalder's results--include the modifications by Elbert Little in a 1979 article in Phytologia and in his 1979 Checklist of United States Trees, USDA Handbook 541.

Our six cottonwoods (aspen being omitted) are assigned by Little to one hybrid and three species names as follows.

P. angustifolia James, narrowleaf cottonwood, is pretty well throughout the state except in the Plains and Bootheel, mostly at higher elevations.

P. X acuminata Rydberg, lanceleaf cottonwood, is a hybrid between P. angustifolia and any of the species below, which are mostly lowland and riparian. Almost throughout New Mexico.

P. deltoides var. occidentalis Rydberg, plains cottonwood, is almost throughout the Great Plains, but not ours: Little maps it only in the Cimmaron country of Union County, near the Colorado and Oklahoma lines. Eckenwalder calls this P. deltoides subsp. monilifera. Most of us have been calling it P. sargentii.

P. fremontii Watson var. fremontii, Fremont cottonwood, is named for the first Republican presidential candidate, who discovered it. It varies a lot and has picked up a passel of names. In New Mexico it is just about restricted to the Gila River drainage.

Rio Grande cottonwood: fruiting spray and staminate flowers. X2/3. From Sudworth 1934.

P. fremontii var. mesetae (Eckenwalder) Little, Meseta cottonwood, though long known has lacked a correct name, though P. arizonica and P. mexicana were commonly misapplied to it. So Eckenwalder provided "subspecies mesetae," which Little, characteristically, reduced to a variety. A geographic complement of plains cottonwood in the northeast, var. mesetae occurs in New Mexico only in the Bootheel of the southwest.

P. fremontii var. wislizeni Watson, Rio Grande cottonwood, is the familiar tree where 90% of New Mexicans live, in the Rio Grande (including Pecos) and San Juan drainages. Thus it forms a broad band between P. deltoides and the other varieties of P. fremontii. P. wislizeni, as it has often been called, is botanically as well as geographically intermediate between them; Eckenwalder calls it P. deltoides subsp. wislizeni and may be

as correct as Little in his more traditional assignment of wislizeni to P. fremontii.

Can New Mexico's native cottonwoods really be assigned to these six names? It ain't easy.

One question, perhaps merely a mapping deficiency, is that neither Eckenwalder nor Little names the cottonwoods of the Arkansas and Brazos River drainages, for instance the Boone's Draw grove of Roosevelt County. Are these, too, P. deltoides var. occidentalis? Or non-native? There are intermediates between occidentalis and wislizeni near the Colorado border, according to Eckenwalder.

More importantly, the keys (no matter whose) sometimes just don't work. A notable instance is in the San Juan drainage (Four Corners area). Seville Flowers (1961, Vegetation of the Navajo Reservoir Basin..., Univ. Utah Anthropol. Papers 55: 15-87) was neither the first nor last to find a decision between P. fremontii varieties fremontii and wislizeni impossible in this area. Are they really separate taxa and hybridizing here, as Eckenwalder claims? Or are they merely downstream populations that emphasize one character or another of this more variable parental population?

Eckenwalder opines that herbarium material, though abundant, is mostly too poor to settle the problems of cottonwood systematics. He urges those interested to gather as full material as possible, ideally at three different collection times: February-April for flowers, May-June for fruiting material, and August-October for winter buds, from the same marked tree(s). "It is important in gathering leaf material to gather whole long shoots, since early leaves (those of the spring flush) often differ from late leaves..." and both are useful. Midsummer collections with no flowers, fruits, or winter buds are the most common in herbaria, he found.

For what it's worth, here is a key for determination of the now-accepted taxa, partly from Eckenwalder. "Petioles" are leaf-stalks; "pedicels" are flower or fruit (capsule) stalks.

1a. Petioles nearly round in cross section or flattened on upper side; leaves (including petioles) 2 to 3 times longer than broad, blades lanceolate to ovate, bases usually long-tapered.....2

1b. Petioles laterally flattened; leaves (including petioles) 1.2 to 2 times longer than broad, blades deltoid, their bases usually indented or straight or short-tapered.....3

2a. Petioles less than 1/3 length of blade; blades lanceolate, bright yellow-green above..... P. angustifolia

2b. Petioles at least ½ blade length; blades rhombic-lanceolate to usually ovate with acuminate tips, dark green above..... P. X acuminata

3a. Leaves with glands at base of blade; bud scales glabrous..... P. deltoides var. occidentalis

3b. Leaves without glands; bud scales hairy or rarely subglabrous..... P. fremontii..4

4a. Shoots and petioles glabrous; pedicels to 15 mm long, longer than capsules; floral disc reduced in fruit, 1-4 mm wide, flat to shallowly cup-shaped..... P. fremontii var. wislizeni

4b. Young shoots and petioles often pubescent; pedicels less than 4 mm long, shorter than capsules; floral disc broad in fruit, 5-9 mm wide, deeply cup-shaped.....5

5a. Shoots with yellow or gray cast, glabrous to densely pubescent; late leaves often as wide as long or wider, short-acuminate or acute..... P. fremontii var. fremontii

5b. Shoots with orange cast, usually densely puberulent; late leaves longer than wide, long-acuminate..... P. fremontii var. mesetae.

--Roger Peterson

THE ORGANIZED WORSHIP OF SUCCULENCE

Partisans of Cactaceae, Agave, Sedum, and other fleshy plants are long- and well-organized. The New Mexico Cactus and Succulent Society meets monthly, usually on the third Friday at the Albuquerque Garden Center. Current chair is Nancy Finley, 6320 Cuesta Place N.W., Albuquerque 87120; home phone 898-6828.

The Cactus and Succulent Journal, whose subscribers are ipso facto the Cactus and Succulent Society of America, is available at $15 per year (or $200 per life) from P.O. Box 3010, Santa Barbara CA 93105. There are six superbly illustrated and edited issues per year. Photographs come in shocking pinks and vibrant greens, not the b-and-w used by journals for the other 300 to 400 plant families.

The Journal is by no means devoted to U.S. natives, but New Mexican cacti are occasionally covered. Coryphantha vivipara's varieties--five in New Mexico--are compared in a recent issue by Pierre Fischer. In 1979's xenophilically titled "Three new species of Cactaceae from southeastern Utah," Kenneth Heil of Navajo Community College, Shiprock, compares several Sclerocactus and Pediocactus species of New Mexico. Itinerant cactologist Fred Dortort passes through New Mexico on pp. 121-123 of the 1980 volume, observing and photographing agaves and Echinocerei of the Organ Mountains.

Cacti of New Mexico is a major work that has been in process for 15 years. To be published by UNM as a memorial to the late grand old man of New Mexico botany, Edward F. Castetter, the book's authors are Castetter, Prince Pierce, and Karl Schwerin of Albuquerque. The Native Plant Society might well consider helping to underwrite expensive color plates, if necessary, for this important publication.

VEGETATION MAPS--AGAIN

Gary Donart et al.'s "Potential Vegetation Types" was discussed last issue as probably the most serviceable of available type maps for New Mexico.

"Primeval vegetation types of New Mexico (1880)" is a 16 x 21" black-and-white map by Fred A. Gross III, based on territorial survey records. It is available from its author: Heritage Section, Natural Resources Dept., Villagra Bldg., Santa Fe 87503. With W. A. Dick-Peddie he published an account of the map, and a smaller version of it, in Southwestern Naturalist 24: 115-122. Six main vegetation types and several subtypes are mapped.

Probably most-used by scientists and agencies has been A. W. Küchler's 1964 map, "Potential natural vegetation of the conterminous United States." The 1975 edition may still be available from the American Geographical Society, Broadway at 156th St., New York NY 10032. Although the New Mexico part of this wall map is only 7 x 8", considerable detail on 17 vegetation types is included.

"Vegetation and land use in New Mexico" by S. A. Morain and others, 1977, is based on satellite photography. This 23 x 26" map is less good for vegetation than those listed above, but includes some interesting human-use data. Send $2 for Resource Map 8 to Publications Room, N.M. Bureau of Mines & Mineral Resources, Socorro 87801.

New Mexico is about 23 x 25" on Brown and Lowe's large wall map, "Biotic communities of the Southwest," 1978. It has about the same amount of detail at Gross's vegetation map. Although it quickly went out of print, requests might get it back in: ask for Gen. Tech. Rept. RM-41 from the Rocky Mtn. Forest & Range Expt. Station, 240 W. Prospect, Ft. Collins CO 80521.

Finally, "Vegetation Map of New Mexico" is the Soil Conservation Service's contribution (Albuquerque Office P.O. Box 2007, Albuquerque 87103). It is more accurate and easier to read than others, but shows only six types. Perhaps it has been replaced by the more detailed map of Donart et al., available from the same office.

ELECTIONS

The nominating committee, though cosmopolitan itself, received no volunteers or recommendations for state-wide offices from the metropolis or the southland. The committee nominates Fairlee Barnes of Los Alamos as State Coordinator, Wendy Dority

of Santa Fe as Treasurer, and Iris David of Santa Fe as Corresponding Secretary. Votes may be sent individually to "Elections" at the Society's P.O. Box 5917, Santa Fe 87502, or may be communicated to present officers elsewise, or, most efficiently, may be taken at chapter meeting and similarly communicated--by 19 December, please.

WILDERNESS PROTECTS HABITAT

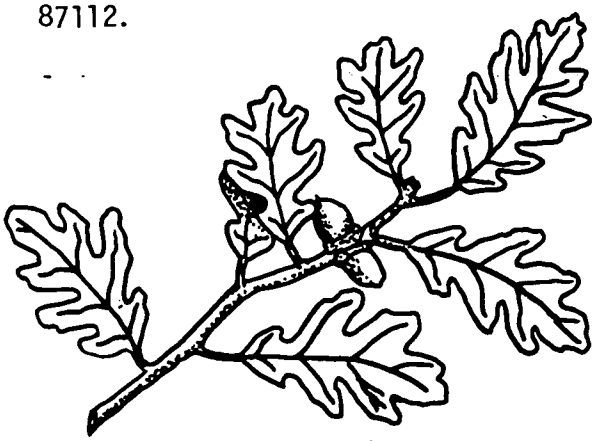
The Congressional delegation's first National Forest wilderness bill (SB 2583) didn't get far: New Mexican conservationists howled and blocked.

After parliamentary maneuvers that threatened the relatively good Colorado Wilderness Bill, Senator Domenici got Senate leaders to let him bring a new plan--not even written up as a bill--to a sudden, unexamined vote just before the Senate recessed at the end of September. Attached as amendments to a small private bill, his proposal passed. Manuel Lujan has introduced the same package in the House for action during the lame-duck session this month.

Conservationists want about 1,000,000 undeveloped acres added to the state's forest wilderness--land that would remain open to livestock and hunters, but not to timber harvest or vehicles. After almost a decade of study the Forest Service and the President recommended about 770,000 of those acres to the Congress for designation. SB 2583 included 560,000 wilderness acres; it omitted Apache Kid in the San Mateo Mtns. (Socorro Co.), which the Wilderness Study Committee had recommended at 100,000 acres and the Forest Service at 130,000. Now the new amendments include about 580,000 acres, including 40,000 in Apache Kid; but an even more important area, Guadalupe Escarpment, has been dropped. Perhaps more critical is the new package's elimination of "further planning" areas (not in the above totals): Bunk Robinson, the best Sierra-Madrean vegetation prospect, and Columbine-Hondo, much of it alpine tundra. These, and all areas not designated wilderness (other than one further planning area), would be opened immediately to multiple uses.

John Seiberling, chairman of the House subcommittee that will consider the Lujan bill, will be here this month to look at some of the controversial areas. He has been a friend of wilderness in the past.

Mr. Lujan and Mr. Seiberling may be contacted at U.S. House of Representatives, Washington, DC 20515. For further information contact local Sierra Club groups or Wilderness Study Committee Chairman Harold Walling, 12020 Apache, N.E., Albuquerque 87112.



Three men touching fingertips can reach around 17'2".

BIG IS BEAUTIFUL

Jim Freeman of the New Mexico Forestry Division--always helpful on arboreous inquiries--sent the Division's new brochure on The Big Tree Program. New Mexico has at least three native-tree champions:

Species	Circumference	Crown Spread	Height	Locality
southwestern white pine	15' 5"	62'	111'	Bonito L., Lincoln Co.
Gambel oak	17' 2"	38'	52'	O-Bar-O, Gila Nat.For.
netleaf hackberry	11' 4"	72'	74'	Redrock, Grant Co.

That's not much of a share of the 679 U.S. native-tree champions; shall we get busy? Measure circumference 4.5' above the ground if possible. To measure crown spread, trace an outline of the tree's crown on the ground and average the lengths of the greatest and least diameters of the tracing--lines that pass through the base of the trunk. For details, and a painless way to measure height, send for a free copy of the brochure: Forestry Division, N.M. Dept. of Natural Resources, P.O. Box 2167, Santa Fe 87503.

Classified Ads

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