



CROSSOSOMA

[Vol. 3 No. 1]

Southern California Botanists

Spring 1977

For more information on activities, contact any of the SCB Board of Directors.

SCB COMMITTEES NEED PEOPLE

The SCB board would like to spread the work of running the organization around so that no one gets swamped. To do this, committees are being set up; they need leaders and members. If you can contribute some much needed help, please let us know.

Committees are:

- Publicity and Posters
- Newsletter -- Crossosoma
- Plant Propagation
- Conservation and Environmental Policy
- Finances and Book Sales
- Publications and Printing
- Membership and Directory
- Field Trip and Program Coordinator
- Symposium

MEMBERSHIP RENEWAL

Membership renewal response has been fantastic. Thank you. Members who joined in October, November or December were credited with 1977 dues.

Those members who joined earlier in the year are credited with that fraction of the dues in 1977 and are asked to pay only the difference to complete the rest of the calendar year.

Old SCB members' dues were payable in January. Thus, there is no real change in procedure.

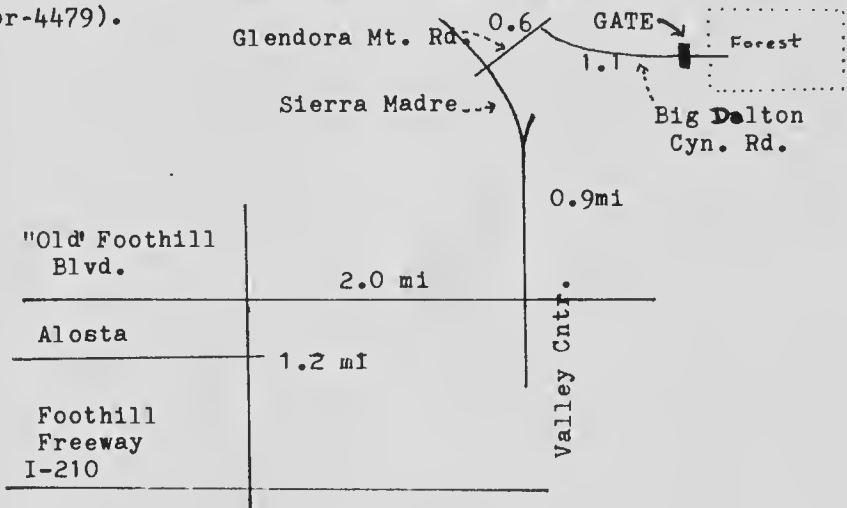
The Southern California Botanists no longer recognizes membership in the California Native Plant Society as a joint membership with SCB. The Southern California Botanists are not a part of CNPS.

If your address is not as printed on the address label, please send us the change of address. We need your help to keep our files up to date.

FEBRUARY

26 Saturday, 9 a.m. FUNGUS FORAY

This year's foray will be at the San Dimas Experimental Forest and adjacent area. Exit from the Foothill Freeway (I210) in Glendora, Grand Ave. exit. Follow map below to the locked gate at the Experimental Forest, and park off the road near the gate. Assemble here (site 1) at 9 a.m. for orientation. (Come earlier if you wish, since this is our primary collecting area.) At 10:30 a.m., a small convoy of cars, guided by our US Forest Service mycologist-host, Dr. Paul Dunn, will proceed up the experimental forest road 2.8mi for collecting in the Bell and Volfe Cyn. areas. You may join this convoy or continue collecting around site 1. Only cars with the convoy will be allowed through the gate. Both collecting areas have oak woodland, riparian and scrub areas. Participants will reassemble at site 1 at 2 p.m. for display and review of collections. Bring wax paper, paper bags and/or picnic basket, garden trowel, knife, pencil, lunch. Leader: Dr. Martin F. Stoner, Cal Poly, Pomona 91768 (714 598-4462 or-4479).



MARCH

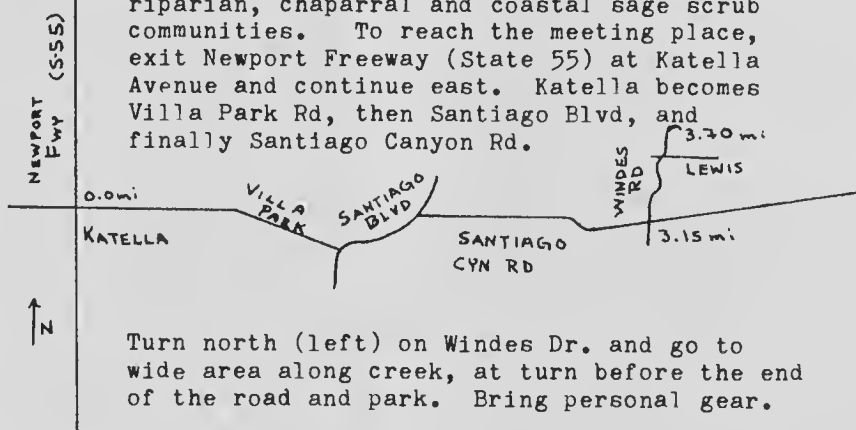
4 Friday, SCAS ABSTRACTS DUE.

Last day to submit abstracts for papers in the Botany section of the Southern California Academy of Sciences annual meeting at Cal Poly, Pomona, May 5,6. See additional information elsewhere in this issue.

5 Saturday, 9 a.m. BLOOM RANCH PIANT INVENTORY

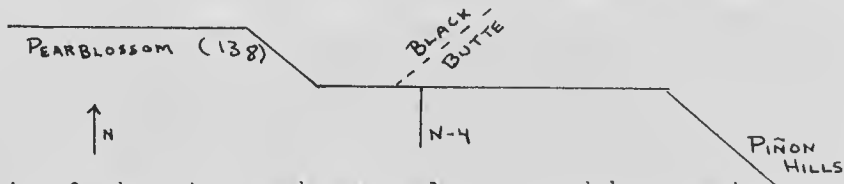
This area has been acquired by Orange County for a park. We will spend the day developing an inventory of the

riparian, chaparral and coastal sage scrub communities. To reach the meeting place, exit Newport Freeway (State 55) at Katella Avenue and continue east. Katella becomes Villa Park Rd, then Santiago Blvd, and finally Santiago Canyon Rd.



19 Saturday 9:30 a.m. ANTELOPE VALLEY, MOJAVE DESERT

Meet at Black Butte Basin Rd., near the junction with Pearblossom Hwy. (State 138). (This is just west of Largo Vista Rd. (N4).)



Bring food, water, and personal gear, and be sure to fill the car before meeting. We will drive good dirt roads and paved roads looking at interesting plants of the Creosote bush, Joshua tree, Alkali sink and Alkali spring communities of the area.

26-27 Edmund C. Jaeger Palaver. Cronese Dry Lake area east of Barstow. Males only invited. (This is not SCB's idea.) Call board members for further information.

NEW DIRECTORS

Carol White, who served as SCB secretary for two years, has been appointed by the board of directors for the remainder of Jim Shevock's term. Carol is a designer and biological illustrator.

Marvin Chesebro has been elected to the board to fill Lyle Gaston's post as SCB director and chairman of the Conservation and Environmental Policy Committee. Marvin is a civil attorney in Los Angeles. Many members will know Marvin from the many field trips he has attended.

APRIL

2 Saturday 10-3. SCB PLANT AND BOOK SALE

Rancho Santa Ana Botanic Garden, 1500 N. College Ave., Claremont. Don't miss this sale if you want native plants for your yard. We will have plants selected from the RSA collection, and from various wholesalers. There will also be various house plants and succulents. Macrame plant hangers and turned wooden plant stands for your prize plants will also be for sale. Check our book selection; there will be lots of new titles (discount for SCB members!). This will be bigger and better than past sales. Proceeds will be used to help defray expenses of the SCB program -- Potluck, Symposium, field trips, etc.

15-17 Friday- Sunday LITTLE HARBOR, CATALINA ISLAND
Departure for Catalina will be at 7p.m. Friday night, from the Long Beach-Catalina Island Cruises Terminal in Long Beach (not San Pedro). Come about $\frac{1}{2}$ hour early. We will cruise to Two Harbors via Avalon, arriving about 9:50. Hope for calm seas!

Camping Friday night will be at Little Fisherman Camp, Two Harbors. Camping Saturday night will be at Little Harbour on the Pacific side of the island. Departure Sunday will be from Two Harbors via Avalon at 3:20, arriving at Long Beach about 6:30 p.m.

Transportation to and from Little Harbor will be provided for botanists and camping equipment.

This trip will provide a different view of the island and its vegetation than we have had the past two years.

Rates for groups are based on a minimum of 25 adults. Reservations must be confirmed and paid in advance. Let K Klier (Rancho Santa Ana Botanic Garden, 1500 N. College, Claremont 91711) know as soon as possible. Deadline is 18 March.

Cost will be \$15.50 per adult (children will be about \$11.55 each).

To reach Long Beach - Catalina Cruises, take the Long Beach Freeway (State 7) south to the Downtown Long Beach exit. Go under the Broadway sign, then $\frac{1}{2}$ mile to the Golden Shore exit. Park in lot east of terminal.

1977 SYMPOSIUM

The 1977 SCB Symposium will be held on 5 November. This fall date is a departure from our past spring scheduling. There seemed to be a feeling that there was so much going on in the field in the spring that a fall meeting would be better. We will try this. If you have comments, please let us hear from you.

This year's symposium will be on the Sierra Nevada: geology, paleobotany, plant communities, speciation, high elevation flora, avifauna-plant relationships, conservation and forestry.

MAY

1 Sunday WEED WALK HUNTINGTON BEACH

Meet author Charlotte Clarke for a leisurely hunt for edible, poisonous and useful plants found in feral fields typical of your neighborhood. A special stop will be Huntington Beach Natural Area, located on the Costa Mesa Bluff, where, despite urban sprawl, wild blackberries can be found. Here history buffs might enjoy a visit to New Land House, a "Queen Anne / Victorian" house built in 1898, and recently designated an historical site. Later that day, we will visit the Natural Area and the herb garden at the Huntington Beach Library.

Meet at 10 a.m. in rear parking lot of the F.H.P. Medical Center on Talbert between Brookhurst and Buchard in Fountain Valley. Take the San Diego Freeway (I-405); exit Brookhurst south and turn right at the first signal (Talbert). Medical Center is about 1 block down on the left. Bring lunch, water and field books.

6-7 Friday, Saturday. SCAS BOTANY SECTION MEETING.

The botany section of the Southern California Academy of Sciences will meet at Cal. Poly. University, Pomona.

Student and professional papers are solicited for the presentation. SCB will again award \$50 in books to the best student presentation.

Abstracts are due by 4 March. Mail them to Dr. L.M. Blakely, Biological Sciences Department, Cal. Poly., 3801 West Temple Avenue, Pomona, CA 91768.

Abstracts must include 1) a 3x5 card with name, institution or address, title of paper, student or professional, and Botany Section. Indicate audio-visual needs and time required (20 minute maximum). 2) Abstract of paper, 150-200 words typed on a white 4x6 card using an electric typewriter, elite type and a fresh ribbon. Left margin should be three spaces from edge of card. First line is title (upper and lower case), second is author's name in caps. Skip a line, then type body of abstract single spaced, without indentations.

MAY, JUNE AND JULY

Details of the activities will be in the next issue of Crossosoma. Our tentative calendar is:

May 14 Western Santa Monica Mountains. Point Dune.

La Jolla Canyon. Big Sycamore Canyon.

28-30 New York Mountains. Eastern Mojave Desert.

June 11 Verdugo Mountains.

25-26 Morro Bay.

July 9-11 Farewell Gap - Mineral King. Hike and high elevation wild flowers.

President	W. Walton Wright 326 Redwood Avenue Brea 92621	714 529-4134 home 714 787-4401 UCR
Vice-President	Robert F. Thorne Rancho Santa Ana Botanic Garden	714 624-7191 home 714 626-3922 RSA
Corresponding Secretary	Kay Klier Rancho Santa Ana Claremont 91711	714 985-0885 home 714 626-3922 RSA
Recording Secretary	Connie Spenger 1318 E. Glenwood Avenue Fullerton 92631	714 879-3471 home
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Director 1977	Phil Baker Biology Dept. CSU Long Beach 90840	213 498-4917 CSU 714 893-0276 home
Director 1977	Marvin Chesebro 510 W 6th St Los Angeles 90014	213 627-4878
Director 1977	Charlotte Clarke 9709 Puffin Fountain Valley 92708	714 963-1430 home 714 871-8000 office ext. 61
Director 1977	Dick Tilforth Rancho Santa Ana Claremont 91711	714 626-3922 RSA
Director 1977-78	Chris Davidson Los Angeles Co. Museum of Natural History	213 746-0410 office ext. 233
Director 1977-78	Steve Ganley 19132 Magnolia Ave. Huntington Beach	714 962-1852 home
Director 1977-78	Bonnie Koploy Biology Dept. Glendale College	213 240-1000 office ext. 208
Director 1977-78	Gordon Marsh Museum of Systematic Biol. U.C. Irvine	714 833-6034 office

SCB records show you last paid dues on or about

So that all memberships fall due in January of each year,
your adjusted dues for 1977 are: _____

Membership categories are:

- Student or retired: \$3
- Individual or family: \$4
- Group or organization: \$5.

Name _____

Address _____

City _____ Zip Code _____

Phone () _____

- I am joining as Student or retired
 Individual or family
 Group or organization.

Dues enclosed \$ _____

In addition, I want to give \$ _____ to help support SCB.

Make check payable to: Southern California Botanists
and mail check and form to: Southern California Botanists
Rancho Santa Ana Botanic Garden
1500 North College Avenue
Claremont, California 91711.

K Klier, Corresponding Secretary
Southern California Botanists
Rancho Santa Ana Botanic Garden
1500 North College Avenue
Claremont, California 91711



CROSSOSOMA

SOUTHERN CALIFORNIA BOTANISTS
Vol. 3 No. 2

Summer, 1977

THE SHORT & THE STOUT OF IT

The vine produced by Marah macrocarpa (Big Root, Wild Cucumber) (Cucurbitaceae) is very evident in the late winter and early spring. The lobed leaves and white flowered stems that climb through any handy shrub give no evidence of what lies below ground.

The tuber, such as this one, is the storage organ that enables this plant to survive the long dry season. After the seed matures in the large spiny fruit, the vine dries up and soon disappears. It will "retire" for the dry period and hoard the moisture that it accumulated during the wet season.



The origin of the word "Marah" is aboriginal according to Munz. "Mara" is used in the Bible (Ruth 1:20. Call me not Naomi, call me Mara, for the Almighty has dealt bitterly with me.). Whether Marah means bitter or not, the tuber flesh is very bitter to the taste. The Indians knew this and did not include it on their shopping list. The fact that a compound contained in the tuber releases cyanide when eaten was probably also a deterrent.

This tuber was dug by Jeff Barnee at Rancho Santa Ana Botanic Garden, and weighs 467 pounds (excluding several basal tubers left in the ground). There is no way of telling how old it is.

-Dick Tilforth

MAY

14 NATURE CONSERVANCY SANTA MONICA MOUNTAINS RESERVE

Meet at the Feed Bin, the junction of Topanga Canyon Road and Pacific Coast Highway, Topanga Beach (west of Santa Monica), 10AM. The following turns will be RIGHT Turns. West on Coast Hwy about 6½ miles to N1, Malibu Canyon Road. North on Malibu Canyon about 6 miles to Mullholland Hwy. East on Mullholland about 3 miles to Stunt Road. Turn up Stunt Road and go about 1 mile to the gate. Park along the road. We will car pool with half the cars from here to the top. In the afternoon, depending on time, continue west on the Coast highway. We will explore the South slope of the Santa Monicas from Malibu to Pt. Mugu, with stops at Big Sycamore Canyon, La Jolla Valley and Pt. Dume. Bring lunch and personal gear. Some may want to camp on their own Saturday night at one of the state parks, and see more of the area Sunday.

27-30 NEW YORK MOUNTAINS

The Memorial Day weekend trip this year will be to the New York Mountains, eastern Mojave Desert. Those wishing to come Thursday night or Friday morning ahead of the campers and motorcycles can camp at Pachalka Spring, west of Clark Mountain (B-9 on the San Bernardino AAA map). Collecting will start at the Spring 9:30 Friday AM. Friday PM we will move to the eastern slope of the Clarks, around the old Coliseum Mine, camping in that canyon that night.

Saturday morning, meet at Nipton Rd exit off I-15 at 9:30. We will go south through Ivanpah and Vanderbilt to the Keystone Spring Canyon on the east side of the New Yorks. Camping Saturday night will be at Caruthers Canyon at the south end of the range. Sunday we will hike to the white fir grove. Camping Sunday night will be in the Kelso Sand Dunes area. Monday we will explore the dunes. Some may wish to see the Mitchell Caverns before returning home Monday afternoon.

JUNE

11 VERDUGO MOUNTAINS

Meet at 9:30 at the Max Straus Camp. We will see small oak shaded cayons with ferns and tiger lilies, and chaparral slopes. In the afternoon we will move to the Big Tujunga Wash on our way to Switzers Camp in the western San Gabriels. To reach Max Straus Camp, take I-210 to Oceanview Blvd, south to Honolulu, right on Honolulu, left on La Crescenta Ave, then right on Shirleyjean to the end. Bring lunch and personal gear. Contact Joe Keefe or Bonnie Koploy at Glendale College (213) 240-1000 ext 208 for more information.

12-16 BOTANICAL SOCIETY OF AMERICA, PACIFIC DIVISION

Meeting in San Francisco.

17-20 SIERRA SAN PEDRO SAN MARTIN, BAJA CALIFORNIA

California Native Plant Society field trip with Reid Moran and Oscar Clarke.

25-26 MORO BAY

Meet 9:30 Saturday morning near the entrance station to Moro Bay State Park. We will see salt marsh, tidal flat and sand dune habitats. Those wishing to camp any night should make reservations with the state park department. Bring bathing suit, and old shoes for wading. Should be a good spot for bird watchers.

JULY

9-11 MINERAL KING, FAREWELL GAP, AND BEYOND.

Meet at 9:30 Saturday at the Mineral King Campground. From the campground, we will hike to Farewell Gap through long meadows of grasses, sedges and wildflowers. The hike to Farewell gap is not hard, and should be quite enjoyable. Those wishing to go only this far may return to Mineral King and/or go to Sequoia Nat'l Park. Those wishing to backpack farther in, will go to the headwaters of the Little Kern River, for Saturday night camp, and on Sunday cover the high elevation flora about Peak, Bullfrog and Silver Lake. Monday we will return to Mineral King. Bring warm clothes and sleeping bags, lightweight food and camping gear. (Remember, you have to carry it all.) For more information, call Jim Shevock (Pylee Boy's Camp office, Huntington Beach) or Walt Wright (714)529-4134.

AUGUST

11-14 EASTERN SIERRA NEVADA AND LAKE TAHOE AREAS

Meet at 9:30 AM Thursday at the Visitor Information House at Bishop City Park. From here, we will go to the gorge of the Owens River, to Hot Creek and then to Mono Craters. Thursday night camping will be in the Mono Lake area.

Friday, leave at 9:30 from the junction of State 120 & 395 in Lee Vining. We will proceed along 395, stopping at various places. Just south of Topaz Lake, we will take State 89 west through Woodforde, and camp in one of the three campgrounds in the West Carson area.

Saturday, we will visit Grass Lake, a floating sphagnum bog (one of the few in the state, and the closest one to us). Droserae (sundewes) and other interesting aquatic plants you may not see other places will be here. Saturday night may be "roughed" in the Lake Tahoe area. Depending on people's interests, we will decide on the Sunday program then.

27 PALOS VERDES PENINSULA

Meet at 9:30 near the street entrance in the parking lot of Marineland, Palos Verdes Drive, for a look at what is left of the Palos Verdes Hills and tidepools.

SEPTEMBER

7-11 SOUTHERN ARIZONA FROM NOGALES TO THE CHIRICAHUA MTS.

Contact Walt Wright for further detail

WHITTIER NARROWS PLANT REESTABLISHMENT

In February 1975, some 150 acres of plowed field at Whittier narrow were transformed into a new wetland habitat. This was done as a settlement of litigation brought by environmental and sportsmen's groups working together to require mitigation for the destruction of North Lake. Dave Foster reports in LA Audobon's March 1977 issue of the Western Tanager:

"Today, all three lakes have stable water levels and excellent production of such waterfowl food plants as Sago Pondweed & Bullrush. The willows, Mulefat, Emory Baccharis and Western Sycamore established along the peripheral berms now have a full year of growth and are four to five times their size at planting. And since its creation, a total of 90 species of plants have been discovered within the New Lakes area -- only 21 of them purposely planted -- the remaining 69 species representing an interesting example of successful colonization."

Dave Foster also reports that the migration area bird list stands at 137 species, including 10 species new to the Whittier Narrows.

- Marvin Chessbro

NEW CALIFORNIA LEGISLATION

The "Cactus-napping" bill became law on April 14, 1977, and amends Penal Code Sec 384(b) which previously governed only the transportation of trees and plants for the Christmas trade. The amendment adds various desert plants and requires transportation tags issued by the owner of the land from which the plants were taken. The tags must be validated by a peace officer for the transportation over public highways of five or more of the following plants: any evergreen tree or top; toyon; any member of the Cactaceae; Agave utahensis, A. deserti, Nolina bigelovii, N. parryi, N. wolfii, Yucca baccata, Y. brevifolia, Y. schidigera, Y. whipplei, Cercidium floridum, C. microphyllum, Dalea spinoza, Olneya tesota and Fouquieria splendens or any part (excepting fruit).

Also pending in the Legislature are two bills, SB 84 (Rains) and AB 268 (Lewis), which would designate certain desert plants as protected and require government permits (at a nominal cost!) to take them. AB 268 lists certain plants which may not be taken at all except for scientific or educational purposes and also designates another initial list of plants which may be taken only with a government permit. However, there are no standards in either bill for the classification or definition of protected plants or for the issuance of permits. Legislation to protect native plants is certainly desirable, but some of our Directors believe that the pending legislation could be much improved upon. If you are interested in further details, call Marvin M. Chessbro, (213) 627-4878.

WHAT'S BLOOMING AT BLOME?

Blome Ranch, soon to be a new county park, on Windee Road off Katella (east of Villa Park) was the scene of an idyllic SCE foray into the Santa Ana Mountains by about a dozen people on March 5, to help round out a species list for Orange County's Department of Environmental management.

Standing between the coastal plain and the desert, the Santa Ana Mountains are, floristically speaking, a meeting place of these two regions.

The soon-to-be park contains pictureque groves of ancient oak and eucalyptus, sandy, dry wash, a creek and a dam (the oldest in Orange County), sage scrub, chaparral and grasslands.

On the south or west facing slopes is found Stipa coronata, a desert species, with Stipa pulchra, the purple needlegrass, soon to be named California's state grass. In the same area is found Gutierrezia (matchsticks). We were unable to find the Amorpha to confirm a tentative identification of A. fruticosa var occidentalis, the desert false indigo.

Also on the dry slopes and between the old reservoirs grows a hybrid swarm of Salvia mellifera x apiana (black and white sage).

The north facing slopes and old orchard were abloom with many cismontane wildflowers and weeds. Sisyrinchium bellum, the blue eyed grass, was memorable, as were the powder blue anthers of Gilia angelensis, the dainty pod of Thyeanocarpus, and a single specimen of tiny Turritia glabra (Brassicaceae).

At the close of the day, the discovery of a single specimen of Ceanothus verrucosus (wartsystem ceanothue) left us with a question: is this plant, typically found farther south, another example of the floristic diversity of the Santa Ana Mountains, or was it planted there by an enthusiast of an earlier decade?

- Connie Spenger

This summer we have scheduled extended trips as well as day trips to local areas. We hope that the choices are acceptable. Comments and suggestions on the activities are always appreciated. If you have ideas or questions, please let one of the board of directors know.

We get very little input from the general membership. We would really like to hear from you.

--- the board

HELP WANTED

SCB will be needing a corresponding secretary to take over Kay Klier's duties in July, when she hopes to finish her degree and return to Iowa. Skills required include rudimentary typing and filing, willingness to try to keep track of various SCB events, and an interest in SCB. You would need only a couple of hours a week, plus an evening a month for the Board of Director's meeting. If you can help, or know anyone who might be willing, please contact Kay or any other Director as soon as possible.

HELP FOUND

Patty Rogers has agreed to take over the post of SCB treasurer from Carol White, who kindly took care of our books for several months after the resignation of Jim Shevock. Patty, who is working on the systematics and reproductive biology of Viguera, is presently a student at Rancho Santa Ana Botanic Garden, and will be at UCLA next year. Thanks, Patty.

WRITERS WANTED

As you may have noticed, many of the short notes this month were contributed by many people. This makes CROSSOSOMA an easier publication to put together, and gives us a greater variety of viewpoints, interests, etc. We would like to include field trip write-ups, notices of meetings of interest to SCB'ers, bits of information -- in short, we'd like to broaden the coverage of Crossosoma. To do this, we need your help in writing, digging up interesting facts, etc. We aren't demanding English Composition Class style (we'd never get this thing out), and we'll even undertake correcting spellings. We hope to have the next issue of Crossosoma for September, so you've got plenty of time to sharpen your pencil, or dig the typewriter out of the back of your closet, or whatever... Send your contributions to the Corresponding Secretary, or to Dr. Christopher Davidson, and see your name in print.

THANK YOU

A big thanks goes to Carol White for taking care of SCB's bookkeeping for several months, while getting ready to move to Oregon and open a new shop. Next time you're in Oregon, you might want to stop in and see all the hand-crafted goods: 1439 SW Hwy 101, Lincoln City, Oregon 97367. Say hi from SCB, too.

FEDERAL ENDANGERED SPECIES LAW

For a good summary of the current status of the Endangered Species Act, see the May 1977 Horticulture (pp 37-39). Of the 1700 plants considered threatened, only 14 species have been placed on the Federal Registry for protection.

- K Klier

BOOK NOTICES

Here's a handful of the recent titles that have come to the attention of the RSABG Library. SCB does not handle these, but you may want to acquire a copy from the publishers.

Kasal, J. Trade-offs between Farm Income and Selected Environmental Indicators: A case study of soil loss, fertilizer and land use constraints. USDA Technical Bulletin 1550.

Jain, S. Vernal Pools: their ecology and conservation. Proceedings of the Symposium of the Institute of Ecology, 1976. Publication 9 of the Inst. of Ecology, U.C. Davis.

Sacamano, C & W.D. Jones. Native Trees and Shrubs for landscape use in the Desert Southwest. Univ. of Ariz. Cooperative extension service, Tucson. Bulletin A82. (A cooperative effort between an extension horticulturalist and a professor of landscape architecture. About 28 trees and 28 shrubs suitable for home landscaping. Gives pictures, cultural requirements, hardiness, and landscape value).

Smith, J.P. Introduction to the Families of Vascular Plants. Mad River Press, Eureka, Ca. \$7.25. Second edition of my favorite introductory taxonomy text. Gives treatments for all families of vascular plants native to US, including floral formulas and recognition characters. This edition has new drawings, reworked family descriptions, and a glossary. I haven't seen it yet, but I intend to get a new one to replace my much dog-eared copy.

Largent and others. How to identify Mushrooms... a series of four books that will be available in September from Mad River Press (see above). The four are: How to identify mushrooms (to genus) using only macroscopic features (\$3.50 (\$2.80)); How to identify mushrooms using only macroscopic features: genera descriptions (2.00 (1.80)); How to identify mushrooms using microscopic features (5.25 (4.20)); How to identify mushrooms using microscopic features: Keys (3.00 (2.40)). The price in the second set of parentheses is the price until 1 September. I haven't seen any of these, but it sounds to me to be the sort of thing that would be quite useful. Ask the publisher for the brochure. -- K Klier

ECOLOGY CENTER

If you are interested in up-to-the minute conservation action news, consider joining the Ecology Center of Southern California, P.O. Box 24388, LA 90024. Dues \$10; student \$5.

Meetings are the first and third Tuesday of every month at 7:30 p.m. at 2315 Westwood Blvd, West Los Angeles. They will also let you know when and where a brief note from you may be of assistance in government action. - Marvin Chesebro

PLANT SALE REPORT

As we anticipated, our third annual plant sale was an overwhelming success. As our reputation grows and interest in native and drought resistant plants increases, SCB is on its way to becoming a major source of landscaping material from San Diego to Santa Barbara. Each year, our sale gets bigger and better, and with the cooperation of Rancho Santa Ana Botanic Garden (Thank you, Dr. Lee Lenz!) and Dick Tilforth's crew, we can't miss. I, personally, am proud to be a part of such a successful endeavor, and wish to thank sincerely the following people for their assistance: Margaret Ayres, Bill Baker, Phil Baker, Colette Beaupré, Marvin Chesebro, Ruth Cooper, Eleanor Damman, Chris Davidson, Larry DeBuhr, John Echternach, Steve Eklund, Pauline Hoag, Kay Klier, Bonnie Koploy, Ann Kowalishen, June Panashi, Diane Pippin, Patty Rogers, Bev Schmidt, Guy Steenhuizen, Tim Thomas, Bob and Mae Thorne, Dick and Dorothy Tilforth, Bruce Tucker, Carol White, Walt Wright, and the garden crew. It took a lot of cooperation and effort to get over 1000 containers out at 6:30 AM, priced and arranged before the descending hordes arrived, but as always, it was worth it. I also wish to thank Steve Ganley for obtaining some lovely ornamentals, Geoff Smith for bringing some plants from Fullerton, and Jim Clarke, who managed the book sales. Tremendous effort -- tremendous day! SCB has come a long way under very capable leadership the past few years! Let's do it again next year - 1st Saturday in April!

-Charlotte Clarke

FERAL ANIMALS ON CALIFORNIA ISLANDS

The LA Times on March 16, 1977 contained an inflammatory and very one sided article concerning the Navy's removal of goats from San Clemente Island. It contained no comprehension of the damage and destruction of the flora caused by these introduced animals. The Times did publish, on March 23, some letters to the Editor, including one from H. Lee Jones, a Research Biologist at UCLA. He outlines expertly the problem of damage to the flora, stating in part: "... Goats and sheep...will eat nearly everything in sight, including cactus in periods of drought. They will even climb into shrubs and small trees to get at their foliage. Once the vegetation goes, serious erosion problems ensue. Erosion in the canyons...has been so severe that large trees have been undermined and toppled. ... The native vegetation, unable to cope with heavy and continuous grazing pressure, has been dying off at an alarming rate. Many endemics are already extinct, and others are severely threatened. ... All but two...endemic birds have recently become extinct, and one of the two remaining is now threatened by extinction. ... A beautiful endemic mallow is reduced to half a dozen plants or less because it happens to be a favorite food of the goats. ..."

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1500 N. College Avenue
Claremont, CA 91711



CROSSOSOMA

Vol. 3 No. 3

CALENDER

For information on any field trip, please contact a member of the Board of Directors, or write to SCB at Rancho Santa Ana.

27 August Palos Verdes Peninsula

Meet at 9:30 am near the street entrance in the parking lot of Marineland, Palos Verdes Drive. We will look at tide pools and what is left of the native vegetation in the Palos Verdes Hills. Bring lunch, personal gear.

31 August - 5 September Chiricahua Mountains

Trip leader: Dr. A. C. Gibson, University of Arizona.
Labor Day Weekend, 1977.

Members wishing to go on this trip are advised that they must call or write Walt Wright to let him know before Aug. 20, if they have not already done so, so that the correct number of reservations can be made at the various campgrounds and ranches. Art Gibson, trip leader, says that regular campsites will be filled in most areas by Friday morning, so if you decide to come along at the last minute, we cannot guarantee a place for you. Tucson will be hot, but the mountains will be cool (perhaps), especially if there is rain. You might bring your galoshes. If the rain fails to come, the forest may be closed due to fire danger. After you leave Willcox, the next gas is apparently at Sunizona, near the Coronado Ranch, and Portal, on the eastern side of the Chiricahuas. Arrangements can be made to have meals at El Coronado Ranch, but they must be made in advance; so again let Walt know before August 20th. Distances: Tucson-Benson, 49; Benson-Willcox, 37; Willcox-El Coronado Ranch, ca. 35; El Coronado-Portal, ca. 40; Portal-Guadalupe Ranch, ca. 40-50; Douglas-O'Donnell Canyon, ca. 100; O'Donnell Canyon-Sycamore Canyon, ca. 50. Mileages all approximate, as is the map.

Wednesday evening, Aug. 31. Lodge and dine in Tucson.

(This day on your own).

Suggested lodging: Inexpensive or luxury motels on Miracle mile, Tucson's north side right off I-10; available are rooms for 2 for \$10 or less with pool and air conditioning. KOA just north of the city off I-10 (look for sign).

Suggested dining: Miracle Mile is a major restaurant district with many fine restaurants. For Mexican food try La Fuente with mariachi music or Club 21; in South Tucson (Mexican-American district) at 29th St. and 4th Ave. try La Minuta or El Dorado.

Tentative schedule. Thursday meeting will not change.

Thursday, Sept. 1. Travel from Tucson to Willcox to Coronado National Forest (Chiricahua Mountains), Cochise County. **MEET 8:30 am in Food Giant parking lot, Camino Seco & Broadway, Tucson.**

Suggested lodging: Regular campsites in the Chiricahuas will be filled by Friday morning on Labor Day weekend. I recommend that we make arrangements to stay two nights at El Coronado Research Ranch in the Chiricahuas (University of Arizona affiliate) near Turkey Creek.

Rates: sleeping bag space	\$2.00/night
full lodging	\$5.00/night
meals (opt.)	\$2.75/meal
	(substantial portions)
kitchen rental	\$14.00/day

Suggested botanizing:

See Sonoran desertscrub and desert grassland on drive to Willcox along I-10.

Willcox Playa, including monoculture of Suaeda torreyana; ephemeral pools may be teaming with aquatic phases of desert animals.

Prairie grasslands between Willcox and Chiricahua Mountains, which should have an interesting flora in flower.

Transition Life Zone communities around El Coronado Ranch and Turkey Creek campground, including a plentiful herbaceous flora and interesting woody vegetation of oak and low-elevation pine communities in the region; possibly cienegas; some interesting meadows.

 Editors and Copy Staff

Chris Davidson

Pat Metcalf

Walt Wright

Kay Klier

Friday, Sept. 2. Botanizing in the Chiricahua Mountains.

Suggested lodging: As before; arrangements can be made to stay on the east side of the Chiricahuas at the Southwest Research Station, Portal with proper notification. Could include meals. Small herbarium here.

Suggested botanizing:

5-mile, downhill hike in Chiricahua National Monument (no collecting allowed) to see localities of Apacheria; pleasant walk with interesting vegetation profile. See Arbutus arizonica, Fendlera, Philadelphus, etc. Interesting rock formations. Along main road through Coronado National Forest to Portal and woodland nearby (Conopholis). Rustler Park with high, wet meadow and adjacent woodland with many interesting natives. Birding good to very good; batting very good.

Saturday, Sept. 3. Botanizing in southeastern Arizona and Guadalupe Canyon Ranch (some may wish to stay in the Chiricahuas another night).

Suggested lodging: Tucson motels.

Suggested botanizing:

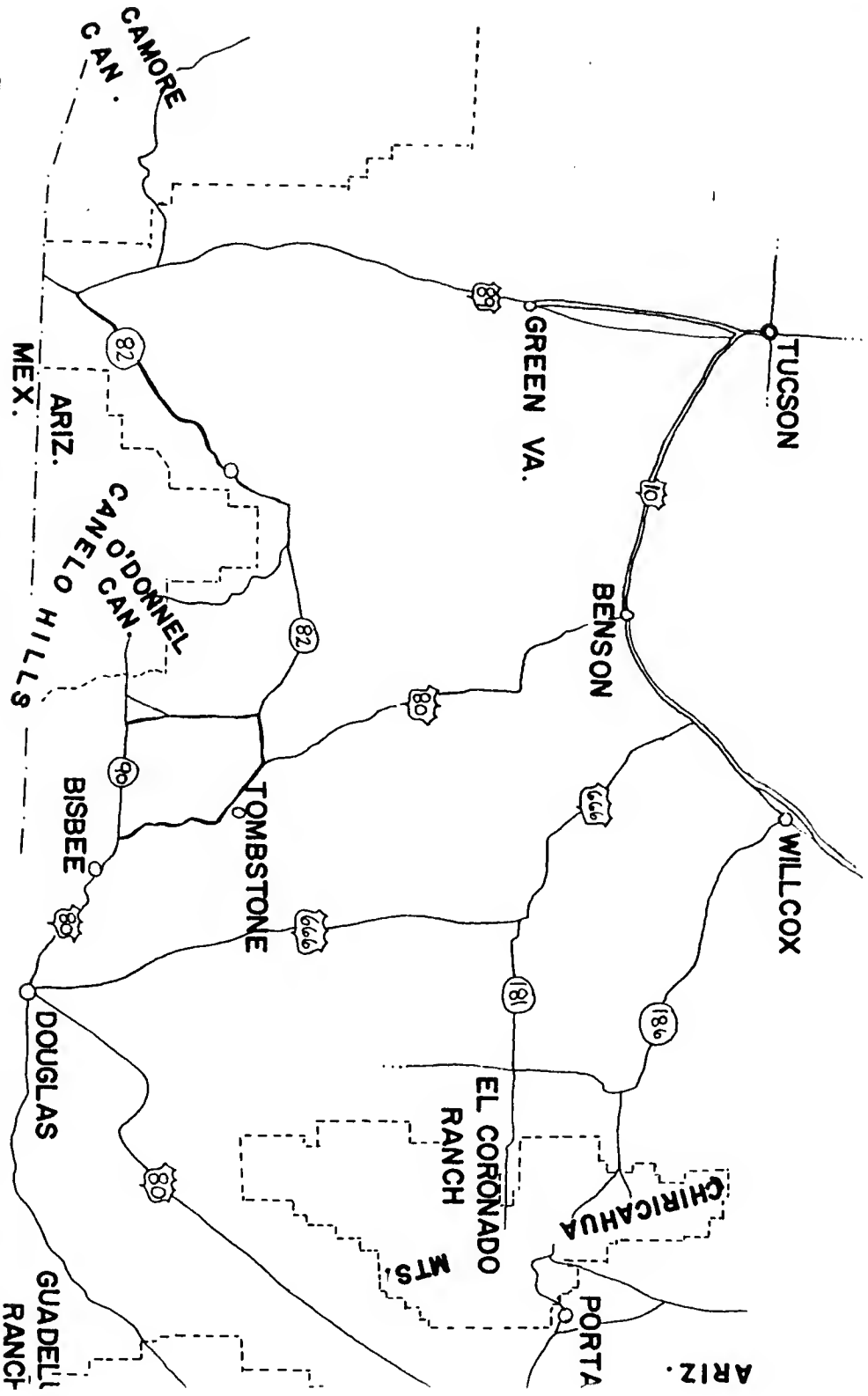
Desert grassland and desertscrub vegetation from the Chiricahuas to Tombstone.
Chihuahuan Desert elements (Mortonia, Parthenium, Flourensia) in Arizona near Tombstone.
Side trip to Patagonia and Sonoita Creek (Cocculus, Rivina, maybe Plumbago), a bird sanctuary and aquatic habitat.
Search for Amoreuxia in Santa Cruz County.
Optional side trip to Sycamore Canyon near Nogales to see only known plant of Psilotum in Arizona; also Tillandsia, Equisetum, etc.

Suggested sidetrips:

Tumacacori Mission off Nogales Highway.
Tubac, artist colony.

Suggested dining:

Pinnacle Peak Steakhouse in Trail Dust Town on northeast side of Tucson; inexpensive, good steaks with western beans and bread served by cowgirl; no ties.



Sunday, Sept. 4. To O'Donnel Canyon and Carmelo Hills.

Monday, Sept. 5. To Sycamore Canyon. Then return to Tucson or Los Angeles.

Suggested lodging: As before.

Suggested botanizing:

Road up and over the Santa Catalina Mountains, used by Whittaker (Cornell) for studies on community zonation; many interesting native plants, including Vauquelinia, Anisacanthus, Gossypium, Dasyilirion, Nolina, Morus, Philadelphus and Selaginella at one locality.

Arizona-Sonora Desert Museum.

Organpipe National Monument (a very long trip; return to Tucson not advised).

15 September SCB Board Meeting

The September board meeting will be in the main classroom of the Rancho Santa Ana at 7:30 p.m. All SCB members are welcome.

17 September Palm Springs Tramway & San Jacinto Peak

Take I-10 east to state 111 (Palm Springs exit). Go to tramway road, which goes west about 4 miles to a parking lot. Meet at the Valley Station (2634 feet) in Chino Canyon at 9:30 am. The 2½ mile ride up will take us to the Mountain station at the eastern edge of Long Valley. We will hike about 3 miles to San Jacinto Peak. (Mt. Station 8516 ft, Peak 10786 ft.) You can hike as far as you want and return.

NO pets on tramway. No fees or restrictions on gear. Since the area is part of the Mt. San Jacinto Wilderness State Park, plant presses should be left in the car.

There are restaurant and snack bar facilities at both tramway stations, but you should bring food and water for the trail. Round trip tram cost is \$4.00, but there is a group discount if enough people come.

1 October Annual Potluck Dinner

Olney Dining Hall, Pomona College, Claremont. To reach the dining hall, take the Indian Hill exit north from the San Bernardino Freeway (I-10). Turn east on Bonita (actually 3rd Street: it's between 2nd & 4th), and go four blocks east past Wig Hall. At Harwood Court, park in the street, or turn right into the parking lot. Olney is south of (behind) Harwood

The guest speaker has not been announced, but there will be a good slide show. As usual, SCB books and notecards will be available.

It is suggested that if your name starts with the following letters you bring: A-F Dessert
G-M Side Dish (Vegetables, Salad..!.)
N-Z Main Dish.

Bring your own table service. SCB will provide bread, butter & beverages.

Please come! It's a good chance to meet some of the SCB members you haven't met on field trips, or at lectures.

Share your favorite slides with us! Bring them early and set them up on viewing trays, so we can see them before dinner. We'll have a few viewing trays there, but please bring yours if you have one.

8-9 October Clark Mountains, Eastern Mojave Desert

Meet at 9am Saturday near old corral on south side of road into Greens Well (Auto Club of S. CA map- San Bernardino Co.-9-B). Exit I-15 at Cima-Excelsior Mine Road, 7.2 mi. east of Halloran Summit (about 15.2 mi east of Halloran Springs). Go north on Excelsior Mine Road about 8.6 mi to a powerline road (shown on the map as having a locked gate. It hasn't seen a lock in years.) Turn right on the powerline road and go east about 6 mi to a road south to Greens Well. Go about 4 miles or so towards Greens Well.

Some of us will be camping in the area Friday night. If others want to get an earlier start, come along. Saturday we will collect in the Clarks; camping Saturday night along the Greens Well Road. Sunday we will probably go south and see what is in the MidHills and Providence Mountains.

15-16 October Edmund Jaeger Palaver

Cima Dome-Kelso Sand Dune Region of Mojave Desert. For information, contact Jaeger.

20-23 October National Association of Biology Teachers Convention

Anaheim Convention Center. The theme this year is Bioethics: From Genes To Biomes.

Highlights include: Thursday 5 & 6 p.m. J.R. Haller: California Flora: A Multimedia Presentation. Friday 8:30 am. George Wald: Ethics of Genetic Engineering. 10:15 am. Kirsten Berry: Biology of our Endangered Desert. Saturday 10:15 am. Wes Jackson: New Environmental Ethics. 3:45 p.m. F.H. Borman: Nutrient Loss and Disturbed Ecosystems. Sunday 8:30 am. Daniel Aldrich: Feeding a Hungry World.

For a complete program, write to NABT, 11250 Roger Bacon Dr., Reston, Va. 22090.

20 October Mycology Lecture

Dr. Gaston Guzman, of the Escuela Nacional de Ciencias Biologicas, Mexico, will give a lecture (title to be announced) at the Delacour Auditorium of the L.A. County Natural History Museum. The lecture is jointly sponsored by USC and the LA Mycological Society. To reach the museum, exit from the Harbor Freeway (St. 11) west on Exposition Blvd. Turn left on Menlo (about 4 stoplights), and then left into visitor parking lot. Auditorium is on the south end of the museum. Lecture is at 8 p.m.

5 November Natural History and Ecology of the Sierra Nevada

This year's symposium will be held, as usual, in the Theatre Arts Auditorium of Fullerton College (not U.C. Fullerton).

Registration begins at 8 a.m., and the program at 8:30. The SCB symposia are not just for professional botanists-- they are designed for the general membership and the public. We try to present speakers who can give their information in an interesting and understandable way. Most of the 400 attending last year's program were not members. We, the Board, would like to see more SCB members there, and urge you to mark your calendar. Posters with more detailed information will be mailed later.

11-12 November (tentative) Society of Range Management

Fall Meeting, Lake Tahoe: "Resource Management: Achieving Results". Invited speakers will represent ranching, agency and university interests. Write to Walt Wright for information.

24-27 November Kofa Mountains, Arizona

This year's SCB Thanksgiving Field Trip will be to Kofa Mts., Arizona, and the Lower Colorado River and Picacho State Recreation Area, California.

Meet at 9 am Thanksgiving day along US 95 just south of I-10. (Take I-10 through Blyth (about 3½ hrs driving time from Riverside across the Colorado River and go about 20 miles to the Quartzite-95 exit).

We will drive south along 95 about 24 miles to a gravel road heading east to Palm Canyon, Kofu Mountains. This area has the only stand of Washingtonia filifera in Arizona. Camping Thursday night will be in this area or along the dirt road into Kofu Mine farther south along 95.

Friday we will drive, with stops, south towards Yuma, but turn west to cross the Colorado at Imperial Dam, then following the All American Canal to Picacho Road, which winds some 18 miles north to the State Recreation Area along the Colorado River. This should be a good time and area for observing waterfowl. Weather and river should be great. Bring food, water and camping gear. Fill your cars in the Blythe and Yuma-Bard area.

10 December CSUF Biology Symposium - Biogeography of Baja

Areas of talks will include geographic history, plant geography, zoogeography and marine geography. Contact Biology Dept., Cal State University, Fullerton, for details. 1

NEW BOARD MEMBER

Jeanine Derby, of the US Forest Service, was approved to fill in the remainder of Phil Baker's term at the last board meeting. Phil will be on sabbatical from Cal State Long Beach.

BOARD OF DIRECTORS NOMINATIONS

Nominations for the 1978 SCB board are now being accepted. President, Vice President, Corresponding Secretary, Recording Secretary, Treasurer and several directorships are open for nominations. Nominations should be received by 1 November in order to meet our printing deadlines. Any SCB member is eligible for directorship or to be an officer.

Also, any bylaws changes you wish to have on the ballot must be received by then. (Contact K Klier for copies of the constitution, if you wish.) Please mail nominations to the SCB c/o Rancho Santa Ana, marked for the NOMINATIONS COMMITTEE.

HELP WANTED

SCB is still in need of a corresponding secretary. Duties include typing official letters, and answering member's questions (or at least directing them to the right person, hopefully).

We also need a membership chairman-- someone who can keep our membership files updated for mailing Crossosoma, etc.

Please, we really need help. We cannot continue to run SCB as we have, or several board members will drop in their tracks from exhaustion. Please contact any member of the board, or drop a line to the RSA address if you can help.

FORMER OFFICERS AND DIRECTORS, IDENTIFY YOURSELVES

The board of directors would like to have information on those who have served as officers and directors of SCB prior to the mid 1960's, and our own records are very spotty. If you have been, or know of anyone who has served in the past, please give us names and dates for the record. Information on past presidents is particularly wanted.

CONCERNING MESA DE BURRO (SANTA ROSA PLATEAU) AND AN
AIRPORT PROPOSED THEREON

On May 25, 1977 President Walt Wright, Board Member Marvin Chesebro, and the editor of this newsletter attended the hearings in Murietta concerning the proposed development of an airport in the vernal pool area on Mesa de Burro. We were interested to see that masses of local people from the three communities most likely to be affected by this project were present at the hearing and nearly all were opposed and even vociferously opposed to an airport. Sadly, all the people who spoke out, saying that this was the very kind of nonsense they moved to Murietta or Murietta Hot Springs or Temecula to avoid, will have little effect on the decision-making process. In fact, it was only after a suit was brought to reopen the matter and bring it to public attention that anything was heard from the people who lived in the area.

Walt Wright presented a short account of the botany of the mesa, which was read into the records of the proceedings. Because so many people came to testify, the hearing was continued late into the evening, but the three of us decided to go up onto the mesa to see the area in question. Though this was not the best time of year to see it, it was scarcely the worst, and we were able to find 31 species, including the vernal pool endemics Orcuttia californica, Downingia cuspidata, and Eryngium aristulatum variety parishii. The limited time we had there did not allow for a more complete survey, but one has been done by Board Member Robert Throne and Earl Lathrop of Loma Linda University (Aliso 8(4): 433-445).

Our brief visit contrasted with the one-day survey done for the botanical section of the environmental impact report prepared for the airport developers. This survey was done in the fall when almost none of the interesting natives were in bloom, and as a result it included only a few of the more abundant weeds and some of the natives listed in the literature as being in this area. We considered this a rather disappointing methodology which could too easily lead to the equivocal conclusion that the mesa had no flora worth saving. To quote a letter sent by Marvin Chesebro to the Hearing Officer: "The vernal pools are a source of great botanical interest; they are unique and a resource that should be protected and preserved."

We also noticed on our brief visit a number of "duck blinds" constructed of rocks around the edges of the pools,

indicating this was an important hunting area for the California Indians. The environmental impact report did not mention this feature.

In the above-mentioned letter Marvin recommended that the owner of the mesa "be required to dedicate an area around and including the pools, and their drainage area... and should be prohibited from any development that changes the natural flow of water into and out of the pools."

We are concerned that the voices of so many citizens of the Santa Rosa Plateau and Mesa de Burro area have been ignored, and we hope that by pointing out the unique features of the vernal pool areas and the presence of at least 3 species on the California Rare and Endangered Plant List (Brodiaea orcuttii, B. filifolia, and Orcuttia californica), we can add our weight to the arguments opposed to the airport.

THE DISTRIBUTION OF ORCUTTIA CALIFORNICA (POACEAE) IN THE VERNAL POOLS OF THE SANTA ROSA PLATEAU, RIVERSIDE COUNTY, CALIFORNIA

By Cluney M. Stagg

Ecological studies were conducted on the rare annual grass Orcuttia californica Vasey, an endemic to California, from April to September, 1976, in 11 vernal pools located on the Santa Rosa Plateau in Riverside County. To help determine why Orcutt grass occurs in only 6 of the 11 pools and more specifically why it only occurs in patches within a given pool, biweekly measurements of frequency, density and phenology were taken within each of a total of 28 circular plots (r=10 meters) in 5 pools. This data was related to concurrent biweekly measurements of soil moisture, soil texture and microrelief of each plot, area and order of desiccation of each pool. Frequency and density show no correlation to soil moisture, soil texture, and area. There is, however, a positive correlation between occurrence of the study species, the order in which the pools become desiccated, and average depth of plot. This is probably related to the germination requirement of the seeds having to be submerged for a minimum amount of time. Also, under different soil moisture conditions there seem to be differences in the time sequences of the phenological events.

Above is presented an abstract of the study by Cluney Stagg, who received the Southern California Botanists' \$50.00 first prize for the best student paper presented at the meeting of the Southern California Academy of Sciences at Cal Poly Pomona, May 6-7, 1977. We congratulate Cluney Stagg for excellent work.



Orcuttia californica Vasey var. *californica*. A. Plant (x 1); B. Inflorescence (x 2½); C. Floret (x5). (W. Wright 76 05 12). Drawings by Robin Kobaly, Riverside Municipal Museum Botanist.

Orcuttia californica var. *californica*, one of the rarest grasses in California, is a tufted annual 10-15 cm. tall, with viscid, rather pilose leaves. The pale green blades are 2-4 cm. long, and flat. Inflorescence is a spike-like raceme with spikelets separated below and dense above.

This variety blooms in May and June on cracked, drying mud flats and the "dry marsh bed" zone of vernal pools. Abrams reports the type was collected by Orcutt from San Quentin Bay, Baja, California. It is found on the Mesa de Burro, and the Mesa de Colorado; and has been reported from the following areas: Murietta, Murietta Hot Springs and Menifee Valley, (western Riverside Co.); near the old airport, south Western Avenue, Los Angeles; and Northern Baja. I have not seen reports of it from San Diego County vernal pools on the Mira Mesa or Otay Mesa. It has been collected by Reid Moran from a pond termed E4½ by the Border Patrol. The vernal pools on the Tijuana Mesa have been virtually eliminated, so it probably no longer exists in the area.

Orcutt Grass was named for C.R. Orcutt, 1864-1929, a naturalist from San Diego. Edmund Jaeger reports that Orcutt did a lot of valuable botanical work in the southern Colorado desert, especially in the canyons of its southwestern border. For ten years (1884-1893), he edited and printed the *West American Scientist*. At that time, this publication was the only one in western America for natural history notes and short articles. One of the later numbers was printed on wallpaper, and advertised everything from sea shells and mineral specimens to a resort hotel which Orcutt was promoting.

-- Walt Wright

BOOK NOTICES

Extinction Is Forever. The Status of Threatened and Endangered Plants of the Americas. Ghilleen T. Prance and Thomas S. Elias (eds.), vi + 437 pages. Colored cover photo and numerous black and white illustrations and maps. New York Botanical Garden, Bronx 10458. 1977. \$20.00.

This very handsome volume is the result of the proceedings of the New York Botanical Garden Bicentennial Symposium "Threatened and Endangered Species of Plants in the Americas and Their Significance in Ecosystems Today and in the Future". The unusually large amount of work summarized in this volume should be a source of some optimism, even if guarded, to those who are aware of the swift degradation various New World tropical habitats have undergone. Our South American colleagues are acutely aware of the problem, and over a third of the contributions to the book are by Central or South American-based botanists. The traditional academic lethargy in many Central and South American universities has rapidly been replaced by teams of knowledgeable and well-trained biologists. The well-known plant-collecting permits and regulations in Peru, Mexico, Costa Rica, and recently even in Bolivia, are an indication of concern even at a governmental level. Most of the contributors express some optimism, perhaps less so in relation to Central America, but all would agree that strong conservation steps must be taken now.

Ironically, conservation efforts in North America are frequently not on much better footing than in South America as a result of mining, timber, and recreational interests. The status of such efforts is taken up on a regional basis, as with the South and Central American countries. Section 4 deals with plant groups especially susceptible to endangerment, for instance orchids and carnivorous plants; section 5 contains papers on special topics such as the use of computers in conservation of endangered species, the balance between conservation and utilization, and so on. The four appendices feature a selected bibliography on endangered plant species, the text of the Pan American Union Treaty of October 12, 1940 on nature protection and wildlife protection, the articles of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, and the text of the Endangered Species Act of 1973.

As far as I am aware, this is the first volume to bring together the conservation efforts of so many different areas, and this in addition to its very attractive appearance should, as stated in Howard Irwin's preface, "...engage spokesmen from outside the mold of systematics to advance the cause, lest we be looked upon as so many nervous academics wringing our hands over the loss of our livelihood." I highly recommend this work to all those interested in the endangered species problem, as it is a genuine bargain at the price, even with a paper cover.

SCB is happy to offer you an expanded list of books available this year. Discounts of 10% to 15% are available on most titles. To save mailing charges, you may pick them up from a Board member, on field trips, or at my home. Write: Charlotte Clarke, 9709 Puffin, Fountain Valley, CA 92708.

- Abrams, Illustr. Flora of Pacific States, 4 Vol. \$100.
 Abbott/Hollenberg, Marine Algae of Calif. \$22.50
 Axelrod, History Conif. Forests Calif./Nev. \$5.00
 Bailey, Climate of So. Calif. (seconds) .50
 Bakker, An Island Called Calif. \$3.95
 Balls, Early Uses Calif. Plants \$2.95
 Barbour et al, Coastal Ecology-Bodega \$10.95
 Belden Baja Calif. Overland \$1.95
 Benson, Cacti of Arizona \$7.95
 Benson, Native Cacti of Calif. \$7.95
 Biachini/Corbetta, Health Plants of the World \$16.95
 Booth, Mammals of So. Calif. \$1.75
 Bostic, A Natural History Guide to Pacif. Coast of No. Central
 Baja Calif. & Adjacent Islands \$7.95
 Bridwell, Hydroponic Gardening \$3.95
 Broughton, Calif. Plants to Color \$1.25
 Christensen, Common Fleshy Fungi \$7.95
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 Arid Flatlands
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 Collins, Key to Trees/Shrubs of Deserts So. Cal. \$4.95
 Coyle/Roberts, Field Guide to Common/Interesting Plants
 of Baja Calif. \$8.50
 Croker, Santa Ana Mtns. Trail Guide \$3.94
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 Downs, Fossil Vertebrates of So. Calif. \$1.75
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 Peterson, Native Trees of So. Calif. \$2.95
 Philbrick, Plants of Santa Barb. Island \$2.00
 Powell, CNPS Inventory of Rare/Endang. Pl. Calif. \$6.00 n/d[†]
 Proceedings of Sympos. on Biol. Calif. Islands \$12.50
 Raven, Native Shrubs of So. Calif. \$2.65 (Oct.)
 Ricketts/Hedgpeth, Between Pacific Tides \$9.50
 Robbins, Weeds of Calif. \$9.95
 Robinson, Camping/Climbing in Baja \$2.95
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 Smith/Carlton, Light's Manual \$20.00
 Storer/Usinger, Sierra Nev. Natural History \$6.95
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 Watts, Desert Tree Finder \$1.00
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 Young, Wildflowers of the Redwood Empire \$3.95

* n/d - no discount

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EDITOR'S NOTE

About the time I began my graduate school work, the terms "ecology," "environment," and "conservation" were resurrected from the realm of biology textbooks and biological journals and given a bright new future as catchwords and battle cries for the "ecological revolution." I remember having certain misgivings about the appropriation of words whose meanings were complicated and were still undergoing a process of definition--one must undertake considerable study before understanding what ecology encompasses. My concern increased when "ecology" was employed as hype and sales pitch for everything from shampoo to dogfood. Was interest in environmental problems going to die from overexposure, from cynicism, or from plain boredom of the audience?

Apparently not. After ten or more years of massive exposure, the basic respectability of these words has been preserved. And the victories of various conservation groups have been astonishing: giant construction developments and power projects have been blocked because of rare and endangered wildlife. In such victories, however, lies a subtle danger. If the victories seem too out of proportion to the more-publicized threats of famine, energy depletion, and over-population, the people we are trying to encourage to develop a more sensitive outlook toward our deserts, national forests and other natural areas will soon begin to wonder if their lives are coming under the control of some ministry of rare plants.

Early this spring I talked with Mr. Maurice Laham, head of environmental planning for Los Angeles International Airport, familiarly known as LAX. At issue were the El Segundo Dunes and a small moth inhabitant, the El Segundo Blue, whose cause was being represented by Julian Donahue, Associate Curator of Entomology at the L.A. County Museum of Natural History. The airport management's idea was to convert the Dunes into a golf course and a series of tennis courts for the public. The conservationist view was to preserve the Dunes as the last habitat of the El Segundo Blue, whose larvae feed on the leaves of Eriogonum parvifolium. Mr. Laham pointedly observed that the cause of the moth seemed out of proportion to the drought in Northern California and even the imminent extinction of Bengal tigers, and this is of course a serious objection, one that must be answered with a clear, well-reasoned argument, not with specious remarks about the interrelated "web of life" or biological rationalizations about the gene pool.

In this case we could point out to begin with that the coastal dunes as a habitat type have been reduced almost to nonexistence by urban expansion, that golf courses appeared to be inconsistent with the drought, and that the wisdom of placing a golf course 100 yards from the end of a jet runway was questionable at best.

Another recent cause celebrated in the national news media was Pedicularis furbishii, a potent obstacle to the construction of a huge hydroelectric project in the North-east. Is the survival of this plant more important than the need for power and jobs? Apparently the readers of Time Magazine thought so in contributing rejoinders to "letters to the editor" suggesting they knew exactly what to do about Furbish's lousewort: they would sneak out to the site some midnight and pull all the damn things up. The lesson here is that the greater the victory is, the more ridiculous the cause may appear to be to the public, whose "public interest" is represented by the courts. The question will arise, "Why cause so much trouble for a rare plant, moth, or fish?" When jobs are at stake, we need a very influential answer.

On the other hand, when we are dealing with big problems like preservation of the coast redwoods, much of the difficult work has already been done. The coast redwood has such widespread appeal among the population and such a long history of publicity that the nagging protests of the loggers in Northern California appear completely out of proportion to the significance of the forests themselves.

We can preserve the respectability of the conservationist's lexicon by carefully selecting the cases we choose to defend and then by defending the entire habitat instead of a single endangered species. The cases of extinction and near-extinction that are most familiar to us involve, not uncommon animals, but some of the animals that were at one time among the most abundant on the continent. Recall the early descriptions of the thousands of acres of buffaloes, black clouds of passenger pigeons, and swarms of Carolina parakeets. A species does not have to be rare to be endangered, just subject to violent alteration of its natural range or breeding ground.

We of the conservationist viewpoint enjoy the beaches, deserts, and mountains as much as, if not more than, the surfers, dune buggy riders and snow skiers; but our form of recreation is more passive. The dune buggy crowd makes a great deal of noise even though there are hardly any

members in this group, comparatively speaking. In order for us to have sufficient influence, we need to build up a large membership with collective firsthand experience with some of California's environmental problems as well as with areas that are not currently threatened with some form of degradation.

To this end Southern California Botanists encourages all members to participate in a few of the scheduled field trips each year and to visit other areas not on our schedule. We would appreciate reports from members of areas likely to make good trips in following years, and we would like to have accounts of these trips for inclusion in Crossosoma.

-- Chris Davidson

Those who want to be on the mailing list of the BLM for information about their desert plan program can write to the following address:

U.S. Department of the Interior
Bureau of Land Management
California Desert Plan Program
1695 Spruce Street
Riverside, CA 92507

Checklist of the Flora of Sequoia and Kings Canyon National Parks. J. A. Rockwell and F. K. Stocking. Sequoia Natural History Assoc., Three Rivers, Ca. 93271. 1969. Free.

This guide can be ordered or can be picked up at Ash Meadows Office, the south entrance station.

Ever widening circle of awareness department. In the L.A. Times of 9 May 1977, it was reported that a small snake had slithered out onto the racetrack during practice for the Indy 500. The snake was summarily scooped and returned to the grass outside the outer wall. The chief steward's comment: "That ought to please the conservationists." Of course, we're always of the opinion there are never enough snakes in the grass.

By Cathy Rose

A group led by Walt Wright spent Saturday and Sunday of the Memorial Day weekend exploring two areas in the New York Mountains of the eastern Mojave Desert. On Monday the group proceeded to the Kelso Dunes.

Saturday's meeting place was the junction of I-15 and Nipton Road, from which snow-capped Charleston Peak was visible to the north, Ivanpah Dry Lake to the east, and the Clark Mountains to the west. The ten-car caravan traveled south on Ivanpah Road, turning toward Cima on Brant Road. Most of the day was spent exploring Cliff Wash and Cliff Canyon near the railroad stop of Brant. The wash was dominated by Ambrosia eriocentra. Outside the mouth of the canyon both Yucca schidigera and Y. baccata were seen. In the canyon itself there were several kinds of cactus, fine stands of Fallugia paradoxa, Apache plume, and an interesting member of the Euphorbia family, Tragia ramosa, a moderately offensive stinging herb, whose range in California is restricted to the eastern Mojave Desert.

A small group accompanying Dr. Robert Thorne joined the main Southern California Botanists contingent on Saturday afternoon at a campsite in Caruthers Canyon, the south-east side of the New York Mountains. They had been botanizing in the Clark Mountains on the two days prior to this and in the morning had been to Keystone Springs on the northwest face of the New Yorks, a little less than a mile cross country from Caruthers Canyon, but about an hour's drive by dusty road.

For Sunday's expedition Bob Thorne suggested a hike up Caruthers Canyon, over a ridge to a small group of white firs (Abies concolor), representing the Rocky Mountain strain, not the Sierra Nevada strain. Accompanied by him for part of the way, the hikers found individuals of Frasera albomarginata (Green Gentian), a handsome member of the gentian family, growing in sandy places; a small population of Penstemon thomsoniae, forming tiny, grayish mats on the limestone soil and found in California only in the eastern Mojave; and three shrubs that had not previously been seen by several members: Cowania mexicana (Cliff Rose), Forestiera neomexicana (Desert Olive), and Forsellesia nevadensis (Spiny-stemmed Tongue Flower according to Jaeger). Bob says Forsellesia belongs in the family Crossosomataceae and not in the Celastraceae,

where it had been incorrectly placed ever since Asa Gray first described it as Glossopetalon.

Bob, who had been to the fir trees before, botanized in the canyon while Walt Wright's group boulder-hopped and scrambled laboriously and by sundry routes toward the top. So tricky was it to find the exact location of the firs that some people missed them entirely, resulting in great hardship and suffering (= lack of food and water). The "for est," consisting of about 20 trees, was in a gorge on the far side of the ridge looking down on Brant and the canyon visited the day before. The plants of the high ridges and in the area of the firs included Fraxinus anomala, Holodiscus microphyllus, Ribes velutinum, Heuchera rubescens, Sedum niveum, Cystopteris fragilis (Brittle Fern), and Arenaria congesta, with the habit of an alpine cushion plant. The return trip was through areas of limestone soil in which Cercocarpus intricatus and Petrophytum caespitosum (Rock Spiraea) were seen.

After a second night in Caruthers Canyon, the Botanists' group traveled on to the Kelso Dunes, through the railroad town of Kelso, with its sumptuous, elm-shaded train station, built in 1921. Having selected a group of far-off green dots on the slopes of the dunes as a destination, the members set out on yet another adventure. On the more stable parts of the dunes, the usual plants common in sandy areas were abundant: Hilaria rigida, Dicoreia canescens, Oenothera deltoides, Palafoxia linearis, and Petalonyx thurberi. On the shifting sands only the one grass species Panicum urvilleanum persisted. Like weary prospectors in search of imaginary oases, the botanists trudged on toward still more dark spots on the white and sandy, sun-beaten landscape, and in this case discovered six desert willows (Chilopsis linearis) and six welcome patches of life-giving shade. The Kelso Dunes can be mightily hot this time of year.

One does not usually associate the desert with trees, but those who clawed their way to the rocky summit of the New York Mountains or tramped across the Kelso Dunes will surely remember the Memorial Day Weekend trip for its white firs and desert willows.

Congratulations to the holder of license plate "ECONUT." We saw you on the Pasadena freeway the other day, but you were going in the opposite direction so we couldn't offer you a free subscription to Crossosoma.



MEMORIAL DAY FIELD TRIP Balancing Rock Camp, Caruthers Canyon, New York
 Mountains; Penstemon palmeri, Clark Mountains. -- C. Davidson.

SOUTHERN CALIFORNIA BOTANISTS
Rancho Santa Ana Botanic Garden
1500 N College Avenue
Claremont, CA 91711



CROSSOSOMA

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& SYMPOSIUM PROGRAM

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VIEW OF MOUNT SHASTA, THIRTY THREE MILES DISTANT

Crossosoma is the official journal of Southern California Botanists. Among the purposes of the journal are education and the promotion of awareness of contemporary issues in conservation, that is, Crossosoma reflects the purposes of the organization it represents. Southern California Botanists conducts an active program of field trips, as many as three or four per month during the peak season from April to August, sponsors an annual symposium, a lecture series, and a potluck dinner; also a discount is available to all members who order books from the SCB Booklist. We have grown from a tiny group to an organization of over 600 members, and as we continue to grow we will continue to expand and improve our program and our journal.

& SYMPOSIUM PROGRAM

NATURAL HISTORY AND ECOLOGY OF THE SIERRA NEVADA

There are a number of reasons for staging a symposium on the natural history and ecology of the Sierra Nevada. One of the first to come to mind might be to bring together information related to the conservation of the biota of the mountains and the preservation of the Sierran habitat for future generations as well as our own to enjoy. Yet we are really years late if our intention is to climb aboard a bandwagon--we have only to remember the Sierra Club is the namesake of the Sierra Nevada, where the first important skirmishes were won by American conservationists many years ago. As long as the exploitative sectors of the business world continue to insist that they must continually expand or face stagnation, conservationists must continue to apply counterpressure, even though it is easy to see that the expansion-exploitation offensive is both right and proper to some extent; we cannot expect the lumber and mining industries to exist solely on recycled beer cans and newspapers. However, insisting that substantial areas of the country, in the Sierra Nevada, for instance, be set aside as wilderness is far from irrational. The popularity of three of the largest national parks in the country, Yosemite, Sequoia, and Kings Canyon, testifies to this and to the need for still more wilderness. Congress responded to this need by passing in 1964 the Wilderness Act, designating, among other things, 939,000 acres of Sierra Nevada national forest as Wilderness--Wilderness which might be defined as the natural state of things.

The biologist, and in our case the botanist, understands the natural state of things. This is the condition he must study first, as a sort of control, for he knows that the natural state changes, sometimes naturally, sometimes unnaturally and catastrophically. Another reason for a symposium, then, is to learn about the past and present state of the Sierra Nevada so that we might judge the consequences of some proposed course of action, not just the consequences of exploitation, either, but also of conservation and recreational use. If research on the natural state of things is to have any significance, it must be done according to acceptable scientific procedures. Repeatability is a fundamental requirement of all scientific work and a requirement that adds to biological work a dimension and depth perhaps not seen in the other physical sciences. We do not pursue the origin of the universe or the nature of matter; but it somehow seems important to us to examine the course of life on earth. Of course repeatability and the course of life become moot points after all the conifer forests have become tree farms, the tropics have become banana and tree plantations, and the deserts

have all become hydroponic farms.

The amount of biological information in the Sierra Nevada is infinite, and it is safe to say that the most interesting and significant ideas to be developed still lie ahead of us. Each new age brings techniques and innovations that appear to put us conceptual millennia ahead of our predecessors--men like John Muir and William Brewer. In turn each presentation at this symposium will become a cornerstone for some future work. Though it is not the intention of this introduction to suggest that all scientific work have a utilitarian motivation, clearly application of experimental work such as the kind presented here is important if biological studies are to be continued.

With this in mind, Southern California Botanists is proud to present the fourth Annual Symposium, which brings together seven of the best people in the country in their particular fields of study. We welcome our speakers and symposium attendants who have travelled far and wide to be here, and we hope that you will feel rewarded for having made the extra effort it takes to get out of bed early on Saturday morning.

The following is a list of times, titles, and abstracts submitted by the speakers. Following each talk there will be a short period for questions.



John Muir

8:15 AM. Program opening.

8:30 NATURAL HISTORY AND DISTRIBUTION OF CONIFER FORESTS.

J.H. Haller, University of California, Santa Barbara.

The Sierran conifer forest extends in an unbroken belt some 400 miles long and 30 to 60 miles wide along the middle and upper slopes of the Sierra Nevada. Supported by higher precipitation and cooler temperatures than in the foothills below, the forest is dominated by tall coniferous evergreen trees. Approximately 24 species of conifers occur in the Sierra, a remarkably high number. As would be expected important differences in forest structure and flora occur from north to south, from low to high elevations, and from moist to dry sites. The altitudinal

variation is most striking, however, and the forest may be divided for convenience into several altitudinal zones. The Lower Montane Zone, from about 1000-2000 m, is the lowest and driest, with fire acting as an important controlling agent. This zone includes the largest trees and the greatest number of coniferous species. The Upper Montane Zone, from 2000-2700 m, has the heaviest snowfall and the densest forests. The Subalpine Zone, from 2700-3300 m, is characterized by very severe winters, a short mid-summer growing season, and an open forest of small, often stunted trees. The upper limit of the Subalpine Zone is marked by the timber line. All of these zones are relatively broad and well defined on the gentle west slope of the Sierra. On the steep east face of the range the zones are greatly compressed and their species composition is highly modified by the prevailing aridity.

9130 ORIGIN AND FLORISTIC RELATIONSHIPS OF THE MONTANE
 VEGETATION OF THE SIERRA NEVADA.

Dean Wm. Taylor, San Francisco State University.

The montane zone (subalpine + alpine) in the Sierra Nevada supports a wide assemblage of vegetation types, ranging from high biomass subalpine forests, high productivity-high diversity herbaceous meadow communities, low productivity-high diversity alpine steppe, to extreme low diversity-low productivity alpine communities. In this presentation, the floristic relationships of the vegetation of the montane zone of the Sierra Nevada will be discussed, drawing on evidence from both present and past plant distribution patterns.

First, 53 montane localities in North America (including six Sierran localities) will be compared using various quantitative floristic approaches. The results will be used to illustrate the overall floristic affinities of the Sierran montane zone.

Secondly, a similar quantitative approach will be used to analyze a selection of Late Tertiary fossil floras so that an objective picture of the modern vegetation can be obtained. The origin and floristic sources of the present flora of the montane Sierra will be described from this analysis.



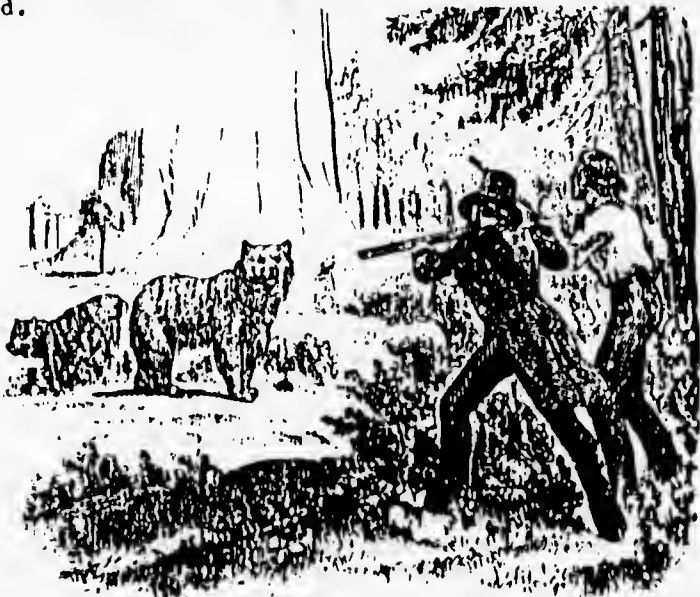
10:30 Coffee break. 15 min.

10:45 FIREWOOD PRODUCTION, USE, AND AVAILABILITY IN SUB-ALPINE FORESTS OF THE SIERRA NEVADA.

Wm. B. Davilla, San Jose State University.

Firewood production and its rate of consumption by wilderness users in the high Sierra Nevada were studied from 1971 to 1974. Estimates of annual firewood production rates were made in three different subalpine forest communities using forest stand dimensional analysis. Primary tree species measured were Pinus murrayana, P. albicaulis, and Tsuga mertensiana. Dimensional and wood litter production results showed that P. murrayana required a minimum stand parabolic volume of 300 m³ per hectare to sustain an estimated mean annual consumption rate of 1080 kg per year., while T. mertensiana stand parabolic volumes exceeded this estimated mean firewood consumption rate. Pinus albicaulis stands were not of sufficient parabolic volume to replace wood litter equal to the estimated annual rate of firewood consumption.

Firewood consumption rates were proportionally higher with increase in firering diameter. Small groups, five or fewer individuals, had significantly higher per hour per capita consumption rates than those for large groups of 15 to 25 individuals. The significance of firewood consumption and wood litter production rates in the Sierran subalpine forest will be discussed.



SCENE IN THE FIREWOOD GROVE OF MAMMOTH TREES.

11:45 ALPINE AND SUBALPINE HABITATS IN THE SOUTHERN SIERRA NEVADA.

Mrs. Mary DeDecker, Independence, California.

The subject is alpine and subalpine plants and the habitats in which they occur. These include the lakes and forests of subalpine glacial basins, talus slopes, exposed ridges, high meadows, and the tundra above treeline. Attention has been focused on that part of the Sierra Nevada crest opposite Owens Valley and above 10,000 feet in elevation. The adjustments by various species to intense light, extreme temperatures, violent weather conditions, and a very short growing season are noted. Some rare plants and their habitats are included.



THE "INDIAN TRAIL" UP THE MOUNTAIN

12:30-1:45 Lunch.

1:45 VEGETATION GRADIENTS IN THE CHAPARRAL AND FOOTHILL WOODLAND ZONES OF SEQUOIA NATIONAL PARK.

Philip W. Rundel, University of California, Irvine.

The foothill zone of Sequoia National Park encompasses approximately 110 km² of chaparral and foothill woodland communities over an elevational range of 400-1800 m. Vegetation patterns are mosaics of at least ten distinct community types, but the environmental factors differentiating these types are complex. Blue oak woodlands dominate the lowest elevations and extend higher on deep soils on south-facing slopes. Chamise chaparral is the most important community type at intermediate elevations, particularly on drier slopes. On more north-facing slopes Ceanothus cuneatus and/or Arctostaphylos viscida become increasingly important with Adenostoma. More mesic north-facing

slopes at intermediate elevations support a variety of woodland community types, including Aesculus, Aesculus-Quercus, and Quercus wislizenii types. A chaparral woodland characterized by Cercocarpus betuloides is also important. The upper foothill zone on south-facing slopes is characterized by an evergreen shrub community of Chamaebatia foliolosa and Arctostaphylos species. North-facing slopes at these elevations have a deciduous woodland dominated by Quercus kelloggii. Gradients of community change can be related in part to soil moisture and nutrient conditions present in individual stands. Fire history, however, is of critical importance in determining the composition and structure of many stands. Both fire frequency and intensity must be considered in determining successional patterns. Structural changes in stands with age since fire and contemporaneous changes in plant biochemical characteristics indicate specialized adaptations have evolved to give fire utilization an important selective advantage.

2:45 PRESCRIBED BURNING IN SIERRA NEVADA MIXED-CONIFER FOREST.

Ronald H. Wakimoto, University of California, Berkeley.

Fire has been a recurrent natural phenomenon in Sierra Nevada mixed-conifer forest in California for thousands of years. Studies of fire-scarred trees have revealed the frequency of fire to have been 4-8 years. Origins of these fires were both climatic and cultural; the frequency of lightning alone in some areas could account for most of the fires, but it is known that the California Indians set wildland fires for a number of reasons.

Early California mixed-conifer forest fires were usually of low intensity because fuel energy was periodically released before it built up to levels where a sudden large energy release could occur. The policy of suppressing all natural and man-caused forest fires, instituted early in the twentieth century, has allowed energy to accumulate over the years, ultimately being released by infrequent, damaging wildfires. Fire is now being reintroduced to many forest environments to reduce fire hazards or recreate pristine conditions.

When natural fires are suppressed, energy rapidly accumulates and species composition shifts from ponderosa pine or giant sequoia with white fir to a white fir-incense cedar mix because fir and incense cedar seedlings are no longer eliminated by frequent surface fires. The new system is also less flammable, especially where ponderosa and sugar pines were once associated, because fires will burn only in the driest months. The understory tree fuels and forest floor fuels tend to accumulate and store energy, distributing some of it as "ladder" energy in the understory which reaches up to the bottoms of the overstory trees.

When a wildfire occurs in dry weather under such fuel conditions, it is much more likely to develop crown fire behavior, killing many of the mature trees and seriously disrupting energy and nutrient cycle stability. This system state is inherently less stable than one dominated by a natural fire-maintained mixed-conifer forest.

The Sierra Nevada mixed-conifer ecosystem is intimately linked with its past fire history and present fire climate. Where the forest management system incorporates fuel dynamics and fire as integral components, optimum fire management alternatives can be developed to accomplish the objectives of society and the forest manager.

3:45

POLLINATION ECOLOGY OF THE SIERRA NEVADA.

Andrew R. Moldenke, Vassar College, Poughkeepsie, N.Y.

The pollinator fauna of the Sierra Nevada varies from extremely diverse to extremely limited; the floral resource diversity also varies widely but is not correlated to pollinator diversity. The Sierra Nevada flora is highly "polyphilic;" the flowers generally are visited by two or more pollinator types and are not morphologically adapted to only a single type. The precise pollinator/flower pattern of interaction varies in many aspects from site to site. Even so, many important aspects of pollination systems are repeatable and predictable within a community type throughout wide geographic distances.

Bees are the most important pollinators throughout; 42 % of the species are specialist-feeders associated with only one genus-species of plants. Within a site the timing of flowering diversity is not necessarily correlated with that of pollinator diversity, since pollinators respond to cues in addition to flower abundance. Generally one or two floral species succeed at any given time in attracting the largest numbers (of both individuals and species) of pollinators; many species attract few pollinators and a surprisingly large percentage of the flora is relegated to selfing. In almost all cases specialist-feeding pollinators are associated with plant genera that are visited most frequently by generalist feeders as well. Bee taxonomy and biology of this region is fairly well known and hypotheses can be generated on the paleohistory and floral associations of many groups; the general pattern of such associations reveals rapid morphological adaptation by the pollinator to the flower and not vice-versa. The factors governing aspects of floral morphology seem to respond much more slowly or are associated with merely increasing availability to any potential pollinator type.

A SEPTEMBER JOURNEY TO THE CHIRICAHUA MOUNTAINS

One of the best times in the year to visit the mountains of eastern Arizona is in the early fall or late summer. The arrival of the second, and usually more important, rainy period frequently brings out an abundance of annuals and perennials to rival anything seen in the spring. It is also the very worst time to travel from Los Angeles to anywhere in Arizona, a passage that I suspect is something like a salt run from Tunisia to Timbuktu, with the Algodones Dunes thrown in for good sport. The first day's stop was Tucson, a trip of some 10-11 hours, depending on how many pit stops were necessary, and by 7:00 PM most of our wicked band of 15 had arrived and were comfortably settled in motels or swimming pools.

On September 1st we teamed up with our guides Dr. Art Gibson and Paul Shaw, both of Tucson, and serious observation and collecting began as we drove off down the Old Spanish Trail north-east of Tucson. The vegetation along the way was mostly creosote bush scrub, but on one hillside we noticed the association of Fouquieria splendens, Celtis pallida, Carnegiea gigantea (the sahuaro), Ferrocactus wislizenii (a barrel cactus), and an occasional Jatropha cardiophylla (Sanre-de-Cristo). All but the Fouquieria are unknown in California creosote bush scrub. The area richest in species was an oak woodland on the Triangle T-Dragoon exit from Interstate 10, in which nearly 100 species were found by Bob Thorne, Dick Tilforth, and other members of the party.

We reached our destination for that evening, El Coronado Research Station on Turkey Cr., around 7:00 PM after a hard day of botanizing. The ranch buildings have an atmosphere of Spanish colonial elegance about them, and the setting in heavily forested Turkey Cr. Canyon next to a large pond is one of idyllic seclusion. We spent two nights here enjoying the hospitality of our hosts and excellent food. Wiser members of the group retired early each night, whereas the more reckless tended to remain up till midnight or later to catalogue the day's collections.

The high point of September 2nd was a short hike into Echo Canyon to see Apacheria (Fig. 1), a recent addition to the family Crossosomataceae and thus of great interest to all members of SCB. The largest plant of Apacheria we saw was growing in a rock crevice on a vertical face and was about 8 inches high and 12 inches across--a tiny shrub indeed. Among the 50-60 associated plants seen along the trail in this weathered-sandstone canyon (Fig. 2) were Echinocereus fendleri (a kind of hedgehog cactus), Quercus hypoleucoides (silverleaf oak), Q. reticulata (net-leaf oak), Carrya wrightii (silk-tassel bush), Fallugia paradoxa (Apache plume), Stachys coccinea (a bright red hedge nettle), Agave parryi, Pinus cembroides (Mexican pinyon), and Pinus leiophylla. In the afternoon we drove around to Camp Rucker and Rucker Lake in oak-juniper woodland, and attractive but not

spectacular place, still delivering over 60 species. Lest one gain the idea that we were interested solely in quantity rather than quality, I hasten to explain that virtually all of these plants were of great quality.

On the third day we followed Turkey Cr. up past the research station into the mixed conifer forest and oak woodland composed of Abies concolor (white fir), Pseudotsuga menziesii (Douglas fir), Quercus arizonica (Arizona white oak), and Q. gambelii (Gambel oak). Growing in the leaf litter and filtered sunlight at the end of the road were Malaxis, an inconspicuous orchid also known as adder's mouth, and Montropa hypopitys, a bright red saprophyte also known as pinesap. The rest of the morning and early afternoon was spent in reconnaissance of the Chiricahua Mountains as we drove up to Kustler Meadow at 8200 ft., where we had lunch, and then down toward Portal on the east side of the mountains. On the way down we made a quick side trip along the South Fork of Lave Cr. (South Fork Forest Camp) to look for elusive trogons, of which we saw none; but there just happened to be large numbers of clumps of Conopholis mexicana, an interesting member of the Orobanchaceae apparently parasitic on oak, pine or cypress roots. The clumps resembled bundles of pine cones and were mostly rather dried up.

The next stop was Guadalupe Canyon, 30 miles east of Douglas in the far southeast corner of the state. We arrived very late after having dinner in Douglas and pitched our camp in the cicada-filled darkness of a desert night. In the morning we discovered that the canyon might be more accurately called a "wash," at least along the length we could see; but it supported a quantity of new plant families and species we had not seen before, such as Bumelia lanuginosa (Sapotaceae), Berberis haematocarpa (red mahonia), Maurandya antirrhiniflora (a vine with showy, purple, snapdragon-like flowers), and Forestiera phillyreoides, adelia, of the family Oleaceae (olive family). The owner of the ranch on which the canyon is located arrived early in the morning and chatted with us for a while. He seemed both pleased and amused that his ranch had attracted so much attention from biologist-sightseers; and though most people manage to ask for permission to visit the canyon, he remembers a few busloads of birdwatchers that arrived unexpectedly one day and proceeded to prowl about the place to spot all the interesting birds that congregate here. In fact our own group of birdwatchers, informally headed by Eleanor Danmann and Anne Dickey, rather outdid the plant squashers with such exotic sounding quarries as vermilion flycatchers, Casson's kingbirds, and zone-tailed hawks. The Mexican border was only a stone's throw away and was marked by a rusty barbed-wire fence that was scarcely adequate to restrain several straying botanists, and we managed to put our big toe across the line just long enough to find a few new plants that were not on the north side.

After we left Guadalupe Canyon, our group, which had already lost one member as a result of car failure, soon dwindled a bit more when Bob Thorne, Dick Tilforth, and Avi Schneider, a visiting Israeli professor of forestry at Syracuse University, drove to Tucson to put Avi on a plane back to Syracuse. The rest of us drove to the Canelo Hills and stayed the evening of September 4th on a small natural preserve in O'Donnel Cienega, owned by the Nature Conservancy. The following Monday the group fragmented still further when Thorne and Tilforth went on from Tucson to Sycamore Canyon, where they claim to have found 60 more plant families; Walt Wright and Anne Dickey went to Ramsey Canyon and sighted 7 of 14 hummingbird species known from there; and the rest of us returned to Smoggy Los Angeles.

POMONA COLLEGE BIOLOGY SEMINARS.

The Pomona College biology seminars for the rest of this semester are listed below. They are held on alternate Tuesdays at 11:00 AM in room 108 of Beaver Hall. Luncheon with the speaker will follow each seminar immediately in Harwood Private Dining Room.

Nov. 1. Ocean of Wax. Dr. Andrew Benson, Scripps Institute of Oceanography.

Nov. 15. The Puzzle of Varying Molecular Arrangements in the Crystalline Yolk of Frog Eggs. Dr. Robert Ward, Columbia University.

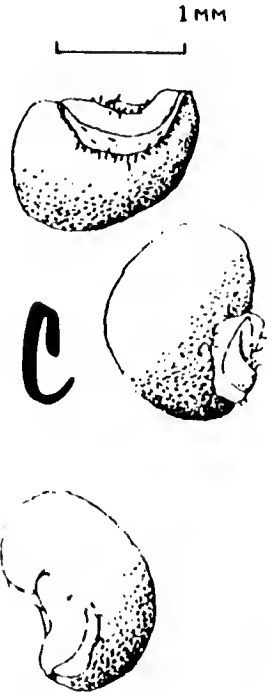
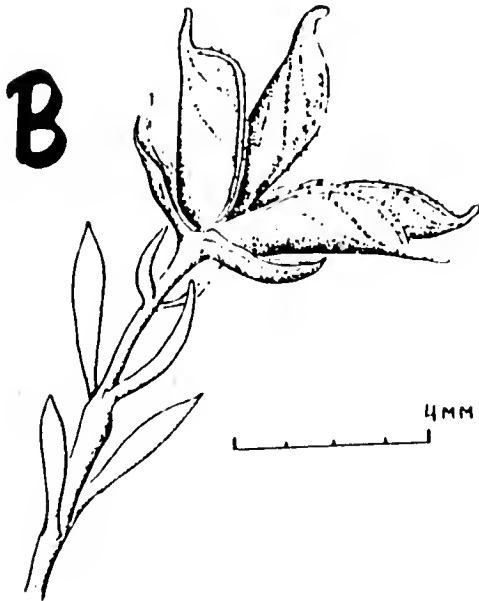
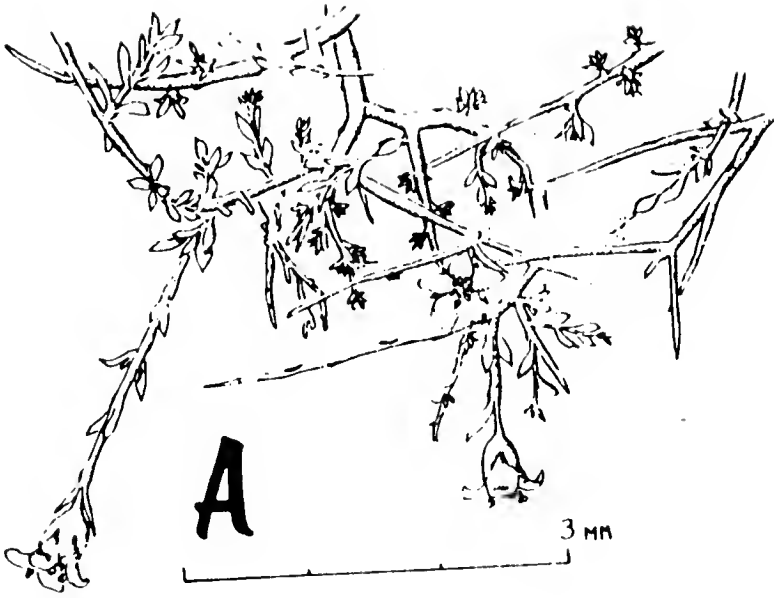
Nov. 29. Fear of Flying: The Evolution of Overwater Colonizing Ability and What You Do When You Get There. Dr. Jared Diamond, University of California at Los Angeles.

Dec. 13. On the Mechanism of the Primary Photochemical Event in Photosynthesis. Dr. Phillip Thornber, University of California at Los Angeles.

APOLOGIES

The editor wishes to apologize for any inconvenience caused by his reference to the El Segundo Blue in the last issue of *Crossosoma* as a moth. The El Segundo Blue is a butterfly.





SLATE OF CANDIDATES FOR OFFICES IN SCB, 1978

The following individuals have been nominated for offices and/or directorships by the Nomination Committee, which consisted of Kay Klier, Takashi Hosonizaki, and H. F. Thorne, Chairman.

President--Chris Davidson
Vice-President--Marvin Chesebro
Treasurer--Patty Rogers
Recording Secretary--Connie Spenger
Corresponding Secretary--Pauline Hoge

Directors:
Genene Derby
Charlotte Clark
Dick Tilfortn
Walt Bertsch

Enclosed in this issue you will find your ballot with a space to mark for each of the above in addition to spaces for write-in candidates. Please return ballots promptly.

FURTHER NOTES ON PEDICULARIS FURBISHII

Attentive readers of the summer issue of Crossosoma will recall a short note on the battle between gigantic Dickey-Lincoln Dam and Furbish's lousewort. Construction of the dam was being held up because of a few rare plants that had the temerity to exist near the construction site. The Army Corps of Engineers, according to Time magazine, 19 Sept. 1977, spent \$17,000 poking along the banks of the St. John River to see if they could find some lousewort outside the perimeter of the project; and they were successful, finding at least 5 clumps. Now we can all sleep peacefully again.



Fig. 1 . Apacheria chiricahuensis. C. Davidson 6496.
A. Close-up of the habit, showing interlocking, rigid, spinescent branchlets, short shoots and long shoots, and solitary flowers. B. Fruit. C. Seeds showing arils and papillae.



Fig. 2 . Echo Canyon, Coronado National Forest. Eroded sandstone blocks form part of the habitat of Apacheria chiricahuensis, the most recently described member of the family Crossosomataceae.



Fig. 3 . President Walt Wright and several SCB members examine a shrub of Vauquellnia californica near Guadalupe Canyon, on Guadalupe Ranch. In the foreground is Fouquieria splendens, ocotillo. Curiously V. californica is not found in California at all.



MINERAL KING; THEY'RE AT IT AGAIN

While we were busy with something else, Walt Disney Productions quietly (surreptitiously?) resurrected its plan to build a winter and summer resort at Mineral King. The attempt will be to compromise and come up with a plan that is economically feasible and still acceptable to environmentalists. If we were dealing with something less than one of the scenic wonders of California, I would be tempted to go along with a compromise; but the faddish nature of snow skiing and the disastrous seasons most ski resorts have had periodically, coupled with almost certain overcrowding make me skeptical. And if, in ten or 15 years the resort proved not to be especially lucrative, what then would happen? Perhaps something much less acceptable than the original compromise? The Forest Service believes Southern California is badly in need of a skiing facility. In what sense do they mean "badly in need"? Will a Mineral King resort help relieve the "urban psychosis" we all suffer from as a result of living in smoggy, populous communities. Perhaps. But back-packing and cross country skiing do as much and require no development comparable to the Disney proposal. Will a Mineral King resort relieve congestion at other skiing areas? Yes, but ironically resorts like this are profitable only when they are crowded--bustling week-ends compensate for the slow week days; and in the case of a year-around facility, a packed summer can make up for a drab, snowless winter. I think we all know the economics of the situation; what seems ideal for the skier, backpacker, or vacationer may put the resort operator out of business. Talk of "badly needed" facilities is perhaps equivocal. What is badly needed is more wilderness to relieve the pressure on the national parks. In this case a reasonable course would be to include Mineral King in Sequoia National Park. You can write to the following congressmen and give them your ideas on this:

The Honorable (your congressman)
House Office Building
Washington, DC 20515

Senator Alan Cranston
Senate Office Bldg.
Washington, DC 20510

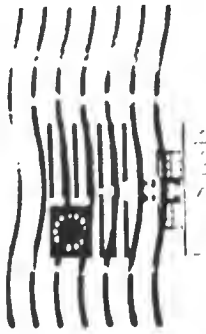
Hon. Philip Burton
Chairman, Subcommittee on Parks and Insular Affairs
Longworth House Office Bldg.
Washington, DC 20515

Secretary Cecil Andrus
Department of the Interior
Washington, DC 20250

Sen. S.I. Hayakawa
Senate Office Bldg.
Washington, DC 20510

SOUTHERN CALIFORNIA BOTANISTS

Rancho Santa Ana Botanic Garden
1500 North College Avenue
Claremont, CA 91711



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