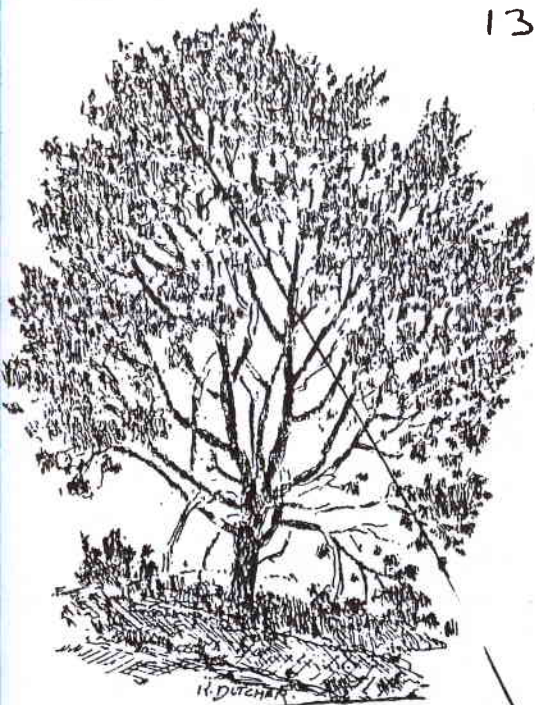


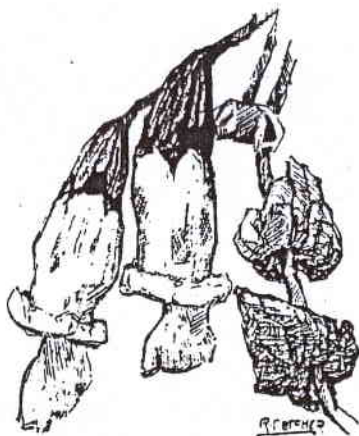
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13(1):5-10



Tecate cypress

(Cupressus guadalupensis forbesii)



Heart-leaved pitcher sage  
(Lepechinia cardionphylla)

You can also help by being informed on the issues. A free slide show about the northernmost Tecate cypress plant community for botanical societies or community groups is available by calling Connie Spenger (714) 879-3471 or Gordon Ruser (714) 541-0944.

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A LIST OF HIGH ELEVATION ANGIOSPERMS AND THEIR  
PHENOLOGY IN THE SAN GABRIEL MOUNTAINS,  
LOS ANGELES COUNTY, CALIFORNIA

by

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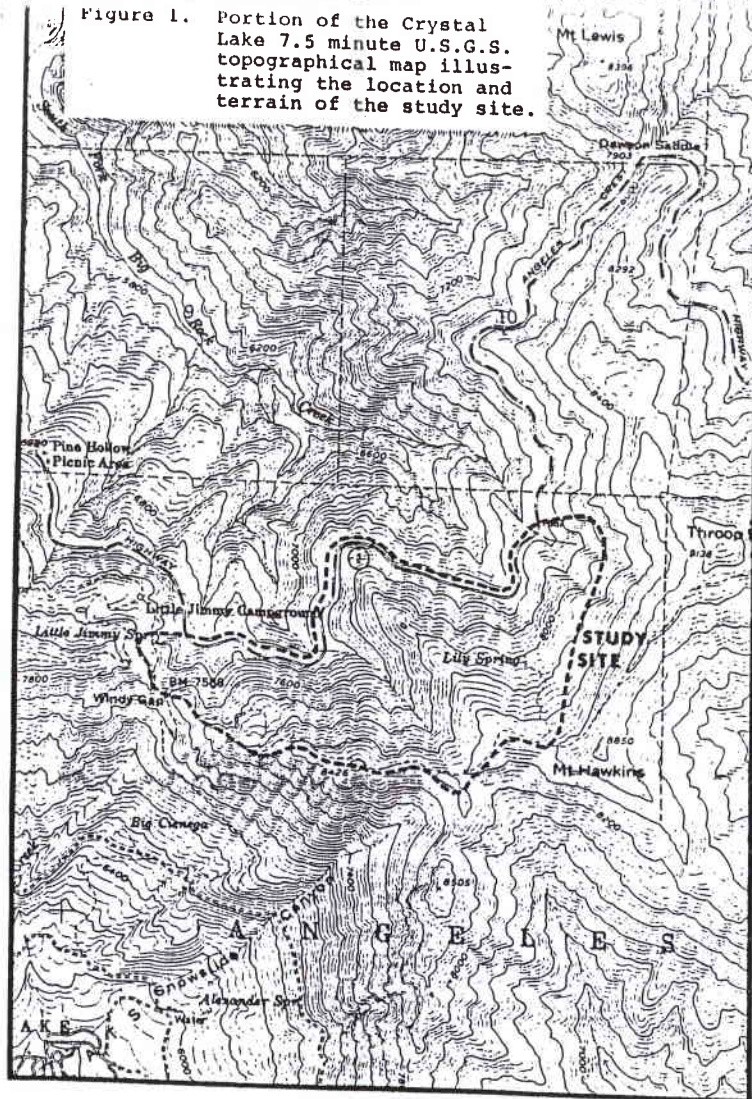
#### Introduction

In a small area between 7000 and 8400 feet (2300-2700 m), on a north facing slope in the San Gabriel Mountains, is an ideal location for studying plant phenology of high elevation plants. The area is accessible by trail, and within a short distance are five distinct plant communities. Montane meadows are found at Lily and Little Jimmy Springs. Most of the surrounding forest is moist yellow pine forest characterized by Jeffrey pine, Pinus jeffreyi; sugar pine, Pinus lambertiana; and white fir, Abies concolor. On dry slopes is scrub vegetation dominated by chinquapin, Chrosolepis sempervirens, a community known as montane chaparral. On ridge tops is a forest of lodgepole pine, Pinus murrayana and limber pine, Pinus flexilis. In exposed sites along the ridge is a wind blown edaphic community of widely spaced low growing plants on coarse well-drained soil. This is an edaphically controlled fell field.

#### Study Site

A study site was established immediately south of Highway 2, 2.1 miles east of the junction of Highway 2 and Route 39 in the San Gabriel Mountains of southern California (see Figure 1). It was surveyed sixteen times during the spring and summer of 1980 to identify all species of flowering plants. Plant specimens were collected, pressed, and identified. These specimens are presently on deposit at the herbarium of the Rancho Santa Ana Botanic Garden, Claremont, California. Common insect visitors were collected and later identified by Dr. Roy Snelling of the Los Angeles County Museum of Natural History, Los Angeles, California.

Figure 1. Portion of the Crystal Lake 7.5 minute U.S.G.S. topographical map illustrating the location and terrain of the study site.



### Flowering Phenology and Visitation

Plant populations accessible by hiking trails were observed at least twice a week between May 2, 1981 and September 11, 1981. Flowering status and floral visitors of each species were noted. A subjective method was used to evaluate flowering status. Generally, a species was considered to be flowering if; (1) at least a few individuals each bore many open flowers, or (2) many individuals each bore a few open flowers. Flowering phenology data are summarized in Table 1.

Table 1. Summary of flowering phenology data. The X's note on which days a species was in bloom.

Species	Date																		
	May			Jun				Jul				Aug				Sep			
	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	4	11
<i>Allium burlewii</i>	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Allium monticola</i> var. <i>monticola</i>	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
<i>Aquilegia formosa</i> var. <i>truncata</i>	-	-	-	-	-	X	X	X	X	X	X	X	X	-	-	-	-	-	-
<i>Arabis platysperma</i>	-	-	-	-	-	-	-	X	X	X	X	X	-	-	-	-	-	-	-
<i>Arabis repanda</i>	-	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-
<i>Arctostaphylos parryana</i>	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Argemone munita</i> ssp. <i>rotundata</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
<i>Brickellia californica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	-
<i>Brickellia microphylla</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X
<i>Calochortus invenustus</i>	-	-	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-
<i>Calyptidium monospermum</i>	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Castilleja miniata</i>	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X
<i>Caulanthus amplexicaulis</i>	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
<i>Ceanothus cordulatus</i>	-	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cercocarpus ledifolius</i>	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Chaenactis santolinoides</i>	-	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-
<i>Chrysolepis sempevirens</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	-	-
<i>Chrysothamnus nauseosus</i> var. <i>bernardinus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X
<i>Clematis ligusticifolia</i> var. <i>ligusticifolia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	-	-
<i>Collinsia torreyi</i> var. <i>wrightii</i>	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cryptantha muricata</i> var. <i>denticulata</i>	-	-	-	-	-	X	X	X	X	X	X	X	-	-	-	-	-	-	-
<i>Cycladenia humilis</i> var. <i>venusta</i>	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Delphinium glaucum</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	-	-	-	-	-
<i>Dodecatheon redolens</i>	-	-	-	-	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-
<i>Draba corrugata</i> var. <i>corrugata</i>	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
<i>Draba stenoloba</i> var. <i>nana</i>	-	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Epilobium brevistylum</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	-	-	-	-
<i>Epilobium oregonense</i>	-	-	-	-	-	-	X	X	X	X	X	X	-	-	-	-	-	-	-
<i>Erigeron breweri</i> var. <i>jacinteus</i>	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	-	-	-
<i>Erigeron foliosus</i> var. <i>stenophyllus</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
<i>Eriodictyon trichocalyx</i> var. <i>trichocalyx</i>	-	-	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-

Table 1. (cont.)	May				Jun				Jul				Aug				Sep		
	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	4	11
<i>Eriogonum davidsonii</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
<i>Eriogonum nudum</i> var. <i>pauciflorum</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
<i>Eriogonum parishii</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
<i>Eriogonum saxatile</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
<i>Eriogonum umbellatum</i> var. <i>minus</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
<i>Eriogonum wrightii</i> var. <i>subscaposum</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
<i>Fritillaria pinetorum</i>	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Galium bifolium</i>	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
<i>Gayophytum</i> sp.	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Gilia ochroleuca</i> ssp. <i>viuida</i>	-	-	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
<i>Gnaphalium palustre</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
<i>Habenaria leucostachya</i>	-	-	-	-	-	X	X	X	X	X	X	X	X	-	-	-	-	-	-
<i>Habenaria sparsiflora</i>	-	-	-	-	-	X	X	X	X	X	X	X	X	-	-	-	-	-	-
<i>Helenium bigelovii</i>	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Heuchera elegans</i>	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
<i>Holodiscus microphyllus</i> var. <i>microphyllus</i>	-	-	-	-	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-
<i>Leptodactylon pungens</i> ssp. <i>pulchellorum</i>	-	-	-	-	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-
<i>Lewisia nevadensis</i>	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Lewisia rediviva</i> var. <i>minor</i>	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Lilium parryi</i>	-	-	-	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-
<i>Lithophragma tenellum</i>	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
<i>Lotus argophyllus</i> var. <i>decorus</i>	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
<i>Lupinus elatus</i>	-	-	-	-	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-
<i>Mimulus cardinalis</i>	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Mimulus floribundus</i> var. <i>floribundus</i>	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Mimulus moschatus</i>	-	-	-	-	-	X	X	X	X	X	X	X	X	-	-	-	-	-	-
<i>Mimulus pilosus</i>	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Mimulus rubellus</i>	-	-	-	X	X	-	-	X	X	-	-	-	-	-	-	-	-	-	-
<i>Monardella cinerea</i>	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
<i>Oreonana vestita</i>	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Osmorhiza chilensis</i>	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
<i>Oxytheca parishii</i> var. <i>parishii</i>	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Pedicularis semibarbata</i>	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Penstemon bridgesii</i>	-	-	-	-	-	-	X	X	X	X	X	X	X	-	-	-	-	-	-
<i>Penstemon grinnellii</i> ssp. <i>grinnellii</i>	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
<i>Phacelia austromontana</i>	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Phacelia curvipes</i> var. <i>curvipes</i>	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
<i>Phacelia longipes</i>	-	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-

Table 1. (cont.)	May				Jun				Jul				Aug				Sep		
	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	4	11
<i>Polygonum aviculare</i>	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
<i>Potentilla glandulosa</i> ssp. <i>nevadensis</i>	-	-	-	-	-	X	X	X	X	X	-	-	-	-	-	-	-	-	-
<i>Potentilla glandulosa</i> ssp. <i>reflexa</i>	-	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-
<i>Pterospora andromedea</i>	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
<i>Pyrola picta</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	-	-	-	-	-	-
<i>Rhamnus californica</i> ssp. <i>cuspidata</i>	-	-	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-
<i>Ribes cereum</i>	-	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes nevadense</i>	-	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ribes roezlii</i>	-	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rubus leucodermis</i> var. <i>bernardinus</i>	-	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-	-
<i>Salix lasiolepis</i> var. <i>lasiolepis</i>	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Salsola iberica</i>	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X
<i>Sambucus caerulea</i>	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Sarcodes sanguinea</i>	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-
<i>Senecio ionophyllus</i>	-	-	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-	-	-
<i>Silene parishii</i> var. <i>latifolia</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
<i>Silene verecunda</i> var. <i>platyota</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
<i>Sisyrinchium eastwoodiae</i>	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Smilacina stellata</i>	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Solidago californica</i>	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X
<i>Symphoricarpos parishii</i>	-	-	-	-	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-
<i>Tetradymia canescens</i>	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X
<i>Trifolium monanthum</i> var. <i>grantianum</i>	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Veratrum californicum</i>	-	-	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	-
<i>Viola purpurea</i> ssp. <i>xerophyta</i>	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Zauschneria californica</i>	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X

### Discussion

All but 5 of the 100 species believed to be biotically-pollinated are listed. No phenology data were collected for *Calyptidium parryi* var. *parryi* as no individuals of this species were observed in 1981. Flowering phenology of *Corallorhiza maculata*, *Mimulus johnstonii*, *Penstemon caesius*, and *Sisymbrium altissimum* was not followed because these species were already in fruit when first observed during the summer of 1981. Failure to find these species before they had completed flowering was due to their rarity in the study site.

Most species had a relatively long flowering period. Only 21 percent had a flowering period of three weeks or less and the average flowering period was 5.4 weeks.

Just one species had a disjunct flowering period. Purple-flowered Mimulus rubellus, a small annual, was in flower from 6/5 to 7/12. A yellow-flowered race of this same species (Thorne, personal communication) was in bloom from 7/10 to 7/24.

#### ANNOUNCEMENTS

##### Annual Southern California Botanists' Symposium

The Board of Directors and Officers were able to begin preparations for the 13th annual one-day symposium almost a year ahead. The theme was suggested on the questionnaires collected at the 1986 symposium and was approved at the December meeting of the Board. The theme and title for the 1987 symposium will be "Botanical Discoveries and Exploration in Southern California". Taxonomists, plant physiologists, ecologists, gardeners, museums, etc. of Southern California have made many exciting discoveries and advanced the understanding and appreciation of vegetation communities and flora. Many principles of plant science have been developed based on theories originally conceived in Southern California.

Some of the suggested topics for individual speakers were:

- the anecdotes of a famous botanist who explored this region throughout his/her career as told by that botanist
- the biography of a famous botanist who explored this region as told by a historian
- the history of botanical exploration in southern California
- an overview of the scientific discoveries made in this area
- the current status of botanical research (who, where, what) supported in this region
- a history of the creation of a particular botanic garden, e.g., Rancho Santa Ana Botanic Garden, and its future plans
- the development of scientific inquiry on and knowledge about a prevalent plant community type in Southern California
- the history of the rare plant conservation effort in this region and its current status
- the history of the development of a theory or principle and the contribution made by Southern California scientists

Some names were suggested for speakers; however, we would like to get the input of the SCB members. If you have a speaker you would like to hear or another interpretation of the 1987 theme, please contact anyone of the Officers or Board of Directors or call Mona Myatt at 818 302-1466 (weekdays) or 818 447-0755 (evenings and weekends) before March 15, 1987.

The symposium will be held at the same place as last year, i.e., the Heritage Room of the University Center at the University of California, Irvine. The date is Saturday, November 14, 1987. The cost is always reasonable. There will be free refreshments and book and biota-themed clothes for sale. The 1986 symposium was very informative and enjoyable. Set aside November 14 and tell your friends and botanical associates. Hope to see you there.

Fourth Annual Environmental Legislative Symposium. Jan. 31, Feb. 1, 1987. The Planning and Conservation League will hold their 4th annual symposium on Saturday, January 31 and February 1, 1987. Attendees will be informed of major issues that will be before the legislature in 1987. There will be workshops on today's leading environmental issues. For more information call: Anne Hedges, Symposium Coordinator, (916) 444-8726 or write to: PCL Symposium, 909 12th St., #203, Sacramento, CA 95814.

Friends of the Big Bear Valley Preserve. Bald eagles over-winter at Big Bear Lake. Throughout winter months, eagle tours are conducted nearly every weekend. On Sunday, February 8, the Orange County Chapter of CNPS has arranged for a tour. Reservations are required and the fee is \$5.00 unless you are a member of the "Friends." Arrangements also can be made to visit the Nature Conservancy's North Baldwin Lake Preserve where rare and endangered species occupy an interesting habitat, a pavement plain. For information about the CNPS trip, call Nancy Kenyon (714) 786-3160. For information about the "Friends," call Lauren Pollock (714) 585-9266.

Help Needed for a "Weeding Party" at Irvine Park. Recent rains have encouraged growth of the new plants at the Irvine Park revegetation site. There are also lots of healthy weeds. A party to remove pesky weeds has been scheduled for Saturday, February 1 at 8:00 a.m. For information call Gus or Frieda (714) 974-1639.

Third California Islands Symposium. March 2-6, 1987. The Southern California Academy of Sciences, the Santa Barbara Museum of Natural History and the Santa Barbara Botanic Garden are hosting this conference focusing exclusively on research on the islands off the coasts of California and Baja California, Mexico. The meeting will be held in Santa Barbara. Pre-registration is \$40 until January 15, 1987; regular registration is \$55. Registration forms are available from California Islands Symposium, Santa Barbara Museum of Natural History, 2559 Puesta del Sol Road, Santa Barbara, CA 93105.