



TORREYANA

*A monthly newsletter for
Torrey Pines State Reserve*

No. 231

June 1995

NEXT DOCENT SOCIETY MEETING SATURDAY, JUNE 17, AT 9 A.M.

There are currently over a half dozen research studies underway in the Reserve, with additional ones planned for later this year, that cover a diversity of plant and animal topics. Mike Wells, whose official title is Associate State Park Resource Ecologist, will discuss all this activity in a talk titled "Research at Torrey Pines" at the June meeting. Our speaker, already well known to many members, is especially concerned about the long-term impact of the continuing development around TPSR and will describe planned studies to monitor and evaluate its effects.

Torrey Pines Association Report by Elizabeth Nicoloff



The Whitaker Garden was a principal topic at the May 13 board meeting of the TPA. A number of friends and colleagues of Dr. Whitaker have sent donations to TPA for a memorial. How best to use these funds? They could be used to improve and help maintain the planting, or for changes and additions to the identification signs for the plants. No decision was reached. Dr. Whitaker's daughter Beverly Whitaker Rogers has indicated an interest in developing the garden into a true memorial, and Pat Axelrod of TPA and Melanie Martinod of the Docent Society have been active in developing plans for the garden. Recently the State Department of Parks and Recreation agreed to allot funds for maintenance.

The matter of beach life guards during the summer was discussed. State lifeguards will continue to patrol the Torrey Pines Beach, but at somewhat reduced capacity to respond to emergencies. As for Black's Beach, the city will no longer provide lifeguards.

The Extension trails are in poor condition. Some work has been done by the CCC, but major repairs remain to be done, and eradication of exotics, another area needing major work, is not included in the CCC assignment. Since preservation of the Reserve is the principal focus of the TPA, we will try to get the State to be more active in improving these conditions.

DOCENT DOINGS

Docent of the Month - Richard Lighthall received the award for May for his help with the meeting refreshments, including the 1995 training sessions. Richard, a retired community college instructor, is a long-time Del Mar resident. He was a frequent visitor to TPSR and enjoyed the area so much that he joined the docents in 1992. Congratulations.

Thanks, Training Contributors - At the May meeting, Training Officer Jim Cassell expressed appreciation to the following people for their assistance and participation in the recently completed training program for new members: Don Grine for the Reserve geology talk, Judy Schulman for her presentation on the Reserve and Native American history, rangers Bob Wohl and Greg Hackett for their discussions on TPSR and interpretation, Joan Nimick for her Sunday flower walks, Jan Taylor for introducing the trainees to the TPSR Extension, and Jane and Bob Talbert along with Richard Lighthall for the refreshments. And from all the members, a special thank you to Jim for his outstanding efforts and contributions to the training program.

Trainees, Please Note - All new members must complete the Volunteer Service agreement form and return it to the ranger office. If you did not attend the May meeting, please stop by the ranger office to obtain the form.

Lodge News -

- a) **Docent Station** - New desk and station layouts are being considered that would provide a more convenient arrangement for the docents on duty. If members who serve in the Lodge have suggestions and comments, please call Kathy Watson, who is collecting members' views on this.
 - b) **Lodge Training** - Diana Gordon will be at the Lodge at 9 A.M. on Sunday, June 11, to discuss Lodge duties and operations with the trainees and other members interested in a refresher on procedures.
 - c) **Lodge Duty Schedule** - At the May meeting, Diana reminded members that the Lodge is frequently very busy on weekends during the spring and summer. So docents who are unable to do Lodge duty on the weekdays and find the weekend schedule filled should consider coming to the Lodge on weekends to serve as a second person for Lodge duty.
 - d) **Tee Shirts** - The Society purchased from the Dept. of Parks and Recreation a small number of tee shirts with various logos. This is a trial purchase to determine if there is a sufficient demand to have this as a regular item. Some members expressed interest in other types of shirts with a Reserve or Society logo. Irving Hansen (a trainee) offered to look into this; members having suggestions should call him.
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Docent Brochures - The brochures are now available at the docent desk. They are to be given just to those visitors who inquire about the Society and express an interest in possibly becoming members. Thanks to Marion Dixon and Judy Schulman for preparing it and to Jim Cassell for artwork.

TPA and TPDS Boards - At the conclusion of the TPA Board meeting on May 13, the TPDS Board members met informally with their counterparts. This is part of a continuing effort to help the two organizations become more familiar with each other's activities.

Hottentot Fig - In order to give members more times to work on the fig removal, Kathy Estey is scheduling work sessions every Wednesday at 8:30 A.M. The current area being cleared is across North Torrey Pines Road opposite the Reserve entrance. Be sure to bring gloves.

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Docent Doings (continued from p. 2)

Invasive Grass Removal - During the past two years, non-native grasses have spread into the Reserve and now constitute a serious problem in parts of TPSR, especially the west section of the Fleming Trail. Eva Armi and a few other docents have been working on removing the grasses, but more people are needed. Claire Brey, a local grass expert and long-time visitor to TPSR, will be at the Reserve on Saturday, June 10, at 9 A.M. to give an overview of grass identification, particularly the unwelcome *Ehrharta longiflora*, followed by a demonstration of identification and removal on the Fleming Trail. Meet at the bench area east of the Lodge; call Eva Armi for additional information.

New Members Note: This is an excellent opportunity to learn about plants not normally discussed in training and to contribute to the preservation of the Reserve.

History Group at TPSR - Alex Bevil, who was the Society's guest speaker on the Lodge history at the November 94 meeting, brought his community college class (extended studies for seniors) to the Reserve on April 29 to hear our historian, Judy Schulman, discuss her work on the history of Camp Callan.

Special Walks - The beach and Extension walks have proven so successful that Jan Taylor has scheduled two more for June. Wes Farmer will do a low-tide walk on Sunday, June 18, starting at 8 A.M. at the kiosk, and Jan will have an Extension walk on Saturday, June 10, at 9 A.M., starting at the Del Mar Scenic Parkway entrance (docents are invited to join Jan and help). Both walks will be advertised.

Carmel Mountain Walks - Diana Gordon and others in the recently formed Carmel Mountain Conservancy will continue leading walks at 4:30 P.M. on Sundays to introduce people to the area. Call Diana for further information.

Paipai Village Trip - Docents Eva Armi, Barbara Wallach, Vida Fruebis and four guests spent three days in May at a Paipai village located about 60 miles southeast of Ensenada, where they met several of the people who had participated in the March Docent Society meeting. They had the unusual opportunity of visiting with tribe members in their houses, looking in on the village school (where the native language is taught), and learning more about pottery. Two high points for Eva were the plant walk and the storyteller. Josefina Ochurte, a Paipai in her 70s, is a local medicinal plant expert. She had never led a group of visitors before to share her knowledge of the local plants, but thanks to Mike Wilken of the CUNA Institute, she agreed to do this for the docent group, an indication of the rapport that is developing between the docents and the tribe. The storyteller, Benito Peralta, entertained the group for several hours with his animated stories, the one on the stink bug being particularly good. His actions were so effective that language wasn't a real barrier although translations were done, the most interesting one being Paipai to Spanish to English to German (for Vida's parents)!

Exotic Plants Status - At a meeting on May 25 in the Lodge, Resource Ecologist Mike Wells summarized current and planned programs to remove exotic plants and restore affected areas. The Reserve now has funds to help with planned work in the Lagoon and other parts of the Reserve, so there will be a large increase in the war on exotics. The next issue of the *Torreyana* will have a summary of Mike's report.

Docent Bios by Del Roberts



Elizabeth Nicoloff considers herself a typical Californian: "one who grew up elsewhere," and in her case, Kansas. After graduating from Stanford University in 1934, she and her mother traveled to China. That was the beginning of many adventures. She spent almost a year exploring South America, and wrote a travel guide. For four years, Elizabeth worked in the office of the military attaché at the American Embassy in Peru, and took three magnificent trips into the Andes. Returning to the States, she settled in Washington, D.C., writing travel pamphlets for the Pan American Union. Many foreign treasures fill her

La Jolla home along with abstract paintings by her late husband, Peter, and wood carvings by her mother.

Peter, born in Bulgaria, was a violinist and conductor. He had just arrived in the States after living in China for 20 years, concertizing and teaching. Elizabeth, who was recovering from tuberculosis at her mother's home in Pasadena, met him at a party. Not long after, they were married, and a new career lay ahead for Elizabeth. As wife of the conductor and founder of the La Jolla Civic Orchestra, she handled the behind-the-scene details necessary to organize an orchestra. She served as music librarian, produced concert programs, and of course served refreshments for rehearsals. When Peter retired, they lived in Salzburg for a year and spent the next year traveling throughout Europe. "Life was never dull," she says.

At age 83, life is still not dull. Her new interest is a Belgian Tervuren dog, Sappho, named after an ancient Greek poet. This champion earned Best of Breed in 1991, delivered eight puppies to her original breeder in Northern California, and was then sold to Elizabeth. "She was my dog immediately," she says. After joining the All Breeder Obedience Club, Elizabeth became membership chair and proofreader of their newsletter, "Dog Daze." She enjoys working with Sappho, who has passed the first two of three levels in the Companion Dog class.

When Elizabeth first joined the docents in 1980, she considered exploring nature an experience of a lifetime. "I felt as if the scales had been taken from my eyes," she says. Although she's now a supporting member, she remains active in the TPDS, keeping track of docent volunteer hours, and proofreading and mailing the *Torreyana*. While a docent, she served on the Board for two years as treasurer, and wrote many informative articles for the *Torreyana*. She loved giving nature walks, both as a Canyoneer and TP docent, carrying her pack of show-and-tell nature articles. Today she is membership chair of the Torrey Pines Association, and liaison between the TPA and the *Torreyana*, reporting on their meetings. "It's all for one purpose," she says, "to protect the Torrey Pines."

An Enriched Life by Elizabeth Nicoloff

Learning a new language opens up a world that had been closed. Sounds that had been only meaningless syllables become significant words, opening relationships and understanding that had not been possible before. Learning about the natural life around us, which we had seen but not understood before, likewise gives a sense of entering what had been a closed world. I have had both experiences, making friends across a formerly insurmountable language barrier, and being introduced through Canyoneer and Torrey Pines Docent training to the marvelously complex interdependence of all living things. Both have enormously enriched my life.

"Leapin' Lizards!"

This favorite exclamation of cartoon character Lil' Orphan Annie may be picturesque, but it is not an accurate description of our Reserve lizards. Sorry, Annie - our most commonly seen lizards prefer to bask in the sun, although they will scoot under cover if visitors get too close. This is the time of year when the lizards are everywhere. The mornings aren't yet too warm, so they are out soaking up the sun's rays and looking for mating partners. Discussing the lizards with visitors, especially children, can add a new dimension to their experience here, so the following background material was prepared to help docents introduce visitors to these commonly seen but little understood animals.

Lizard Features - Lizards and snakes constitute separate suborders of the order *Squamata*, Latin for scale, so both share the scale-like skin characteristic and are cold blooded. How are they different? One might think that lizards differ from snakes in having legs, eyelids, and external ears, all of which snakes lack, but these are not present in all lizards, the silvery legless lizard in TPSR being one example. Rather, the differences are in their internal anatomies: lizards have a frontal opening in the brain case (snakes don't), and the lower halves of their jaws are held tightly together in front (snakes have an elastic binding).

Lizards regularly shed their skins, just as snakes do. With the exception of the alligator lizard, which loses its skin in one or two large sections, our common lizards shed in small pieces. Occasionally you may see one that appears to be covered with fuzz - not to worry, it is just shedding. Insects and spiders form the diet for the Reserve lizards, to which the alligator lizard adds black widow spiders and their eggs, small lizards and even small mice. The commonly seen lizards here have good vision and hearing, and they can be very active and agile if their body temperatures are optimum. The species here lay eggs (in moist soil) that take two to almost three months to hatch, usually in late July and August. The just hatched lizards are able to survive without any aid from the adults. While reptiles hibernate during winter in the colder parts of the state, in the local area they may be out during warm weather throughout the year.

The most unusual trait of many species is the ability to grow new tails. The original tail consists of vertebrae; the break occurs at a weak spot near the center of a vertebra, and a sphincter muscle around the tail artery at that point contracts to block blood loss. The regenerated tail is shorter than the original lost section and contains a rod-like cartilaginous material rather than vertebrae.

TPSR Species - The Reserve is indebted to Prof. Don Hunsaker (San Diego State University) and his students, who did extensive field surveys of the Reserve's vertebrates during 1968-72. From the survey results, which are in a report in the docent library, we know that there were eight lizard species at that time: side-blotched, fence, orange-throated whiptail, coastal whiptail, alligator, western skink, horned lizard, and the silvery legless lizard. Based on extensive personal observations, only the first three are apt to be seen on or near the trails, and their distinguishing features are described here.

Side-blotched Lizard - This and the fence lizard are the ones seen most often. It is tan to light brown, with a small blackish spot on each side just back of the front limbs. Adults are about 5 to 6 inches long. The adult male has a mottled or speckled appearance with small blue dots on its back and tail, while the female has a chevron-like pattern on its back with various hues of tan and hints of gray, and a longitudinal stripe on each side. The juveniles of both sexes somewhat resemble the adult female. In TPSR this lizard likes sandy areas; a good place to see them is the Fleming Trail between the north and south overlooks.

Western Fence Lizard (Local subspecies is the Great Basin Fence) - Adults are 6 to possibly 8 inches long and have much rougher scales than the side-blotched. Field guides describe the typical color as black, gray, or brown, with a blotched pattern. To confuse the observer, the adults may vary color with the year. In 1993 and 94, most adults were a solid black until mid summer, while this year (and 1992) only some are black. This lizard is called blue belly because of the bright blue color on its underside, brighter and more extensive on the male. A distinguishing marking is the yellowish color on the backs of the limbs near the body. Males have blue spots on the back, especially noticeable during the mating season. This lizard, which is an excellent climber, prefers to be near thick ground cover.

Orange-throated Whiptail - This is a slender, smooth-skinned lizard with a very long tapered tail. The color is brown with several yellowish longitudinal stripes. The underneath side is an orange color, more vivid and extensive in the male. The juvenile differs by having a bright blue tail. (Note: the juveniles of the orange-throated whiptail and western skink both have blue tails and at first glance resemble each other. Refer to a field guide for information on differences in the stripe pattern.) In contrast to the fence and side-blotched lizards, this lizard (if undisturbed) ambles about on the ground in no hurry to get anywhere.

(This note is a summary of part of the talk the author gave at the May Docent Society meeting.)

John Carson

Bugs in Rugs in San Diego by Helen Oswalt

Cochineal insects may look to us like insignificant white blobs scattered on the prickly pear pads, but they have been used ever since the days of the Aztecs by people who know how to produce a prized red dye from these tiny insects.

Today, right here in San Diego, at least one artisan still makes and uses cochineal dye. Gabino B. Jimenez, who demonstrates tapestry weaving at the Museum of Man on Wednesdays and Fridays through Sundays, makes his own cochineal dye because he wants to use only traditional products in his rug making. He buys large bags of dried cochineal and soaks the bodies in water for three or four days. After they have swollen to a much larger size, he mashes them in water, which he then strains to obtain the clear red liquid he needs. He fills a big kettle with the liquid plus some vinegar and coarse salt to serve as a fixative for the color, and then he heats the mixture to a boil. He then plunges two skeins (about eight pounds) of wet yarn into the boiling liquid, which he stirs for an hour. He will add more water during that time if he wants to lighten the color. If you'd like to know more about weaving with natural products, go to the Museum of Man and talk to Mr. Jimenez (call first for his schedule). His grandfather in Oaxaca, Mexico, taught him how to prepare dyes and to weave, and he likes to share his knowledge and demonstrate his weaving techniques.

The cochineal dye industry began when the Spanish learned from the Indians in Mexico how to produce the dye and subsequently exported large shipments of dried cochineal to Europe for use in the growing cloth industry there. The red of soldiers' jackets was derived from imports and "farmed" cochineal after the Spanish planted prickly pear cacti in their country to make this newfound source of wealth locally available. Cochineal dye lost its commercial prominence when aniline dyes were developed in the last century, but because it is nontoxic it still finds use today in some cosmetics, foods, and beverages, and weavers following traditional methods rely on it for their clear, bright reds. Today the industry exists only in the Canary Islands, Honduras, and Mexico.

You may want to go to the Museum of Man to watch Mr. Jimenez weave and to see the informative Kumeyaay exhibit on the upper level. The new exhibit of beadwork done by North American Indians is dazzling and includes a few examples of local materials, such as pine nuts, used for decoration before the advent of seed beads. The captions in this exhibit offer us a new awareness of the cultural capabilities of these earliest human inhabitants of our continent.

Appendix - Cochineal Entomology

Because of its historical importance in the dye industry and its presence in the Reserve, the cochineal is an excellent topic for discussion on docent walks. Also noteworthy are the unusual features of the insect's life cycle. For members interested in the latter, the following summary should be useful.

Cochineal Insects:

Order - Homioptera (scale insects, aphids, cicadas)

Family - Dactylopiidae

Genus - *Dactylopius*

Species - Local species are mainly *D. opuntiae* and *D. confusus*. *D. coccus* (primarily a "domesticated" version) in Mexico and farther south is the commercial source of the red dye.

Life Cycle - The insects reach adult phase several weeks after hatching from eggs. The males, which metamorphose into flying insects that have no mouth parts, live only about a week, during which time they mate with as many females as possible. The females remain in a larval-like form, with non-functional vestigial legs and no wings. They live by sucking fluid from the cactus and secrete a waxy, whitish material from their abdomens that they use as a protective cover.

Red Color - Docents who discuss the red dye with visitors should point out that most insect blood is colorless or light green or yellow because of the lack of hemoglobin and that the red fluid in cochineal is

(continued on next page)

Bugs in Rugs (continued from p. 6)

not blood. It was first analyzed in 1910 and found to be a hydrocarbon ring compound, which was named carminic acid (it has a bitter taste).

In the 1700s the Spanish shipped hundreds of thousands of pounds of cochineal back to Spain. A pound consists of approximately 70,000 dried female insects, with the red substance accounting for about 10% of the weight. A pound of dried cochineal, which cost almost \$50 in the 1980s, is now about \$160.

References -

Hogue, C.L., *Insects of the Los Angeles Basin*, 2nd Ed., p.136, 1993 (also see ref. in this book).

McGavin, G., *Bugs of the World*, p. 185, 1993.

Dixon, M., "Bugs Worth Their Weight - Almost - in Gold," *Torreyana*, Sept., Oct., 1987.

Encyclopaedia Britannica, and other encyclopedias.

Oh No! Insects in the Library (Subject List #1, revised) by Marc Gittelsohn

Here is a revision of our first list of books in the docent library and covers the class Insecta. Volumes added to the collection since this list was first issued in the *Torreyana* four years ago are preceded by an asterisk. Books specifically about butterflies and the class Arachnida (spiders, mites, etc.) will be covered in later lists. Except as noted, all of the books below are shelved in the category Insects. Thanks to Ron Lyons, who suggested a number of these works over the years.

*Arnett, R.H., Jr., *Simon & Schuster's Guide to Insects*, Simon & Schuster, 1981.

Borror, D.J., *A Field Guide to the Insects of America North of Mexico*, Houghton Mifflin, Peterson Field Guide No. 11, 1970.

Dodge, N.N., *Poisonous Dwellers of the Desert*, SW Parks & Monuments Assoc., 1976. Deserts Section.

*Dreistadt, S.H., *Pests of Landscape Trees and Shrubs; an Integrated Pest Management Guide*, University of Calif. Div. of Agriculture and Natural Resources, Publication No. 3359, 1994.

Edwards, J. G., *Insects*, Chevron, Western Outdoor Environmental Guide, 1971.

*Faulkner, D., *What Bugs You?* San Diego Natural History Museum, no date.

Hawks, E., *Bees Shown to the Children*, T.C. Jack, 1912.

*Hogue, C.L., *The Insects of the Los Angeles Basin*, 2nd Ed., Natural History Museum of Los Angeles County, 1993.

*Hubbell, S., *Broadsides from the Other Orders; a Book of Bugs*, Random House, 1993.

*Imes, R. *The Practical Entomologist*, Simon & Schuster/Fireside, 1992.

Powell, J.A. and Hogue, C.L., *California Insects*, University of California Press, California Natural History Guide No. 44, 1979.

Russo, R.A., *Plant Galls of the California Region*, Boxwood Press, 1979.

Teale, E.W., *Near Horizons; the Story of an Insect Garden*, Pyramid Books, 1966.

U.S. Department of Agriculture, *Insects; the Yearbook of Agriculture for 1952*.

Westcott, C., *The Gardener's Bug Book*, 1973.

*White, R.E., *A Field Guide to the Beetles of North America*, Houghton Mifflin, Peterson Field Guide No. 29, 1983.



Ranger Linda Engel and the Docent Society - 1975

After the Reserve staff decided to organize a volunteer group to provide interpretive activities for visitors, Ranger Linda Engel (now Leyva) was chosen to organize the group and the training. The type and quality of the initial training for a new group are a major factor in determining the direction the group moves in later years. Looking at the diverse interests and expertise of the present docents, it is clear that she made wise choices.

How did she come up with the training format (see the March 95 *Torreyana*, p. 13, for the first training schedule)? From her letter to the newsletter editor: "I remember having excellent help and support everywhere I turned; there is a magic about the Reserve and the Torrey pines themselves that seemed to bring out the generosity and goodwill in people. I can't recall exactly where the format originated but I'm sure I based the outline on ideas from other places. I believe some help came from the San Diego Audubon Society and the Natural history Museum in Balboa Park."

The Natural History Museum's Canyoneer program had been set up just two years earlier and involved about a dozen sessions covering the main natural history topics of the area. Ranger Engel's program looks very much like a shorter version of the Canyoneer program, and it had several Museum staff for lecturers. In addition, Helen Witham (Chamlee) was a TPA member, very active in the Reserve, on the Museum staff, and one of the lecturers for the docent training. So it is plausible to assume that the Canyoneer program was the model for the docent training or at least strongly influenced it.

What are some of her memories of her time at the Reserve? "There were many special times. One was an hour I spent walking the trails with a woman who had been progressively losing her eyesight over many years, who could identify any of the Reserve's birds by call. Another was quietly observing ravens nesting in a hole in a sandstone gully." For a humorous item: "I recall a frightened woman who came up to HQ reporting a 'wildcat' in the ladies restroom. It turned out to be a fat and feisty raccoon someone had raised as a pet until it got too big and aggressive to keep, so it got dropped off at TPSR. We got hold of a hav-a-hart trap, caught it with sardine bait, and I took it up to Mount Palomar State Park on my next days off, where I released it."

Where is she now? In 1976 she moved north and is presently a science teacher at Mendocino Middle School. From the opening of her letter: "I was very pleasantly surprised to receive your letter and to realize that this year will be the 20th anniversary of the Docent Society and my time at Torrey Pines. I am VERY happy to hear that the Docent Society is thriving." Thanks, Ranger Linda, from the past and present docents for all your contributions in 1975 that helped shape the present Docent Society.



Ranger Linda leading a walk in the Reserve



Linda, now a science teacher

Tips for Effective Interpretation

At the last class for the 1995 trainees, Ranger Greg Hackett discussed the goals of interpretation and suggested approaches that have been found helpful in achieving successful interpretation. Because even experienced docents can benefit from a refresher on this subject, here are some of his thoughts and suggestions.

- ♦ Interpretation is a communication process designed to reveal meaning and relationships of our cultural and natural heritage through first-hand involvement of the visitors.

- ♦ Good interpretation provokes park visitors' interest and attention, relates to their everyday life experiences, and reveals answers to your main theme and message.

Some of Greg's Tips -

- ♦ Know: Yourself - Be enthusiastic, courteous, caring.

Your theme - The thoughts you want your visitors to take home.

Your Audience - Why they are here and their needs.

- ♦ Note that we remember 10% of what we hear, 30% of what we read, 50% of what we see, and 90% of what we do.

- ♦ Involve your audience, use the Socratic method, be interactive.

- ♦ Be flexible - always watch for unexpected "interpretive moments."

- ♦ Encourage curiosity; let people find their own items of interest.

- ♦ Try new ideas; don't fall into a fixed routine.

(Editor's note: Tom Crandall, a former state park ranger and now volunteer at Cuyamaca Rancho State Park, made the following remarks at a 1993 training session there; because of their relevance to our programs, they are repeated here.) "The interpretive program must be rewarding to the visitors, and it should be fun. It ought to instill a sense of pride in visitors regarding their park and its cultural heritage. It should develop a keener awareness, appreciation, and understanding of the park. And finally, successful interpretation will make visitors more aware of their place in the total environment and the complexities of coexisting with it."

TPDS Board

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The *Torreyana* is issued monthly except for August by the Torrey Pines Docent Soc., which gratefully acknowledges the assistance of the Torrey Pines Assoc. in its production. Contributions are due 5 weeks before the end of the month. Please deliver them to the *Torreyana* box at the Lodge.

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The *Torreyana* is printed on 100% recycled paper.

JUNE DUTY CALENDAR

SUN	MON	TUES	WED	THU	FRI	SAT
DUTY COORDINATOR: Elaine Sacks 551-0708 HOURS: Lodge Daily 10-1; 1-4 Walks Sat/Sun/Hol 11 & 1 If you cannot do your duty, please arrange your own substitute.				1 L Heller L [REDACTED]	2 L Wenman L [REDACTED]	3 L [REDACTED] W [REDACTED] L [REDACTED] W Dixon
4 L Schulman W Cassell L Schulman W P. Roberts	5 L R. Miller L [REDACTED]	6 L Amanns L Gittelsohn	7 L D. Miller L Shaw	8 L McDonald L Altizier	9 L Musser L Grain	10 L [REDACTED] W McConnell L [REDACTED] W [REDACTED]
11 L Robertson W [REDACTED] L [REDACTED] W Stiegler	12 L [REDACTED] L Wenman	13 L Talberts L [REDACTED]	14 L E. Sacks L [REDACTED]	15 L McDonald L [REDACTED]	16 L R. Miller L [REDACTED]	17 Meeting L Parnell W Brav L Parnell W D. Miller
18 L Ferguson W Cassell L Clark W McConnell	19 L [REDACTED] L Huber	20 L McDonald L Gittelsohn	21 L Grain L Shaw	22 L E. Sacks L Oswald	23 L Musser L Marine	24 L Ferguson W Francis L [REDACTED] W Brav
25 L [REDACTED] W D. Miller L P. Roberts W Stiegler	26 L Watson L Oswald	27 L Talberts L Brickelmaier	28 L Margulies L Marine	29 L Clark L [REDACTED]	30 L Watson L Dixon	

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