



TORREYANA

Published for Members of the
Torrey Pines Docent Society
and the Torrey Pines Association

No. 187

May 1991

Next Docent Society Meeting

SATURDAY, MAY 18, 9:00 A.M. AT THE VISITOR CENTER

The business meeting will begin promptly at 9:00 A.M. Following refreshments, docents will car pool to San Elijo Lagoon, where Ranger Robert Patton will lead a nature walk, with particular attention to birds currently in residence. The endangered least terns were scheduled to return to this vicinity in April and perhaps will be visible. Other water, marsh, and field birds that may be seen include marsh and red-tailed hawks, American kestrels, pied-bill grebes, double-crested cormorants, great blue herons, great egrets, killdeer, black-necked stilts, American avocets, various ducks and gulls. Be sure to bring your binoculars and bird guides.



LARGE NUMBER OF TRAINEES TURNS OUT

Torrey Pines Docent Society welcomes the 1991 docent class, which includes 35 enthusiastic trainees, making it one of the largest classes ever. The trainees are: Barbara Anderson, Elaine Brix, Laurilyn Burson, Kathy Carine, James Cassell, Joy Cooper, Kristine Crewse, Janet and Bill Derow, Wesley Farmer, Susan Ferguson, Tom Lidot, Richard Lighthall, Pat MacGillis, Steve Marley, Andrew Mauro, Joanne Martinis, Christine McCormick, Terrea Lee McCoy, Julia Martin, Hilda Moran, David Pierce, Dee Osisek, Rebekah Polanchak, Carol Schroeder, David Seay, Karen Steimle, Betty Stephan, Mayo Steigler, Vickie Stone, Eva Szela, Vanessa Turnage, Susan Walters, Ana Velasquez, Mary Louise Wasden.

Trainees who wish assistance from a mentor, can check with the program director, Joan Nimick, for someone on the list of full docents who signed up to be mentors at the April meeting.



See p. 2

Docent Doings

CHECK THESE EVENTS SCHEDULED FOR MAY

Monday, May 6, Cleanup Day in the Lodge: Willing workers wanted between 8:30 A.M. and 1:30 P.M. (or thereabouts) to make the Lodge exhibit space and the docent room spic and span. Come when you can. For further information, call Diana Snodgrass, 481-2354.

Sunday, May 12, Interpretation for Children: Joan Nimick will lead a walk beginning at 9:00 A.M. from the Lodge focusing on the special approach needed to interest children. Regular docents as well as trainees are welcome.

Monday, May 13, Annual Meeting of Docent League of San Diego County: The Docent Council of the San Diego Museum of Art is hosting the annual meeting of the County Docent League on Monday, May 13, in the Copley Auditorium, Balboa Park, at 9:30 A.M. Lunch is at 12:30 noon in the Sculpture Garden Cafe. Reservations should be made by Tuesday, May 7. Make your check for \$14.00 payable to the Docent League of San Diego County and send it to Marion Maynard, 2520 C St., S. D., CA 92102. For further information, call JoAnn Knutson, 660-9890. (When you make your reservation, note that you belong to Torrey Pines Docent Society.)

Saturday, May 18, Regular Docent Meeting. See p. 1. President Diana Snodgrass asks that everyone come promptly to these meetings, which will start on the dot at 9:00 A.M. from now on. Also, if you have something you want to announce to the group, please let her know ahead of time so that she can plan the agenda with everyone's needs in mind.

Monday, May 20, Exotic Plant Removal: Helpers should meet at the Lodge at 8:30 A.M. for materials and directions on where to work. Hours are flexible.

COMING UP IN JUNE

The "Docent Appreciation Dinner," hosted by the TPSR staff, which was such a success last year, will be repeated this June. Tentatively, the date is Monday, June 3, at 7:00 P.M. at the Lodge. Chris Platis, our resident Greek Ranger, is planning exotic Greek cuisine and music. More details will be available at the docent meeting, May 18.

VOLUNTEERS TO THE RESCUE

In answer to the plea for an assistant for Rowdy James, our shopkeeper and sales accountant, John Green has offered his services. John and Rowdy request that docents write items sold clearly and specifically. "Book" won't do—you must give the name of the book sold.

Bob Amman is hard at work improving the specimen garden in front of the Lodge. To date, he has added several plants, including blue-eyed grass and Indian paintbrush. He is looking for others that represent some of our most common and popular species to transfer into the entrance area. Let him know if you have suggestions. As Bob noted, many visitors come just to the Lodge and never get out on the trails to see the plants. For them, these specimens will broaden their knowledge of nature at Torrey Pines.

DOCENT DUTY

Kathy Estey, duty coordinator, requests that docents who cannot keep their commitments because of emergencies, find their own replacements. They should, however, notify her of the change. Kathy also requests that more docents sign up for weekend walks—not to worry if you don't know everything, including the Latin names. You can take along resource material for reference if you like.

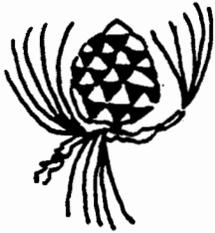
News and Notes

ADD TO LOCAL CONSERVATION GROUPS

The April *Torreyana* listed several groups dedicated to conserving San Diego's environment. Marc Gittelsohn suggests that the following two organizations, both active and effective and with lively newsletters, may also be of interest to docents: Friends of Los Peñasquitos Canyon Preserve (P.O.Box 26523, San Diego, CA 92196, tel. 484-3219); and Friends of the San Dieguito River Valley (P.O.Box 273, Del Mar, CA 92014, tel. 755-9196).

WHAT THE PARK MEANS TO VISITORS

A letter from a visitor who walked on the Guy Fleming trail in April with a docent gives an inkling of the pleasure that the park provides.



Thank you very much for a lovely time at the Torrey Pines State Reserve. It was a perfect day for the visit--many of the wildflowers in full bloom, the air was clean and fragrant, and the ocean view was spectacular! After I came home, I realized that it was the most peaceful and restful time I had since I moved to La Jolla [two years ago]. I am going to visit again there and try other trails next time.

DOCENT OFFERS SLIDE SHOW

Docent Joan Nimick and her husband will give a slide show Monday, May 20, at 7:30 P.M. entitled "The Ultimate Safari," and covering their recent trip to Africa. It will be in the auditorium of the La Jolla Recreation Center and is free and open to the public. Judging by the enlargement of animal photos that Joan showed to docents, the photography will be spectacular.

DEPARTING DOCENTS

Two active members of the Docent Society, who have given freely of their time and efforts in the past five years, are leaving this area soon. Temporary addresses for Herb and Jean Swanson will be: Herb, 910 N. Division St., Sand Point, Idaho, 83864-2175; Jean, c/o Abbe, 5600 S.E. Harvard, Bartlesville, OK 74006. Ultimately, the Swansons will be making their home in Oklahoma. They will be missed by TPDS.

NATURE NOTES FOR PUBLIC

The Docent Society recently underwrote the reproduction of a number of classic informative handouts for the public, covering the following topics: Torrey pines, geology, bark beetle, Guy Fleming trail, other trails. Glenn Dunham volunteered his time to get the copying done, at the reasonable rate of \$40 per 1,000. The handouts are available in the Ranger office.

ENVIRONMENTAL IMPACT REPORT

A copy of the *Environmental Impact Report* for the proposed freeway interchange at Carmel Valley is available in the Ranger office for docents who wish to bring themselves up to date on this project.

ANNUAL CONFERENCE OF THE LEAGUE OF CALIFORNIA STATE PARK NON-PROFIT ORGANIZATIONS

by Diana Snodgrass



I attended the first all-League Statewide Conference of the League of California State Park Non-Profit Organizations held March 22-24 at the Holiday Inn, Buellton (a few miles from the town of Solvang). Mary Ellen Young, president up until that weekend, was overjoyed to see so many docent organizations represented, as it had been her dream and goal to have the conference take place. Several hundred docents and volunteers from all parts of California

were present.

A wine and cheese reception the first evening was a good opener for meeting other participants. From the Southern Region there were 16 docents from Old Town alone—the retiring president is from Old Town. The group was full of fun and informative about previous events. It was good to make contacts with a local group, and I hope we will be exchanging visits between TPDS and Old Town in the near future.

The keynote speech Saturday was given by William Penn Mott, Jr., former director of both the California Department of Parks and the Recreation and National Park Service. Mr. Mott talked inspirationally about stepping into the twenty-first century, which he described as "the century of the environment." His goal "wish list" was: high quality interpretation reaching a diverse audience (particularly the children of urban environments); preservation of biological diversity to maintain a gene pool for future scientists; improved public relations between state parks and the public; and above all, conservation of natural values rather than preservation.

Next on the agenda was a workshop led by Patricia Garske, a junior high school teacher in Santa Cruz County with extensive docenting and interpretive skills. She discussed interpretation for children from a number of angles. I will be writing up a record of her guidelines for those docents interested in interpretation for children.

Following a nouvelle cuisine style lunch, I visited La Purisima Mission for a workshop on living history. I have handouts of this workshop, and copies will be in the docent room for perusal. (Perhaps future TPDS docents would like to disguise themselves as Guy Fleming and Ellen Browning Scripps!)

The most enjoyable part of the conference was the candlelight tour Saturday evening put on by the La Purisima docents. They played roles of different characters likely to be found at the height of operation of the working mission: scenes such as Indians playing dice by firelight, women working on embroidery, and a choir singing in the chapel.

At the Sunday morning League Board meeting it was announced that President Mary Ellen Young was retiring. Eileen Murray was voted in as the new president.

We must--all of us, men, women, and children--reorient ourselves with relation to the world in which we live. . . . We must come to understand our past, our history, in terms of the soil and water and forests and grasses that have made it what it is. . . . Our philosophies must be rewritten to remove them from the domain of words and "ideas," and to plant their roots firmly in the earth. Above all, we must weigh our place in the society of nations and our future through the decades to come in the scale of our total environment.

--William Vogt
Road to Survival (1948)

Report from the Ranger

RESEARCH IN THE RESERVE

Supervising Ranger Bob Wohl reported at the docents' April meeting that, among many other scientific research projects in the Reserve, a new bark beetle control project would soon be started, employing both attractants and anti-attractants. Beetles have destroyed perhaps 500 trees here to date.

As the population of the trees diminishes from beetle infestation and drought, the question of how far the forest will be reduced comes up. Bob found in his files a letter from the Forest Service of the United States Department of Agriculture dated February, 1981, which offered some information that is most timely. The writer, F. Thomas Ledig, Project Leader of the Institute of Forest Genetics, noted that "Probably, Torrey Pine came through a bottleneck where its population size was even smaller than now. Inbreeding occurs in small populations, resulting in loss of genetic variation. New variants will arise by mutation, but that is a slow process. . . ."

Ledig predicted that "the Torrey Pine will not be able to adapt to environmental changes by evolutionary processes. Any deterioration of the environment could adversely affect its survival, making protection of the reserves all the more important if we wish to keep it from extinction. Torrey Pine seed should be stored in the National seed banks in case the species declines in its natural habitats; for example, because of climatic changes, atmospheric pollution, insects or diseases."

And that was written before our current drought and beetle problem. Something to think about.



INFLUENCES ON SANTA ROSA TORREY PINES by Glenn Dunham

At the March 19 meeting of the California Native Plant Society, Steve Veirs, a research biologist with the National Park Service and the coordinator of the National Parks Studies Unit at U.C. Davis, presented a program on the population dynamics and the fire history of the Torrey pines on Santa Rosa Island. The dynamics appear to have been radically altered by sheep grazing and changes in the fire regime.

Veirs showed slides of the island and charts of age and size data for the pines. They now occupy less than 100 acres on a relatively sheltered part of the island. During the 1880s, the pine population numbered approximately 100 individuals; presently it is 4,400. The age data shown confirmed that only a few trees left are over 100 years old, and only two or three over 250, with the majority 50 years or younger. Veirs believes the terrific growth rate has to do with overgrazing, which gives the pines open space to expand, and with lack of fires, which would have damaged the trees. Data from core samples and parts of trees indicated that the fire sequence was about every 20 to 30 years prior to the 1880s, but very few fires since. The island had no large grazing animals before sheep, cattle, deer, and elk were introduced. The sheep effectively denuded the landscape first, and native vegetation has been pushed to small sections of the island. Veirs speculated that if the parks service removes the grazing animals in 20 years as planned, this may have adverse effects on any continued increase in the Torrey pine population.

IF YOU'RE AT SEA ABOUT MARINE MAMMALS. . . .

Waters off Torrey Pines State Reserve are rich with marine mammals, particularly bottlenose dolphins and California sea lions. Identification clues, population statistics, and lifestyles of these creatures were described for docents at their April meeting by Bob Clark, a longtime officer of the San Diego Chapter of the American Cetacean Society and coordinator of the local annual dolphin count, which took place in April.

Some items to keep in mind:

--The population of gray whales has actually increased since commercial whaling ended and is now nearly 150% of pre-whaling numbers, or about 23,000. The grays are swimming further offshore than formerly as a result of boating activity, so numbers actually spotted from shore may be fewer. The increase in these whales is an exception to general whale statistics: other whale populations, except the minke, rarely seen here, have decreased.

--Gray whales are 40 to 45 feet long and weigh 30 to 40 tons. They are covered with barnacles and specific lice (which eat the dead skin). The barnacles fall off and leave a distinctive pattern on the whale's body, making it possible for individuals to be identified and tracked.

--The bottlenose dolphin is the most common cetacean seen from shore. Populations of 500 to 600 cruise along our coast, typically within 400 yards of shore. These dolphins are mostly gray. Other dolphins that may be seen are the common dolphin, with an hour-glass pattern of white on their sides and an all black fin; the Pacific white-sided dolphin with a black and white fin; and Risso's dolphin, dark with scarred skin and a rounded, rather than beaked, profile.

--For those concerned about the difference between porpoises and dolphins: the former are somewhat smaller and are not commonly seen off the San Diego coast. They also have rounded, spatulate teeth in contrast to the pointed teeth of dolphins—but you might not get close enough to verify that.

--Dolphins beach when they are sick. However, when large numbers beach, this may be panic resulting perhaps from magnetic reversals.

--"Swim with the dolphins" programs are not recommended by Clark. In fact, he feels that such programs should be abandoned.

--Other commonly seen mammals in this area are two of the pinnapeds: the black or tan California sea lion, which is thriving, and the smaller spotted harbor seal. The sea lion is the one with the ear flaps. The six-ton elephant seals are rarely seen here. These giants spend most of their time diving—really, sinking—down to 2,000 feet, and only a couple of minutes breathing at the surface. Elephant seals may be seen in numbers lounging around the rocks at the Coronado Islands.

--For the children in your groups, you might remember that blue whales, now considered endangered, are bigger than the heaviest dinosaurs were.

(The TPDS Executive Boards requested that additional copies of the handout on cetaceans passed out at the meeting be made available for those interested at the Lodge. The Board also voted to send \$100 to the American Cetacean Society as a gesture of thanks for providing us with a speaker.)

I suppose you could never prove to the mind of the most ingenious mollusk that such a creature as a whale was possible.

--Ralph Waldo Emerson

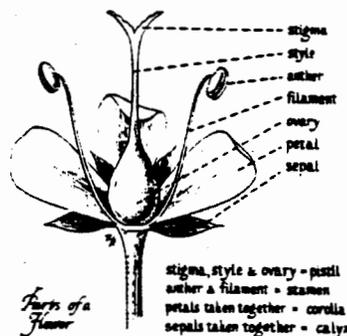


STIGMAS AND POLLEN, AND VARIOUS GO-BETWEENS by Elizabeth Nicoloff

When our spring display of colorful wildflowers dramatizes the landscape and fills the air with sweet smells, it seems as if flowers must have been designed purely for our enjoyment. But flowers have been around since long before man appeared on the planet, and our pleasure is only incidental to their mission of procreation of their species.

Sexual reproduction of plants began in the mid-Paleozoic era, around 400 million years ago. These early spore and later seed-bearing plants—ferns, cycads, ginkgo, conifers, and others now extinct—had no flowers, and the landscape was a uniform green, gray, and brown. Then, around the middle of the Cretaceous period, say 125 million years ago, as the dinosaurs were declining and mammals increasing, flowering plants appeared and expanded and in the Tertiary period became the dominant plant form. Now more than 150,000 species of flowering plants are recognized worldwide. Here let us look at how plant fertilization is brought about, looking especially at our plants in Torrey Pines State Reserve.

First of all, we must know the parts of a flower. Most flowers have both male and female parts; these are called perfect flowers.



Some plants have separate male and female flowers on the same plant (monoecious plants) and others grow the male and female flowers on separate plants (dioecious plants).

The diagram shows the parts of a perfect flower. The petals of the corolla surround the male stamens, which bear pollen on the anthers, and the female pistil, which consists of the stigma, style, and ovary. When a pollen grain is deposited on a stigma, it grows a pollen tube down through the style to the ovary, where it connects with one of the ovules, or egg cells, therein. Several

pollen grains will produce several pollen tubes. Then the sperm cell of the pollen grain goes down through the tube and unites with the egg cell, and fertilization is accomplished. From this union a seed will result. This all sounds very simple.

The problem, since plants are rooted in place, is getting pollen from one flower to another. Obviously, something must carry it—wind, insect, bird, or animal. True, some flowers are self-fertilizing; the dandelion is one such. But cross fertilization, bringing about genetic diversity, is more advantageous. And so the pollen must meet not only a stigma, but the stigma of another flower to avoid self-pollination. Notice how a flower's pistil is usually longer than the stamens around it; the insect or bird with its dusting of pollen from another flower will touch the stigma first, dropping pollen, and then pick up more pollen from the anthers. In other flowers the stigma becomes receptive before the anthers shed their pollen, so the flower will be already pollinated from other flowers before its own pollen becomes available. And of course dioecious plants cannot self-pollinate.

Wind carried the pollen of the earliest seed-bearing plants. Since wind is an imprecise carrier, scattering the pollen widely and haphazardly, such plants must produce vast quantities of very light pollen to ensure contact of some grains with female receptors of the same species. Every February we see how the pollen of the Torrey pines dusts the whole area and collects wastefully in piles along smooth road surfaces. Some later-developed flowering plants still use wind as their pollinators. Oaks, many grasses, willows, and some members of the sunflower family scatter their pollen with the wind. Their flowers, like the cones of conifers, have no fragrance and drab in color, usually have no petals, and have feathery or branched stigmas to catch the passing pollen.

(continued on p.8)

Pines are our specialty here, so let's look at their pollination in some detail. The female seed cones grow on short lateral branches near the tips of young branches, partially hidden by the terminal bud, and surrounded by a cluster of needles. The male cones (which resemble catkins), bearing the pollen, grow in clusters at branch ends. When the pollen is released and wafted into the air, the seed cones open into elaborate wind snares. Studies have shown that the scales deflect the air currents into a spiral around the cone and then into smaller spirals between the separate scales, thus funneling the pollen grains right into the receptive openings in the two ovules of each scale. Neat. But there is even more involved in perfecting the process. In order to capture only pollen of its own species, each species of pine has a different-shaped cone as well as different-shaped pollen grains. (In fact, every plant has its own distinctive shape of pollen grain.) In this way pollens are filtered out, as well as undesirable elements like fungal spores, which could cause damage. Furthermore, the cluster of needles around the cone serve to slow the wind, causing it to drop more of its cargo of pollen onto the cone, there to be sucked into the eddies around the scales. The ensuing process of pollen tube growth and sperm and egg cell development is very slow, and fertilization may not occur for a year or more after pollination.

The jobba flower hangs like a bell beneath a pair of leaves that point upward. These two leaves deflect the wind downward onto the flower, whose sepals and petals channel it to the stigma underneath. And because of the distinguishing shape of the pollen grains, only jobba pollen is carried to the stigma, while pine and other pollens pass the flower by.

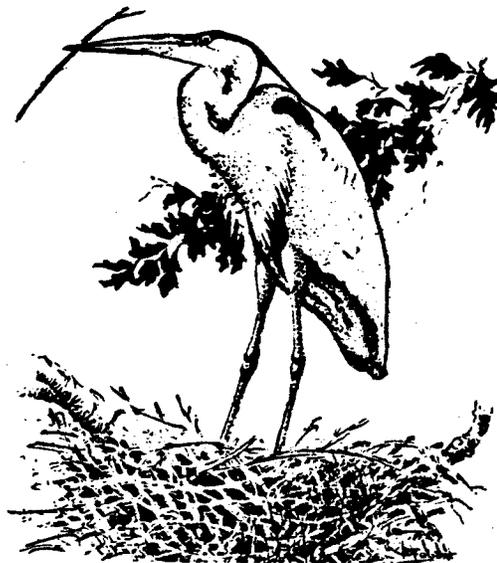
You surely have noticed the catkins on the scrub oak. Each bead-like flower on the hanging thread is a cluster of stamens. The female flowers are less noticeable--they are very small pistils growing in groups of two or three in the axils, or angles, between leaves and stems. They are feathery and face upward ready to receive pollen that breezes by.

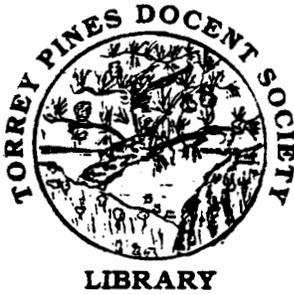
Grasses, also wind-pollinated, have tiny inconspicuous flowers in a loose inflorescence. The flowers open in the early morning to allow pollen to escape and be carried away and caught on feathery stigmas. The loose inflorescence does not catch and manipulate the air currents but rather shakes in complex patterns to expose the flowers to more of the pollen. Only a few hours later, already pollinated, the flowers close again around the ovary and developing seed.

(This is the first part of a two-part article on pollination. Next month, learn the role of beetles, birds, and bees as pollinators.)

With esoteric bills of lading,
 For twigs and feathers, mud and grasses,
 By searching, seizing, plucking, raiding,
 The avian architect amasses
 A fine supply of found material
 For nest on earth, or nest aerial.

JOEL PETERS (1905-), *The Avian Architect*



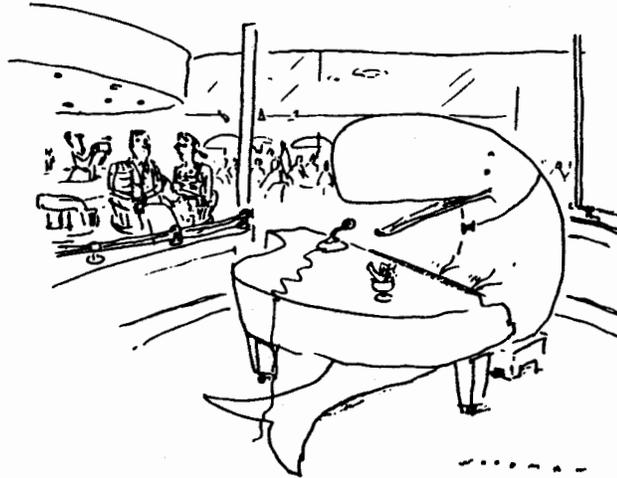
LIBRARY BOOKPLATES by Marc Gittelsohn

GIFT OF RUTH HAND

Thanks to the artistic skills of Pat Foster, Torrey Pines Docent Society now has elegant bookplates for the volumes comprising our docent library. In addition to making the design, Pat also saw these self-adhering bookplates through the printing and manufacturing process. I am happy to report that most of our books have already been plated.

As you will note from the illustration, the plates have space to acknowledge donors.

(Note: Library Subject List #5, "Native Americana," will appear in next month's Torreyana.)



"What's remarkable is that just last week he was lying despondent on the beach."

The *Torreyana* is issued monthly except for August by the Torrey Pines Docent Society and Torrey Pines Association.

Deadline for contributions is the 24th of each month. Please send to the editor:

Marion Dixon
2355 Avenida de la Playa
La Jolla, CA 92037

Staff: Glenn Dunham, Pat and Parker Foster.

* * *

Address changes go to:

Carol Lewis, Mbrshp Chair
12908 Candela Pl.
San Diego, CA 92130

ADD TO ROSTER

The following name was inadvertently omitted from the 1991 TPDS Membership List distributed at the April meeting. Please add it under "Supporting Members":

Carlstrom, Judy
13609 Ring Road
Poway, CA 92064

748-0181

*May, with alle thy floures and thy grene,
Wel-come be thou, fair fresshe May.*

--Geoffrey Chaucer

