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The deadline for articles to be submitted for the June 2019 issue of OAK NOTES is Wednesday, May 15. Thank you for your prompt submission!!



FROM THE PRESIDENT Cindy Walkenbach, Volunteer President

"Volunteering is the ultimate exercise in democracy. You vote in elections once a year, but when you volunteer, you vote every day about the kind of community you want to live in."

—Author Unknown

It was nice to see so many of you turn out for a Volunteer "champagne lunch" to meet the architectural team charged with designing the Forest Pavilion. Our own Richard Davis and his crew cleaned the grounds, Peter Evans marked out the area to give us an idea where parts of the structure and gardens would be, and the architects brought a 3D layout to make it easier for us to visualize the total project.

I am so very happy to report that your Volunteer Organization has met its initial lofty goal of raising \$25,000 to name the Gathering Circle for school children. In fact, we've actually exceeded that initial goal and are well on our way toward raising \$40,000 to be able to name the pathway from the bus drop-off area to the Gathering Circle. With your help, I hope to report by June that we have reached the new level. Marla White is coordinating a fund-raiser for us at Panera Bread in Upland on Thursday, May 9, so let's turn out to support this effort. Information on that event will be forthcoming.

If you haven't made a gift and would like to do so, please contact Karina Chappell in the Advancement office. You may make a one-time gift or Karina will take your pledge to be paid over a three-year period. This can facilitate an individual's giving at a higher level, and all donors at the \$250 level and above will be recognized at the site and with additional individual naming opportunities based on the level of their gifts.

The Garden is a special place that we all love, and I continue to be amazed at the support you give in so many ways. Your incredible commitment to it through countless hours of volunteer time and now your generosity in supporting the

Forest Pavilion project are truly extraordinary. It is inspiring. Thank you!



From the

Executive Director

Greetings volunteers:

As I write, we have just finished Wildflower Weekend which involved a great deal of vital and excellent contributions from volunteers. Thanks to all of you who served as room attendants and guest greeters, and also to those who were with us on the Saturday night Wildflower Happy Hour event, an event that definitely put the wild in wildflower! Of course, vol-

unteer contributions continue through California Native Plant week with our daily tram tours, and then there are the marvelous arrangements contributed by Native Designs. These last are on display through the week in the ECRartistically displayed on the pedestals that David Bryant managed to borrow from Scripps.

"The earth has received the embrace of the sun and we shall see the results of that love."

- Sitting Bull

will be the field trip to the Sand to Snow Monument on Saturday, April 20. Led by two very serious and DIRECTOR accomplished field botanists, Conservation Botanist Duncan Bell and Senior Scientist Mark Porter, this Lucinda McDade, RSABG promises to be a very special day! I hope that many of you are signed up to participate and I am also quite jealous of you as I have another commitment that day and am unable to go. May all of your eyes be dazzled with wildflowers and your hearts and minds thrilled with the wonder of California native plants! Also, as I am writing, Origami in the Garden is being

packed up to leave us. I hope that you have enjoyed having the sculptures among us as much as I have! It has been a great exhibit in terms of other activi-

The last formal event of the wildflower extravaganza

ties-mostly educational-that went on "around" it including those folding stations staffed by some of you volunteers. I also want to be sure that you are all aware that the exhibit has been excellent for RSABG in terms of membership and visitation. Both of these categories are considerably "up" compared to last year at this time. The latest data that I have seen for visitation indi-

cate that admission revenues have been up more than a third year over year. With regard to membership, the onus is now on us to hold on to those members especially those who joined because of Origami—by giving them reasons to renew when their membership year is over. This means that we will be doing a series of mission-central exhibits and other events that are free or advantageously priced for members.

It is likely to be on the order of three years before we are ready again to mount an exhibit of the scale of Origami. In significant part, this is because an exhibit like this costs money and thus requires considerable fund-raising effort to garner sponsorships to pay for it. During the second half of 2018, we very much felt that RSABG had nearly too many fund-raising opportunities 'on offer': Forest Pavilion, Origami, Garden Fund. And of course, we cannot afford to have Garden Fund get short shrift as that is the bread

The wildflower display was quite different this year, and I am not just speaking of the fact that the four "sources" of plants were arranged on four "islands" of pedestals. As importantly, we probably displayed no more than half as many samples of flowering plants as in past years just owing to reduced real estate on the pedestals versus our normal table tops. I would love to have your feedback on these changes. This includes your personal thoughts on it as well as anything you might have gleaned from volunteering to staff the room or just from being there when other guests were visiting the show. As an FYI, we were interviewing guests about their perspectives and opinions on the show and other aspects of Wildflower Week that were on offer. I am looking forward to having some real data from those surveys which will be useful to us in charting our future course with regard to this event.

and butter of funding for core programs: horticulture, research, education.

And speaking of Garden Fund, that brings me to Forever California at our Garden with a View. This event provides vital support for Garden Fund: this year, all aspects of it—on-line, silent, live, paddle auctions—will go to support core programs at RSABG. These are the vital programs that enable RSABG to achieve our core mission by funding:

- horticulture staff in tending to the grounds and the living collection;
- research staff in advancing knowledge of California native plants and caring for RSABG's world class seed bank, herbarium and library and
- the diverse educational programming that we do—from the preschoolers learning about squirrels, lizards and plants with Lisa Pritchard, to adults learning to identify grasses with Travis Columbus, to our graduate students enrolled in degree granting programs (note that, with Lisa on board, we are now pre-K to gray in terms of educational programming!).

I hope that many of you will come to *Forever California*! It is a fun and lively evening and it is so very critical for the long-term well-being of our Garden. As volunteers, you support our Garden with your incredibly valuable time and well-honed abilities. Your attendance at *Forever California* is very welcome

icing on that already abundant cake!

Thanks again for all that you do: each and every one of you makes our Garden more effective and impactful, and also a more wonderful place to work!



Touring Programs

Judy Hayami, Touring Programs Manager

Thanks to everyone who helped with the Wildflower Show set-up and clean-up duties. Collected flowers went from baggies to glassware and into the East Classroom smoothly and quickly. Installation and identification were nearly complete by 3:30 p.m. The show has certainly evolved since the year I joined RSABG staff. The new format is fresh and contemporary, and we did not work beyond 11:30 p.m. as we often did in the past. I hope you had time to enjoy the show and activities of Wildflower Week.

Kathleen and I are looking for Nature Interpreters and other volunteers interested in birds, for Bird LA Day, May 4. Chris Verma of Claremont's Wild Birds Unlimited will meet interested guests at the kiosk at 8 a.m. to start things off with a bird walk. From 9 to 11 a.m., Nature Interpreters are needed to host

MEET LISA PRITCHARD, "COMMUNITY EDUCATION COORDINATOR



Hello to the RSABG volunteers! I've been working here for six months now and I know I haven't introduced myself to many of you, so here I go—I am the new Community Education Coordinator (who used to be Diana Nightingale). I arrived here

in Claremont almost two years ago, after growing up and raising a family in Rhode Island. When my son and daughter both went to West Coast schools, I knew it was only a matter of time before my husband, dogs, cats and tortoise made our way out here as well! Prior to working at RSABG, I was a lower school science teacher, an estate gardener, a stay at home mom, and the education coordinator at a local bird sanctuary. I share a love of wildlife, gardening, and teaching with many of you and I look forward to working with you here at the Garden. Should you have any ideas, or inspirations for classes, please feel free to pass them along.

stations from the *Adaptation and Survival* school program. Our taxidermy bird collection will be on display and we may offer a simple craft (origami swan or crane?), if we have enough help. Please sign up through Volgistics or send an email to Volunteer Manager Kathleen Noll or me.

Speaking of the Adaptation and Survival Program, NIs Marla White, Katy Douglass and Elene Kalamanis have been working diligently to align that 2-hour school program with Next Generation Science Standards. A little tweaking here and there, and some items added and removed from stations, will be presented for discussion and review at a workshop sometime before tours start up in the fall. Date to be decided.

Tour reservations for May are now closed. Please keep a close eye on the NI calendar and be sure to line up a substitute if you are not available for your team. Sign Up Tour and Tram Tour guides are needed, too. Please sign up early and often!

-Judy



VOLUNTEER PROGRAMS Kathleen Noll, Manager of Volunteer Programs

Volunteers are the heartbeat of the Garden and make almost every Garden program possible! Volunteers lead tours and field trips, welcome visitors in the Garden shop, expand the herbarium and keep the Garden looking beautiful.

We need you! Please join our wonderful volunteer teams!

The Volunteer Program at RSABG presently has openings all around the Garden. If you feel like trying something new or adding a new experience to your regular volunteer service, there are opportunities for you in the following programs:

- Horticulture/Living Collection Garden Grounds Keepers & Bench Brigade.
- Herbarium Specimen Preparator in the Herbarium.
- Visitor Education docent to lead two-hour touring programs on Thursdays and Fridays.
- Garden Gift Shop retail support on weekdays and weekends.
- Public Outreach sharing RSABG's mission with the community.

For more information, please contact Kathleen

Coming up:

The California Butterfly Pavilion opens on Saturday, May 11. Volunteer orientation for the upcoming Butterfly Pavilion season is on Wednesday, May 1 at 1 p.m. in the Outdoor Classroom. Butterfly Pavilion morning and afternoon shifts are on the Volgistics sign-up calendar. Please call or email if I may assist you with signing up for the Butterfly Pavilion. Use your Volgistics account on the Garden's volunteer page to login and sign-up to claim your shift. If you would enjoy a weekly "gig" for the season



A Very Happy May Birthday to:

Ed James Sharron Neyer Sally Prusia Stephen Simon Hugh Menton Jackie Pace

ia Holly Yokoyama Imon Vicky Geary nton Ruth Pitt e Dawn Thielo

Chuck Burt

Robert Swank

Linda Clement

4

and are available to commit to a specific day each week we would love to hear from you!

Next month the Garden will host a special celebration honoring volunteers and presentation of volunteer awards at the **Volunteer Appreciation Dinner on Wednesday, June 26 in the California Courtyard**. We look forward to seeing everyone there!

VOLUNTEER ENRICHMENT Linda Clement, for Volunteer Enrichment Committee

The Enrichment committee would like to invite you to join us on Monday, May 20, at noon in the East Classroom to hear Hester Bell's presentation on her work in the Eureka Valley. Along with this presentation we will have beautiful photos by photographer Deb Woo documenting the work Hester has done in the Eureka Valley.

Please join us on Monday, May 20 at noon for this presentation. You are welcome to bring your lunch. Coffee, tea, and cookies will be provided.

THANK YOU FROM THE VOLUNTEER LIBRARY COMMITTEE!

There has been a significant increase in books checked out from the Volunteer Library. Interest has mainly focused on spring wildflowers, forest bathing, children's books, and trees. So, thank you volunteers. The Volunteer Library Committee continues to strive to make our library an accessible resource for your work at RSABG.



Notes from Visitor Experience

David Bryant, Director of Visitor Experience

A Living Kaleidoscope: The California Butterfly Pavilion

I recently learned that a grouping of butterflies is called a "kaleidoscope." How befitting of these winged

HELP WANTED! Kathleen Noll, Manager of Volunteer Programs

The California Gift Shop has open shifts available for volunteers who can assist with shop operations on a weekly basis. Volunteer duties include:

- Greeting customers and directing them to their area(s) of interest.
- Cashier duties.
- Maintaining neatness of merchandise displays.
- Enhancing visitors' knowledge and appreciation of the Garden.

As Gift Shop Assistant you will report to Anne Vetterli, Manager of the California Gift Shop at RSABG. Dependability and commitment are of the utmost importance for volunteering in the Gift Shop. Training will be provided. The weekly shifts are on the following days/times ongoing: Monday morning from 9 a.m. – 1 p.m.

Monday afternoon from 1-5 p.m. Wednesday morning from 9 a.m. -1 p.m. Thursday morning from 9 a.m. -1 p.m. Thursday afternoon from 1-5 p.m. Friday afternoon from 1-5 p.m. Sunday morning from 9 a.m. -1 p.m. Sunday afternoon from 1-5 p.m.

The Gift Shop also needs volunteer support for special events and occasional break volunteers on Saturdays. Please reply, call or come by the Volunteer Office (room 124) if you are interested or think you may be interested in this ongoing volunteer role. You may also stop by the Gift Shop to check it out and see if this opportunity may be right for you. Thank you!

jewels and their showstopping performances this year. Their hypnotic colors and patterns, in the enormous masses we have seen, has nearly rivaled the superbloom. Millions of painted ladies (*Vanessa cardui*) took flight as they moved from our deserts northward. Western tiger swallowtails (*Papilio rutulus*) are lighting up the Garden with beautiful bursts of yellow as they flap their oversized wings. Monarch (*Danaus plexippus*) and queen (*Danaus gilippus*) butterflies have been spotted dashing between sages and other wildflowers.

This May we will exhibit this kaleidoscope in all its colorful beauty at the California Butterfly Pavilion. Opening May 11, the pavilion showcases California butterflies and the native plants they depend on. Through exploration and discovery, visitors learn that the lives of these beautiful creatures are inextricably linked to California's plants. Our fabulous staff and volunteers highlight this connection and elevate the experience with educational demonstrations, interpretation and joy.

The pavilion experience is evolving. New displays will feature California habitats where butterflies are found and reveal the respective plants that support a kaleidoscope of these amazing insects. New plants, signage, furniture and activities will bolster the already marvelous experience that guests have at our California Butterfly Pavilion.

We are presently recruiting volunteers for pavilion shifts—this opportunity involves welcoming guests into the pavilion, providing light interpretation and helping with the upkeep of displays. Shifts are available throughout the week from 9:30 a.m.–12:30 p.m. and 12:30–3:30 p.m. If you want to help raise our butterfly livestock, we could also use help harvesting plant material, cleaning cages and assisting our pavilion staff with the butterflies' general care.

I hope to see you at the pavilion!

David

MULBERRY (GENUS *MORUS*) Rudi Volti, Nature Interpreter



On first acquaintance, the mulberry seems to be a wonder tree. It is very hardy, able to withstand occasional temperatures below zero degrees centigrade (32° F.), yet it also does well in Mediterranean and sub-tropical climates. It is not picky about its local environment, being tolerant of wind, drought, and partial shade. Its ability to flourish in a variety of environments is reflected in its widespread distribution throughout Asia, Europe, North and East Africa, and in the Americas, ranging from the United States to Argentina. It is salt-tolerant and is rarely afflicted by disease and insect pests. As a bonus, it produces edible fruit, which depending on the species, may be red, white or black.

So, what's not to like? First, as any backyard gardener knows, some fruit trees may be too prolific, requiring constant harvesting of fruit that exceeds the appetites of family, friends, and workmates. After 20–30 years growth a typical tree will produce well over 300 kg. (660 lbs.) of berries during fruiting season. This will go on for 6–8 weeks, during which time the tree's owner will be hard-pressed to keep up with the steady fruit fall. Making matters more difficult, the fruit starts to rot after a few days, which is why it rarely appears in stores.

A more serious annoyance is the tree's rapid growth and its large, aggressive roots that can lift sidewalks and choke drains. I can speak from experience here. A landscaper recommended that I plant a mulberry for an area that needed shade. Rapid growth ensued, after which another landscaper noted that if the

government is ever worried about unemployment, all it has to do is plant mulberries throughout the nation; millions of people could then be put to work endlessly pruning them.

There are about 68 species of the genus *Morus*, the majority of which originated in Asia. They are medium-sized trees, growing to a height of 10–20 m. (33–66 ft.). The trees can be dioecious, i.e., having male and female flowers on different plants or monoecious with male and female flowers in separate structures on the same plant. They also will sometimes change from one sex to another.

The nursery rhyme, "Here we go 'round the mulberry bush" has no basis in fact, as all mulberries are trees. It is possible that the rhyme refers to Britain's efforts in the eighteenth and nineteenth centuries to grow mulberry trees to support silkworms. But mulberry trees proved too vulnerable to prolonged frost; hence, the traditional lyrics "Here we go 'round the mulberry bush on a cold and frosty morning" may therefore be a sardonic reference to the problems faced by the nascent industry.

Mulberries have a wide variety of uses throughout the world. On the Indian subcontinent especially, mulberry wood is used for handicrafts, cabinet work, and poles for stakes and tree props. In Korea the leaves are prepared as a nutritious tea and are sometimes served as a vegetable. The mulberry also has a number of medicinal applications. The bark and twigs are said to be useful for treating coughs, colds, insect bites, and wounds. Some Chinese have long believed that mulberry fruit has aphrodisiac qualities. Most importantly, as noted above, mulberry leaves are essential for silk production, which is based on the cocoons of the silkworm (Bombyx mori). So significant was silk production in China long ago that the Romans referred to that country as Serica, "the land of silk." In China today, 626,000 hectares are devoted to the cultivation of mulberry trees for raising silkworms.

In the past, silk production brought great wealth, but it could also lead to financial ruin. The latter is narrated in one of the classics of modern Chinese fiction, Mao Dun's "Spring Silkworms." It is the story of a debt-ridden, malnourished peasant family who hopes that the year's silkworm crop would lighten their burdens somewhat while also allowing them to repay the debt they incurred to buy mulberry leaves. Under the devoted care of the exhausted, sleepdeprived family members, the silkworms flourished, giving rise to a bumper crop of cocoons. But when it came time to sell the cocoons, the family found to their immense chagrin that the price of silk had collapsed, and with it the value of their cocoons. Unbeknownst to them, the Great Depression that started half a world away had destroyed their household industry.

THE BUZZ ON POLLINATION Fred Brooks, Nature Interpreter



Photo. Buzz pollination of madrone (Arbutus unedo), courtesy of Wiki Commons

Pollination is the transfer of pollen from a male anther to a female stigma. It enables fertilization among flowers on the same plant (self-pollination), and when pollen is transferred to another plant with compatible flowers (cross-pollination). Most pollinators are insects, especially bees, but birds, bats, humans, wind, and water also transfer pollen.

Pollination is not gratuitous; pollinators are after something. Many insects eat pollen, feed it to their growing larvae, or both. Other pollinators, like hummingbirds, are after nectar in the flower and accidentally contact and transfer pollen. Most of these flower—pollinator relationships are mutually beneficial, others primarily benefit the flower or the pollinator.

Some research classifies floral visits by whether they lead to pollen transfer. Three illegitimate floral visits are not likely to transfer pollen. "Primary nectarrobbing" occurs when an insect makes a hole in a flower and collects only nectar and not pollen. This probably explains the small holes at the base of some manzanita flowers. "Secondary nectar-robbing" is the collection of nectar through a hole made by another insect. In "nectar thievery," an insect forces its mouthparts into an unopened flower without damaging it and collects the nectar.

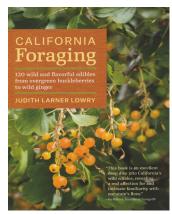
During "legitimate pollen collection," bees collect pollen on their body hairs or hind legs. In "legitimate nectar collection," an insect inserts its mouthparts through the flower's open corolla. Sonication, or "buzz pollination" is another form of legitimate pollen collection.

Buzz pollination may have evolved in plants to protect their pollen from illegitimate or inefficient pollinators. These plants developed "poricidal anthers" containing dry pollen grains that are only released through small pores or slits.

Most buzz-pollinators are bumblebees or solitary bees, but not honeybees. These insects grasp the corolla or anthers with their legs, and then grip the base with their mandibles (photo). They then decouple the flight muscles from their wings. Rapidly contracting these muscles does not move the wings but produces vibrations that shake pollen from the anthers directly or indirectly onto the bee's body. Next time you see a bumblebee clasping a flower, listen for a faint "middle-C" buzz.

BOOK OF THE MONTH

Gene Baumann, Volunteer Library Committee



"California Foraging" by Judith Larner Lowry. Illustrated. 344 pp. Timber Press. Portland, Oregon. 2014.

Iso Rabins, founder of Forage SF states that California Foraging is "an excellent deep dive into California's wild edibles,

revealing a real affection for and intimate familiarity with our state's flora." Lowry's book covers 120 wild edibles from evergreen huckleberries to wild ginger. The guide is organized for year-round foraging, safe identification, suggestions for sustainable harvesting, development of wild food gardens and tips on preparation and use.

For example, the entry for Stinging Nettle (*Urtica dioica*) identifies the leaves and stems as edible. Subsections include: How to identify; Where and when to gather; How to gather; How to use and Future harvests.

Lowry is indeed cautious about foraging and offers repeated advice about seeking experienced foragers for training. She also clearly advises against foraging where plants are less common and/or less vigorous. Conservation and sustainability are important and included as a dedicated section for each plant listed.

I found Lowry's approach to foraging sensitive to preserving natural habitat. I recommend this book for its interesting and informative material. I am less enthusiastic about everyone foraging since mass expeditions into nature tend to go poorly for the plants. We are a present witness to mass excitement about wildflower blooms which have led to plants being trampled and fragile desert habitat being destroyed. So, if you must forage, please do so with extreme care and expert guidance.

This interesting read is available in the Volunteer Library.



May 1: Butterfly Pavilion Volunteer Orientation, Wednesday, 1–2 p.m., Butterfly Pavilion.

May 2: Volunteer Organization Board Meeting, Thursday, Noon–1:30 p.m., East Classroom.

May 4: Garden Walking Club, Saturday, 8 a.m., Admission Kiosk.

May 4: Bird Day LA, Saturday, 8–11 a.m., FREE with Garden admission.

May 5: Forever California: Garden with a View 2018, Sunday, 4:30–8 p.m.

May 5: Pomona Valley Audubon Society Beginner's Bird Walk, Sunday, 8–9:30 a.m., Admission Kiosk, FREE with Garden admission.

May 6: Volunteer Library Committee Meeting, Monday, 10:15–11:45 a.m., Volunteer Library.

May 7: Public Relations Meeting, Tuesday, 10–11 a.m., Volunteer Library.

May 8: Education Materials Work Party, Wednesday, 9–11 a.m., Lenz Horticulture Classroom, everyone welcome!

May 9: Panera Volunteer Fundraiser, Thursday, 4–8 p.m., at Panera, 1053 E. 19th St, Upland, California 91784. Please bring a digital flyer or flyer in Oak Notes to the event!.

May 10: National Public Gardens Day/FREE ADMISSION DAY!, Friday, 9 a.m.–5 p.m.

May 11: California Butterfly Pavilion—Opening Day, Saturday, 10 a.m.–3 p.m., through August 3.

May 11: Medicinal Plants of California Herb Walk, Saturday, 10 a.m.—1 p.m. Pre-registration required, \$20 members.

May 11: Garden Walking Club, Saturday, 8 a.m., Admission Kiosk.

May 12: Mother's Day—Moms receive FREE Garden admission, Sunday, 8 a.m.–5 p.m.

May 15: Volunteer Personnel Committee Meeting, Wednesday, 9:30–11 a.m., Volunteer Library.

May 16: Visitor Education Committee Meeting, Thursday, Noon–1:15 p.m., Volunteer Library.

May 18: Family Bird Walk—Wild Birds Unlimited, Saturday, 8 a.m., Admission Kiosk, FREE with Garden admission.

May 18: Garden Walking Club, Saturday, 8 a.m., Admission Kiosk.

May 18: Full Moon Night Hike, Saturday, 7:30–9:30 p.m. Pre-registration required, \$16 members.

May 20: Education Materials Work Party, Monday, 9–11 a.m., Lenz Hort Classroom, everyone welcome!

May 20: Volunteer Enrichment, Hester L. Bell, Research Associate RSABG program on Eureka Valley. Monday, Noon–1 p.m., East Classroom.

May 25: Garden Walking Club, Saturday, 8 a.m., Admission Kiosk.

May 27: Blue Star Museum Days: Free admission for Active Duty, Veterans and immediate family, through September 2.

May 31: Volunteer Time Report due, Friday, 8 a.m.– 5 p.m.



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