

Oak Notes

Volume 36
Number 10
June 2018

NEWSLETTER OF THE RANCHO SANTA ANA BOTANIC GARDEN VOLUNTEERS

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OAK NOTES

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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

The Quarterly Meeting and Potluck Luncheon is set for Friday, June 8 and I hope to see all of you there. We'll be voting for next year's Executive Board, so please watch your email for the slate of officers. Kathleen will be sharing information about Volgistics, the new software program for recording our volunteer hours; and we'll have an opportunity to sign up to help with some fun summer Garden activities. Betty Butler and her crew are planning a lovely potluck, so please bring anything you wish to share. No need to sign up.

Recently I had an opportunity to volunteer in the Butterfly Pavilion and it is heartwarming to see so many young families introducing their children to the wonders of nature. Seeing butterflies is a joyous, entrancing experience for our youngest Garden visitors; their excitement is palpable. As adults we delight in the butterfly's emergence from its chrysalis into a creature of delicate, ethereal beauty, and its metamorphosis reminds us how perfect nature can be in an often chaotic world.

This is the last issue of Oak Notes until September, so let me leave you with this lovely monarch-inspired "Advice from a BUTTERFLY" written by storyteller Ilan Shamir, founder of Your True Nature:

Let your true colors show; get out of your cocoon; take yourself lightly; look for the sweetness in life; take time to smell the flowers; catch a breeze....

Happy summer to each of you!

The deadline for articles to be submitted for the September 2018 issue of OAK NOTES is Wednesday, August 15. Thank you for your prompt submission!!



FROM THE DIRECTOR

Lucinda McDade, RSABG
Executive Director

Forever California, Summer at RSABG and What's This about Native Plant Cocktails?

Hello RSABG volunteers:

First, hats off to all of you who helped make *Forever California* (at our *Garden with a View*) such a wonderful event. Of course, this starts with the *Native Designs* team who put in dozens and dozens of person hours to achieve the spectacularly gorgeous arrangements for the tables—all of the tables—as well as for certain other locations that need beautifying—like the women's restroom. The arrangements were at once simple and elegant, and above all beautiful. Thanks also to those of you who purchased auction items and who helped get the sales price up to a highly beneficial level for RSABG during the live auction! Fortunately for everyone, this year we did not have to put out a call for “all hands on deck” as we did last year when we needed to move ***everything*** over to the Doubletree.

This is my last Oak Notes column for a few months. Oak Notes is quite the traditionalist in that it takes the summer off! You already know that RSABG staff—and many volunteers—will definitely *not* be taking the summer off. Hort staff will be busy on the grounds trying their best to keep everything as shipshape as possible through the summer months. For Research staff it is mostly business as usual although many students and research scientists will be off in the field for sizable chunks of the summer months. Conservation and nursery staff have lots upon lots of plants to care for—if anything, these need quite a bit more care over the summer months. Staff involved in events for members and the public will be busy and busier all through May (*Butterfly Pavilion*), June (*Butterfly Pavilion*, *Butterflies & Brews*, *Brew Wild*), and July (*Butterfly Pavilion* + *Garden Groove*). By August, Education staff will be looking toward gearing up again with the Teachers' Open

House. Volunteers, of course, are involved in all of these programs and events; thanks as always for all that you do.

Because so many of you are involved in events here at RSABG and because a *few* of these events feature alcoholic beverages—even built around them as in the case of *Brew Wild* to take place in June—I thought it might be useful to share my perspectives on the place of such events at RSABG. Among other things, you may be asked about such events, and I would like for you to be able to answer in a way that is most informed.

However, it is important to back up to note that our programming continues to be dominated by family-friendly events at which no alcoholic beverages of any sort are offered. Volunteers who help with Bump, Acorn Fest, Bird Fest, Luminaria, etc. etc. know this better than anyone! In fact, we have added to these over recent years—many of us remember the pre-*Luminaria* days and then we began celebrating *Bird Day LA* just last year.

At the same time, it is vital for the future well-being of our Garden that we constantly recruit new Garden friends. Thus, we have diversified—and will continue to diversify—our programming. This is all part of our effort to find new avenues to connect people to the beauty and value of California native plants, beginning with making them aware of RSABG and having them visit the Garden.

We began to experiment with after-hours events at which we offer alcoholic beverages a few years ago with *Butterflies and Brews*. No one needs to remind volunteers that the *Butterfly Pavilion* is open for dozens of hours over the course of the week during normal hours. For *BFs & Brews*, we open it for just



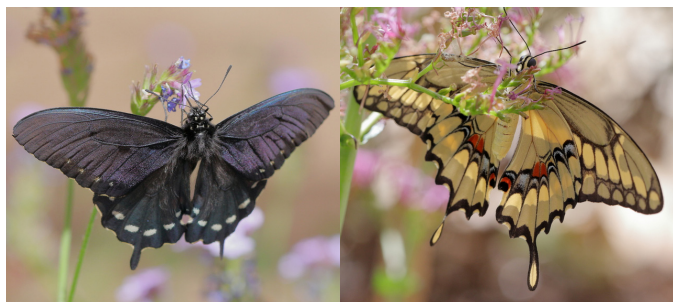
Photos: Butterfly Pavilion RSABG 2018, Debbie Woo, photographer.
L: monarch; R: anise swallowtail,

2.5 hours on one night a week during one of the three months that the Pavilion is in operation.

Back in March, we showcased the *Grove of Thorns* in the early evening hours (when the thorns look best) and featured drinks that incorporated native plants. This was an unabashed effort to form a connection to—and build appreciation for—native plants among attendees. It is our hope that once guests experience a cocktail with native cactus juice, they will become plugged into the larger world of California native plants and their importance far beyond incorporation in a beverage or dish. In short, we hope that they will acquire the knowledge and appreciation that leads them to embrace RSABG's mission.

In much the same vein, we will be doing *Brew Wild* in June, featuring beers of local, independent brewers that incorporate a native plant ingredient. The craft beer movement that started in California has emphasized the art of brewing and promoted a culture of culinary appreciation rather than one of over-consumption or drunkenness. We are excited to infuse the local craft beer movement with a healthy dose of native plants! Again, and quite unapologetically, we intend to reach a lot of people who have never been here before—and who may well not know our native fan palm from the Mexican fan palm—with the wonder of California native plants. Once they experience a beer created with Torrey pine, they will see the light!

Of course, these and all other events at which alcohol is on offer take place following all laws regarding the provision and consumption of alcoholic beverages. In most cases, the event venue is “adults only” for the duration of the event. We also monitor alcohol consumption by our guests. For example, in the case of *BFs & Brews*, we limit consumption to two drinks.



Photos: Butterfly Pavilion RSABG 2018, Debbie Woo, photographer.
L: pipevine swallowtail; R: giant swallowtail

RSABG will never become a brewpub or a bar, but we will continue our efforts to bring in new audiences who are interested in our programs and would like to share them with other adults with an adult beverage in hand (e.g., *BFs & Brews*). We also want to welcome those who are intrigued



A Very Happy June Birthday to:

Alan Melgoza	Hugh Menton
Calderon	Barbara Nakaoka
Tracy Cheung	Polly O'Keefe
Ann Dodds	Joan Oyler
Paul Donatelli	Ernie Pianalto
Wanda Ewing	Jack Rosenbrock
Terry Givens	Cacky Rowlee
Lisa Hahn	Marion Swick
Bruce Hines	Judy Whale
Sherry Hogue	June Teitsworth
Stella Li	

A Very Happy July Birthday to:

Emilie Ballard	Bill Gendron
Gene Baumann	Joaquina Hernandez
Jean Beckner	Robert Koukol
John Biddle	Anne Moreau
Chris Caenepeel	Mary Perera
Nan Davidson	Harry Steendam
Enid Eckert	Marla White
Albert Finnerty	

A Very Happy August Birthday to:

Stephen H. Bryant	Ray Owens
Mary Chamberlain	Carol Petty
Shaunna Gygli	Sara Simon
Cliff Hutson	Kelly Swift
Sharon Kaatmann	Linda Troyer
Elene Kallimanis	Rudi Volti
Bob Loncar	Cindy Walkenbach
Eduardo Martinez	Susan Winderman

by the intersection between native plants and food and drink. It is my conviction that it would be irresponsible of me—insufficiently forward looking—to fail to try such experiments. Even if RSABG's endowment far exceeded our financial needs such that we did not have to think about the fact that friends transition to funders, our mission as an educational institution would still require us to reach new audiences with our message that California native plants merit high respect and a place in our lives! To achieve our mission and be all that we can be as a Garden, we must broaden

our audiences, reaching farther in the hopes that we can promote newfound and greater appreciation for California plants and this Garden that celebrates them. Everyone has a different way of finding both initial and continual connections to California native plants, and we must strive to build those bridges in many different ways.

Oak Notes will head off for its summer vacation, but I know I will see many of you at the Garden in the coming months whether working or playing (in many cases, both!). Thanks as always for all that you do to make our Garden ever stronger!

EMERITA AWARD

June 8, 2018, Nadja Cole



Occasionally there is a volunteer who plays a sustained and critical but not highly visible role in the smooth operation of the volunteer organization, the volunteer board, and in support of RSABG staff. Nadja Cole is such a person.

Nadja Cole will be honored as Emerita Alumna at the June 8, 2018 volunteer organization luncheon and quarterly business meeting. Emeritus is a special designation for volunteers who have given exemplary service to RSABG. Volunteer Sharon Thompson introduced Nadja to the Garden. As friends and colleagues at the City of Baldwin Park, Sharon encouraged Nadja to join her for classes and walks at RSABG. In 2006 Nadja received a postcard for the fall plant sale, and the rest, as they say, is history. Nadja became a member of the Garden at that very plant sale and enrolled in the training class the next fall, the class of 2007.

Nadja became involved in volunteer organization board activities and a member of the volunteer personnel committee from her first year with the Garden, including serving as co-chair 2011-2013 and 2016-2017, as well as a member of the goals and evaluations committee.

For the herbarium she has assisted with maintaining the collection information through

data entry weekly since 2007. She has assisted the research library with maintaining the database of book collections, periodicals and special collections.

She was the volunteer program assistant to the volunteer manager 2015-2018, including data entry of the volunteer service records, clerical operations, volunteer service award records, and new volunteer orientation and training, including maintenance of the volunteer rosters for all members—which are constantly changing and are critical information for the volunteer organization. She also served as liaison for the Garden's RSVP volunteers for Senior Community Services 2016-2018.

In addition, she has worked at numerous Garden events, been involved in education materials assembly workshops and served as advancement assistant. Since 2007 she has logged 1768 hours of volunteer service as testimony to her sustained dedication.

Nadja's passion for the Garden is derived from the people she has met, the events that she has worked, and the knowledge that she has gained throughout her 11 years of service. Nadja Cole's professional experience and talent for personnel management has guided the volunteer organization for many years.

RSABG is grateful to Nadja for her outstanding commitment and dedication to the Garden. Congratulations Nadja on the award of Emerita!



VOLUNTEER PROGRAMS

Kathleen Noll, Manager of Volunteer Programs

We raise our glasses in appreciation and celebration on Wednesday, June 27, 5:30 p.m. at the Volunteer Appreciation Dinner, so that we may celebrate you and your wonderful contributions to the Garden.

The appreciation event will be held in conjunction with the Trustees and Overseers Annual Meeting, so we will enjoy the full Garden ohana at the celebration.



VOLUNTEER QUARTERLY LUNCHEON AND BUSINESS MEETING

Join us on Friday, June 8, 2018 at 11:30 a.m. in the Lantz Outdoor Classroom for our luncheon and business meeting. Our theme is “Butterfly Delight!” This will be another “good luck/potluck” event, so there will be no sign-up sheets—just bring your favorite appetizer, main dish, side dish or dessert. You will be able to hear the latest news about what’s happening in the Garden, meet new volunteers, and reconnect with old friends. The tram will begin at 11 a.m. We look forward to seeing you all.

—Hospitality Committee

At the “Aloha California” event, many volunteers will be honored for reaching 5-year milestones in their volunteer experience. And, of course, those not receiving specific service awards are among those we wish to thank and honor.

The following volunteers will receive recognition for their years of service. **30 years:** Mary Chamberlain, Tom White, Linda Worlow and Barbara Coates. **25 years:** Eleanor Carter. **15 years:** Jean Beckner, Karen Lent, Alice Oglesby, and Gloria Slosberg. **10 years:** Susan Gregory, Eduardo Martinez, Mary Perera, Carol Petty, Susan Spradley, Sharon Thompson, Elizabeth Tulac, and John Turner. **5-years:** Jim Brashler, Lisa Broderick, Linda Clement, Kathy Henkins, Sharon Kaatmann, Josie Muir, Sara Simon, Stephen Simon, and Mike Smith.

Also at the party, the most recent RSABG 101 graduating class—**Class of 2018** will be inducted into the Volunteer Organization. Congratulations and thank you to the Class of 2018: Xenia Amashukeli, Tracy Cheung, Paul Donatelli, Katy Douglass, Lisa Hahn, Joaquina Hernandez, Elene Kallimanis, Sam Kamler, Suzanne Kamler, Peter Kavounas, Stella Li, Alex Lintner, Paul Mann, Alan Melgoza Calderon, Patty Nueva Espana, Polly O’Keefe, Tom O’Keefe, Kathy Roth, Anthony Sutrisno, Joe Vlietstra, Marla White, Ian Winick and Jimmy Yamamori.

I hope you are able to attend this fun-filled and meaningful event. RSVP’s are due by Wednesday, June 20. What a terrific year!

—Kathleen



TOURING PROGRAMS

Judy Hayami, Touring Programs Manager

Almost Summer Greetings!

This is my last opportunity this school year to thank you for your support, flexibility, intrepid spirit, helping hands, inspiration —well, **everything** you’ve contributed in support of education and family events. Thank you very much!

- Please continue to check and volunteer for any Sign-Up tours or tram tours over the summer months. I already have reservations for adult group tours on the calendar for June and a Native Partners Program for Upward Bound students on July 11.
- Touring Preference Questionnaires will be broadcast to NIs via email in late July. Thank you for filling in a spot or two and returning the form promptly. Please consider Team Captain and/or Monthly Organizer opportunities.
- Many schools start up again in August. Be prepared for tours or programs as early as September.
- Teacher Open House will be Thursday, August 16, from 9 a.m. to Noon. I will need help, NI and not. Please sign up or contact me if you are available.
- Kathleen and I have yet to settle on dates for the traditional August NI gathering, and for new volunteer and NI classes in the fall. We will do so very soon and get the word out to you. If someone you know is interested in RSABG volunteer

opportunities, Kathleen and I would love to meet them!

Safe journeys and grand adventures to you, if you are traveling this summer. If you are staying close to home, I wish you happiness in your own back yard. Hope to see you at the Volunteer Appreciation Dinner!

—Judy

VOLUNTEER LIBRARY SURVEY RESULTS

**Gene Baumann, Volunteer
Library Committee**

In March about 50 volunteers responded to a survey constructed by the Volunteer Library Committee.

The survey found that: over 50 percent of respondents either checked out books or read books while in the library; nearly 100 percent of respondents read the monthly book review in Oak Notes; and about 30 percent of respondents purchased a book as a result of reading about

NATIVE DESIGNS SHINES AT FOREVER CALIFORNIA

If you attended Forever California on May 6, you no doubt saw all the flower arrangements made by the Native Designs volunteers. Our “in-house florists” made a total of sixty-three arrangements for the gala—from cocktail table bud vases to dining table centerpieces to very large vase arrangements for the bar.

Plant material was cut from the Garden on the Thursday and Friday before the event and conditioned in the potting shed. A team of twelve Native Designers made the arrangements on Saturday and others transported and placed them on Sunday. Many thanks to all the Native Designers who worked on this huge project!

—Linda Prendergast



it in Oak Notes. Comments included many complimentary statements about the library. Recommendations included: more information about the new Children's Section in the library; open the library on weekends; send a list of newly acquired books to Oak Notes on a quarterly basis; and extend the check-out period. These recommendations are being implemented as this article is being written.

Thank you to all who responded. Your feedback confirmed that the Volunteer Library is well used and gave the committee valuable insight into future improvements.

LOOKING BACK...

THE FIRST HERBARIUM

Carol Lerew, Library Volunteer
Photo Courtesy of RSABG Archives

Susanna Bixby Bryant wrote in a 1930 letter to botanist Dr. LeRoy Abrams of Stanford: "The thought grows persistent in my mind all the time that we need you to outline for us our whole scientific program for future development." She envisioned a growing herbarium collection as a vital part of that goal, as did he.

Under the main part of the new house, completed in 1928, in Santa Ana Canyon, was the fledgling herbarium where unmounted specimens, mounted specimens, seeds, and cones were stored. Pressed flowers were affixed to paper sheets while seed samples were kept in tins, and cones, cacti, and crassulaceae, like *dudleya*, were pickled in formalin solution in jars of various sizes. Woody specimens were sewn down on heavy mounting board. Mounted plants were stored on shelves inside cardboard cases. Insect pests could be a problem, and though Susanna disliked the use of fumigants, it seemed to be the best way of delaying the destruction those pests caused.

Of greatest help to Susanna in the development of her herbarium were such notables as Theodore Payne, horticulturalist and nurseryman in Southern California, with his advice on where to collect in the wild, where to find herbarium supplies and answers

to countless other questions that arose. Many other horticulturalists, nurserymen, and botanists who lived and worked in California during that time were helpful in various ways to developing the herbarium.

Berkeley botanist W. L. Jepson, author of "Manual of the Flowering Plants of California," recommended one of his young students, John Thomas Howell, to Susanna for the position of the first full time botanist at the Garden. Howell and Santa Ana staff managed field trips as other duties permitted. Howell often collected alone on the weekends in his enthusiasm to build the herbarium. A year and a half later he left to attend graduate school and the position was again open.



In 1930 Susanna hired Carl Brandt Wolf, a recent doctoral graduate from Stanford, upon recommendation from LeRoy Abrams, under whom he had studied. Wolf devoted his energy to the project and by 1933 he reported total herbarium specimens at 11,694 sheets of which 7,556 were mounted, excluding duplicates. There were nearly 19,000 duplicate specimens on hand. Those numbers included plants collected from the wild, gifts from private individuals such as Theodore Payne, and from the UC Berkeley, Stanford, and Pomona College.

About that time the old truck used on field trips was worn out. Wolf had a Dodge Field Car adapted to collecting. The interior resembled the camper pickups we know today with onboard water, a table, bunk, storage, and working area for botany (see photo of Wolf at Saddlebag Lake in the high Sierra Nevada, 17 August, 1933). During summers he spent weeks in the wilderness collecting a wide variety of little known and rare California native plants. His

notes were meticulous, as were his frequent reports. Over the fifteen-plus years he served Rancho Santa Ana Botanic Garden he contributed significantly to the collection Susanna envisioned as part of her scientific program.

The war years saw a huge slowdown in collecting because gas was rationed, and tires and herbarium supplies were hard to get. Efforts were concentrated on maintaining the Garden itself, where cutbacks in programs were discontinued or sharply curtailed.

After Wolf's resignation in 1946, Susanna began a search for a resident botanist to replace him and in August she appointed Dr. Philip A. Munz, who had built a strong botany program at Pomona College. He assumed his duties two months before Susanna Bixby Bryant suddenly passed away on 2 October, 1946. The herbarium summary report for 1947 stated a total of 34,675 specimens. Collecting trips were active again.

Shortly following the move to Claremont in February of 1952, Dr. Munz reported the collection numbered 400,000 specimens. 300,000 had recently been gifted from Pomona College.

Can you guess how many specimens are in the collection now? Join us next time for a visit to the Claremont herbarium and the answer to that question.

Credits: Aliso 9/1 1977; Semi-annual and Annual Reports, 1930-1952; RSABG Archival Box OR 2, Files 2.1-2.5.3; Santa Ana Register, April 1, 1928. Thank you to Irene Holiman, Library Specialist, and Gary Wallace, Research Associate, for their valuable information and guidance.

NAVEL ORANGE TREE (*CITRUS SINENSIS*) Rudi Volti, Nature Interpreter

Once more I've strayed from the native path in order to highlight a tree that has been a vital element of California's economic and cultural development: the one that bears the navel orange. After all, is there anything more emblematic of California than a grove of orange trees at the foot of a snow-capped

mountain? Along with their aesthetic impact, orange trees have made important contributions to California's economy. In 2016–17 the state's 125,000 acres devoted to navel orange cultivation brought in \$706,121,000 in revenue. This is a tidy sum, but rather surprisingly, of all the fruits, nuts, and vegetables produced in the state, oranges ranked only ninth in cash value, lower than walnuts or broccoli. On a national level, America's orange groves trailed those of Brazil, which accounted for 24% of the world's total production, followed by China and India.



Oranges belong to the citrus family, which includes lemons, grapefruit, satsumas, kumquats and several other fruits. Oranges are a cross between the pomelo (*Citrus maxima*), which accounts for about 42

percent of its genetic endowment, and the Mandarin (*Citrus reticulata*), which provides about 58 percent. Oranges resulting from hybridization can be classified according to several taxonomic schemes that do not always agree with one another.

The “bellybutton” from which the navel orange gets its name is actually a secondary fruit. It is the dominant orange in California, accounting for about three quarters of production, while Valencias are more prominent in Florida's industry. The two varieties have complementary growing seasons. The navel's long season extends from November to April, with peak supplies coming from January through March, while the season for Valencia oranges stretches from March to June.

The appearance of the navel orange remains a matter of some controversy. The standard account is that around 1820 a branch on one tree in Bahia, Brazil produced a welcome random mutation: a seedless orange. Subsequent grafts became the basis of a large population, which in California began with twelve cuttings delivered to Riverside in the 1870s. Two trees, one of which still lives today, were derived from these cuttings. Today, the ancestry of most navel orange

trees can be traced to these progenitors. Lacking seeds for propagation, all navel oranges are clones, genetically identical with the first cultivated oranges.

By the beginning of the 20th century California had more than 5 million bearing orange trees, most of them growing in a citrus belt stretching from Los Angeles to San Bernardino. By the 1920s, orange trees in Los Angeles County alone generated more wealth than the aircraft and movie industries combined.

In the early years, like all agricultural producers, growers faced a dilemma: poor harvests meant low revenues, while bumper crops resulted in lower prices and consequent reduced incomes. Needed was an “orderly” marketing system to keep supply and demand in balance. This was achieved in 1905 with the formation of a marketing cooperative dubbed the California Fruit Growers Exchange. In 1952 it was given the familiar moniker, Sunkist.

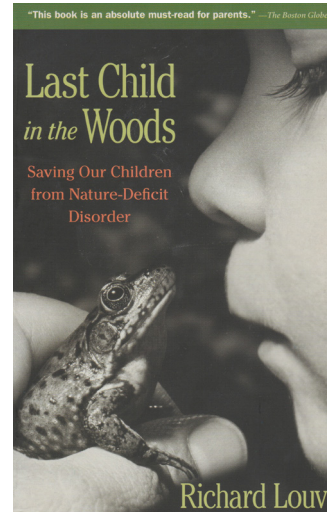
The orange industry stimulated the growth of many complementary products and services, notably the refrigerated railroad car and machinery for washing, weighing, and sorting oranges. An enduring artifact from a bygone era is the wooden orange crate (mostly constructed of sugar and ponderosa pine) with its colorful representation of idyllic scenes in the orange empire. Less successful were efforts to prevent damaging frosts. The most common guardian, the oil-fired smudge pot, was reasonably effective, but its effects on air quality are an unpleasant memory for long-time residents of this region.

Claremont and its environs no longer constitute the orange empire; tract houses have displaced the groves, and commercial production is virtually extinct as the industry now has literally taken root in the Central Valley. The predominance of Southern California as the home of the navel orange was relatively short-lived, but like the native redwood and sequoia, this Brazilian import will persist as a symbol of our part of the world for a long time to come.

BOOK OF THE MONTH

**Alice Calaprice,
Volunteer Library Committee**

Richard Louv: “Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder” 2005, 334 pages; and “Vitamin N: The Essential Guide to a Nature-Rich Life” 2016, 277 pages. Algonquin Books, Chapel Hill, NC. Paperbacks.



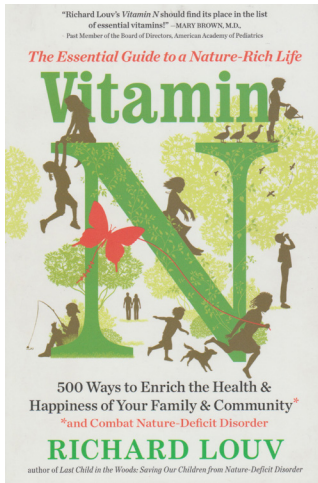
About thirteen years ago, I was driving in my car, listening to the local NPR station. Being interviewed was Richard Louv, who had just published his groundbreaking book, “Last Child in the Woods,” discussing what he coined as “nature-deficit disorder.” It was the first book to bring together research that showed that

experiencing nature is essential to children’s well-being and mental health. He linked the absence of nature in a child’s life to the increasing childhood trends of obesity, depression, and ADHD, and too much time being spent indoors, online, and in front of the television. As children grew into adults, he noted, these trends would continue unless they made a concerted effort to change their lifestyles. Louv has since made this topic his life’s work.



Photos: Butterfly Pavilion RSABG 2018, Debbie Woo, photographer.
L: painted lady R: gulf fritillary

I found Louv's research compelling and ordered copies of the book for my grown children, who were becoming parents during those years. The book has since engendered a worldwide grassroots movement to reconnect children with nature.



About ten years and several books later, Louv published Vitamin N. The formerly unknown vitamin, which has been around since the beginning of time, is Nature. A practical and prescriptive guide to the enjoyment of nature, this useful book was designed to be a companion handbook to Last Child in

the Woods and Louv's more recent book, "The Nature Principle," which focuses on adults. It is essential reading for parents and educators and for those who want to find simple ways of becoming happier and healthier by communing with nature, no matter where they live or how old they are. Both books are available in the Volunteer Library.

TWO FLUXES: SLIME AND ALCOHOLIC

Fred Brooks, Nature Interpreter

You probably have seen "bleeding" trees in the Garden or elsewhere and wondered what caused it. The two most common sources are wetwood, or slime flux (L *fluxus*, to flow), and alcoholic flux (foamy flux).

Wetwood is caused by soil bacteria entering a tree through wounds or cracks in the bark. As they feed on the tree sap, anaerobic bacterial species produce methane gas and a light-colored fluid that damages and discolors the sapwood and heartwood. As this

fluid, called slime flux, is forced out of the tree by the gases, it turns dark and foul-smelling.

Alcoholic flux is not well understood. It seems to be caused by aerobic bacteria and yeasts invading stressed trees. The microorganisms colonize previously damaged bark or sapwood, producing a white, frothy exudate that bubbles from discreet spots on the stem. The exudate usually appears during the summer and has a light, fruity, alcoholic smell. Though it causes little damage, this disorder may indicate an underlying problem, such as plant stress or root injury.

Neither of these fluxes seriously affect the tree, but other causes of bleeding or bark discoloration may. *Phytophthora ramorum*, for example, causes Sudden Oak Death in coastal central and northern California. This fungus-like organism creates sunken, necrotic tissue (cankers) beneath the bark and can exude a dark sticky liquid with a faint odor. The disease is often fatal. Another problem is the polyphagous shot hole borer. This beetle discolors the bark around its entry and exit holes and carries a fungus responsible for branch dieback and tree death. The western oak bark beetle also spreads a fungus, one that causes foamy bark canker. Its sticky white liquid is similar to alcoholic flux, but the cankers can lead to tree decline and death.

Except for Sudden Oak Death, a healthy tree is the best prevention against these diseases and disorders.



Slime flux (wetwood) staining the stem of a coast live oak.



JUNE CALENDAR

Special Events

June 8: Volunteer Quarterly Meeting & Luncheon, Friday, 11:30 a.m.–1:30 p.m., Outdoor Classroom

June 23: Brew Wild Beer Festival, Saturday, 4–8 p.m., Indian Hill Mesa

June 27: Volunteer Appreciation Dinner, Wednesday, 5:30 p.m., Johnson Oval and California Courtyard

On going Meetings, Classes, Workshops

June 2: Garden Walking Club, Saturday, 8 a.m., Admission Kiosk

June 3: Pomona Valley Audubon Society Beginner's Bird Walk, Sunday, 8–9:30 a.m., Admission Kiosk, FREE with Garden admission.

June 4: Volunteer Library Committee Meeting, Monday, 10:15–11:45 a.m., Volunteer Library

June 5: Public Relations Meeting, Tuesday, 10–11 a.m., Volunteer Library

June 7: Volunteer Organization Board Meeting, Thursday, Noon–1:30 p.m., East Classroom

June 8: Volunteer Quarterly Meeting & Luncheon, Friday, 11:30 a.m.–1:30 p.m., Outdoor Classroom

June 8: Butterflies & Brews, Friday, 5:30–8:30 p.m., Butterfly Pavilion

June 9: Garden Walking Club, Saturday, 8 a.m., Admission Kiosk

June 15: Butterflies & Brews, Friday, 5:30–8:30 p.m., Butterfly Pavilion

June 16: Garden Walking Club, Saturday, 8 a.m., Admission Kiosk

June 16: Family Bird Walk–Wild Birds Unlimited, Saturday, 8 a.m., Admission Kiosk, FREE with Garden admission.

June 17: Father's Day–Dad's receive FREE Garden admission, Sunday, 8 a.m.–5 p.m.

June 17: Plants of California Herb Walk, Sunday, 10 a.m.–1 p.m., pre-registration required. \$20 members.

June 20: Volunteer Personnel Committee Meeting, Wednesday, 9:30–11 a.m., Volunteer Library

June 22: Butterflies & Brews, Friday, 5:30–8:30 p.m., Butterfly Pavilion

June 23: Garden Walking Club, Saturday, 8 a.m., Admission Kiosk,

June 23: Brew Wild Beer Festival, Saturday, 4–8 p.m., Indian Hill Mesa

June 27: Volunteer Appreciation Dinner, Wednesday, 5:30 p.m., Johnson Oval + California Courtyard

June 29: Volunteer time cards due, Friday, 8 a.m.–5 p.m.

June 29: Butterflies & Brews, Friday, 5:30–8:30 p.m., Butterfly Pavilion

June 30: Garden Walking Club, Saturday, 8 a.m., Admission Kiosk



Photo: Butterfly Pavilion RSABG 2018, Debbie Woo, photographer.
Pictured: giant swallowtail



NEWSLETTER OF THE RANCHO SANTA ANA BOTANIC GARDEN VOLUNTEERS

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