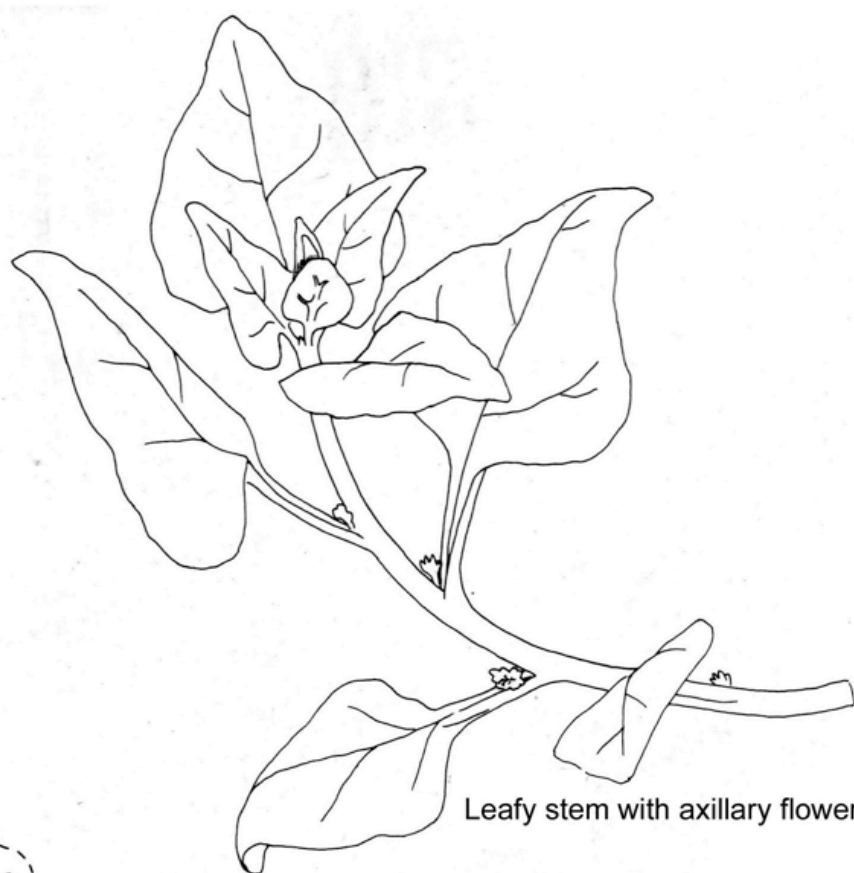
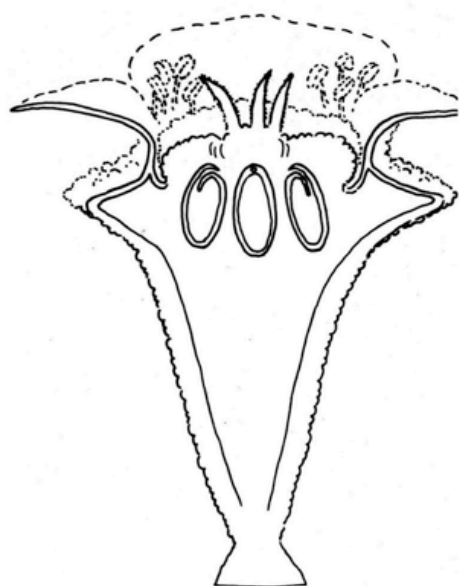

Obispoensis

Newsletter of the San Luis Obispo Chapter of the California Native Plant Society



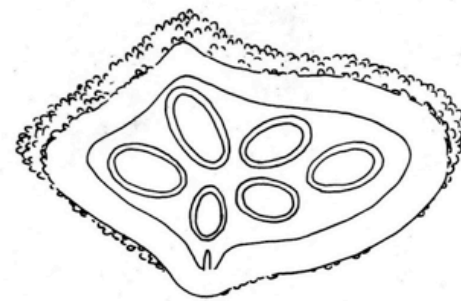
Leafy stem with axillary flowers



Long-section of flower



Single flower



Cross-section of ovary

(cover) Tetragonia tetragonoides

New Zealand Spinach

Bonnie's drawing for this issue of OBISPOENSIS has never been used in any local newsletter. Bonnie drew it for Dr. David Keil and my plant taxonomy text back in the early 1970's. Why has it not been used? Well, first a look at Bonnie's drawing will indicate that the species produces inconspicuous flowers. It lacks petals, and the flowers are semi-hidden in the axils of its somewhat succulent leaves, and the species is not native to California. Its common names include New Zealand, or dune, spinach, *Tetragonia tetragonoides*. For you old timers like me, back in the 1970's its most common published scientific name was *Tetragonia expansa*.

New Zealand spinach is considered by many to be an invasive weed. I assume we must go along with that, but my experience with it around here is that it's not particularly good at it. It prefers slightly salty (halophilic) soils. It also seems to require a bit of disturbance. So, look for it at the upper, less salty edge of salt marsh and/or on coastal benches, especially in disturbed sites where few other species can grow. A few individual plants have been found along the edge of Los Osos Creek, west of Bay View bridge. It is especially common along the trails south of Spooner's Cove in Montaña de Oro State Park, where it became sufficiently dense to warrant a targeted removal project. It can also be encountered as a weed all along the coast.

New Zealand spinach belongs to a family of flowering plants, *Aizoaceae*, that is primarily native to the Southern Hemisphere. New Zealand spinach is, in fact native to Southern Africa but has spread to New Zealand and is apparently a serious weed throughout southern Australia. Obviously, it has also been introduced into North America and Eurasia. The genus, *Tetragonia*, has around a dozen species and its generic name is derived from the four (tetra-) wings that are produced on the green fruit. These wings dry up and essentially disappear in the mature fruit. The inconspicuous flower displays a pale yellow color, but the flowers have no petals, only sepals as it only produces a single whorl of perianth (collective term for sepals and petals). If a perianth has only one whorl, botanists tend to regard them as sepals. These sepals, as well as the stamens are attached to the top of the ovary which makes the ovary inferior. The more famous and probably even more weedy members of the Aizoaceae are the ice plants (*Carpobrotus* and *Mesembryanthemum*).

Wherever New Zealand spinach is found growing, its leaves have been used as a green vegetable. One web source indicated that the Magellan expedition around the world was especially happy to find a patch of it. They would pick the leaves, boil them and then dry (preserve) them for eating. It was particularly good in preventing scurvy! However, note that they boiled the leaves before eating them. The leaves contain enough oxalate chemicals to cause oxalate poisoning. Oxalate chemicals are usually destroyed by boiling.

DIRK WALTERS



Bluff Trail, Montaña de Oro S.P.: site of a New Zealand spinach removal project to encourage the return of native plants : photo by David Chipping



Tetragonia in flower: close-up photo by David Chipping

WANT COLOR? The latest edition of our monthly newsletter Obispoensis is available for download as a PDF file from the link below. Find out about upcoming events, field trips, local issues impacting native plants, invasives to be on the watch for, horticulture tips for growing natives, contact info and more in each issue:

<http://cnpsslo.org>

Having trouble opening the file? You need to have Adobe Acrobat Reader installed on your device. It can be downloaded here:

<https://get.adobe.com/reader>

The Garden Corner

It's time to start thinking about planting your wildflower garden with the winter rains coming soon. As in years past, we are beginning our rainy season late with a dry fall so far. This doesn't mean we will have a dry winter, but this dry pattern is important when it comes to sowing our wildflower garden.

The best gardens start with the onset of rain. But if we put out our seeds too soon, the birds will eat them and the sun will bake the rest. So keeping this in mind, we can still prepare the site to be planted by raking the area smooth. Soil amendment is not necessary.

Go through the seeds you have acquired, which, of course, you bought at the plant sale. Get everything ready so that when the storms start to line up you are ready to sow your seeds. Two days in advance of a rain event, complete the following steps: First, rake the top one inch of soil to loosen it; Second, using a light hand, spread seeds over the area that is to be your wildflower garden; Third, using your rake, go over the area once again to ensure there is soil-to-seed contact. Finally, and the best part, 'do the stomp' by walking all over the area to compress the soil. Then wait for the rains to come.

It's important to provide extra water, if necessary, at least every two weeks. Otherwise if the rains come, sit back and watch your wildflowers grow! Until next time, happy gardening! If you have any questions about sowing your wildflower garden, please contact me at: gritlys@gmail.com. **John Nowak**

Notes from the plant sale

It was still dark and very cold when Suzette and I starting heading east from Los Osos to the plant sale site located in San Luis Obispo. It's amazing at 6:30am, how few vehicles are on Los Osos Valley Road. This was a good thing, because the old Ford Explorer was not traveling very fast due to the heavy load of tables and other items. As we reached Madonna Road, I wondered what we would see as we arrived at the sale site.

These are the kind of things that a plant sale chairperson can lose sleep over. As we pulled into the parking lot, it was 38 degrees outside. I looked at Suzette and we both breathed a sigh of relief. As always and for the last 31 years, everybody was there, having a great time while setting things up for the sale.

Soon it was time for the starting bell to ring. As the day went on, people came and went, with numerous plants, books, t-shirts and seeds being sold, thanks to the hard work of our many volunteers. Suzette and I want to thank all who volunteered, who took the time to come out on a beautiful day and really make this sale happen. Looking forward already to next year's sale and seeing you all working together again. Thanks for helping to spread the word ... native plants rock! Have a great winter season and happy gardening. **John and Suzette**

Successful Seed Exchange

I want to extend a thank you to all who participated in the seed exchange in October. We ended up with over eighty species of plants. It was fun to see the interest of those who enjoy the propagation experience. Extra seed was packaged to sell at the plant sale in November and we managed to raise over \$250 for our chapter. Who knows, perhaps we will have more native plants in local gardens to support the critters that make our county the wonderful place that it is, grown from seed at our exchange. I encourage all of those who enjoy collecting seed to continue to do that when the time is right. If anyone has access to red maid seeds please plan to collect. We did have some but not enough to carry over into the plant sale and it is one that I would like to be able to offer. I also think it would be fun to have some miner's lettuce, milk maids, owls clover, yerba buena and, well, the list could go on and on. Perhaps none of you have this on your property but if you do, please collect. Remember though that to collect on collect on property that is not your own you need permission. **Marti Rutherford**



Moving? No Newsletter? Please Let Us Know Your New Address. Contact <dchippin@calpoly.edu> or write us at P.O. Box 784, San Luis Obispo, CA 93406

CHAPTER MEETING Dec 5th 2019 - Thursday - 7pm social, 7:30pm program

Place to Land: Conserving Habitats for People, Plants, and Wildlife

Daniel Bohlman and Lindsey Roddick of the Land Conservancy of San Luis Obispo County



The Land Conservancy of San Luis Obispo County has been protecting diverse landscapes throughout San Luis Obispo County for the last 30 years. Land conservation has had intentional and unintentionally benefits for rare and common plants. Daniel Bohlman and Lindsey Roddick of the Land Conservancy will share how this non-profit organization has succeeded in protected important landscapes and how those conservation actions have benefited natural communities throughout San Luis Obispo County.

Daniel Bohlman has worked on conserving the Central Coast for the last 18 years through his work at The Nature Conservancy, California Department of Fish and Wildlife, and for the last 14 years at The Land Conservancy of San Luis Obispo County. He is currently the Deputy Director and works closely with local land owners to preserve the Central Coast landscape. Lindsey Roddick is the Senior Restoration Ecologist at The Land Conservancy and ensures stewardship of the land under The Land Conservancy's care is ecologically sound and provides for long-term health of the landscape.

Spread the Joy of Native Plants

Introduce your friends and family members to native plants this holiday season with a gift from our chapter sales table at the December 5 meeting.

When you buy items from the sales table at our meetings and events, you are supporting our chapter and getting a good deal because the chapter pays the sales tax. Plus you can walk out with your purchase in hand.



We have a wide variety of books including field guides, how-to books, and books specific to San Luis Obispo County. Friends who do not know they are native plant enthusiasts yet may enjoy the gift of a well-made attractive t-shirt.

New this year, Marti Rutherford will be bringing seed packets that we will be selling for \$1.00/packet (the seeds inside are priceless). Native plant seeds are a great gift for kids and gardening fans that might enjoy growing plants themselves. Marti's wildflower mix includes tidy tips (*Layia platyglossa*), clarkia (*Clarkia unguiculata* and *purpurea*), lupine (*Lupinus succulentus*), and California poppy (*Eschscholzia californica*).

We accept cash, checks, and credit cards. Dave Krause has been teaching me how to process credit card payments via PayPal on my iPad so I thank you in advance for your patience as I learn.

Linda Poppenheimer

Membership Corner

Welcome New and Renewing Members: Thank you.. For membership-related issues, contact
LynneDee@althouseandmeade.com

Arthur Hazebrook, Vicki Marchenko, Kathleen McCarey, Melissa Mooney, Linda Poppenheimer, Rhonda Riggins-Pimentel, Marti Rutherford, Leslie Washburn, Lawrence Davidson, Adrienne Walter, Robert Peterson, Mike Bush

President's notes – December 2019

Over the years, Dr. David Keil, professor emeritus Cal Poly-SLO, has documented the plants of California with an emphasis on plants of San Luis Obispo County and nearby regions. Recently, Dave offered to make the majority of his plants lists for this region available to CNPS-SLO and they now reside on the Chapter's website. These lists represent a mountain of work, where he has carefully noted every species occurring in a particular area and later revisited the area to add and/or modify his findings. Some of us have been fortunate to accompany him on one of his "plant list" field trips. He starts with a clipboard and about ten pages of blank paper. At the end of the visit, the pages are full, written in a notation style only he can decipher. Those notes are then transcribed by Dave into lists. So, thank you Dave for allowing us to share in this treasure trove of data, which is now available for generations to come. To access the website domain containing these lists, go to www.cnpsslo.org, then to the pulldown menu "Resources" and then to "Finding Plants in the Wild". And while you're there, go to the "Home" page and scroll down to the green box opposite the calendar and sign up to receive e-mails about upcoming Chapter events.

Bill Waycott

Editor's Addition: The plant lists described by Bill are PDF files and require a PDF reader. Dr. Keil's lists present species with native/introduced in the first column, latin binomials in alphabetic order in the second column, common name in the third column, and family in the fourth column. If you wish to sort these lists in a different order, such as by family, you can select data on the PDF and paste it into an Excel spreadsheet, selecting only sections of the PDF with the plant data (i.e. do not include explanatory text, or page numbers). When you paste into Excel, you will see that each of Dr. Keil's data lines will occupy two rows of the spreadsheet, one of which will contain no data. Ignore this. To sort in Excel, select the cells to include in the sort (sort is part of the 'Data' pulldown). Sort only works if all the cells are the same size, which is why you don't copy/paste parts of the original PDF.



Saturday, Dec. 21st, 10:00 am, Mushroom Walk, Cambria. Led by Eric Brunschwiler, David Krause, and Dennis Sheridan. We will look for mushrooms growing in the Monterey pine forests of Cambria while enjoying the beauty of the Fiscalini Ranch Preserve. Meet at the corner of Tipton Street and Warren Road in Cambria at 10:00 AM. How to get there: Travel north on Hwy 1 to Cambria. At the first stoplight, turn left onto Ardath Drive. Follow Ardath and turn right onto Tipton Street. Continue to the intersection with Warren Road (2 blocks) and find a parking place. Bring water, your field guides and a mushroom basket for you may want to collect some edible varieties. Dress appropriately for the weather. Be prepared for poison oak. The hike will be easy, about a 2-3 hour stroll through the woods. For additional information, email, text, or call Dave Krause: dkincmbria@aol.com, (805) 459-9007.

Invasive Species Report: Bull thistle *Cirsium vulgare*

A member of the Asteraceae family, bull thistle is an annual herb native to Europe and is widespread in California and listed as a noxious weed in Colorado, New Mexico, Oregon and Washington. It is found in every state in the U.S. and on every continent except Antarctica. It is a problem in some natural areas such as Yosemite National Park, California. It might have been introduced to eastern North America during colonial times, and to western North America in the late 1800s. Bull thistle is the most common and widespread of pasture and rangeland thistles in western North America. It is also found in disturbed areas such as forest clearcuts, and along roads, riparian areas, and fences. Plants can form dense thickets, displacing other vegetation. The spiny nature of the plant renders it unpalatable to wildlife. Bull thistle is usually a biennial, but can be monocarpic (flowers and seeds one time) and die. It forms a deep taproot and prefers fertile, well drained soils and grows to 3 to 4 ft. tall. In the juvenile phase, individual bull thistle plants form a single rosette to 3 ft. in diameter. Stems have spiny wings with many spreading branches, and sometimes a single stem. Leaves are 3 to 12 inches long, deeply lobed with coarse prickly hairs on top and woolly underneath. Lobes are tipped with stout spines. Bull thistle flower heads are pink-magenta, to 2 inches in diameter, to 2 inches long, usually solitary, or clustered at the ends of shoots and branches. Large spiny bracts (modified or specialized leaves) surround the seed heads. Bull thistle fruits are achenes (a simple dry fruit), 1/16th-inch long, with a long, hairy plume that is easily detached. Plants can produce up to 300 seeds per flowerhead, with 1 to 400 flower heads per plant. The seed bank is very short lived on the surface but may last 3 years if buried. The key to successful management of bull thistle is to prevent seed production. Seedling and rosette growth stages are the most logical to target for control efforts.

Mark Skinner: Invasive Species Chair



Cirsium vulgare: photo by David Chipping

Using the Consortium of California Herbaria website



Screen Shots of herbarium sheets of some of the coastal manzanitas

How many of you have photographed a manzanita in the field, or brought back a leaf, and then had trouble identifying it using a key? There are many manzanitas in the County, and a lot share common features. You ask yourself if what you have matches what is described in the key. One helpful tool is to use something like the CalFlora web site to see what other people thought as a match to the species name, but those photos may not flag key diagnostic features from the key. Don't you wish you had a bunch of correctly identified specimens lying in front of you for comparison? Well... you can....

At the web site <http://www.cch2.org/portal/> you can enter and examine specimens from dozens of herbaria. On the opening page, select 'image search' and then type in the latin binomial into the search page. You can also search by 'common name', 'family', or 'taxonomic group'. Click the 'Load Images' box, and up will pop thumbnail pictures of all herbaria sheets matching your search criteria. Select a thumbnail, and another page will open with data on the sample. It will offer the chance to open an image, where 'Open Large Image' will open a high resolution picture of the specimen. Once loaded, your cursor will turn into the '+' which allows extreme close up. This is sufficiently detailed to enable you to see glands on stem hairs, and details of leaf surfaces, and you will have a lot of samples for most species.

Those of you who attended the workshop before the last meeting were learning how to enter data from herbarium sheets, and this site is where a lot of the data will reside. **David Chipping**

Landscaping with California Native Plants Workshop in October

CNPS-SLO hosted an information-packed, fun-filled workshop on October 12, 2019. This was the first of a series of “Botanist-Development” workshops to be provided by your local CNPS chapter. The goals for these workshops is to offer low cost training for local botanists to improve your knowledge and spread the love of native plants! The Landscaping with California Native Plants workshop was expertly facilitated by local landscape contractor and CNPS member, John Doyle. After a brief lecture on the foundations of landscaping with natives, the group hit the dirt, observing and learning about native plant gardening from local landscapers. John’s lecture provided context on why using native plants in your landscaping is so important for local critters, basic tenants of a good landscape design (match to your climate, substrate and topography), and examples of local native plants that tend to do well in our gardens. Native plants were raffled off to eager participants and everyone walked home with a wealth of information on where to learn more and find native plants. The first tour stop was the Garden of the Seven Sisters where SLO Master Gardeners have a healthy California Native Plant garden. After an informative presentation by Gary Lawson, the class moved on to the Monday Club where they have recently installed a native plant garden. Landscape Architect Jeffrey Gordon Smith shared some of his wisdom on landscaping with natives. The last stop was at the home of Bill and Diana Waycott to learn about what some dedicated homeowners can do to create a little utopia for native pollinators. Workshop participants learned how they can earn a CNPS Certified Wildlife Habitat sign.

Mindy Trask



Photographs contributed by workshop participants

THE GOOD PEOPLE WHO MAKE THE CHAPTER ‘HAPPEN’ AND HOW TO FIND THEM

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WE ALWAYS NEED PEOPLE TO HELP OUT. OUR MISSION IS VITAL AND OUR FLORA IS AT RISK

Protecting California's Native Flora since 1965

The California Native Plant Society is a statewide non-profit organization of amateurs and professionals with a common interest in California's plants. The mission of the Society is to increase understanding and appreciation of California's native plants and to preserve them in their natural habitat through scientific activities, education and conservation. Membership is open to all. Membership includes the journal, *Fremontia*; the quarterly *Flora*, which gives statewide news and announcements of the activities and conservation issues, and the chapter newsletter, *Obispoensis*.



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