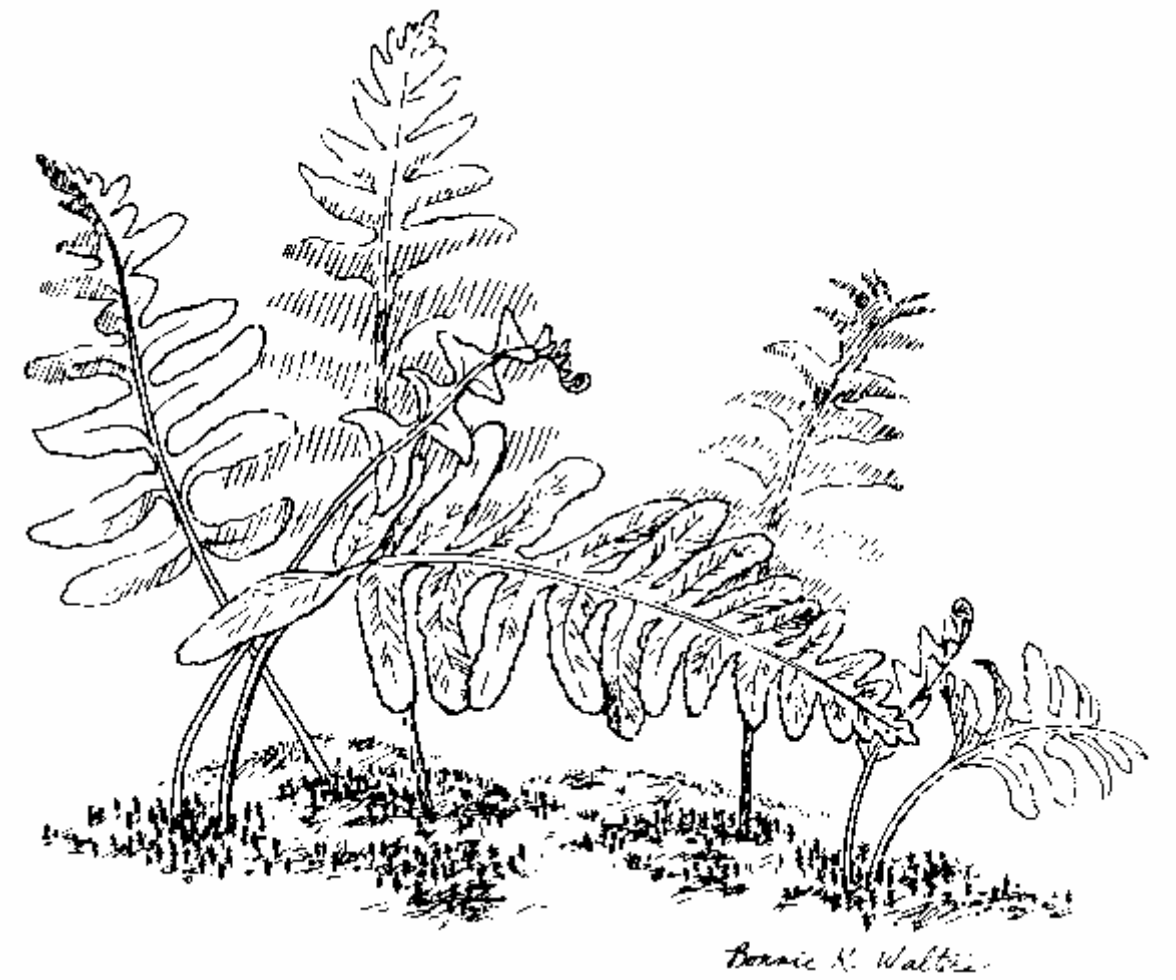
OBISPOENSIS

The San Luis Obispo Chapter of the California Native Plant Society for San Luis Obispo and Northern Santa Barbara Counties



November 2004

About the Cover

A few weeks ago I was sorting through some folders that I hadn't opened for many years. In one of them I found a copy of an *Obispoensis* newsletter from January 1984. The cover of this month's *Obispoensis* is sort of a repeat of that cover. That is, although both are copied from the same original, the two covers appear somewhat different. Bonnie used fine drawing pens to create the original drawing and this produced a drawing with lots of very fine lines. The duplication processes available in 1984 were so crude by today's standards that much of these fine details were lost. So if any of you who remember the 1984 cover, I think you will find the present cover not only better but quite different form the earlier one.

There are two kinds of true plants shown in the cover drawing. The larger one is the common California polypody or *Polypodium californicum*. The smaller, but more numerous plant species is some kind of moss. I have no idea what kind. Neither of these plants produces seeds. Seeds are complex multi-cellular reproductive structures that consist of at least three parts. These include the outer, protective seed coat whose cells contain DNA that is identical to the mother, a food supply (endosperm) often consisting of cells made up of 2/3 mother and 1/3 father DNA, and an embryo whose DNA is ½ from each parent. Seeds allow land plants to disperse over the land environment. Mosses and ferns do not produce seeds, yet they too are land plants. So by what devise do they disperse over land? They use spores. Spores are simple, unicellular structures that are enclosed in a thick wall. Like seeds, spores usually are capable of a period of dormancy before they are required to germinate and grow. In the true plants (Kingdom Plantae which includes mosses, ferns and seed plants) all spores contain a single set of chromosomes (haploid). Also in the true plants spores are always produced in a capsule-like structure, sporangia, each of whose cells contains two sets of chromosomes (diploid). Since the cells of the sporangium are diploid and the spores produced inside are haploid, something special must happen to at least some of the cells inside the sporangium. The is the special type of cell division in which a single diploid cell halves its chromosome number while producing four haploid spores. Both mosses and ferns do this. For more details on the life cycle of ferns see "*From Spore to Sporeling: The Birth of a Fern*" in the April 2004 *Fremontia*.

California polypody produces its stalked sporangia in round clusters on the underside of its leaves. Each cluster (sorus) contains a few score of sporangia. Lets say 60 sporangia. Each sproangium produces approximately 60 spores so a single sorus would be expected to produce 3600 spores. Each leave produces about 20 sori, so the number of spores produced per leaf would be 72,000. Each individual fern plant produces at least 10 leaves so the number of spores per plant is now 720,000. But the California polypody is a perennial and it produces spores every year of its life. If we are conservative and say a given fern individual lives for only five years, then during that individual's five-year life, it will produce 3,600,000 spores. How many of these spores must be successful in order to produce a stable population of fern plants? The answer is only two! What happens to the individuals that could have been produced from the other 3,599,998 spores? They die. If three or more are successful the ferns increase, if only one of none then the fern population decreases.

– Dirk Walters

Conservation News

First of all an apology for not bringing you up to date sooner on the Hearst Ranch conservation easement issue. Our chapter had supported the general concepts for limited development and extensive conservation easements on the east side of Highway 1, and had taken a tour with one of the Ranch's representatives, where we were assured that our concern on the protection of coastal prairie and rare plant populations would be fully met. We were therefore extremely unhappy to see that no biological data was presented for the east side, nor was any open for public inspection. Further more, the terms of the easement showed no guarantee that the site could be policed to ensure that promised protection would in fact take place. However we differed from Sierra Club and other organizations that wanted more public access on the east side, which we see as a non-plant issue.

The first major hurdle for the purchase was a Sacramento hearing before the Wildlife Conservation Board that would approve the release of state funds for the purchase of the easement. I expressed CNPS' concerns before the Board, although in a minority position as most people coming up from SLO County were expressing unabashed enthusiasm for the deal, compared to a relatively few but extremely thoughtful conservationists. I was surprised to see a number of conservationists from SLO also supporting the deal "as-is". So what was wrong with "as-is"? Well, the really big mess-up is the placement of potential home sites in the middle of rare plant populations in Arroyo de la Cruz. This was brought to everybody's attention by John Chesnut. The biological consultants for Hearst, Sage Associates, heard my testimony and met with me, and I also had a chance to talk to the Rangeland Trust who would be the holder of the conservation easement. As a result, CNPS had a subsequent Los Osos meeting with both Sage Associates and the Trust where John Chesnut presented then with the biological data from the area, much of which had been compiled by Malcolm McLeod. John showed them all of the Natural Diversity Datebase occurrence forms that CNPS had filed for the area (a lot), and also a map of a proposed plant preserve in the area of the housing sites that Malcolm had prepared. John pointed out that Arroyo de la Cruz is a center of new speciation and endemism, and therefore of global botanic interest. We did point out that there house sites would face severe challenge under CEQA review, and that it might be better for all concerned that alternative sites be found. I think we made some progress, but we have heard nothing since the meeting.

On other fronts, I am looking for someone to watch over City of San Luis Obispo issues on Conservation and Open Space. Can I get a volunteer to go to some of the City Council Meetings and track document drafts, as I am over-taxed at the moment. We really do need a conservation committee rather than just one guy if we are truly going to cover county issues, and this could be a start. We have exotic species covered now, but we are really weak in the far north and far south of the County. Lets walk the walk rather than just talk the talk.

– David Chipping

MEETINGS

Thursday, November 4, 7:00 p.m., San Luis Obispo Monthly Meeting. Native Gardening Program: In conjunction with our Plant Sale, the November topic is horticulture. Peigi Duvall, the state CNPS Program Chair is the speaker. San Luis Obispo Vets Hall, corner of Grand Avenue (801 Grand) & Monterey. Contact John Nowak 464-0717, Charlie Blair 733-3189, or Dirk Walters 543-7051 for details.

Sunday, November 7, 9:00 a.m., Fall Plant Walk, La Purisima Mission: Charlie Blair will be leading a tour of fall blooming plants of the Burton Mesa Chaparral. Come and see what is out at this sometimes forgotten time of the year. Meet at 9 a.m., east end of Burton Mesa Boulevard. (1550 E. Burton Mesa Boulevard) in Mission Hills. From the north, take the Constellation Road off-ramp from SR 1, heading left, then turn right on Burton Mesa Boulevard. From the south, Burton Mesa Boulevard can be accessed from either Harris Grade Road or Rucker Road, again turn right. Call Charlie Blair, 733-3189 for details.

Saturday, November 20, 9 a.m. -12 p.m., Hancock College Chaparral Preserve Clean-up LVBHS: The Lompoc Valley Botanic and Horticultural Society will do an additional "grooming" of the Burton Mesa Chaparral Preserve in conjunction with the La Purisima Audubon Chapter at the Lompoc Center of Allan Hancock College. It will take place on Saturday the 20th of November from 9 – 12. The focus will be trail maintenance and removal of dead material. To reach the area, turn right upon entering the campus, and continue along the periphery to the preserve's parking area. Bring hand tools, and snacks for an optional picnic. Call Mimi Erland, 736-5454,or Charles Blair, 733-3189, for details.

Sunday, November 21, 1:00 p.m., LVBHS Fall Plant Exchange, Lompoc Methodist Church: Please join us for our Fall Plant Exchange and Tool Sharpening session. Come share those extra favorite plants that are too good to throw away. We will also have tips on planting and pruning. We meet at the Methodist Church in Lompoc corner of N. F and E. North Streets at 2:00 p.m. Call Rosemary Holmes, 735-3974, or Charlie Blair, 733-3189, for more information.

PLANT ACTIVITIES

Saturday, November 6, 9 a.m. – 2 p.m. Native Plant Sale, Madonna Plaza: Come to the Heritage Oak Bank parking lot (297 Madonna Road.) from 9 a.m.- 2 p.m. for the San Luis Obispo Chapter, California Native Plant Society Plant Sale. A wide variety of plants, posters, books, and gardening literature will be available along with many knowledgeable and helpful people. Contact John Nowak, 464-0717, Charlie Blair, 733-3189, or Dirk Walters, 543-7051, for more information.

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Dedicated to the Preservation of the Califronia Native Flora

The California Native Plant Society is a statewide nonprofit organization of amateurs and professionals with a common interest in California's native 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 throughscientific activities, education, and conservation. Membership is open to all.

Membership includes the quarterly journal, *Fremontia*, the quarterly *Bulletin* which gives statewide news and announcements of Society activities and conservation issues, and the chapter newsletter, *Obispoensis*.

San Luis Obispo Chapter of the
California Native Plant Society
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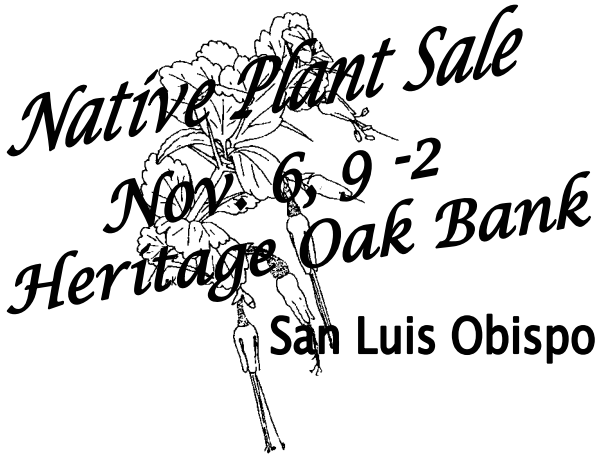

AUTUMN AND WINTER IN THE NATIVE GARDEN

By Larry Vierheilig

Fall is here and normal gardening tasks are coming to a close, but not in the native garden. This is the time to prepare the plants for the coming rains and cooler weather. So while you are looking at those seed and plant catalogs for next year and dreamily planning for spring, set aside time to spruce up the natives. It is also the best time to plant most native and non-native seeds and plants. The cooler weather and rains give the plants time to establish a healthy and extensive root system in preparation for next summer.

What to do out there? Numerous short, easy tasks can be accomplished starting now and continuing into next year. So, here goes!

Pruning: Many perennials can be pruned at this time to remove dead wood and flower spikes, encourage bushy spring growth, and generally shape the plant or tree. When pruning most natives, prune lightly. No more the 25% of the vegetation or stems should be removed in any one year. Plants that benefit from pruning at this time include Sage, Buckwheat that flower with spikes, Ceanothus, Manzanita, Fremontia, Catalina Cherry (Prunus lyonii), and others. Plants that can be pruned from mid-January on include California Wild Rose, Toyon, Coffeeberry, Island Bush Snapdragon, Purple Nightshade, Monkeyflower, Foothill Penstemon, California Fuchsia, and Island Bush Mallow to name some of the more common natives. When pruning California Wild Rose, cut the dead and undesired canes off at ground level. If you have Yarrow, now is the time to give it the annual haircut. Take your power mower and mow it with a height setting of about 2-1/2 to 3 inches.

DO NOT prune any of the Currant (Ribes) species at this time; many will be starting to bloom. These are best pruned after they have completed their bloom cycle in the spring.

Mulching: I don't want to sound like a broken record but mulch, mulch, mulch!!! This provides shade for the soil and roots, helps to retain moisture in the soil, and, as it slowly decomposes, provides fertilizer to the plant. Mulch can range from wood chips to compost and should be put around the plant out to the drip line and somewhat beyond. Be generous and apply a 3 to 4 inch thick layer of mulch but DO NOT place the mulch against the crown of the plant. This is where the roots transition to the stem(s). Mulch or compost against the plant crown will cause the rot and death of most native plants since the area will remain too moist and shaded which will result in a perfect breeding ground for fungus and bacteria. It is best to keep the mulch back from this area by 2 to 3 inches.

The best time to mulch is after we have received at least one-half inch of rain. This allows time between now and then to get those compost piles finished and collect wood chips. Eucalyptus chips are fine to use but, if fresh, they should be left in the sun for at least 4 to 6 weeks for the oils to break down and become benign.

Another DO NOT is the use of plain grass clippings for mulching around the plants. Grass clippings will compact down in just a week or so and become hydrophobic; that is, they will repel water. The soil beneath will be as dry as a bone in the middle of the Sahara!!! I have had personal experience with this and wondered why the plants were doing so poorly no matter how much I watered. When I finally removed the clippings, I found the top one-quarter inch of the clippings to be moist and the rest to be compacted and dry.

Seed Bed Preparation: If you are planning on planting any native plants from seed, this is the time to prepare the seed bed. If you live on the Mesa where the soil is sand, incorporating compost into the soil is a must for the plants to thrive. While quite a chore, the more compost the better; 6 to 8 inches is a good start. Borrow your neighbor's tiller or call in all those owed favors from your friends and host a digging party. Guaranteed, they will still be your friends. Once the compost is incorporated, water well in the evening so the water can thoroughly soak into the soil. Remove any weeds that sprout by your favorite method. Then sit back until we receive at least three-quarters of an inch of rain before sowing the seeds.

Repotting: For any who grow natives in containers, November is a good time to repot and refresh the soil even if the plants don't require larger pots. Their roots need a continuing supply of soil with sufficient organic matter. Remove the plant and gently loosen as much of the old soil as possible. Take care not to break the roots. Some roots will get broken in this process but try to minimize the disturbance. Before putting new soil in the pot, mix some bone meal with the new soil at a 6 parts soil to 1 part bone meal ratio. The bone meal will stimulate the plant and provide the necessary nutrients to vigorously grow new roots without excessive vegetative growth.