Seemingly delicate, beautiful and beautifully-adapted plants grow on high mountain summits...above the life zone of any tree. It’s not easy. It is always cool, sometimes bitterly cold. A plant’s leaves might be fairly warm while its roots are near freezing. The wind howls, and ultraviolet radiation is intense. The cold air carries relatively little moisture.

Why are there alpine plants anyway? How do they manage to survive where trees cannot, and to handle the severe environmental stresses? We’ll consider these questions and others, and we’ll look at the varied microclimatic conditions that shape the habitats for alpine plants, along with adaptations that suit them to this demanding world. And in the process we’ll see some lovely plants and spectacular places.

Jim Bishop has long been fascinated with the alpine zone and its plants, first as a hiker who knew next to nothing about them. Those rambles included peaks and ridges in the Sierras, Cascades, Rockies, Great Basin, and SE Alaska. Even if you don’t know much, the alpine environment is wonderful, and the more you do know the more fun it is.

In more recent years he has participated in the international GLORIA alpine-survey project, which has allowed him and Catie to spend parts of 6 summers in alpine zones throughout the Sierras, White Mountains, and Snake Range. That is a wonderful learning experience, involving contact with experienced alpine botanists and ecologists. Jim’s studies in plant physiology at CSU, Chico provided a great foundation for building knowledge of the eco-physiology of alpine plants, and he has been an avid learner about them for years.

Townsendia congesta, CNPS listed plant in the White Mountains. Photo by Catie Bishop.
OLD PLANT INTRODUCTION STATION
TREE WALK
November 22
Sunday
Meet at the Mendocino Genetic Resource Center at 9:30 am (from Skyway drive south on Dominic Drive to Morrow Lane, left to Kramer Lane, south to parking by gate). Established in 1904, woody plants from all over the world were planted here by the USDA to test their use in medicine, agriculture and forestry; many still survive. Expect to see lacebark pine, Shantung maple, mourning cypress, Chinese wingnut, giant bamboo, several species of pistachio, and many others. Leaders: Wes Dempsey, 530-342-2293 and Gerry Ingco, 530-893-5123.

TREE TOURS OF CSU,C CAMPUS AND BIDWELL MANSION
December 1
Tuesdays
Meet at the gazebo in front of Bidwell Mansion State Historic Park at 10 am, parking available. See 30 of the best specimens of woody plants out of a total collection of over 200. This is the finest arboretum north of capitol park in Sacramento with many unusual species, some planted by Bidwell in 1870 and others dating back to the founding of CSU, C: bunya bunya from Australia, monkeypuzzle from Chile, dawn redwood from China, cockspur coral from Brazil and others. Information about garden trees will be discussed. Tours end about 11:30. Leaders: Gerry Ingco 530-893-5123, Wes Dempsey 530-342-2293 and Hal Mackey 530-899-9456

CENTERVILLE FLUME
December 6
Sunday
Meet at Chico Park & Ride at 9 am or at the trailhead on Centerville Road (where it crosses the PG&E ditch, about a mile beyond the museum) at 9:45 am. Bring lunch and water. Easy walking along the ditchbank but there are also occasional narrow trestles over the flume; about 4 miles overall. In years past, we have seen 24 different kinds of flowering plants in bloom. Leaders: Wes Dempsey, 530-342-2293 and Gerry Ingco, 530-893-5123.

BANANA BELT
UPPER BIDWELL PARK
January 1, 2010
Friday
Meet at 10 am at Horseshoe Lake parking lot (E) with lunch and drink. Wear hiking shoes for the scramble up the north ridge to see the first of the New Year’s flowers. We may see blue dicks and the cute little purple mouse ears (Mimulus douglasii) along with some last gaping penstemons and Indian paint brush. Lunch in a unique Indian rock shelter equipped with 30 bedrock mortars and running water (if it has rained recently). Manzanita flowerrs on the low return walk. About 2 miles overall. Leaders: Wes Dempsey, 530-342-2293 and Gerry Ingco, 530-893-5123.

ANNUAL SNOW GOOSE FESTIVAL
January 28-31
Sunday
We usually offer a short walk up to the Indian rock shelter above Horseshoe Lake as an event in this worthwhile celebration. For updates and information visit www.snowgoosefestival.org 530-345-1865.
Executive Board Meeting

January 20, 2010
Wednesday 7:00 pm

Woody Elliott’s
287 Pinyon Hills Drive, Chico
530-342-6053

President’s Message

by Janna Lathrop
Chapter President

A CORNUCOPIA OF THANKS

Annie B’s Community Drive a Success: This was the first year that our Chapter participated in the Annie B’s Community Drive. We had 44 contributors donate $1294.39! This also includes a seven per cent matching grant from the North Valley Community Foundation. Thank you for your donations to Mount Lassen Chapter specifically, and the collective effort that supports our community on many levels.

Yahi Trail Maintenance Days: Thank you to Adopt-A-Trail leader Elizabeth Rice and chief trail volunteer John Meehan for being available during the two-day trail maintenance work event at the end of October. They worked along with staff and interns of the Parks Department to eliminate a creek side portion of the Yahi Trail that had major erosion issues and to improve a nearby bypass. The improved trail looks excellent. There will be other volunteer opportunities in the near future to help edge back poison oak and to improve trail passage and signage near the Diver- sion Dam portion of the trail.

Harvest Festival: I would like to thank Judi Maxfield, Ellen Copeland and Phyllis Lindley for staffing our outreach table at the recent Harvest Festival held at Bidwell Mansion. Other than a bit of blustery weather and a little too much zealous horn honking, we had a wonderful opportunity to interact with young families, children and others about the importance of native plants around our homes and in our environment.

2010 General Meetings

When we return in 2010, our general meetings will be held on the first Wednesday of the month beginning February 3, 2010. (Remember there will be no general meeting for the month of January). In order to continue holding our general meetings at the library location we have had to alter which day of the week we can meet.

It is our hope this change will not be much of an imposition to those members that attend the general meetings. We hope to remain consistent and continue to be able to reserve the library throughout 2010. Your understanding is appreciated.

Legislative Notes

by David Anderson

Status of Isolated VERNAL POOLS & WETLANDS?

The struggle of environmentalists to clarify federal jurisdiction over isolated vernal pools and wetlands under the Clean Water Act goes on. Following U.S. Supreme Court decisions denying federal jurisdiction over abandoned and isolated gravel pit ponds (2001), and wetlands which were found to be “not adjacent” to navigable waters (2006), the federal protection for all isolated vernal pools and wetlands has been highly uncertain.

In an effort to settle the confusion left in the wake of the court decisions, on December 2, 2008 the Environmental Protection Agency and the U.S. Army Corps of Engineers jointly issued a Memorandum of Guidance to EPA regions and Corps districts. The Memorandum, like the court decisions and the Clean Water Act itself, is couched in terms of relationships to navigable waters. Key provisions require an analysis of whether the isolated ponds/wetlands significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters. Proving this “nexus” could be difficult.

A Senate bill (S. 787 - Clean Water Restoration Act) introduced on April 2, 2009 by 24 Senators, including our Barbara Boxer, would eliminate the problem. Like earlier bills that died with the 110th Congress, S.787 deletes from the Clean Water Act all references to “navigable waters” and substitutes “waters of the United States.” They are defined broadly to encompass “all interstate and intrastate waters and their tributaries, including lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, and all impoundments of the foregoing, to the fullest extent that these waters, or activities affecting these waters, are subject to the legislative power of Congress under the Constitution (emphasis supplied).”

If S. 787 (still in committee) is enacted, isolated vernal pools and wetlands will definitely have the protection of the Clean Water Act, subject to the caveat noted above. If not, we will have to continue to live with the uncertainties of the “nexus” analysis.

WINTER BREAK

THE NEXT Board Meeting will be January 20, 2010, General Meeting will be on February 3, 2010, and Pipevine will be the February issue

HAPPY HOLIDAYS
As noted in the President’s Message, Lloyd of the Chico Park Department has been busy working with his crew on the Yahi Trail. Some of what he has accomplished our Chapter might have been able to do if we had more willing hands. A short section of the Y-T was realigned recently to avoid continued streambank erosion. With Lloyd’s preparation and coordination of workers, this task was completed in only two short days.

Lloyd also managed to cut through vegetation blocking the water flow across the Y-T near parking area ‘N’. This particular problem did require the use of power tools, which volunteers in the Park are not authorized to use. Recently, Billie Bresnehan and I did a little pruning along the approaches to this section. More work needs to be done to create a more stable and drier trail bed.

There are several sections of the Yahi Trail that need to be more clearly marked. We are consulting with the Park Dept. regarding how best this can be accomplished. Although there will not be another Pipervine for a few months, that does not mean we are not going to continue to maintain the Y-T. As Susan Mason pointed out “it is YOUR park” -- may I add, the Mt. Lassen Chapter “adopted” the Yahi Trail, making us responsible for maintaining it. Sure would be nice to see some different folks coming out to help. As always, call me to arrange a work date.

Thanks, Elizabeth 530-345-5758

The Nominations Committee presented the slate of 2010 officers at the October 1, 2009 General Meeting. The election was held at the November 5, 2009 General Meeting. Thank you members that attended and voted.

President JANNA LATHROJP
Vice President HAL MACKEY
Secretary BILLIE BRESNAHAN
Treasurer SUSAN BAZELL
Members-at-Large
CINDY WEINER
PHYLLIS LINDLEY
GERRY INGCO
NANCY SCHLEIGER

Thank You Nominating Committee
Woody Elliott, Gerry Ingco, and Suellen Rowlison

As soon as we have a little more rain, CNPS volunteers will start their annual Spanish broom removal efforts in Upper Bidwell Park.

There are two ways you can help with this project:

If you’re walking on the Yahi Trail and see some broom, please make a note of its general location and send that info to me. Better yet, if you have a GPS unit or cell phone with GPS capabilities, mark the location and transfer it to a Google Earth map. I can send instructions as to how to do this. As has been done recently by Friends of Bidwell Park for other Bidwell Park weeds, we will start creating a Google map that shows the known locations of broom infestations as well as info about removal efforts for each of these sites.

Secondly, you can sign up to receive email or telephone notifications of broom removal days. These will be 2-3 hour sessions, on weekend and occasionally weekday mornings. Since I recently noticed lots of smaller broom plants just downstream from the Bidwell Park Golf Course bridge while surveying for a different weed, we’ll probably start there.

Keep John Copeland’s memory alive by helping with this important effort to improve Bidwell Park’s native plant diversity. Call 530-892-1666 or send an email to smason908@gmail.com.

NEW MEMBERS
Candice Boggs Chico
Vicki McCulloch Chico
Tony Morosco Chico
Deb Rojas Chico
Joan Walters Chico
Gary Nielsen Oroville

REINSTATED
Shannon Pope Chico
Barbara Vlamis Chico
Renee Seely Sacramento

For information about becoming a member of MOUNT LASSEN CHAPTER CALIFORNIA NATIVE PLANT SOCIETY contact Membership Chair Phyllis Lindley 530-899-1514, lindley84@att.net or use the application on last page of this newsletter
NATIVE PLANT
GARDEN TOUR 2010

Once again the Mount Lassen Chapter is planning a native plant garden tour. It is scheduled for April 25th. Our last tour in 2008 was a huge success with about 80 people buying tickets to tour the local gardens. The ability to see mature plantings in a home-garden setting is an experience that can’t be gotten any other way. Choice of plants, water requirements, space requirements, pruning, in essence many questions you always had about using natives in the landscape can be discussed with the gardener. What a valuable resource! It’s not easy to picture what that little native plant in a pot at the nursery or plant sale will look like, or what its eventual needs will be.

There are also benefits to the gardener who allows the public to traipse through their yard. Gardeners, in my experience, love to share their gardens and what they know with others. Gardeners like nothing better than helping other potential gardeners with problems or with getting started. Gardens are often reflections of the gardener’s personality in their choice of plants and arrangements, and even old hands like seeing new ways of doing things. Not to mention an event like this being the impetus to whip your garden into the shape you’ve always wanted. How often does the opportunity arise to do that? The garden tour is an informal way to have seasoned gardeners interacting with new gardeners to fashion more beautiful neighborhoods.

Native plants are especially appropriate to garden landscaping as they feed and shelter wildlife, are especially adapted to the local area, and often take much less water and fertilizer than plants from other areas. And just about any kind of “look” you want to achieve is doable with natives. So we would love to provide the venue for this great cosmic convergence of knowledge and talent and eager enthusiasm once again. We received wonderful reviews from both the gardeners and the participants last time. Let’s make the tour happen.

If you have some natives in your yard that you have chosen to plant there, and you are happy to encourage others by sharing what you know about gardening, please call Janna Lathrop at 530-893-2886, or email Catie Bishop at cjbishop1991@sbcglobal.net or Suellen Rowlison at suellen@garlic.com. Someone can help identify plants if needed, and there will also be someone available on the day of the tour to help you out. We are also looking for volunteers to help with the preparations. It is really a fun day for all, and a good educational experience in, and promotion of, native plants in the home garden.
The beauty of leaf colors, especially in the fall, is endlessly appealing. And their explanation, as with all of the workings of plants, is endlessly interesting. Here is a short essay on the origins of fall leaf colors, with some of what is known about the processes at work, and the benefits to the plant of the responsible pigments. A few ideas on the source of “color” will help in understanding. It is worth persisting through some background, and helpful for you to think through the few examples below and to notice your own.

SEEING COLOR

Sunlight contains the entire rainbow (a spectrum) of colors, and that mix appears to us as white. When a sunlit surface (such as a leaf) appears to us as colored, some of the range of colors is being absorbed (that is, “removed”) from the full spectrum, leaving a different spectral mix now reflected to your eye as a “color”. Picture the rainbow colors, as they might be seen in the colors cast by a prism hanging in your window, or find a picture of a spectrum. Let’s describe it simply as the series: violet-blue-green-yellow-orange-red. Imagine certain parts of the spectrum being removed and leaving the rest to reach our eyes and to give us the sensation of color.

“Color” is very much a construct of the viewer’s brain, an interpretation of the relative balance of stimulation of our 3 types of photoreceptive “cones” in the retina. Surprisingly small shifts in the spectrum, resulting in changes in the relative outputs of the cones, result in dramatic differences in the color that we perceive.

PLANT PIGMENTS

Four types of pigment dominate the colors of leaves, and the resulting colors often make sense in terms of the effects of those pigments on the spectrum of reflected light.

Chlorophyll has a complex square ring containing magnesium, a vital molecule of photosynthesis. It absorbs mainly blue light and red light, capturing the light energy that drives photosynthesis, and appears green. Photosynthesis is important not only in the growing season, but also to the orderly and beneficial process of leaf senescence (aging and decline), and chlorophyll must remain functional even when the leaf is soon to be lost.

Carotenoids are long hydrocarbon chains with a ring at each end, and are integral parts of the light-absorbing antennae along with chlorophyll. They absorb mostly blue and blue-green light, and appear yellow.

“Wait a minute!”. With the blue colors removed, that still leaves not just yellow but green, yellow, orange, and red...how can that be ‘yellow’? But when we see multiple portions of the spectrum our eye still interprets the combined effects as a single color. And we can think of the range from green to red as being roughly equivalent in its effect on our light-receptive cones to the sort of “midrange” yellow/orange.

Anthocyanins contain 3 rings, and provide various protections. They absorb mostly in the blue-green to green-yellow range, and appear red to violet depending on the pH.

What good do the anthocyanins do? When light is intense, the “photo” aspect of photosynthesis is in full swing. But when temperatures are low, the “synthesis” aspect (conducted by carrier molecules and enzymes) is slow and does not keep up with the energy provided by light absorption—photosynthesis becomes less efficient. Excited molecules cannot pass along their energy, get into mischief, and damage cellular components, much of the damage being done by highly-reactive chemical species called ‘free radicals’. 
Anthocyanins serve (at least) two purposes: 1. To absorb light that otherwise overdrives photosynthesis, 2. To disarm free radicals that otherwise do chemical damage to the cell. In that way they prolong the function of chlorophyll and assist the recovery of nutrients in senescence. Anthocyanins also can play a protective role in newly developing, vulnerable leaves.

It takes sugar to make anthocyanins, and it takes light to stimulate the process. The reddish colors are best in the presence of those inputs.

**Tannins** are complex phenolic compounds that are important in deterring herbivory of the leaves. They lend brownish colors to senescing leaves, and in combination with yellow carotenes can make for a nice coppery color (as in beech trees).

### MAKING LEAF COLORS

You can estimate the effect of each pigment on leaf color by imagining the particular portion of the spectral rainbow that is “missing” (absorbed by the pigment), and leaving the light you see. Let’s consider those effects on leaf color in several cases.

In a healthy leaf, chlorophyll and carotenoids remove the blue and red ends of the spectrum, leaving green and a little yellow light reflected to our eyes—block out the blue and red end-portions of your spectrum (your ‘rainbow’), leaving the greenish middle. We see the typical green of growing plants.

Now the leaf enters fall senescence. Chlorophyll breaks down and valuable magnesium and nitrogen are scavenged from the dying leaf by the plant—that’s what’s in it for the plant, the recovery of valuable elements. But the carotenoids persist; they are not made of such valuable stuff and are not recovered. The blue end of the spectrum is still effectively removed by the carotenoids, but the red end is no longer absorbed, and the leaf now appears yellow. Many of the yellow fall colors arise just this way, as the effect of chlorophyll wanes leaving just carotenoids to color the leaf...giving the yellows of aspens, ginkos, black oaks.

Imagine now that after (or as) chlorophyll fades leaving otherwise yellow leaves that anthocyanins accumulate in the leaf. Carotenoids continue to absorb the blues, while anthocyanin now absorbs also the green-yellow colors. Only the orange-red end of the spectrum remains to reach your eyes. The leaves become red—with the color often spreading from red-tinged edges on outer leaves to eventually color most of the tree. If anthocyanins appear while the chlorophyll declines, the color transition is from green to red, often purple when both pigments are present.

You can readily observe that light is necessary to the production of anthocyanins. Often the red color appears only where light strikes the leaf, while a portion nearby, eclipsed by another leaf or stem, remains yellow or green. You can see many trees showing the reddish color first, and most prominently, on the sunward, highest, and outermost portions of the tree—places with the greatest light exposure and likely higher sugar concentrations.

In detail, leaf colors are not explained simply as the effect of the main pigments. Other pigments and other materials in the leaf also absorb light, contributing to leaf color—a leaf spectrum looks different than the major-pigment spectrum. And it takes only small variations in the overall spectrum of reflected light to cause significant differences in the color we perceive—small variations in the balance of the cone responses result in striking variations in leaf color.

But changes in the main pigments still explain much of what we see, and make beautifully visible the vital inner workings of the leaf itself.

### TO PONDER

Why do you think that the fall leaf-color display of our native riparian and foothill trees is not as spectacular as it is in the NE US—fewer trees that turn color and especially fewer native trees that turn red?
The Second Edition of
A Manual of CALIFORNIA VEGETATION

by John O. Sawyer, Todd Keeler-Wolf, and Julie M. Evens
1312 Pages, 352 Maps, Price $82.00

California is famous for its beautiful plant displays across the landscape. These patterns of plants are known collectively as plant communities or vegetation, such as redwood forests, oak woodlands, and Joshua tree woodlands. A Manual of California Vegetation, published in 1995, has since become widely accepted as the standard for classifying the state’s vegetation. CNPS is pleased to announce the release of the Second Edition of A Manual of California Vegetation. Greatly expanded from the previous edition, this revision comprises a collection of biological and ecological information on all of the known vegetation types in the state focusing on both the individual species and surrounding habitats. This completely updated edition features more than twice the number of vegetation descriptions as the original MCV and includes the following:

- Over 485 descriptions of vegetation types updated references
- 352 Vegetation Maps
- Definitions for over 430 native vegetation alliances
- Listings of characteristic plants within each alliance description
- Detailed life history information for the primary plants defined in the alliances
- Keys to differentiate groups of related vegetation types
- Detailed descriptions of the regional variation within each vegetation type
- Specifics on rarity and importance values of the vegetation
- Separate descriptions of the state’s rarest vegetation stands
- Accounts of 33 non-native vegetation types that are threatening natural landscapes
- Data on fire, flooding, and other natural processes
- Information on restoration and other management considerations
- Display of the new national and international classification of vegetation
- Standardized nomenclature complying with the National Vegetation Classification
- Detailed synonymy with translation to other commonly used classification systems

This comprehensive guide has wide applicability to biologists, botanists, ecologists, environmental scientists, land-use managers, conservation planners, natural history enthusiasts, teachers, and students. The MCV provides a systematic approach to classifying and describing vegetation in California, providing definitions, descriptions, and maps that enable more definitive assessments of extent, location, rarity, and threats to these natural communities.

John O. Sawyer is an emeritus Professor of Botany at Humboldt State University where he taught ecology and plant taxonomy for 40 years. His interests are especially in the vegetation of the Klamath Mountains and North Coast and the state’s shrubs.

Todd Keeler-Wolf is an ecologist who has worked in California for over 30 years. Currently he is the Senior Vegetation Ecologist at the California Department of Fish and Game and lead’s their Vegetation Classification and Mapping Program.

Julie M. Evens is a vegetation ecologist with over 15 years of fieldwork and research in California. She is the Vegetation Program Director for CNPS where she manages projects to survey, describe and map vegetation statewide.

CALIFORNIA MOSSES
by Bill and Nancy Malcolm, Jim Shevock, and Dan Norris
430 Pages  Price $68.00

California has one of the most species-rich moss floras in North America. During the last 50 years alone the checklist of California mosses has nearly doubled, yet the moss flora is seldom studied by botanists.

The CNPS is proud to offer this color photographic guide as a portal into this truly remarkable group of plants. Designed to encourage both amateur and professional botanists to take up an interest in California’s mosses, this guide contains over 2,200 color photographs and 1,100 black and white drawings illustrating all but five of the state’s 600+ moss species.

Instead of relying on traditional “dichotomous keys” for species identification, this guide is organized by leaf shape and diagnostic traits so species are identified by pictures. Nearly half of the mosses currently documented for the state are presented with a color plate incorporating each of the 176 moss genera occurring in California. Of these genera, 79 are represented in California by a single species easily identified by use of this guide. For larger genera, several additional species plates are added to provide insights into the diversity of that group. This indispensable guide not only incorporates the common species likely to be encountered in the field but also includes Pacific Coast endemic species and conservation concern.

Bill and Nancy Malcolm are experienced botanists, photomicrographers, and bryophyte enthusiasts living in New Zealand. Bill trained as a physiological ecologist (Ph.D., Michigan State) and Nancy as a ceramist (M.A., Douglass-Rutgers). They are the authors and photographers of the glossary, Mosses and Other Bryophytes, and are currently working on Tasmanian mosses.

Jim Shevock is a botanist/ecologist who has spent more than 30 years in public service working for the USDA Forest Service and the National Park Service. He is currently a research associate with the Dept of Botany, California Academy of Sciences and University Herbarium, UC Berkeley. Initially a vascular plant taxonomist and authority of the flora of Academy of Sciences and University Herbarium, UC Berkeley. Currently a research associate with the Dept of Botany, California for the USDA Forest Service and the National Park Service. He is an experienced botanist who has spent more than 30 years in public service working for restoration projects. Successful seed collection involves planning ahead and monitoring for maturity. Suitable donor populations must be located and seeds must be collected at the appropriate time once they are mature. The window for collection is highly variable among species, ranging from only a few days to several weeks or longer. If the window is missed, collection must wait until the next year or growing season, at a minimum.

Susan Erwin is the Westside Botanist for the Shasta Trinity National Forest in Weaverville, California. She has been actively collecting native grass seed since 1997. Linnea Hanson is the Ecosystem Manager for the Feather River Ranger District and has been a botanist on the Plumas National Forest in Oroville, California for many years. She has been involved with the Plumas Native Grass Seed Zone Study and Sierra Nevada Seed Zone Study since 1996 to develop seed transfer guidelines.

The workshop will meet Saturday, December 5, from 9:00 a.m. to 4:30 p.m. in Holt Hall room 129 at CSU Chico. The registration fee is $100.00 personal, $125.00 business ($90.00 for members of Friends of the Herbarium). Please register in advance; class size is limited to 24 participants (class cancelled without a minimum of 8 participants). For more information about workshop content please contact Linnea Hanson at lhanson@fs.fed.us or 530 532-7425. For more information about workshop registration please contact the Chico State Herbarium office at 530-898-3511 or NS@csuchico.edu.

OTHER WORKSHOPS
February 6, 2010
INTRODUCTION TO THE IDENTIFICATION OF BRYOPHYTES
by Shana Gross.

February 27, 2010
HEALTH AND SAFETY IN THE FIELD
by Josephine Guardino

For more information
www.csuchico.edu/biol/Herb/Events.html.
Although we most generally think of plants when we think of roots, a few decades ago there was a TV series named “Roots,” that was about bringing slaves to America and selling them in Colonial times. “Africans uprooted from their home” would be the term.

People’s roots are generally referred to as where they were born and raised, and there is always an interest in where “people came from” or were born. A person can travel far and yet think dearly of the home town and homeland in a nostalgic treasure of memories.

When you get down to real root rhetoric, it is the plant roots that stir a sense of wonder. The “greening of the Earth” is an extremely interesting process with a variety of ingenious designs involving nearly 400,000 plant species. Consider the amazing establishment of a seed plant, sprouting from a seed in the soil, one sprout going down into the ground like a reproductive insertion to spread out in a network of roots groping for water, and the other sprout going up toward the sky to become leaves that collect sunshine for the photosynthesis machinery.

The light is converted into sugars and food for the plant, circulated through the phloem tubes carrying water up and the xylem channels sending food-water down. Through it all the plant supports itself in an upright position, which is quite a feat in the case of a tree, where roots go deep, like an oak, or spread out in redwoods. One might ask what pump forces the water 300 feet up to reach the top of a redwood! Or what keeps the ponderous limbs of an oak from falling.

For flower lovers in the springtime, it is the plant parts above ground that we see, often never thinking of the network of roots out of sight beneath the soil. Yet, that soil/root structure is the foundation of life, in spite of the glorious display of colorful blossoms lifted to the sky. Down below, in the dark passages of the dirty underground, where worms wiggle and moles burrow, the roots of plants spread out, groping for the most meager amount of moisture.

On the Missouri farm in rural days, we had to clamp metal rings into the noses of screaming hogs to keep them from ruining the field with their rooting. Swine are very adept at sticking their sturdy noses into the soil and tearing into edible roots. The ring would cause pain to the sensitive snout when they prodded for roots and bulbs. If attacked by a big boar, a wallop on the nose would change his course. Boars have tusks which can be very formidable.

The beautiful new “Peace Valley” CA State Park in the Sutter Buttes is plagued by a herd of hogs gone wild. They become very canny and do a lot of damage by their rooting. There is a hunting season, and shooting a wild boar is good conservation plus a ton of meat. You need root systems to have flower fields, and flowers are lacking in that valley.

Roots, bulbs, especially the “grass nut” bulbs of the Brodiaea group that “Digger” Indians relished, rhizomes, and even the mycelium root-like spread of mushrooms, help compose a living world in the darkness of dank earth where bodies decompose and leaves decay.

...Before the leaves can mount again, / to fill the trees with another shade,
They must go down past things coming up; / They must go down into the dark decayed...
– Robert Frost, “In Hardwood Groves”
Wanted for The Pipevine

I am always eager to print your native plant photos or drawings in this newsletter. Don’t be afraid if they are in color. I can help make them look good in black and white. Please email to me at dsrdevine@hotmail.com or if you have questions. Thanks, Denise Devine, Editor.

RENEW ONLINE

Renew your CNPS membership online using a credit card. As an option, set it up to renew automatically year after year. It is quick, easy, convenient, and reduces renewal mailing costs.

www.cnps.org

Click on the JOIN button
Join Today!

MEMBERSHIP APPLICATION

CALIFORNIA NATIVE PLANT SOCIETY

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I wish to affiliate with the Mount Lassen Chapter

Name ________________________________
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Send Membership Applications to:
MOUNT LASSEN CHAPTER CNPS
P. O. BOX 3212
CHICO, CA 95927-3212

Student / Retired / Limited Income... $25
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Plant Lover................................. $100
Patron....................................... $300
Benefactor................................. $600

www.cnps.org.

Calendar
2009 - 2010

November
22 - Old Plant Intro Walk

December
1 - CSUC Tree Tour
3 - General Meeting
6 - Centerville Flume
No Board Meeting

January
1 - Banana Belt Hike
No General Meeting
6 - Pipevine Deadline
11-13 - NorCal Bot Symposium
28-31 - Snowgoose Festival

February
3 - General Meeting