

**DEDICATED TO THE PRESERVATION OF THE CALIFORNIA
NATIVE FLORA**

The California Native Plant Society



Bristlecone Chapter

**Volume 29 No. 6
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Next Chapter Meeting

On November 19th, the Bristlecone Chapter will host our annual potluck at White Mountain Research Station followed by a program by Naomi Fraga on *Mimulus*: an overview of the *Mimulus palmeri* clade. Naomi Fraga is a Phd graduate student at Rancho Santa Ana Botanic Garden. She will present observations from her 2008 field work, including preliminary findings on an undescribed species from Death Valley National Park. The potluck set-up will begin at 6:00 with dinner at 6:30 PM. Please bring your own table setting and a dish to share. All are welcome.

Next Board Meeting

The Bristlecone Chapter Board will meet on TUESDAY, November 11th at 7:00 PM at the home of Steve McLaughlin and Jan Bowers, 1365 Birch Creek Road, Big Pine. Everyone is welcome to attend. Please call for directions (938-3140).

PRESIDENT'S MESSAGE

Be sure to mark your calendars for the annual potluck on Wednesday, November 19. This is always a fun event.

Now that November is here and Thanksgiving is drawing near, I want to give thanks to the people who make our chapter work for you, our members. We had a very successful plant sale this past September, due to the hard work of Anne Halford and Diana Pietrasanta. I thank all of our field trip leaders, but especially Anne and Cathy Rose, both of whom led several trips. Program duties were split this year between Cheryl Chipman and Sherryl Taylor. Sally Gaines and Rosanne Higley did the bulk of the work for our July banquet.

Rosanne continues to keep our financial house in order while Diana looks after the membership duties. I'm grateful to Lizzy Wenk for serving as our secretary. Sherryl stepped in to complete the 2008 term for chapter Vice-President and continues to work for our chapter in many ways. Anne puts out one of the best chapter newsletters in the state, and Jo Bacon, despite her busy schedule, maintains our website. Sally Gaines handled the publicity duties, Jerry Zatorski managed the DeDecker Native Plant Garden, and Scott Hetzler organized our highway clean-ups—thanks to all. Daniel Pritchett continues to fight the good fight as our conservation

chair. Sally Manning does so many things behind the scenes. Finally, I want to thank the rest of our Board members for their participation, input, advice, and support: Edyth Irvine, Sue Weis, Ann Fulton, EvelynMae Nikolaus, Kathleen Nelson, Stephen Ingram, Kathy LaShure, and Jan Bowers.

There's a lot to look forward to in 2009. We're starting to organize the summer sojourn, which will once again be held in the White Mountains. Stay tuned for details. With or without winter rains and snow, we'll have another good season of field trips. I'm already looking forward to next fall's plant sale.

.....Steve McLaughlin

**The tangled little woolly-stars
(*Eriastrum*, Polemoniaceae)**

by Sarah De Groot, 2008 Mary DeDecker
Grant recipient

It looked like a nice, tidy little group. When I started this project, there were fourteen described species of woolly-stars—mostly little annual plants with five-petaled blue or white flowers, popping out in clusters from heads that looked to be covered in cotton. I heard that there was some difficulty in identifying them, but I thought people just weren't looking close enough or using the right characters.

That was true, but come to find out, the group is a bit more complicated. Most of it seems to fit a pattern of rapid diversification—that every form came about in the last million years or so, and it's probably still diversifying. Parts of the group (e.g., *E. densifolium*) look like

complexes of ecological races, whose morphologies may be adapted to particular environments, and therefore fairly distinct, but whose genes may still be identical or nearly so. If adaptations are to particular environments, more distantly related species may have convergent morphologies if they occur in similar environments.

Hybridization does occur in at least a few species (e.g., *E. densifolium*), although very little study has been done to determine how much hybridization occurs or potentially could occur within the whole genus.

The state of names for the species and subspecies didn't make things easier. The problem was that none of the previous authors who classified the woolly-stars had understood or had seen all or most of the variation in the group, and some forms were treated quite differently by different authors. For example, *E. harwoodii*, now a separate species, was first described as a variety of *E. filifolium* (*Gilia filifolia*) by Craig (1934). Mason (1945) moved it under *E. diffusum*, as a subspecies. Harrison (1972) placed it under *E. sparsiflorum*. Gowen (2008) elevated it to species. While this treatment seems most appropriate, a taxonomist still has to track the circumscription of a taxon through all these name changes to ensure that they all refer to the same entity (quite a chore sometimes).

The real problem, though, seems to be getting a handle on all the variation that occurs in nature. Just in and around the Owens Valley, many species may be encountered: *E. densifolium*, *E. wilcoxii*, *E. eremicum*, *E. sparsiflorum*, *E. signatum*, and *E. sapphirinum* subsp. *ambiguum*. But there are also some different forms within these—one example is in *E. wilcoxii*, which has a woollier valley form with fewer leaf lobes, and a less woolly mountain form with a number of leaf lobes.

For my study, I decided the best way to understand the group is to sample as much of the naturally-occurring variation as I can. I just don't see how one can begin to sort out the taxonomy of a group until the number of species and subspecies is known—if you don't know how many entities you are dealing with, how can you group them meaningfully into species or subspecies? Some species may look similar, but turn out to contain several distinct entities that may be recognized as subspecies. Other species may look different, but with additional samples, turn out to form a grade of morphologies, corresponding to latitude, elevation, soil type, or precipitation.

Analysis of this group is still in beginning stages, but a preliminary phylogenetic analysis of molecular data showed only a small amount of DNA sequence divergence between species. On the other hand, morphological data has been highly informative, even able to tell populations apart. Caution must be exercised, however, because ecological adaptations (which appear to be likely) could induce convergent morphologies in distantly related species. Use of multiple morphological datasets (corollas, leaves, pollen) along with molecular data should make most of these inconsistencies apparent. Eventually, I hope to make enough sense of this group to revise the classification, and provide a key for identification.

Literature cited

- Craig, T. 1934. A revision of the subgenus *Hugelia* of the genus *Gilia* (Polemoniaceae). *Bulletin of the Torrey Botanical Club* 61: 385-397, 411-428.
- Gowen, D. 2008. New taxa following a reassessment of *Eriastrum sparsiflorum* (Polemoniaceae). *Madroño* 55(1): 82-87.

Harrison, H. K. 1972. Contributions to the study of the genus *Eriastrum*. II. Notes concerning the type specimens and descriptions of the species. *Brigham Young University Science Bulletin* 16(4): 7.

Mason, H. L. 1945. The genus *Eriastrum* and the influence of Bentham and Gray upon the problem of generic confusion in Polemoniaceae. *Madroño* 8(3): 65-91.

NEW MEMBERS

The Bristlecone Chapter warmly welcomes the following new members!

Mary Roper
Independence, CA

Sherry Nostrant
Bishop, CA

Sharon Connor
Bishop, CA

Charles & Christine Spiller
Bishop, CA

Larry Nahm
Bishop, CA

Pamela Gross
Mammoth, CA

Again special thanks to all of you who helped with the 2008 Plant Sale. It really makes it such a great event when all of you show such support! Anne and Diana.

Next Newsletter Deadline: December 28th.

CALIFORNIA NATIVE PLANT SOCIETY - Membership Application

The California Native Plant Society is an organization of lay persons and professionals united by an interest in the plants of California. It is open to all. The society, working through its local chapters, seeks to increase the understanding of California's native flora and to preserve this rich resource for future generations. Varied interests are represented.

Name _____ P.O. Box or Street _____
 City _____ State _____ Zip Code _____ Phone _____
 I wish to be affiliated with the Bristlecone Chapter _____ Other _____.

Bristlecone Chapter Directory

Membership Category

___ Student, Limited Income	\$25.00
___ Individual	\$45.00
___ International	\$45.00
___ Family, Group, or Library	\$75.00
___ Supporting	\$75.00
___ Plant Lover	\$100.00
___ Patron	\$300.00
___ Benefactor	\$600.00
___ Mariposa Lily	\$1,500.00

Please make membership checks payable to and send to:

CNPS - Membership Coordinator
 2707 K. Street, Suite 1
 Sacramento, CA 95816

President - Steve McLaughlin (760) 938-3140
 Vice President - Sherryl Taylor (760) 924-8742
 Secretary - Lizzy Wenk - (760) 873-6263
 Treasurer - Rosanne Higley (760) 387-2803
 Membership - Diana Pietrasanta - (760) 873-6262
 Newsletter Editor - Anne Halford - (760) 873-6714
 Conservation - Daniel Pritchett - (760) 873-8943
 Plant Communities - Sally Manning - (760) 873-3790
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 Decker Native Plant Garden - Jerry Zatorski (760) 872-3818
 Publicity - Sally Gaines (760) 935-4088
 Historian - Ann Fulton (760) 873-9261
 Librarian - EvelynMae Nikolaus - (760) 878-2149
 Rare Plant Committee - 2008 Chair. - Kathleen Nelson
 (760) 873-1095
 Plant Sale Committee - Anne Halford, Diana Pietrasanta,
 Sherryl Taylor (924-8742), Denise Waterbury (873-4344)
 Book Sales - Sue Weis (760) 873-3485
 Posters - Stephen Ingram (760) 387-2913
 Kathy LaShure, Creosote Ring Sub-chapter Coordinator,
 (760) 377-4541

Gift Contribution: Where most needed _____ Conservation _____.

THE CALIFORNIA NATIVE PLANT SOCIETY (www.bristleconecnps.org) Bristlecone Chapter Newsletter comes out bimonthly. It is mailed free to members of the Bristlecone Chapter, CNPS. The subscription is \$5.00 per year for non-members and can be obtained by sending newsletter subscriptions to CNPS, P.O. Box 364, Bishop, CA 93515-0364. Send newsletter articles not memberships to Newsletter Editor Anne Halford at 312 Shepard Lane, Bishop, CA 93514 - or email to: kasch@cebridge.net

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