



C. splendens

# MARIPOSA

the newsletter of the CALOCHORTUS SOCIETY

Vol. XII, No. 1 (July 2000)

c/o Robinett, P. O. Box 1993, Brookings, OR 97415 USA

## Greetings ... SEND SEEDS !!

We have sold our California residence and are at last entirely moved. Brookings, Oregon, shares with the community of Smith River, California (just across the state border) the title of "Easter Lily Capital of the World." Our first full summer here is proving to be cooler and foggier than average, but we are enjoying the coastal climate nonetheless. Had a nice blooming this spring from the globe lilies and catsears Jim planted in our front yard last fall, but the mariposas we brought north with us are not quite so fond of their new circumstances. We anticipated they might not do well here, but wanted to try them nonetheless. We also brought a small precious tub of *C. umpquaensis* and hope it will adapt well, although it comes from a more inland, hotter habitat. We'll see ...

With settling the sale of our old house and finalizing our move – as well as some "ups and downs" with Jim's recovery – we did not get out and about for seed collection this year. So **please send seeds** for the October issue listing. (We advise using a padded or "bubbled" envelope or small box, to protect the seeds from damage in the mail.)

## Species of the issue – *Calochortus coxii* – by Frank Callahan

*The following article was generously contributed by botanist Frank Callahan, who with Ray Godfrey co-authored the original 1988 publication of this beautiful catsear in the journal Phytologia (Vol. 65, No. 3).*

On June 18, 1988, Marvin Cox (who now resides in Roseburg, Oregon) discovered a population of *Calochortus* in bloom on a serpentine slope between Boomer Hill and Myrtle Creek, Oregon. He observed some floral differences from other *Calochortus* he had seen and wondered if this could be either a new species, or a new variety of *C. tolmiei*. A short while later, news of the discovery was relayed to (the late) Ray Godfrey. A meeting was arranged between Cox, Godfrey, and myself, with Mr. Cox requesting our participation in describing this plant.

Marvin Cox has had an enduring interest in the *Liliaceae*. He joined the North American Lily Society in 1947, at 17 years of age. He is now 70 and shares with Boyd Kline of Medford, Oregon, the title of the NALS members with the longest membership.

Rumors had persisted since the mid-nineteen-fifties of a *Calochortus* resembling *C. persistens* [a narrowly endemic species known only from a ridge northwest of the town of Yreka, California – Eds.]. The first

sightings of the plant were in fact made by the late Reggie Miller. Reggie was the first person to collect *C. umpquaensis* [a quite uncommon species confined to the Umpqua River drainage in Oregon – *Eds.*] in the nineteen-fifties, and was also the founder of the Glide Wildflower Show. She, however, confused the new plant with *C. persistens*.

*Calochortus coxii* is a very rare species confined to the ultramafic soils in the Boomer Hill region and hills to the northeast in Douglas county, Oregon, at altitudes ranging from about 800 feet to about 2800 feet. It is distributed over an approximately 11-square-mile area. It shares traits with *C. umpquaensis*, *C. howellii* [a less uncommon species from the Illinois River drainage in southwestern Oregon – *Eds.*], and an undescribed variety of *C. elegans*. All have rowed trichomes (hairs) on the inner basal leaf surface – a unique characteristic not exhibited by any other known species of *Calochortus*. All four taxa are Oregon serpentine endemics.

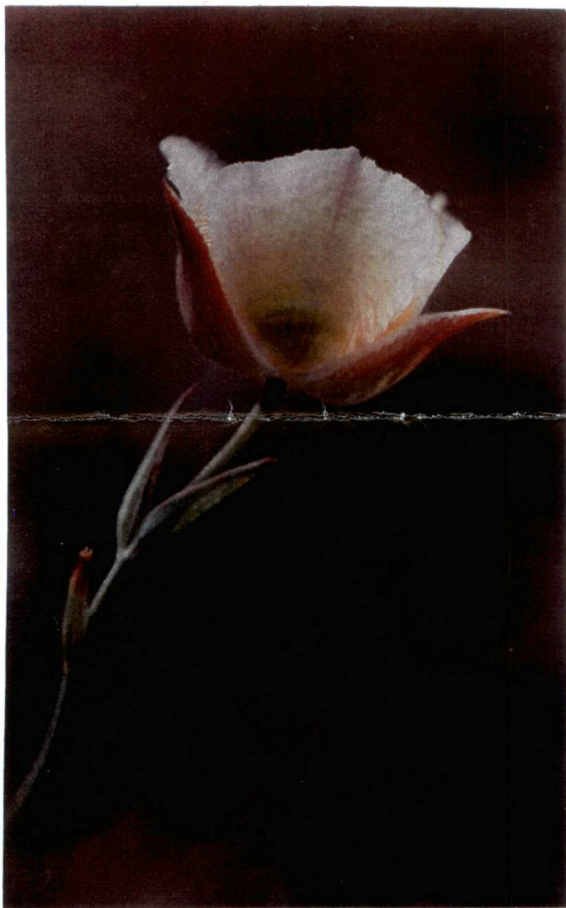
The distribution and habitats of the three previously described species are somewhat different from each other. *Calochortus howellii* is confined to the Illinois River Valley of southern Josephine county, Oregon, where it occupies some of the hottest, most sterile sites in the county. On the other hand, *Calochortus coxii* and *C. umpquaensis* tend to be found in cooler, more mesic habitats – mostly on north-facing inclines and slopes.

All three *Calochortus* appear to be long-lived – as determined by documented bulb coat counts, which suggest that they may exceed 50 years' longevity. Bulb coat counts can be made readily in serpentine endemic plants such as these, because the sterile nature of serpentine soils supports the preservation from year to year of the bulb coats (which tend to deteriorate in more fertile soils). Serpentine or ultramafic soils tend to be quite plant-restrictive, because of the high percentages of iron and magnesium they contain, with low ratios of calcium (an essential plant nutrient). Such soils are also noted for their concentrations of nickel/chromium compounds, which further reduce soil fertility. These species of *Calochortus* tend to accumulate nickel salts that may serve as an insecticide or at least as a deterrent to plant-consuming pests based on taste or digestibility.

The table below compares *C. coxii* with *C. umpquaensis* and *C. howellii* on some of the more important identifying characteristics.

Characteristic	<i>C. coxii</i>	<i>C. umpquaensis</i>	<i>C. howellii</i>
Length of anthers	8 mm	10 mm	7 mm
Length of filaments	7 mm	5 mm	4 mm
Stigma lobe shape	slightly curved	curved	strongly curved
Nectary shape	strongly lunate	straight-lunate	straight-lunate
Nectary extent	does not extend to petal edge	extending nearly to petal edge	extending nearly to petal edge
Distance, petal base to nectary	10 mm	8 mm	5 mm
Petal hairs color above nectary	yellow	dark purple	purple
Petal base above nectary (blotch)	pink/red	dark purple	lime green
Lavender chevron	present	absent	absent
Blooming habit	flexuose	flexuose	strictly erect
Flower shape	broadly campanulate	nearly funnelform	nearly funnelform
Capsules	pendant	pendant	erect, half the size of the other two sp.

*Calochortus coxii* --



↑  
Photographs by John Erwin ↗



↖ Photographs by Jim Robinett  
↓





Side-by-side comparison of black-and-white prints (top view) of *Calochortus coxii* and *C. tolmiei* showed considerable similarity between the two. A first viewing of *C. coxii* might be explained as a *C. tolmiei* on steroids! It exhibits a broadly campanulate flower structure more closely allied to *C. tolmiei* than to *C. umpquaensis* or *C. howellii*, both of which have a sub-funnelform flower with a narrow base.

The best sites for seeing *C. coxii* – in north-facing open grasslands – are on the Cliff Bryden property above the Boomer Hill exit off Interstate 5. In fact, the construction of I-5 destroyed numerous populations of this rare plant, as did the building of roads on Bureau of Land Management lands and development of gravel quarries. The biggest remaining threat to its survival is from grazing – deer, rabbits, and cattle pose the greatest risk. To visit the best sites for *Calochortus coxii*, which blooms from mid-June to the first week of July (varying from year to year), contact Marvin Cox, at 1337 SE Main Street, Roseburg, OR 97470; or phone (541) 673-2166 to set up a field trip.

*Editors Note – We were privileged to see Calochortus coxii at height of bloom at the Bryden Ranch on July 1, 1995. It is indeed a big, beautiful catsear, as the photographs show – Frank's characterization of it as "C. tolmiei on steroids" is quite fitting. (Given its very limited range, it is most fortunate that the ranch's owners seem eager to protect and preserve it.)*

*The original publication of C. coxii in 1988 closely compared it with C. tolmiei, and we have adapted information from that article into the table below.*

Characteristic	<i>C. coxii</i>	<i>C. tolmiei</i>
Blooming time	late June to early July	March to early May
Inner leaf surface	densely hairy along veins	glaucous / glabrous
Outer leaf surface	shiny dark green	glaucous
Petal gland	larger, strongly impressed	slightly impressed
Hairs above gland	yellow	purple, rarely pink
Stigma	raised on a style-like extension	sessile
Anther color	reddish brown	pale lavender

*The same article also compared line drawings of petals of C. coxii, C. tolmiei, and C. persistens. The petals of C. persistens are noticeably larger, easily half again the size of the other two, and are remarkable for having fringed side margins but a smooth top margin, and little in the way of hairs on the petal surface. C. coxii and C. tolmiei, on the other hand, both have petals with smooth margins at sides and top, and distinctly haired petal surfaces.*

*Godfrey and Callahan proposed the creation of a new subsection within the genus Calochortus to accommodate C. coxii, C. howellii, and C. umpquaensis, because of their unique but similar characteristics – the densely hairy inner leaf surfaces, the style-like extension of the ovary; the apiculate (having a small, broad point at the apex) anthers, the light yellow seed (somewhat similar to seeds of C. coeruleus), and their serpentine endemism – though these plants are by no means unique in this last characteristic. Godfrey and Callahan also would have included two additional taxa which were not yet published. All are endemic to Oregon and are centered in Oregon's Klamath Ranges. However, this proposal has not yet been accepted by the Botanical Powers That Be, so far as we are aware.*

## A new stand of *Calochortus syntrophus* !

Member Ron Parsons has reported finding a new stand of *Calochortus syntrophus*, at Battlecreek Vista Lookout on Highway 36 in Tehama county, California, where it was growing among lava rocks. This sounds like a rather different habitat from the "type locality" near Montgomery Creek [see Vol. XI, No 4 (April 2000) of *Mariposa*]. Ron encountered the stand near the end of its bloom, on May 25th. He has promised us a slide duplicate, and we will print it when we have received it. Members may want to check out the site for themselves next year; if you do, please let us know what you find there.

## Readers' Forum

✿ Norman Young, The Poplars, Newdigate, Dorking, Surrey – "I do miss the letters in the news letter. It is nice to know others have problems as well. I am growing in plastic pots on capillary matting for the first time, and it looks quite good at the moment. Last year I used clay pots on matting, but it was a waste of time. Germination of *C. syntrophus* seed was good, and the seedlings are still growing in mid-May."

*We, too, missed readers' letters, and are happy to be receiving some again. The call for subscription renewal seems to stimulate interest, as does the annual seed list. And even readers who don't respond appreciate knowing about different cultivation techniques.*

✿ Jim Shields, Westfield, Indiana – "My germination rate from *C. nuttallii* seeds was only about 10%, but from *C. gunnisonii* seeds was miserable – from 0 to 3%. Do any readers have suggestions on how to handle them for better results?"

*How about it, members? Jim also reports good results with *C. luteus* and *C. superbus* bulbs purchased from "Dutch dealers" – but fails to identify the dealers. Send us their names, Jim – see the next page.*

✿ Chuck Baccus, San Jose (Santa Clara county) – "On the *C. rubellus* colors – I used seed from York [Mountain] Road in the early years and seemed to have color fade on some bulbs. Also seed produced a spectrum of shades from light to wine. Sold most of these when mature so only have a couple from the seed you sent two years ago. On the germination tests – Most of the seed you sent seemed to be viable, but I do believe a few may not have come up this year so have to condense the data now. One problem was a hailstorm in February which may have cost half of the seedlings up then."

*Interesting! Both Chuck and Wayne Roderick (in Orinda, Contra Costa county) report bulb fading in this species, whereas in Sonoma county we didn't experience this. Perhaps the fact that our location was closer to the ocean (only 8 air miles from it) was responsible? Jim grew our *C. rubellus* in a spot that received full sunlight from dawn to about 1 or 2 o'clock, then was shady the rest of the day.*

✿ Fred Smith, Glendale (Los Angeles county) – I had a late but good mariposa year. *C. venustus* is the best one here. Southern California *C. luteus* not so showy, but does well also.

*For those readers who don't know him, Mr. Smith has been growing Calochortus for more than 60 years. He became enamored of mariposas after a 1938 hike in the Montebello hills, where he saw *C. catalinae* and recognized a relative of the "sego lilies" of his native Wyoming. Starting initially with some bulbs purchased from Carl Purdy, he went on to growing from seed, experimenting with various soil mixes and watering schedules He is now retired – but certainly has not lost his interest in Calochortus !*

✿ Mark Hennelly, Sacramento – "Can you include a list of bulb sources?"

*Here's a partial list of sources for bulbs, from north to south, plus overseas. Some sell mail order –*  
 ➤ Pacific Rim Native Plants, 44305 Old Orchard Road, Chilliwack, BC, Canada - V2R 1A9

- Telos Rare Bulbs, P. O. Box 4978, Arcata, CA 95521
- Far West Bulb Farm, 14499 Lower Colfax Road, Grass Valley, CA 95945
- O'Donnells Fairfax Nursery, 1700 Sir Francis Drake, Blvd., Fairfax, CA 94930
- Native Plant Nursery, SFBay National Wildlife Refuge, P. O. Box 524, Newark, CA 94560-0524
- Yerba Buena Nursery, 19500 Skyline Blvd., Woodside, CA 94062
- C. H. Baccus, 900 Boynton Avenue, San Jose, CA 95117-2032
- Suncrest Nursery, 400 Casserly Road, Watsonville, CA 95076
- Native Sons Wholesale Nursery, 379 West El Campo Road, Arroyo Grande, CA 93420
- Santa Barbara Botanic Garden, 1212 Mission Canyon Road, Santa Barbara, CA 93105
- OVERSEAS – Potterton & Martin, 14 Newboul Close, Caistor, Lincs, England LN7 6NY

Local Native Plant Societies may be a resource as well. If readers write to us regarding any additional resources, we'll be happy to put their names and addresses in a future issue.

❁ Gordon Fowler, Whitefield, UK – As a relatively new member, I would like to say how impressed I am with your newsletter, especially the magnificent colour reproductions. Are any back-numbers of Volumes I-X still available for sale?

All the back issues are available in full-volume sets for anyone interested. However, production values in the master set of Volumes I-IX provided to us are uneven, and color was not used until Vol. VII. We will reproduce Volumes I-IX for the cost of reproduction only. Starting with Volume X, the cost is the same as our current subscription price – US\$9. **Overseas, add US\$3 to the cost of each volume.** A volume-by-volume list of species featured and costs is given below.

Vol.	Species featured	Total pages	Graphics	US cost with postage
I	(1st issue none), <i>C. albus</i> , <i>C. elegans</i> , <i>C. uniflorus</i>	21	bl+w line drawings	\$3.60
II	<i>C. eurycarpus</i> , (2nd issue none), <i>C. venustus</i> , <i>C. macrocarpus</i>	20	bl+w line drawings	\$3.25
III	<i>C. kennedyi</i> , <i>C. ambiguus</i> , <i>C. plummerae</i> , <i>C. venustulus</i>	20	b+w line drawings and 1 b+w photo	\$3.25
IV	<i>C. barbatus</i> , <i>C. purpureus</i> , (3rd issue none), <i>C. amabilis</i>	20	b+w photos	\$3.25
V	<i>C. tolmiei</i> , <i>C. umbellatus</i> , <i>C. longebarbatus</i> , (4th issue none)	20	b+w photos	\$3.25
VI	<i>C. palmerae</i> , <i>C. palmeri</i> II, <i>C. macrocarpus</i> var. <i>macrocarpus</i> , <i>C. nuttallii</i>	20	b+w photos	\$4.65
VII	<i>C. gunnisoni</i> , <i>C. weedii</i> , <i>C. ghiesbreghtii</i> , <i>C. nigrescens</i>	20	color photos	\$8.85
VIII	<i>C. spatulatus</i> , <i>C. amoenus</i> , <i>C. subalpinus</i> , <i>C. minimus</i>	20	color photos	\$8.85
IX	<i>C. howellii</i> , (no species featured in the last 3 issues, but each issue included photographs of <i>C. venustus</i> color forms)	20	color photos	\$8.85
X	<i>C. vestae</i> , <i>C. monophyllus</i> , <i>C. excavatus</i> , <i>C. luteus</i>	24	color photos	\$9.00
XI	<i>C. superbus</i> , <i>C. clavatus</i> , <i>C. albus</i> revisited, <i>C. syntrophus</i>	24	color photos	\$9.00

❁ Geoff Burleigh of Los Angeles, and Gwen and Phil Phillips of Lincolnshire, UK, both sent along extensive notes on locations for various species – but we've run out of room ! More next issue ...