

MARIPOSA

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THE *CALOCHORTUS*
SOCIETY NEWSLETTER

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I. Announcements

A. Reaction to the color copies of Mariposa was enthusiastic. Arthur Hayler called them a "good addition to the newsletter." Ross Watson thinks the color page looks "excellent," while Milton Seibert compared it to "a day in spring." Even those who initially had reservations about the addition of color page were won over. George Clark, president of the Cal. Native Plant Society, best expressed this sentiment by remarking that "perhaps it was a good idea."

B. **FREE SEED OFFER:** The tremendous rains of the winter of 1995 resulted in abundant flowering and seed set. The desert, in particular, was a sight to behold; in one stretch there was a "stand" of *Calochortus kennedyi* for ten miles! To get your free seed send a self-addressed, stamped envelope (overseas send 50 cents or an international postal certificate). Each member may choose three species. From section Calochortus:

1. *C. tolmiei* from Shasta Co. at about 1000 ft. (about 300m). Tolmie's cat's ear varies from white to purple in this area and is a sentimental favorite of mine as the first sp. I saw in the wild. Prefers light shade, abundant water during the growing season, hardy. First time offer to members.

2. *C. nudus* from Siskiyou Co. at about 3900 ft. (about 1200 m). The nude star tulip occupies wet meadows at moderate altitudes. This stand had flowers which varied from white to lavender. Sun, abundant water during the growing season, very hardy: may require cold stratification in mild areas. First time offer to members.

3. *C. greenei*, also from Siskiyou Co. This is rightly considered a rare species and I wouldn't ordinarily offer it, but the abundant rains this winter produced a bumper crop, so for the first and ONLY time we are offering this lovely meadow tulip. It is lavender outer, white inner with long petal hairs. Sun, moderate water during the growing season (keep it on the dry side in humid areas), very hardy (will require cold stratification in mild areas). First time offer to members from any source.

From section Mariposa:

4. *C. luteus*, the central Coast variety, from San Benito Co. at 1000' (300 m). This form, common from San Francisco Bay to about northern San Luis Obispo Co., is yellow with brown striations, but lacks the central petal blotch of its northern and eastern counterpart. Full sun, moderate water. First time offer to members.

5. *C. kennedyi*, the brilliant, Desert Mariposa. This will be offered in three forms, and members should specify which strain they want. (a). The vermilion form from San Bernardino Co. at about 3000 ft. (900 m). (b). Seeds from a stand in the Panamint Valley of California's Inyo Co. near Death Valley. This stand has mixed colors of orange, apricot, yellow, etc. (c). The yellow form from Yavapai Co., Arizona, courtesy of Prof. Watson. Full sun, DRY (water only every three to four weeks!). First time offer to members.

6. *C. gunnisoni*, the Rocky Mountain Mariposa pictured in the last issue, white with purple marks and overtones, and yellow hairs. From near Mesa Verde Indian ruins in Colorado at about 5000' (1500 m). Part shade, moderate water to dry, extremely hardy (will require cold stratification in mild areas; not recommended for Coastal California except for very dedicated growers: will require extensive refrigeration each year). First time offer to members.

From section Cyclobothra:

7. *C. weedii* var. *intermedius* from Orange Co., Ca. at 500 feet (150 m) is a color form which is pale yellow or cream at the base and purplish at the top of the petals. Good under low shrubs as it can get

up to three feet high. Part shade, moderate water, hardiness unknown. First time offer to members from any source.

8. *C. venustus* from the state of Mexico, Mexico at 6000 feet (1800 m) has small yellow flowers. This form is from the lowest altitude stand known, and is suitable for all climates. Sun, moderate water, the hardest Mexican, and it tolerates winter snow. First time offer to members. **REQUIRES SUMMER WATER.**

9. *C. barbatus* var. *chihuahuensis*, a nodding species with a brown and yellow exterior, and a yellow interior with hairs covering most of the petals. This variety is from northern Mexico, and our seed was from plants from the state of Chihuahua at about 6000' (1000 m). Sun, moderate water, and fairly hardy. First time offer to members. **REQUIRES SUMMER WATER.**

There is also *C. spatulatus* available, from 5000' (1500 m) in Michoacan, part shade, moderate water in summer. We also have *C. vestae* available, donated by Lottie Jenvey.

II. Trips

Pictures by Sunset, Camping by Moonlight, or 24 Calochorti in 9 days--by Dr. Bob. [Fourth Installment]

We then met Marvin Cox, who lives outside Canyonville, Oregon. He took us to the recently discovered cat's ear, *C. coxii* on the hills in sight of the freeway. He found them in 1988, while looking for ferns. It is a large, cup-shaped flower, greyish on the outside, white to orange inside, and with a hairy pink to red base--quite charming. The plant was generously named for its discoverer who loves growing plants, particularly our native lilies. He was most proud of his 8-foot tall *Lillium occidentale*. The owner of the site is a retired lumber person who with his wife has built their retirement home in the hills and proudly displays photographs of this beauty in their living room. They generously feted us with some snacks, then off again into the gathering dusk and an 11 PM supper at the slowest service Denny's in Oregon. But you can't complain because all other restaurants serving normal clientele were closed. [Look who forgot to pack dinner!--ed.]

III. Horticulture

"*Calochortus*. Easier to Grow Than you Think!"

[This is excerpted from an article by member Norman Young, who wrote it with "people who know nothing about Calochortus" in mind. The article is useful as presenting the experience of a successful grower who lives far from the native range of Calochorti. Also, it is a reminder that these adaptable plants do not need elaborate artificial conditions to thrive. First installment--ed.]

"Not a lot has been written about *Calochortus*, so I thought I would put in my "two pennyworth." There are over 60 species, about half of which grow in California. Most are reasonably hardy, -10°C in my greenhouse and, according to the *Calochortus* Society, some need to be winter chilled to grow properly. Even the Mexican species if kept dry will survive a light frost. They range from easy to difficult, not necessarily to grow, but to bloom. The color range of some species is quite wide and variable which is why I grow two or three pots of each from different locations. At present, 25 species are grown from bulbs (please note, I said grow, not bloom!) and another 13 are growing from seed. [Continued next issue]

IV. The Horticultural History of Calochorti

[Fifth Installment of the article by Allen Chickering from 1938--ed.]

There is another fine species which grows in Southern California and to some extent in the north known as *Calochortus clavatus*. This is a large yellow Mariposa. Some of them have delicate edging at the inside base of the petals and some of them have purple anthers, which make a pleasing contrast to the bright yellow of the petals...on the west side of the San Joaquin valley...it is inclined to grow on steep hillsides or points in dry, loose soil sometimes with some sagebrush (*Artemesia*). This soil seems to contain considerable gypsum...I have never had much luck growing this species until this year [1938-ed.], although I always have a few of them in flower every year. This year we tried some in very loose, newly dug soil, in which there was mixed a good deal of sand and quite a

little leaf mold. The results have been very satisfactory. None of them have mildewed, and the plants have grown to be quite large with fine flowers and have produced a quantity of seed. I should also mention that there is a little shrubbery, and consequent shade, around the place where these bulbs were planted.

An allied variety...grows sparingly in the foothills of the Sierra Nevada Mountains...between...2500 and 4000 feet [about 750-1200 m]. This variety is the largest in size of any Mariposa of which I know. I measured one which was 5 1/2 inches [about 14 cm.] across the top. It is sometimes termed *Calochortus clavatus* var. *avius*. It is yellow, but does not have the purple anthers. There is a faint dark edging at the base of the petals. It blooms in late June. It offers the most definite instance of soil selection of any Mariposa with which I am familiar. It grows only in lava formation, so definitely that in one place where there is a narrow cap of lava not over 50 feet wide in some places on top of a limestone ridge, this Mariposa is absolutely confined to the lava and never goes into the limestone at all...Obviously this variety should have lava soil...I have never had a chance to try growing it from seed. However, it does not mildew and all it needs is lava.

Calochortus concolor...I have never tried. I have usually seen it growing in a granite formation, It is a large and beautiful yellow Mariposa with delicate striation on the petals.

V. Conservation

Rare, threatened and endangered: reflections upon the categories of botanical scarcity (Part Four).

The quantity of plants requisite to a judgement of scarcity is generally a relative number. That is, a comparison may be made with other plant species within a genus or even beyond it and a determination of scarcity can be made. If a plant occurs "in such small numbers throughout its range" relative to the numbers in other species and genera, then it can be adjudged rare. While *Calochortus albus* grows from San Diego to Butte and Plumas counties, *C. tiburonensis* grows in only one known location in the world. Thus the latter is intrinsically rare, even if it is not necessarily threatened. It is rare because the number of stands of the species is small, the numbers of plants at this stand are few, and thus by comparison with a more common species like *C. albus* it is a rare species. *C. albus* in turn, is relatively rare by comparison with *C. nuttallii*, which grows in parts of nine states, while *C. albus* is confined to California. However, *C. albus* is not considered rare as it is fairly common in California, and does not occur "in such small numbers throughout its range" that it can be considered rare. On the contrary, it is fairly abundant where it does occur and its overall numbers are probably beyond counting. [Continued next issue]

VI. Species This Issue: *Calochortus Weedii*

Genus *Calochortus* Key (composite based on the botanical literature and field observations)

I. Section *Calochortus*

II. Section *Mariposa*

III. Section *Cyclobothra* fibrous-reticulate bulb coats and nectaries with few trichomes on the surface.

A. Subsection *Weedii*. Stems tall, simple or branching, never bulbiferous; leaves lanceolate, acuminate and not channeled or grooved; flowers erect, generally multiple except in young plants; petals obovate or fan-shaped with rounded or acuminate edges, thickly covered on at least the bottom half by trichomes with a dark spot at their base; nectary depressed and surrounded by a ring of trichomes; seed capsules linear, seeds flattened and ovoid or irregular.

1. Petals truncated, shorter than the sepals and thickly covered with yellowish and brownish trichomes; filaments not appressed at base to pistils; San Luis Obispo Co., California...*C.*

obispoensis

2. Petals not truncated, sometimes equal in length to the sepals; filaments usually appressed at base to pistils

a. Petals white or (usually) mottled with pink and red, with very conspicuous fringe of trichomes at edge, usually in two rows; nectary obovate, bloom time late July and August, Ventura, Santa Barbara and Monterey Co., Ca...*C. vestus*

b. Nectary rounded, bloom time usually late May to June, south of Ventura Co., Ca.

i. Petals lacking fringe

α. Flowers pink, lavender or purple, or with lighter shades at the base of the petals;
Transverse Ranges of South California in Los Angeles, San Bernardino and Riverside Co.,

Ca.... *C. plummerae*

β. Flowers pale yellow; Peninsular Ranges of Baja California del Norte... *C. weedii* var.
peninsularis

ii. Petals with less conspicuous fringe of trichomes at edge, usually in one row, and frequently serrated or undulate; flowers deep yellow (usually) to whitish with green overtones and some with lavender areas at the top, and also some with reddish-brown blotches and markings on the petals; range from Orange and southern Riverside Co., Ca. to northern Baja California, Mex.... *C. weedii*

B. Subsection *Ghiesbreghtianii*

C. Subsection *Barbati*

D. Subsection *Purpurei*

Calochortus weedii, Weed's Mariposa is not actually a Mariposa at all, but this separation is relatively recent, and it was considered a Mariposa by most botanists up until Ownbey noticed the connection between it and the Mexican *Calochortus* in the form of the fibrous bulb coat in 1940.

Range and Habitat: This is a localized species, centered in San Diego Co., Ca., where it is fairly common. It grows just over the San Diego Co. border in southwest Riverside Co. and southeast Orange Co., and also into northern Baja. *Calochortus weedii* grows from sea level up to high in the Peninsular Ranges, most often in shrubby areas called chaparral. The plant is shaded by the surrounding shrubs, but the flower prefers sun, and it must grow quite high, up to three feet, so its flower can be in the sun. The effect looks like the flower is part of the shrub! Except at high altitudes this is warm subtropical habitat, with fairly dry conditions year round and almost no summer rain. However, at high altitudes *C. weedii* grows in wetter and cooler conditions and, unlike *C. plummerae*, blooms later than at lower altitudes. In its native range it is hardy to at least 10°F (-12°C) and is probably hardier. As Allen Chickering noted, it frequently grows in soils derived from sandstone, well-drained but nutrient-poor.

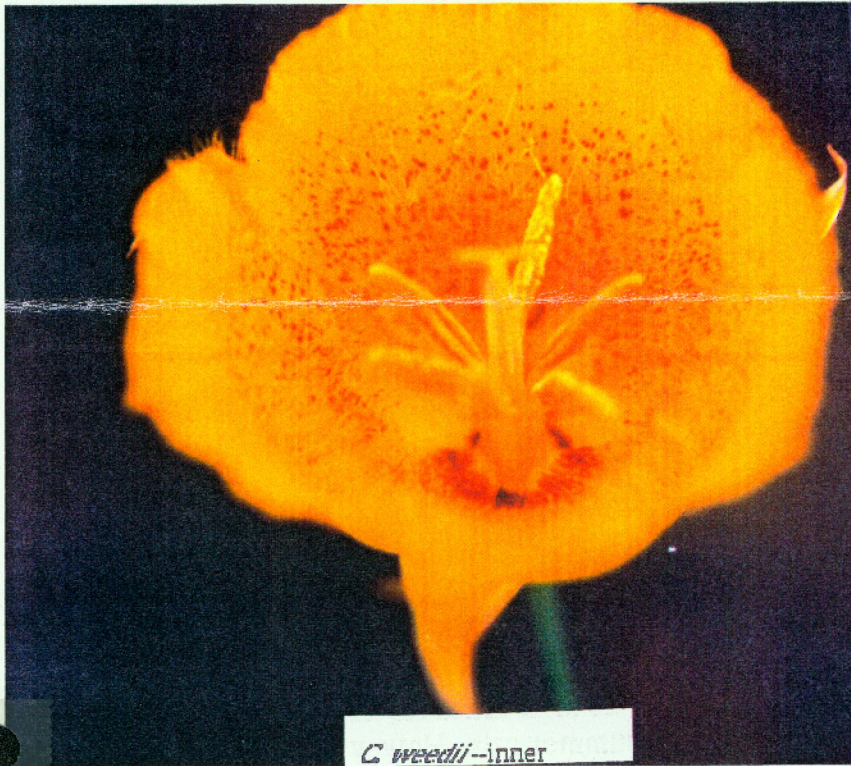
Botany: The fibrous-reticulate bulb coat and nectary with few trichomes on its surface mark this species as within section *Cyclobothra*. Its tall, erect flowers, circular, depressed nectaries and California range put it in subsection *Weedii*, for which the subsection was named.

Calochortus weedii can be distinguished from the other species in the subsection by range, color and morphological features. From *C. obispoensis*, *C. weedii* can be distinguished by its larger petals, with fewer hairs, which do not entirely cover the surface. Also, the filaments of *C. weedii* are appressed at the base to the ovary, while those of *C. obispoensis* are not. From *C. vestus* it is differentiated by the shape of the nectary, its less hairy petal edges, bloom time, and color. From *C. plummerae* and its var. *peninsularis* it is distinguished by the presence of some hairs on the edges of the petals, and from *C. plummerae*, the frequent, if not universal presence of undulate or serrated petal edges. It is also distinguished by color from these two taxa, although var. *peninsularis* is close in color to *C. weedii* var. *weedii*. Further, the range of *C. weedii* is to the south of the other spp., and north of its var. *peninsularis*.

The California *Cyclobothras* were considered varieties of one species until they were separated by Jepson in 1922. They were all considered varieties of *Calochortus weedii*, the first named species in the group. (*C. weedii* was named by Wood in 1878.) *C. vestus* is still treated as a variety of *C. weedii* to this day by some botanists, although it is more distinct from *C. weedii* than *C. plummerae* in many respects. The haploid chromosome number of *C. weedii* is 9.

Horticulture: This is a fairly adaptable species, which can readily be grown in both containers and in the ground. (Mr. C. Baccus, who has grown it in both, thinks it does better in the ground.) It does well in UC Davis mix but also does well in other mixes, and is not fussy about soil. I have little information on how it does outside California; Grey knew of no one who had grown it in Great Britain in his day.

Despite its southern habitat, it does quite well in San Jose and Berkeley, and did not seem to mind the torrential rains of 1993 and 1995. Perhaps the fibrous reticulate bulb coat, like those on the reticulata group of irises, keeps it fairly insulated from excessive moisture. It does not seem to bloom as well as the other species in this subsection in wet years, but this may reflect its propensity to divide under favorable conditions, and its energy may be used up in splitting. It is, of course, also drought tolerant.



C. weedii--inner



C. plummerae



C. weedii--outer

All photographs by H. P. McDonald



C. weedii--habitat



C. weedii--color form