

MARIPOSA

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MARIPOSATHE *CALOCHORTUS* SOCIETY
NEWSLETTER

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I. Announcements

1. Member Iain Lamble of Cornwall has been growing an impressive number of *Calochortus* species. Among these is the rare *Calochortus tiburonensis*, the Tiburon Mariposa. He has discovered that his plants produce leaf axil bulbils where the leaves meet the stem. This was previously unknown: no stem bulbils have been reported from the wild stands. Mr. Lamble has also noted that the bulbs divide, thus that there are two methods of vegetative propagation, as well as seed. He grows all his Calochorti under glass in pots in a "mixture of 3 parts John Innes compost, 1 part peat and 2 parts coarse grit. No supplementary feeding is given."

2. Member Lottie Jenvey has mounted her excellent photos of various *Calochortus* species on cards which are for sale. These striking cards would make excellent gifts for people, it seems to us, and the quality photos would likely be treasured by the recipients for some time. She has been selling them for a number of years at Native Plant sales and her prices are more than competitive as well. Interested parties can contact her at 946 San Ramon Ct. Mountain View, Ca. 94043, or at e-mail: special-images@worldnet.att.net

3. In a letter to Mariposa, long time member Fred Smith has responded to issues raised about storage of bulbs and early dormancy due to high temperatures: "I have had satisfactory results storing mature, dry bulbs in paper sacks. I add an all purpose fungicide/insecticide dust. This helps keep mice out also." He adds in "notes from hot S. California" that "Mariposas in general don't like heat. 90°+ [days] can hit as early as early March here. Seedlings go down at once; bulbs struggle on. I throw shade cloth on and hope!"

II. Trips

Nogales is definitely a Mexican city, with its tiny shops crowded charmingly onto narrow streets. We stopped at a bank to exchange our money. We received 7.35 pesos for every dollar. (As a reflection of the country's instability, by the time we left, we were getting 7.65 pesos on the dollar!)

About 20 kilometers south of Nogales, we were stopped in order to register our vehicle. Apparently, Americans have been selling their used cars in Mexico in a way that is of no benefit to the Mexican people, and the government has been trying to stop this practice with stricter regulations. Our personal papers were stamped, and a sticker was placed on our car to show that we had brought it into the country legally.

We drove along Mexican Highway 15 through the state of Sonora. We seemed to be going through a high plateau, ringed by distant mountains on either side. The vegetation was not very different from that in southern Arizona and New Mexico. I particularly remember miles and miles of desert asters.

Sonora is Mexico's "frontera" (or frontier,) and we saw many ranches along the way. Dotted along the highway, there were small houses, whose courtyards we could see through wrought-iron fences. In one place, some enterprising people had turned a train into homes, with each railroad car, a separate house.

As we were traveling along, we suddenly experienced a blowout. We got out of the car and inspected the tires. Sure enough, the right rear tire had lost its tread. While it took only ten minutes to put on the spare, it meant that we had to buy a new tire to replace it.

As we continued on, we looked for a place that might sell "llantas" (tires.) We were heartened when we saw the "llantero" sign above a small shop. Unfortunately, the proprietor sold only used tires, and none were in our size. We had hopes of having better luck in the city of Hermosillo, which looked

like a major thoroughfare on our maps. And indeed, we got a new tire there. We also stopped for our first dinner in Mexico. Hugh and I went to a small "super-mercado" (supermarket--but this one was a small grocery store) to purchase fresh tomatoes, "queso fresco" ("fresh cheese"), and some tortillas. After a failed experiment with something called a "hamburguesa," Tom joined us, and we feasted on tortillas filled with cheese and sliced tomatoes.

III. Horticulture

"*Calochortus* Easier to Grow than you think!" [Second Part of Part II-ed.]

"Other disappointments? Though the germination of most *Calochortus* seeds are very good (every seed seems to germinate) at the end of the day I'm lucky if I get two bulbs out of it. Not all of it is damping off (I wish you could still get Captan in this country, not only was it good for preventing damping off but it was a very good rooting powder for cuttings!) Having said this, from a packet of *Calochortus* Society seeds, *C. venustus* I have managed to raise over forty bulbs and *C. splendens* over twenty! In future I think I must try to sow them more sparsely and WATCH THE WATERING and feed them more often. I am also finding that bulbs brought from some nurseries (not all) are dying. I also found this with other genera (*Crocus*, *Fritillaria*, etc.) though those obtained from friends or grown from seed do not do this. Perhaps the nurseries keep them out of the soil too long and it has an adverse effect on them. Up till now I have lost two complete species and another two are down to one bulb each. Luckily I had already obtained bulbs of these from other sources.

"The coming year? Who knows, when I repotted *Calochortus uniflorus* in October, some bulbs had one and one-half inches of growth on them. Though in this area where I live we have had two periods of hard frost (-7°C or 19°F in my greenhouse) and some lighter ones, on the 25th November I counted eleven pots, all different species with growth in them. At this rate they will be blooming at Christmas! Normally I would not expect any growth until January at the earliest. It looks as though it's going to be another one of those years!

"I checked in early January and found that there were 32 pots with growth in them. Late January we had another cold spell. For over a week daytime temperatures remained below freezing. Nighttime went as low as -9°C or 17°F and even now (early February) we are still having night frosts. Despite this, 5 more pots (total of 37) have managed to start into growth."

IV. The Horticultural History of *Calochortus*

[Tenth Installment of Alan Chickering's extensive "Monograph" from 1938]

Another large species or group which is almost as difficult to handle as *Calochortus venustus* is *C. luteus*. This is scattered all over northern California, both Coast and Sierra foothills. It does not reach up very high in the Sierras...It is perhaps best known in the plain yellow form which is very plentiful in the Coast Range. This form is sometimes edged with brown...but is usually a pure, rich yellow. I suppose that there is perhaps more of this form than any other form of Mariposa...In some bare hills...in Santa Clara County one year I saw acres covered with this form, while the following year there were none. I have no explanation to suggest, but I do suspect that we may at times have similar experiences in our gardens and for that reason I mention this experience.

In the Sierra foothills we find another yellow form of *C. luteus* usually having a faint eye above the base of the petal. While attractive as are all Mariposas, this, to my mind, is one of the least attractive Mariposas.

Calochortus luteus has white strains, white tinged with purple or pink and even a blue strain [most of these refer to *C. superbused*.]...In El Dorado County, there was in '49er days much placer mining. The soil was turned over and washed and the resultant gravel was piled in little ridges or rows, leaving depressions between them, which are likely to remain moist well into June. This region has quantities of a plain white form of *C. luteus* with a dark eye [*C. superbused*.] and among them in these moist places is found the blue form. It is not confined to these depressions but may be found anywhere it is moist. I have tried some of these bulbs in my garden but with slight success. With the exception of this blue form, I have not found any very attractive *C. luteus* in the Sierras. In the Coast Range,

however, in Mendocino County in particular, there is some very fine *C. luteus* white deeply tinged with purple and rarely pink, sometimes referred to as var. *oculatus* [again *C. superbus*-ed.]. I have had good success with this strain and it has maintained itself for some years without replenishing the supply of bulbs. In one place, where the soil is too heavy and lacks sufficient sand and particularly rock or gravel, it has not done well, but in several others the form seems to survive and persist very well indeed. I have not grown it from seed.

As a rule Mariposas are not found in the Sierras above 6000 feet. There is, however, an exception in *C. leichtlinii*. This species is white with a dark eye at the base of the petals. I recall having seen it on a bare ridge in Amador County at least 8500 feet in elevation. It was very plentiful but the flowers bloomed right on the surface of the ground. At somewhat lower elevations, however, it becomes an attractive flower 10 to 15 inches high. It is inclined to grow in or between brush and always, in my experience, in rocky soil. It blooms from July to September according to the melting of the snow. I have never made a serious attempt to grow this species in Piedmont, as it is plentiful around our summer home...in Placer County.

The designation "Star Tulips" fails to properly cover many other forms of *Calochortus*, but is perhaps as good as any other....These forms, although attractive, do not in my opinion rank with the *Mariposas*, so I have paid less attention to them. I have, however, successfully grown some of them, but have never grown any of them from seed.

In the Sierra foothills reaching up to 3000 or 3500 feet elevation is found a pretty yellow species, *C. monophyllus*...It is a bright clear yellow, sometimes with a brown spot toward the base of the petal....blooming in April and May. This may be grown readily from bulbs....

Around the Tamalpais region is found *C. maweanus* [*C. tolmei*--ed.], sometimes called "Pussy Ears." This is a lavender colored flower, full of hairs, which is low growing. It is quite plentiful in Marin County near the coast. There is a somewhat similar, but smaller flowered form called *C. westonii* which comes from Greenhorn Mountain near Bakersfield, which grows in wet meadows. I have had both of these species, but, after blooming a year or two, the latter has died out and I have never cared enough about them to renew them. I still have a few *C. maweanus* persisting some years after they were planted.

I don't know how *C. uniflorus* will like being classed as a Star Tulip. It is a form which grows in wet meadows, usually where there is gravel or rock. Its color is pink or magenta, and its bulbs send out long white runners on which little bulblets develop, ultimately becoming flowering bulbs. I like this species....It is easy to grow and I have it growing from some 2 or 3 bulbs which I dug 4 or 5 years ago. I have heard that it has a rather extended range but I personally have seen it only in a high meadow in Mendocino County about 4500 feet elevation, blooming about June 20.

C. lilacinus [*C. umbellatus*--ed.], the "Oakland Mariposa" is found in the hills back of Oakland. It will grow readily in a soil which contains a lot of rock or gravel and also likes some leaf-mold, although it does not require it.

V. Conservation: Report on *Calochortus dunnii*

This is a rare Southern California species, so rare that it is a candidate species for Federal listing and protection. Unlike most other Mariposas, it does not reproduce vegetatively, i.e. by offsets. Thus it is dependent upon seed production, a more precarious strategy. This is doubly so as drought cycles are more pronounced in Southern California than in northern and flowering less consistent; without flowering the plant cannot produce seed. Further, this makes the species more pollinator dependent.

There are only three known stands, two in San Diego County, one in North Baja. The northern most stand is fairly extensive and continues for some distance, although the plants are spread out thinly among the shrubs. The central stand is smaller. (I have not seen the Mexican stand.) There may well be unknown stands in inaccessible wild areas and flowers hiding from human view, but, as far as is known, there are probably only 1000 plants total. This is a very small genetic base on which to survive and even less given that the species is divided into three disjunct populations with all the problems of survival in a drought prone habitat. On the bright side, one stand is away from most

development and conservation efforts can probably save the others. However, it doesn't help, when greedy people collect these seeds to offer in their catalogues!

VI. Species this Issue: *Calochortus subalpinus* Piper

(For the key to the cat's ears see Mariposa, Vol. V, #1, 7/73)

Calochortus subalpinus Lobb's cat's ear, was named by Piper in 1905, but had been distinguished by Purdy prior, in 1901. Purdy apparently confused nomenclature of the plant with *C. elegans*, thus his proposed name for the plant, *C. lobbi*, has been placed in synonymy by botanists. It has stuck as the common name, however. The botanical name means 'surrounding' the mountains or 'under' the mountains.

Range and Habitat: *Calochortus subalpinus* occupies a north-south range in the Oregon and Washington Cascades. The range is to the north and west of *C. elegans* to the south of *C. lyallii* and east of *C. tolmiei*. In Oregon it is more alpine, occupying mountain meadows on the windward side of the ranges. To the north the species is more sub-alpine, also inhabiting high altitude areas at the base of the mountains. In Washington state, which is extremely wet, the plant is found more on the leeward side of the Cascades. The plants can be found both in open meadows and in pine woodlands, although its original, indigenous habitat would be difficult to reconstruct as most of the species' present range is in or near second growth forests. Even on the leeward slopes this is very wet habitat, receiving over 200cm. (80") of precipitation per year on the windward slopes. The climate is temperate Mediterranean, with all the precipitation occurring during the rainy months, much of it in the form of snow, and mostly dry summers. There is a definite winter. The plant blooms as early as May and as late as August, depending upon altitude, precipitation and exposure.

Botany: This species was discovered late, perhaps because its range was less explored than that of other cat's ears. Confused at first with *Calochortus elegans*, the plant was separated by Purdy and has been uncontested since by any botanist. Marlon Ownbey placed this species, following Purdy, in with subsection *Elegant*, the cat's ears. Like the others, its petals are densely covered with short, hairlike processes. *C. subalpinus* is less densely hairy than some of the others, although this is not an observation based on an actual count. It differs in color from all but *C. apiculatus*, although the latter species is more consistently straw colored. *C. subalpinus* is nearer to a cream or pale yellow with yellow highlights. The glands on the sepals differentiate it from any of the other species in its subsection, while the petal glands are distinct from the round ones on *C. apiculatus*. Also, the petal nectaries may be more depressed than those of the other cat's ears. Like the other alpine cat's ears, *C. apiculatus*, *C. coeruleus*, and *C. elegans*, its stems are rarely branched, the flowers occurring in an umbellate pattern. The straw colored seeds are different than the dark colored seeds of some cat's ears, e.g. *C. monophyllus*. The wet alpine to subalpine habitat is not unique to this species, but Lobb's cat's ear gets more precipitation than the more southern and eastern species. Its range is well removed from the other cat's ears, except, perhaps, *C. lyallii* in Yakima Co. Wa.

Horticulture: I have not yet flowered this species in California, as I have only recently begun to grow it. Here it requires refrigeration for three months at near freezing to grow; in more temperate areas this could be dispensed with. I cold stratified the seeds in small containers in UC Davis mix and they have done quite well, reaching over an inch and a half their first year and almost all coming back the second. As with all Pacific Coast species I have dried the tiny bulbs out during dormancy, although this species gets so deluged in its native range that I doubt it would be much bothered by summer rain. Thus it is a good species for temperate areas, and can even be grown in drier cold climates if attention is given to watering. The flowers are more challenging in mild climates, but with cold stratification, the major obstacle can be overcome. The seeds should be kept wet and frigid until the majority germinate, then drowned at least once a week (keep in mind that this species gets up to *eighty inches of precipitation a year*; most in the spring as snow melt.) As I use bulb fertilizer, it seems that this species also responds well to fertilizer. Finally, it should be placed in at least part shade at low altitudes, although it gets considerable sun in high altitude meadows.

All photos on page 5 by H. P. McDonald,



Calochortus subalpinus



C. elegans



C. subalpinus
habitat



C. subalpinus
plant



C. tolmiei