

Mariposa

The Calochortus Newsletter

Produced by Telos Rare Bulbs
P.O. Box 4147, Arcata, Ca 95518

A Tribute to Jim and Georgie Robinett

Time marches relentlessly forward, and with it our lives grow, blossom, evolve, or simply change. Georgie Robinett's recent decision that the time had come to pass the editorship and production of *Mariposa* on to someone else marks the end of one era, and, I hope, the beginning of a new one.

It is easy to take someone else's expertise for granted when you are the recipient of years of accumulation of knowledge and endeavor. Georgie, and her late husband, Jim, dedicated a large portion of their lives, and a great deal of energy, to knowing and understanding the beautiful genus *Calochortus*. From reading the latest scientific and taxonomic developments, to photographing the flowers themselves, as well as exploring the mountains and valleys of California that are home to California's greatest botanical treasures, the Robinetts spent almost every spare hour and much of their income in pursuit of their passion.

We, the readers of *Mariposa*, have been the lucky beneficiaries of those passionate years, and I am sure that the Robinetts have passed on to most of us some of their joy and delight in the beautiful genus *Calochortus*.

A New Direction?

Georgie asked me to take over *Mariposa*, and having accepted I am now faced with the daunting task of carrying on where Georgie has left off, fully knowing that I will be unable to continue *Mariposa* in exactly the same expert format that Georgie and Jim established. My experience with *Calochortus* is, necessarily, different, and that will mean a slightly different emphasis, with more information on cultivating *Calochortus*, and, possibly, less on taxonomy.

(Cont. page 4)

January, 2005

Vol. XVI, No. ³~~4~~

Featured species:
Calochortus striatus



Background 2

Habitat 2

Status 2

Horticulture 3

Horticultural
uses 4

Calochortus striatus

Calochortus striatus, also known as the Alkali Mariposa Lily, is a rare endemic of southern California and southern Nevada that grows in vernal moist alkaline meadows or seeps that dry out in summer. It is considered critically endangered in southern Nevada, where the known populations are small and under threat from the lowering of water tables.

All *Calochortus* grow from a true bulb, although sometimes they are incorrectly referred to in the literature as growing from a corm. In keeping with other members of the section *Mariposa*, the bulb of *C. striatus* produces two or three slender leaves which are usually withered by flowering time. The 8-12 inch (20-30cm) flowering stem is often branched,

with an umbel-like inflorescence of up to five flowers. The flowers are bell-shaped and approximately 1-1/2 inches (30-40mm) long, with petals that are irregularly toothed or fringed at the edges, white, pink or pale lavender in color, and conspicuously lined or veined with purple, sometimes giving the flower an overall pink appearance. The nectary is oblong, not depressed, and densely hairy. Seed capsules are erect.

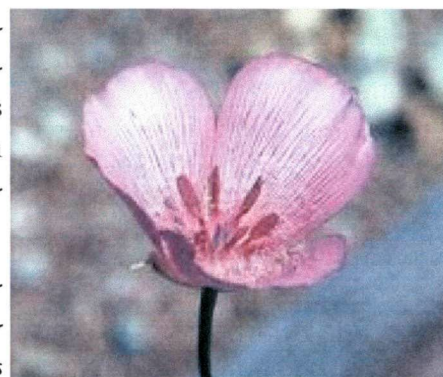
Although the flowers of *C. striatus* are somewhat smaller than most *Mariposas*, the purple-striped petals, along with the sub-umbellate inflorescence makes this *Calochortus* as showy as any, and certainly very unique, since no other *Calochortus* have striped petals.

Background

Parish first described *C. striatus* in 1902 from a collection at Rabbit Springs in San Bernardino County in southern California (see *Bull. So. Cal. Ac.* 1:122 1902). In spite of its very distinctive appearance, Jepson in 1921, Abrams in 1923 and Jaeger in 1940, probably due to confusion of type specimens, placed this species in synonymy with *Calochortus palmeri*. However, since Ownbey's monograph was published in 1940, it has been accepted as a distinct species.

Habitat

C. striatus occupies an unusual niche, growing as it does in extremely alkaline soils along with saltbrush (*Atriplex spp.*) and other salt-tolerant species. Although usually described as growing in wet meadows, "wet" in a desert environment is relative, and some areas where it grows are barely visibly moist. It grows in depressions, ephemeral washes and seeps that dry out completely in summer, but is not found where there is surface water or swampy conditions. As is common with *Calochortus*, it often remains dormant in dry years. In Nevada small populations are found in Clark County near Las Vegas and Nye County at Ash Meadows. In California *C. striatus* is found in scattered populations in Kern, Los Angeles and San Bernardino counties with large populations reported at Edwards Air Force Base in Kern and northern Los Angeles County. The elevations it is found at varies from 2670 to 6330 ft. (800-1900m).



Calochortus striatus



Ash Meadows, Nevada

Status

Although described as rare, there still appear to be some very large flourishing populations of *Calochortus striatus*, notably at Edwards Air Force Base, with approximately 165,000 plants documented there. There are other robust populations near Lancaster in Los Angeles County, and also near Lake Isabella in Kern County. The appearance of *C. striatus* can fluctuate wildly from year to year depending upon rainfall. Obviously, the bulbs are there, but they may not break dormancy in a dry year or even in the year following a mass blooming. This makes surveying populations accurately very difficult, and has led to erroneous reports of populations having died out.



C. striatus

In spite of the presence of flourishing populations of *C. striatus*, the future of this species is not secure. It occupies a very narrow niche—vernally moist alkaline habitat—and the drawing down of water tables in these desert regions could eliminate much of its habitat. Urbanization also poses a threat, especially in the Lancaster region, and road building and development have destroyed populations in recent years. Cattle grazing occurs where *C. striatus* grows, and cattle eat and trample the plants.

Horticulture

Although *C. striatus* is said to be difficult to cultivate, this has not been our experience. Seed and bulbs are sometimes available from native plant specialists (see *Mariposa* Vol. XII No. I for bulb sources). The seed requires no special treatment, and should be sown in the fall when the winter rains begin. Since this is a desert species, the greatest threat to seedlings is damping-off from excess moisture. Seed should,

therefore, be sown very thinly in a sterile, free-draining medium and kept protected from rain. It has been useful for us to sow seeds in a pot that is deep enough for the seedlings to grow to maturity. This would be a pot that is at least six to eight inches deep. Ten to twelve inches is even better. A mulch of coarse sand to cover seeds when they are sown helps keep the surface of the potting medium on the dry side, and a fan to circulate air can also be beneficial. Germination usually occurs in 30-60 days. Seedlings must be kept moist but

not wet, and fertilization with a soluble fertilizer at least once a month is very beneficial. In spite of the provenance of *C. striatus*, it is not necessary to use lime or an alkaline growing medium. It has grown well for us in a neutral (pH 6.5) potting medium with added perlite or pumice for drainage and aeration.

When the seedlings start to go dormant, usually in about May or June, water should be withheld, and the potting medium allowed to go completely dry. Moisture during dormancy is fatal to the desert species of *Calochortus*. The onset of the rainy season in its native habitat commences in October to November, and this is when watering should be resumed the year following the first dormancy and each year thereafter. With good culture, it usually takes about four years for the bulbs to reach maturity and bloom.

**Growing from seed—see
Mariposa Vol. XIII No. 3, Jan.
2002 for more details on the
desert species.**

Horticultural Uses

For most hobbyists it is probably safer to grow this species in a deep pot where watering can be controlled, and where a gritty fast-draining growing medium can be provided. Either plastic or clay pots are suitable, but depth is critical, and a pot at least ten to twelve inches (25-30cm) deep should be used when planting bulbs. *Calochortus* bulbs pull themselves deeper each growing season, and if a pot is used that is too shallow, you will find your bulbs at the bottom of the pot after a few seasons. Any neutral potting mix that does not have added organic material such as manure would be suitable, but pumice, perlite or very coarse grit should be added to give you a mix that is about 50/50 commercial mix to inert material. Fertilization can be with a soluble fertilizer on a monthly basis once growth begins in the fall, or a pelletized slow-release fertilizer can be used once each year. It will be necessary to repot every two to three years. Where summer rainfall occurs, pots can be moved into a dry storage area.



C. striatus in habitat

In desert regions with rainfall in the winter months that is 12" (30cm) or less, *C. striatus* can be grown outside. It is moderately frost hardy, probably to Zone 7, and would be suitable for a dry garden that receives no water in the summer associated with natives with similar low water requirements such as native *Penstemon* spp., *Mentzelia* spp., *Eriogonum* spp., *Trichostema* spp., as well as annuals such as *Clarkia* spp., and shrubs such as *Ceanothus* and *Carpenteria californica*.

**See Mariposa Vol. IX, No. 4 for
more horticultural advice**

Clusters of plants would give the best display, remembering that some bulbs may not bloom every year. Since the leaves are usually withered by the time the flowers open, it is best to plant most *Calochortus* where they grow through other plants, thus ob-

scuring the dry leaves and also lending some support to the stems. Gophers love *Calochortus*, so some protection, such as caging the bulbs, should be provided if gophers are a problem. The plants should be positioned in full sun in most regions, although some light afternoon shade can make the flowers last longer in desert regions. In regions that receive more than 12" rain, and as long as summers are dry, it would be well worthwhile trying this lovely species in a rock garden setting where its fairly short stature and dainty growth habit would look appropriate with other rock garden species.

This lovely species is well worth seeking out, and will reward the dedicated *Calochortus* grower with its beautiful and unusual flowers.

Greene and Sanders. Alkali Mariposa Lily, *Calochortus striatus* Parish, Univ. Calif. Riverside.

Hickman, Ed. 1993. The Jepson Manual—Higher Plants of California. Univ. Calif. Press.

Ownbey, M. 1940. A Monograph of the Genus *Calochortus*, Ann Mo. Bot. Gard. 27:71-561.

A New Direction, cont.:

Some practical changes are as follows: *Mariposa* will now be produced by Telos Rare Bulbs and all correspondence should be addressed to "Mariposa", c/o Telos Rare Bulbs, P.O. Box 4147, Arcata, CA 95518, USA. Any checks or money orders should be made payable to "Telos Rare Bulbs". Please note that the Post Office box number is different from the one Georgie had in her last two issues of *Mariposa*. E-mail inquiries can be addressed to: rarebulbs@earthlink.net, but please be aware that my time is very limited, and that I am unable to engage in extended e-mail correspondence.

Diana Chapman

Telos Rare Bulbs, P.O. Box 4147, Arcata, CA 95518—www.TelosRareBulbs.com