

MARIPOSA

VOL. IV, #1

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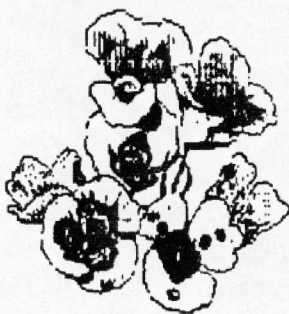
PUBL. QUARTERLY

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MARIPOSA



THE *CALOCHORTUS*
SOCIETY NEWSLETTER

JULY, 1992

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AND B. NESS

I. Announcements

We'd like to remind our members once again that there is a slide show available for educational purposes. It is being maintained for us by **Dr. Robert J. Weera, 721 South Dora, Ukiah, CA 95482**. Please send him slides of your favorite *Calochortus* or write him regarding use of the slides.

When we first announced a slide show last year, we received an inquiry from **Ron Vinnard** in Australia, asking if we could start a slide show "Down Under." He has graciously agreed to maintain a slide show for the Australia/New Zealand/Asian members. Donations of slides or inquiries for the Australian slide show may be addressed to Ron at **74 Edinburgh Road, Blackburn South 3130, Victoria, AUSTRALIA**.

II. Trips

There are a great many outstanding sights in the western United States, but one of our favorites is the scenic view afforded those who travel through northern Arizona's Kaibab Plateau. This flat area, relieved here and there by great mountains of jutting rock, whose gorgeous red beauty and stunning grandeur almost rivals that of the Grand Canyon to the south, seems to stretch on forever. The entire plain was sunny, except for a cloudburst to the southeast of us, covering only a small portion of the landscape with rain and lightning. It gives one the feeling of being caught in a piece of eternity.

This area is where the Navajo nation (or the Dineh) live. We stopped at the gas station at Chinle for a fillup. We had been here once before, to see the ancient ruins at Canyon de Chelly, where ancestors of the Pueblo peoples had built adobe "apartment houses" in the lovely and hard-to-get-to canyons. Unfortunately, we didn't have time to see them again. We did, however, run into a family of Navajo at the gas station. Hugh approached and asked if any of them might know the local word for *Calochortus*. All of them shook their heads, except the older woman in the group. She looked like she might know, but was keeping the secret to herself....

The arid plain slowly turned into the lovely conifer forests outside Flagstaff. Here, we were discomfited by a sudden summer drizzle. Like the California *Calochorti*, we aren't used to rain outside the winter months! Bundling up in our jackets, we continued on our way, stopping only to admire the breath-taking red rock formations of Sedona, as we headed south. Soon, we found two stands of *C. ambiguus*. It's difficult to describe these lovelies. As Hugh has pointed out many times, "ambiguus" is well-named, for it is indeed "ambiguous." Some of his observations were, of course, rather technical, but I'd like to share with you a different sort of observation. Hugh asked me: "What color would you say is typical of this flower?" Looking over the individuals in the stand, I had to confess that I couldn't really say. One or two were almost a pure white with yellow hairs at the base of the petal, but most were a...well, an ambiguous color. If you can imagine a blue that's somehow also a lavender, a pink and a pearly grey, then you can imagine *C. ambiguus*' color. (Good Luck!)

III. Germination Tests--8th Installment: UK Conditions, wet temperate climates--by Steve Keeble

[Continued from last issue.]

1991 was a great year for germination, thanks to J. Robinett, S. Walker and some good frosts. I've just

repotted 60 pots of seedlings and have counted some in the 30's and 40's.

We live in the driest corner of the U.K. Only 12" of rain during 1990, although this was exceptionally dry.

C. kennedyi doesn't seem difficult, at least in its early years. I have more trouble with high altitude *Calochortus*, which seem to dry out too much during dormancy.

I did suffer losses over the first couple of years. About 30% of first year bulbs fail, but this is very variable from one species to another. It would be interesting to try alternatives to the 6 month dry dormancy--e.g., refrigeration, or provoking a second growing season.

IV. The Horticultural History of *Calochortus*-11th Installment

Roundtree, Lester, *Hardy Californians*, New York, Macmillan: 1936. [Continued from last issue--Ed.]

"It is said that native California plants are hard to grow. They are--so long as we insist on putting the wrong plant in the wrong place. Nothing can be more pig-headed than a California wild flower under uncongenial conditions, nothing so amenable and satisfying if happily placed.

"Shun unnatural locations and arrangements. If you are to create a wild garden of California native plants, choose an informal environment. Don't put it next to the rose garden or close up to a clipped hedge or a wall on which espaliered trees are plastered. That makes for broken continuity,--to say the least. Choose rather an uneven plot of ground on the outskirts of the premises, especially if the land adjoins chaparral, or woods or a vacant lot. If the gods have been kind to you and have dowered you with a canyon or an abandoned quarry or natural woodland or even a broken slope, give thanks immediately and get down quickly to the business of making there a blending of natural beauty with appropriate introduced plantings. Wild flowers are heaven-sent things for using up oddments of land, filling in the little back-of-beyond places, especially for beautifying those parts of the grounds which are out of reach of the watering system.

"If your land is entirely or partly in a state of nature, study the native plants already there. If these have decorative qualities do not recklessly uproot them all, but leave plenty as the framework of the wild garden, and gradually introduce similar species requiring similar soil and exposure. But unless your wild garden is also to be a trial ground (which is another thing altogether, although equally fascinating) see to it that your newcomers are appropriate. If your land offers opportunities for growing several of the regional groups of native California plants count yourself blessed and make the most of your advantages. But if the exposure plainly says it will grow one certain group of plants and that only, stick to that group.

"A plant is more susceptible to its surroundings than we think. Root companionship, plant associates and gregarious proclivity are not mere phrases. The standards for good wild flower gardening are as obvious as those for the growing of exotics. It is even more important, when dealing with wild flowers, to group together plants of like feelings. Even though we know that wild plants from unlike locations ~~can~~ be made to dwell together, the innate instincts of good plantsmanship rebel against it.

"We gardeners must conform to the requirements of air and soil and location. Every plant which is made unhappy through our arbitrariness, detracts just that much from the success of our plan. In wild flower gardening we must work with Nature. And Nature won't be forced. If we can't or won't go her pace and adopt her manner, we might as well give up all idea of wild flower gardening.

"If we know and value the fact that California contains within its borders such diverse spectacles as the desert in early spring, a Redwood grove in late spring, a Sierra peak in late summer, and a bespangled coastal bluff more or less gay all the year round, and each of these sights a masterpiece in its own way, we must also realize the incongruity of lumping together, in any ~~one~~ exposure,

characteristic representatives of these distinct regions.

"Also each group of plants has its own particular requisites:--sandy soil and sun for desert dwellers; humus and shale for plants of the Redwoods; shale and gravel, sun and wind, for the alpiners; and for the coastal plants, sand for those from the dunes and broken rock for those from the sea bluffs and wind for both. Each group is individual and a law unto itself."

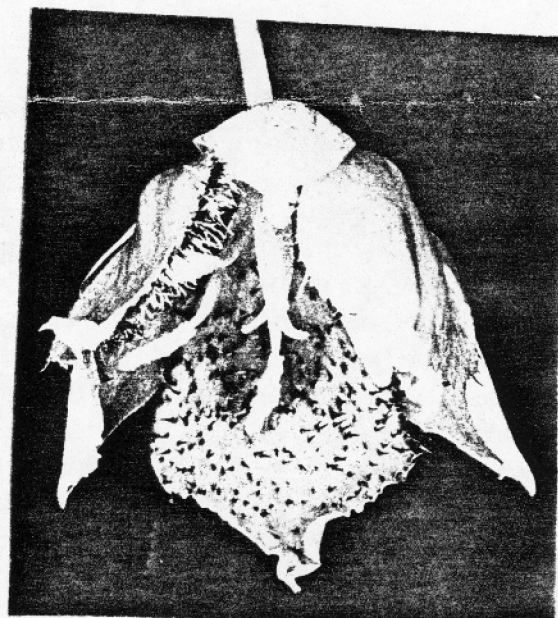
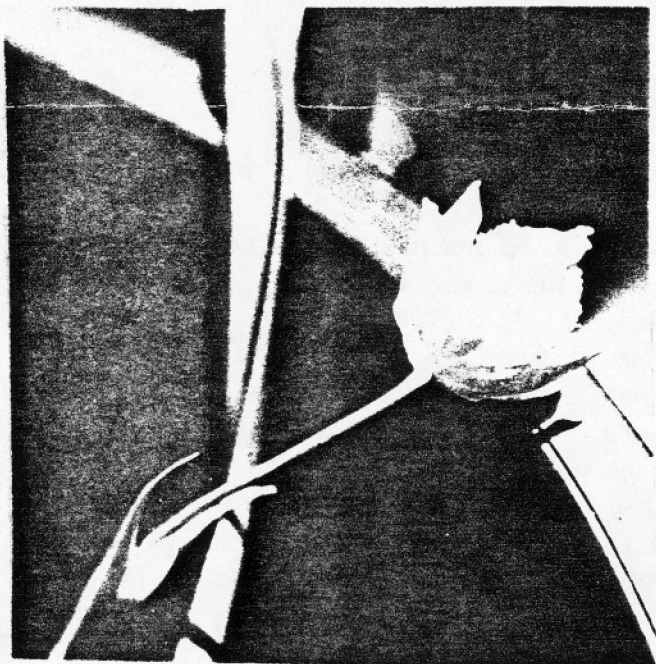
V. Conservation--Grazing and Desertification

In her article entitled "Too Many Cattle," [This World, 11/10/91] Myra Klockenbrink discusses the problem of overgrazing the western rangelands. As both she and a recent article in the **CNPS Bulletin** point out, it is not grazing in and of itself that is the problem. Rather, grazing fees on public lands for at least 265 million acres are so low that these lands cannot be managed properly. The result is desertification, which "manifests itself through low groundwater tables, salinization of topsoil and water, reduced surface waters, high soil erosion and acute loss of native vegetation." In other words, an ecological nightmare is being created.

Ms. Klockenbrink also includes a map to show where the desertification is taking place, dividing the problem into "slight, moderate, severe, and very severe." To bring this problem home to our members, we report that according to the map, the following species of *Calochortus* are affected by this problem: *C. macrocarpus*, *C. aureus*, *C. kennedyi*, *C. nuttallii*, *C. ambiguus*, *C. gunnisoni*, *C. bruneauris*, *C. flexuosus*

Next Issue: Proposing Solutions

VI. Species This Issue-- *Calochortus barbatus*



Genus *Calochortus* Key:

- A. Section *Calochortus*
- B. Section *Mariposa*
- C. Section *Cyclobothra*
 - 1. Subsection *Weediani*

2. Subsection *Ghiesbreghtiani*3. Subsection *Barbati*: moderately bulbiliferous in the cauline leaf axils; leaves narrow, linear; flowers erect to nodding; petals conspicuously hairy.

a. Flowers erect

- i. plants tall, flowers dark red with yellow or red hairs, lunate shaped gland...

..... *C. pringlei*

b. Flowers erect to nodding

- ii. plants short, cauline leaves thick at base, very bulbiliferous in the cauline leaf axils, flowers very dark purplish red, some with greenish sepals, dark hairs, round gland.....

..... *C. nigrescens*

c. Flowers nodding, petals hairy above gland.

- iii. leaves grey-green on both inner and outer sides, flowers purplish-red, petals hairy on edges, gland slightly depressed, sagittate.....

..... *C. marcellae*

- iv. leaves medium green, large, amplexicaul; very bulbiliferous in cauline leaf axils and bracts; flowers large, yellow, globose with reddish spots at the base of the petal hairs; gland depressed, triangular.....

..... *C. balsensis*

d. Flowers nodding, petals hairy above and below gland.

- v. leaves gray-green on inside and outside; petals purplish on exterior, petal edges hairy; gland depressed, rounded.....

..... *C. barbatus* var. *chihuahuensis*

- vi. leaves medium green on inner side; flowers yellow; petal edges serrate; gland depressed, rounded.....

..... *C. barbatus*4. Subsection *Purpurei*

Range: This species has the longest known range of any species of *Calochortus*, from Chihuahua to Oaxaca states, Mexico. It occurs on the plateau area between the Sierra Madre Ranges, east and west, as well as up into the foothills.

Botany: *Calochortus barbatus* is well named, for its botanical epithet means "bearded." This refers to the small hair-like growths on the inner side of the petals, which are usually red or brown in color and cover the entire surface. The flower nods, perhaps to avoid damage to its floral parts during the summer rainy season. In the Valley of Mexico, where it is common, *C. barbatus* is called "ayatito." According to Prof. X. Madrigal Sanchez of Morelia Mich., this term refers to a small drape under which a great deal can be stored or hidden. One can see the point when the flower is looked at from above: the entire inside of the plant is hidden from view by the skirt-like inflorescence. This is the only Mexican sp. I know of which has been genetically tested, with a chromosome count of $n=18$ (Ownbey & Beal).

Subsection *Barbati* is distinguished from the other subsections of *Cyclobothra* by range (weediani), nodding habit, except for *C. pringlei* (the weediani and the ghiesbreghtiani), generally hairier petal surface, thinner leaves and more moderate bulbil production (the purpurei).

Calochortus barbatus is distinguished from the other species of the subsection by range, habitat, nectary features, *et. al.* From *C. pringlei* it is distinguished by color, a much greater range, a less shaded habitat, nectary shape, and a nodding habit. From *C. nigrescens* it is distinguished by color, a larger, wetter range, a less shaded habitat, and its thinner leaf structure. From *C. marcellae* it is distinguished by color, a larger, more western range, a sunnier habitat, and the nectary shape. From the recently described *C. balsensis* it is distinguished by a more northerly, less tropical range, nectary shape, and a more open flower. From its variety *chihuahuensis* it is distinguished by external color, a more medium green color on the inside of the leaves, a more open inflorescence, and its serrated (wavy) petal edges.

Calochortus barbatus is a medium sized *Calochortus* and grows on rocky, moderately steep slopes. Its associates include scattered oaks, *Tigridia* spp., *Milla hüllora*, and bunch grasses. Its habitat is generally lower than that of *C. venustus*; hillsides rather than mountains. Also, it is less shaded than that of the other species of the subsection, although like most calochorti, it prefers its base to be shaded by other plants.

History: This sp. was at first thought to be a frittillaria, perhaps due to its nodding habit. Along with *C. purpureus* it was separated into its own genus by D. Don in 1828: *Cyclobothra*. Later, in 1829, Schultes recognized the similarities between the *Cyclobothras* and the recently discovered genus *Calochortus* and the two were combined into one genus. Other names under which the plant has been described are *C. flavus*, *C. pallidus*, *C. lutea*, and *C. propinqua*. The variety *chihuahuensis* was separated by Painter in 1911, but Prof. Ownbey believed that it could not be separated as a species, only a variety. It was Prof. Ownbey who both distinguished and named the subsection, of which *C. barbatus* was taken as representative.

Horticulture: *Calochortus barbatus* has such a wide range that it encompasses both temperate and subtropical areas. Generally, the more northern stands are temperate, while the southern are subtropical. The former are hardy to at least 10°F (about -12°C). In the north, the sp. receives about 18" (40cm.) of rain per year. This amount increases as one moves south, such that when the most southerly stands are reached it is much greater, up to 50" (about 90cm.) per year, most of which falls between May and October. The species grows in areas between large rocks, but the soil is variable over its lengthy range.

This species does well in our standard U.C. Davis mix of 1/2 SP Moss and 1/2 sand, with a complete, low nitrogen bulb fertilizer. It also will grow in UCD soiless, or a mixture of 1/2 SP Moss and 1/2 Lava Rock (suggested by Jim Robinett). Perhaps it tolerates the latter out of necessity, as at home it grows in a volcanically active area around the Mexican Federal District, in part of its range. Full sun is recommended, except in very hot areas. One inch (2.2 cm.) of rain or irrigation per week are recommended, although in the southern part of its range it gets much more. The sp. tolerates winter rainfall, although it receives very little in its native range. Such rainfall results in earlier growth and bloom time. About four bulbs per one gallon pot is sufficient. In the ground some attention should be paid to drainage, although this widespread plant is not that fussy, and may be easy in a garden situation in areas which do not get too cold.

IV. Letter to MARIPOSA

"Your letter and bulbs arrived on the twenty-fourth, the bulbs in excellent condition. [For the seed exchange--Ed.]

"Question on the *Calochortus luteus*. Where were they dug or seed secured from originally? May as well keep as complete records as possible. Sometimes a species will have minor differences depending on the locale, and knowing the area of origin could be important to a collector or to re-introducing into the wild.

"Since we are essentially in-breeding species and growing probably from only one clone; could problems arise as to viability or abnormal growth? Has anyone grown the genus long enough, i.e. many plant generations, to observe anything? I raise the clonal question because *Androsiphon capense* from the Karoo appears to require genetically different specimens to produce seeds.

"Sorry the request for growers [for the seed exchange--Ed.] has had such poor response. Does seem typical of today's world, reluctance to get involved.

"Perhaps another request is needed, this time stating size of bed, mix, siting, etc. Reassure them this is no major project and that correspondence should be minimal and fun (I hope!)

"I hope people realize that it will be several years probably before we have enough seed to offer. It will take time to build up a stock. With possibly three years for *C. uniflorus* and five for *C. luteus*, I cannot see extra seed much before 1995 or 1997. Can you?

"If Mr. McDonald becomes so desolate after completing his weeding, I know of a plot just brimming with weds and all of "collector's quality"!

"Until later,

"Leonard Corbett-Grant."

[Wish I knew the answers to these interesting questions. It remains to be seen.--Ed.]