White Flowers of a rare mutant of *Leuenbergeria lychnidiflora* (DC.) Lodé

Manzanote Cactus Tree, Previous accepted name *Pereskia lychnidiflora* DC, July 6 and 7, 2023

FLAAR Mesoamerica Aerial Photos by drone pilot Haniel Lopez
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FLAAR Reports, FLAAR (USA) and FLAAR Mesoamerica (Guatemala)
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Introduction to aerial photography of white-flowering Manzanote tree cactus with FLAAR drone, piloted by Haniel Lopez

To accomplish botanical, ecological or archaeological field work, a drone and professional drone pilot are essential. The drone should be at least a Mavic 2 Pro, Mavic 3 or 3 Pro, and for May 2025 onwards, a Mavic 4 Pro is the best option. The earlier Go Pro style drone cameras are terrible: too wide angle so things are distorted and not enough file size in the photos. For archaeology there are also LiDAR drones but these are not needed for botanical and ecological field work.

A drone with multi-spectral camera and multi-spectral software would be helpful to show how many of each species of plant is in each area—but until a significant donation comes our way, we do not have multi-spectral capability.

The first drone we bought was the Mavic 2 Pro which we replaced by the Mavic 3 when that was available.

The present FLAAR Reports shows the aerial photos of the white-flowering variant of manzanote cactus trees, *Leuenbergeria lychnidiflora*. The previous accepted name *Pereskia lychnidiflora* is the name used in many plant databases in 2023, 2024 and still in 2025.

Haniel Lopez is a professional drone pilot. If you are a botanist, ecologist or archaeologist, you can hire him (since he is an independent contractor). If he is not available he can recommend the several other experienced drone pilots in Guatemala. One of many advantages of your hiring these drone pilots is that they are accustomed to working in remote areas on field trips. They get along well with all your team members and with all the local people in the areas where you are doing your research.

It is helpful if your drone is already in Guatemala since you need to have it registered with the government and registered with the local park administrators where you will be doing your field work. You will need LOTS of batteries since when the sun is shining a single batter will last only 10 to 15 minutes. We have at least eight batteries for the Mavic 3. Plus you need extra chargers, since each individual battery takes a long time to charge. FLAAR has the special multi-battery chargers in addition to individual chargers.

All the photographs in the present report are by Haniel Lopez—all are in the FLAAR Digital Photo Archive of Flora, Fauna and Biodiverse Ecosystems of Guatemala. All photos are from July 6 and July 7, 2023.

Fig. 1.

12:05pm July 6, 2023.

Fig. 5. Would be interesting to have a high-resolution photo showing the entire top of the tree and try to could now many flower buds can be counted. There are many many hundreds of large flower buds on each mature tree.

I estimate there are more than 80 buds in this one photo (some have already flowered in recent days).

Fig. 6.

Almost every flower in every photo has pollinators.

Some of the pollinators are bees but lots are wasps. And I estimate other insects are also pollinating these flowers.

Fig. 8. The black color on top of some “buds” are wilted flowers that bloomed a few days ago. Each flower on a manzanote tree cactus opens for only one single day. There are over eight unopened buds in this photo.

Fig. 9.

The entire manzanote cactus tree is bright green—except for the branches which are a dark color.

Fig. 11. There are plenty of flowers that will continue opening further into July. Would be helpful to do aerial drone photos the last week of July to see how many flowers and buds can still be found.

Then do aerial photos the second week of August when potentially there are not many flowers or buds remaining. I estimate these dates vary by year depending on when it rains and how much, and what days are sunny and what days are cloudy.

Fig. 12. A large pollinator is in one flower and two smaller pollinators are in the other flower.

Fig. 13.

These rocks are the bed of Rio Tambor. These rocks are far down below the sharp cliff.

The dirt road at the left goes alongside the edge of this cattle field. The aerial photo shows the entire upper part of this cactus tree.

Most woody trees are not this thickly filled with twigs and thick leaves. You can see some of the long cactus spines at the right.

Fig. 15. We call these “white flowers” but they are really off-white and the upper parts of the petals are light dusty brown.

Fig. 17. 12:27pm. The petals are raised up. Are they not yet fully opened? Or is this their usual position. Noon is too early for the flowers to begin to fold up (each flower remains open only one day and by early evening they are all closed).

Fig. 18.

Lots of epiphytes grow all over these manzanote cactus trees. You can see one species at the lower left corner.

Fig. 19.

All the photos up to here are from July 6, 2023.

All the following aerial photos by Haniel Lopez are when we returned on July 7, 2023. We spent the night not far away so we could return by 8:30am.

Fig. 20. I am frankly surprised that there were flowers open at 8:33am in the morning.

Fig. 23.

Almost every open flower has a wasp and/or a bee looking for what these insects want to eat or carry back to their nest.

To the left of the open flower is a tiny bud that will take many days to reach the size that will open into a flower.

Fig. 25. The cliff at the left goes literally straight down to the Rio Tambor (you can see the river gravel at top left). The “road” is mainly used by local farm workers who commute to work on their motorcycles.

Fig. 29.

One former bud with wilted black flower remaining on top.

LOTS of buds that will open in coming days.

The tiny buds will open in coming weeks. So I estimate that this manzanote tree cactus flowers all July, all June, and begins in last week of May.

Fig. 30.

A wasp is in the flower at the right. The flower in the middle also has a pollinator.

Fig. 31. Lots of long thin needle-sharp spines stick out at many angles. Lots of buds are still tiny in July so lots more to flower later.

Fig. 32. The cattle field is at the right. This is the manzanote tree that was blown over in a storm in early May 2025.

Fig. 33. Diagonal view shows more of the shape of the flowers.

Lots of off-white colored needle-sharp cactus spines.

Fig. 34.

July 7, 2023. Lots of buds will flower all July and into August.

Fig. 37.

9:20am

Concluding Remarks on helpful aerial photographs by using a drone to document the rare white-flowered variant of *Leuenbergeria lychnidiflora* cactus tree

Originally we estimated that these white manzanote flowers would not be fully open by 10:30am, but the drone photos of July 7 show that the photos are quite open already at 8:33am. So it is best to overnight in the hotel in Cabañas rather than in the far-away lodge at the nice Heloderma nature reserve. Plus, in Cabañas there is an acceptable restaurant along the main street.

To accomplish time-lapse you evidently need to arrive a lot earlier than 8:30am, unless it's a cloudy morning. Cactus plants like full sun.

We have separate FLAAR Reports showing all the photos of Nicholas Hellmuth and Edwin Solares in late June 2023 (when the white flowers were discovered) and then in July. So this is the best documented manzanote cactus tree of its native area.

There is also a FLAAR Reports showing the fallen tree as found on May 19, 2025.

Plus we have a complete FLAAR Reports to document the botanical discovery of these two white flowering mutants of *Leuenbergeria lychnidiflora* by the FLAAR team and park ranger Gilberto Salazar on June 21, 2023.

Introductory Bibliography on the Manzanote Tree, *Leuenbergeria lychnidiflora* (DC.) Lodé especially the unexpected discovery of White Flowers

https://flaar-mesoamerica.org/tag/lychnidiflora/ Blog info on Manzanote cactus from year 2021.

https://flaar-mesoamerica.org/2021/01/22/manzanote-a-special-cacti-from-the-dry-forest/
Photo of trunk, of leaves, of spines on trunk; has 3-item bibliography.

https://www.tiktok.com/foryou FLAAR Mesoamerica video of a few seconds.

https://www.instagram.com/reel/Cu2mI8ptq3q/ FLAAR Mesoamerica, same video as on TikTok of the orange flowers.

https://www.instagram.com/flaarmesoamerica/reel/Cwlp8MlPJeL/ Posted August 30, 2023, with photos and video by Edwin Solares, FLAAR Mesoamerica. Shows the white flowers discovered by FLAAR in summer 2023. Videos in this Instagram post show the pollinators at work.

https://www.digital-photography.org/digital-camera-vs-iPhone-14-Pro-Max-review/iPhone-14-Pro-Max-macro-mode.php
Posted July 14, 2023, shows the white flower variant with a bee ready to pollinate it. So Hellmuth published the white flowers already in summer of 2023.

During June we will be posting our complete photo corpus of the white-flowering manzanote tree as we found it in summer 2023.

BUNKENBURG, Alexander and Laia HAURIE
2025 The discovery of dioecious Leuenbergeria lychnidiflora (DC.) Lodé (Cactaceae) in Guatemala. *Bradleya* 43/2025, pages 54-60.

Article kindly sent to FLAAR by Bunkenburg. In the article they document their botanical discovery (by Laia Haurie) that this species is also dioecious. Also has helpful References Cited. The park ranger of the Heloderma reserve took Bunkenburg and Haurie to the same white-flowering manzanote tree in their visit of 2024 that the FLAAR Mesoamerica team had discovered in 2023 and that Hellmuth already published.

HURTADO, Vivian and Nicholas HELLMUTH
2023 FLAAR Annual Report, For Year 2023. 69 pages.
The back cover shows a green-colored bee popping out of the white manzanote flower. Page 35 shows this bee before it dives down into the center of the flower.