Orange-Flowered Manzanote Cactus Trees of Zacapa Bosque Seco area of Guatemala

Leuenbergeria lychnidiflora, also named *Pereskia lychnidiflora*, local name Manzanote

Photographs by Nicholas Hellmuth, FLAAR Mesoamerica

FLAAR Reports, FLAAR (USA) and FLAAR Mesoamerica (Guatemala), June 2025

Many hundreds of stamens with pollen in each of these male flowers.

June 4, 2023, 1:08pm.

Introduction to Orange-Colored Flowers of Manzanote Trees of Bosque Seco Areas of Departamento de Zacapa, Guatemala

I have been driving highway CA9 across the Bosque Seco area of El Progreso and Zacapa since the 1970's, while driving to Peten to map Yaxha. I began to notice the manzanote trees during the years that I was stopping to photograph every flowering plant that I saw in Guatemala. Since there are a lot of *Plumeria* (frangipani, flor de mayo, flor de la cruz) flowering in April, May and June, I would hike into the dry forests to photograph the *Plumeria* flowers up close with a macro lens. So I would often see manzanote trees. Then, when driving the back roads of Zacapa, I would see hundreds of manzanote trees filled with fruits. It was fairly obvious that these manzanote trees were cactus plants--they grew surrounded by *Opuntia*, *Nopalea* and lots of candelabra-shaped cacti. Plus the manzanote tree trunks and branches are covered with long thin spines. My best experience seeing manzanote cactus was driving to the Reserva Natural Heloderma to study remarkable species of morning glory—in 2021. In San Juan Sacatepequez area, we had found an Ipomoea that was a TREE—yes, a morning glory tree, *Ipomoea murucoides*, that was not a vine. Plus, while driving to the heloderma nature reserve in Zacapa, we found another species of morning glory that was a vine, but grew primarily across the top of one tree species (possibly *Tecoma stans*) so that non-Ipomoea tree species looked like a morning glory tree! But the other actual morning glory tree was *Ipomoea murucoides*—so while driving en route to and hiking around the Reserva Natural Heloderma, I saw lots of manzanote cactus trees. Then on June 21, 2023, while on our long-range project to find all areas of Guatemala where *Plumeria* grows, we found manzanote trees with white flowers. But, since 99.99% of manzanote trees have orange flowers, those are the ones we dedicated most of our time stopping, setting up the very tall ladder, and climbing up so we could photograph straight down to see the complete flower from above. Now that we have published five FLAAR Reports on the two rare white-flowering mutants of manzanote trees, we wanted to also show our photos of the orange-flowering manzanote tree, especially since the tone or tint of the orange color varies slightly depending on which mazanote tree you are in front of.

During 2021-2023 library research on manzanote trees almost all plant databases used *Pereskia lychnidiflora* as the accepted name. In their 2025 botanical report Bunkenburg and Haurie use *Leuenbergeria lychnidiflora* (DC.) Lodé as their accepted name. So often in my titles I show both genus names: *Pereskia* and *Leuenbergeria*.

When you Google Is *Pereskia lychnidiflora* DC an accepted name? you get the following AI Overview: "Yes, *Pereskia lychnidiflora* DC is an accepted name for a species of cactus. It is the accepted name for a species within the genus Pereskia and the family Cactaceae. This name was originally published in … 1828.

While *Pereskia lychnidiflora* DC is the accepted name, it's also recognized as a synonym for *Leuenbergeria lychnidiflora* (DC.) Lodé by some authorities. This highlights the ongoing debate and changes in plant taxonomy, where the classification of species can evolve as more data becomes available.

Additionally, *Pereskia lychnidiflora* DC has also been used as a synonym for *Rhodocactus lychnidiflorus* (DC.) F.M. Knuth. This further illustrates the complexities in taxonomic classifications, with different authorities recognizing different names for the same species." (Google A1 Overview, June 5, 2025).

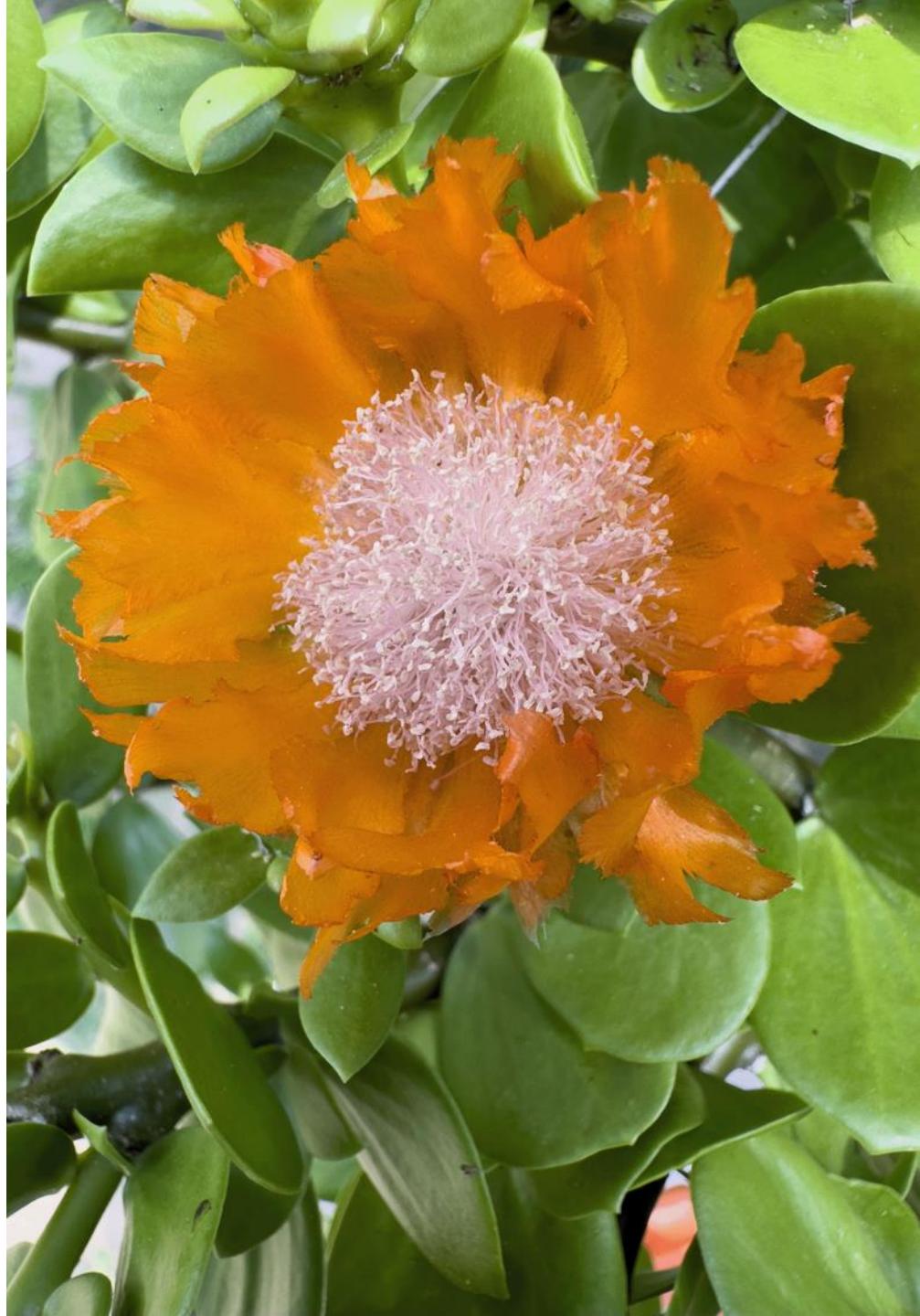
On their August 2024 field trip, botanist Laia Haurie noticed that there were male and female flowers of *Leuenbergeria lychnidiflora* (DC.) Lodé. This was published in 2025 with photos of both pistillate and staminate flowers (Bunkenburg and Haurie 2025: Fig. 3 and Fig. 4).

Both the two trees with white-flowering manzanote variants that Lopez, Hellmuth and Salazar discovered near aldea Agua Caliente, in June 21, 2023, were staminate (male). By far, most orange-flowering manzanote flowers are also staminate. But obviously female pistillate flowers exist and we found a few, that we show later in this report.

The flower on the present page is staminate (male). June 4, 2023, 1:08pm.

All the photos in this 1st edition are by Nicholas Hellmuth, with iPhone 14 Pro Max that we had in year 2023. We now use the iPhone 15 Pro Max and for next year will prefer the iPhone 17 Pro Max. The iPhone 16 did not offer enough new features to warrant upgrading to that model.

All the photos are in the FLAAR Digital Photo Archive of Flora, Fauna and Biodiverse Ecosystems of Guatemala.



A fully opened flower is often stopped on one side by other parts of the plant. Here the petals at the left are scrunched by the adjacent bud.

This is a typical ”full orange” flower of the manzanote cactus tree. We have a separate FLAAR Reports on a more yellowish variant. Plus we show a yellow variant later in the present report.

1:08pm, June 4, 2023.

The leaves of manzanote cactus are very thick.

The bud at the left will open in a few days.

The bigger bud in the middle has the wilting flower sticking out.

June 4, 2023, 1:14 pm.

1:15pm, June 4, 2023.

I estimate that these orange flowers to not ”open as wide” as the white-flowering mutant, because 1:15 is too early for the petals to start to rise up to fold over—that will normally start after 2pm. All these aspects need to be studied, keeping in mind that the sequence will depend on how much sun or clouds and potentially when it last rained to invigorate the entire tree.

Male flower. I estimate over 200 stamens. Probably almost 300.

The trunk of most manzanote trees goes straight up. The limbs and branches come out at many different angles. All are covered with clusters of long needle-sharp cactus thorns.

I estimate that most of the flowers are on the outside—since the “inside” is in the shade of the upper limbs and branches covered with leaves.

2:55pm, June 4, 2023.

We first noticed this tree in 2021. Since Bunkenburg and Haurie had the same helpful local park ranger as their guide, Gilberto Salazar, they also saw and photographed this tree, with a helpful discussion of its tuberous roots (2025: Fig. 7 and page 58). This tree had zero flowers in June 2023.

The gravel is because this is a seasonally dry creek bed. When it pours rain during a heavy rainy season, there is over 1 meter of raging water flowing so fast that it has eroded the field on which this manzanote tree was growing on over a decade ago. Do don't try to drive this "road" after heavy rains.

The creek bed is the "road" to the Heloderma Nature Reserve that is several kilometers away. As you drive along the creek bed you can see how much of the adjacent fields and hills have been washed away during recent decades and centuries.

2:56pm, June 4, 2023.

So at 3pm in the afternoon I would not be surprised if some flowers are beginning to fold over. But this photo raises the question of whether this wilted the day before? Or whether it started to wilt today (June 4th).

I do not think the “bud” at the right is opening, but I could be wrong. It looks very healthy and not “withered”.

The ”bud” at the left looks more wilted. Since it’s 3:56 in the afternoon, these are unlikely “waiting to bloom when the sun comes out”.

All photos up to here are from June 4, 2023.

All the following photos are from June 13, 2023, when we accomplished another field trip to photograph and document manza-note cactus trees.

June 13, 2023, 1:07pm.

Notice at the left that the two fresh sprouts are heading straight upwards, not out sideways as did the branches in earlier years when this tree was younger.

Clusters of diagonal spines all over the trunk(s).

What are the rows of white spots? Are these where earlier clusters of white spines once grew but have fallen away to allow new clusters of spines to grow?

Here I repeat the question of the previous page caption: What are the rows of white spots? Are these where earlier areoles of white spines once grew but have fallen away to allow new clusters of spines to grow?

Herbarium specimens have assisted botanical research around the world for centuries. But today in the digital world, good resolution photographs can show more features than are in a drawer (since you can’t put the mature trunk of this tree in a drawer).

June 13, 2023, 1:07pm.

These trees have healthy flowers but not hundreds of them.

On the trunk there are lots more spines in each cluster. On these branches, not as many spines-per-cluster.

These manzanote cactus trees have thousands of leaves, as do most trees, but these manzanote leaves form an “umbrella” over the trunk that thus does not get much direct sunlight.

Zillions of leaves, here mostly pointed up diagonally (rather than horizontally).

Very few flowers on this orange-flowered manzanote tree, even though, in theory, mid-June is the height of their flowering season.

Need to see whether there are more flowers in July.

June 13, 2023, 1:08pm.

Spines are pointing out diagonally rather than straight up.

Leaves are straight up or diagonally up, but a few are horizontal.

Have these leaves adapted to receiving sun from a diagonal position?

June 13, 2023, 1:08pm.

I am not a tree-ologist, but this certainly looks like a tree to me.

1:42pm,
June 13, 2023.

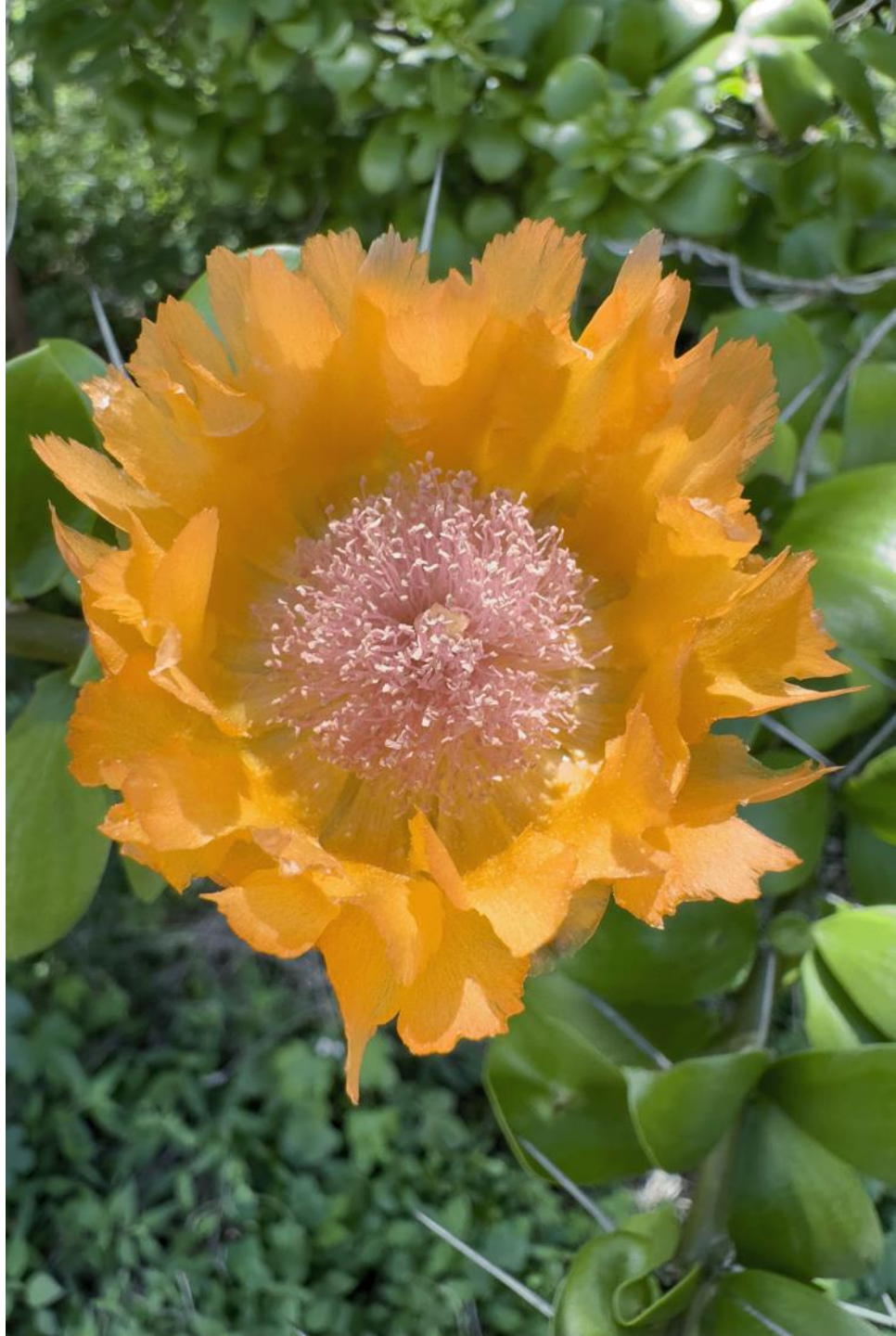
Since these flowers need sun, then tend to be on twigs away from the shade of the limbs and branches.

All photos up to here are from June 13, 2023.

All the following photos are from June 21, 2023.

June 21, 2023, 1:35pm.

These flowers could be considered another color variant, light-orange. We have a separate year 2025 FLAAR Reports: “Yellow-Orange instead of Deep Orange Flowers of Manzanote Cactus Tree, *Leuenbergeria lychnidiflora*, synonym *Pereskia lychnidiflora* Why are these flowers such a different tone? Is this a variant?”



Light orange, June 21, 2023. 1:35pm.

How many petals do these flowers have? If you ask Google you get a totally incorrect answer “Pereskia lychnidiflora flowers have 7 to 20 petals”. This reminds us that these early versions of AI are not always really ”intelligent”.

Using the 2024 discovery of Laia Haurie (Bunkenberg and Haurie 2025), I estimate this is a staminate flower, male flower.

Since the several hundred stamens are so tall, and the anthers filled with pollen also take up so much of the view, you don’t always get to see the stigma of the male flower—but, there it is, in the center, at a lower height than all the stamens.

June 21, 2023, 1:36pm.

June 21, 2023, 1:37pm.

There is a bee or wasp pollinator on the lower flower.

Cropped and enlarged from the previous photo. Since this is an iPhone photo, it does not have the file size that allows enlarging an insect from a wide view.

I am not an entomologist, but I estimate this is a wasp, not a bee.

Lots of wasps are pollinators. We have several FLAAR Reports on wasp pollinators on our www.Maya-ethnozoology.org website.

June 21, 2023, *Leuenbergeria lychnidiflora*, may be similar to the yellow-orange variant that I show in a separate year 2025 FLAAR Reports: "Yellow-Orange instead of Deep Orange Flowers of Manzanote Cactus Tree *Leuenbergeria lychnidiflora*, synonym *Pereskia lychnidiflora*".

3:55pm, so this flower is folding its petals to wilt.

June 21, 2023, 3:55pm, so almost 4pm, so clearly this manzanote flower is beginning to fold its petals (and wilt).

There is an insect on the lower left petal.

Standley and Steyermark, and probably other botanists, have already noticed that the flowers can be of at least two tints: “orange or orange-red flowers.” (1962: 225). But the date he gives must be for somewhere else in the world, or a different species, since he says October—but in Zacapa and surroundings they flower from late May through June and July, into August.

So far, every botanical description of this cactus makes at least one crucial mistake—even publications into 2025. Out goal is for our aerial photos and close-up photos and our field notes to provide documentation so discussions of *Leuenbergeria lychnidiflora* and *Pereskia lychnidiflora* can be updated from 2025 onward. And if more cactus botanists dedicate more field trips they will find aspects that we have not yet discovered.

3:58 pm, so these flowers have already advanced their process of folding their petals.

Hundreds of stamens with pollen at the tip of their top. Would be great if a botanist or student could count the stamens.

The wide stigma is visible in the middle, below the height of the surrounding stigmas.

As we have mentioned before, what would help would be a timelapse from 7am to 5pm.

Or at least starting at 8am, since getting to these trees takes time and most restaurants don’t serve breakfast very early.

This is the last photo of this “pale orange” variant on June 21, 2023. All the following photos are from June 28, 2023 and are a deeper orange color.

All the following photos are from June 28, 2023. The flowers here are slightly deeper orange color.

10:22am, but the petals are not fully open, either because this part of the tree was in the shade or there were clouds earlier in the morning.

This female flower has very long petals, standing almost straight up at 10:25am.

You can tell this is a female flower because it has very few stamens and none are very tall (so they do not hide the female parts).

Bunkenburg and Haurie say (2025: 56): “The pistillate flowers (Figure 3) have very few stamens which are short and underdeveloped and give no pollen. In the middle, there is a developed style with a large stigma.”

Since most of the trees have male flowers, most of our photos are these staminate flowers. Lots more photos are needed of the rare female flowers.

June 28, 2023, 10:22am.

The fact that the petals are stranding straight up suggests this flower has not yet opened completely. The amount these flowers open each hour depends on whether the morning is full sun, or partial clouds.

The iPhone focused on the top of the petals, so the female aspects inside are out of focus. But at least you can see how different this area is on a female flower compared to the same area on a male flower.

10:25am on June 28, 2023.

Female flower.

The petals are sticking almost straight up. Is that because its 10:25am on a cloudy day? Yet the flower is obviously in full sun.

Why is this flower not fully open, as are male flowers on the same day in similar areas?

Accomplishing field trips is good for physical health (hiking each day) and great for mental health (having your eyes and brain scan each plant to learn more about it).

Now you can see why I call this “cactus” a tree!

Clumps of epiphytes on many of the limbs and branches and even twigs of this giant manzanote tree.

“Bosque” seco means dry “forest”—so this literally is a forest. Perhaps you could call it a dry scrub forest. But since there are lots of different tree species, albeit not as “high as a ceiba tree” perhaps best to skip the word scrub when there is scrub but also lots of trees in addition to bushes.

Botanists and ecologists have their own specialized scientific names—I use “bosque seco” as a generic designation.

In this photo you can see a tall manzanote cactus tree (its leaves are darker green than the surrounding trees).

You can also see a cactus at the lower right.

On June 28, 2023 we also revisited the white flowering manzanote tree near Agua Caliente, overlooking the Rio Tambor. Other than the two white-flowering mutants near each other, all other manzanote trees in this entire area are the normal orange-flowering ones.

We have published five FLAAR Reports on the white flower variants. We list these titles on the final pages.

Only a few orange flowers are open on the same day in June 2023, June 28, 2023, 2:24pm.

2:25pm on June 28, 2023.

The flower at the right has wilted perhaps the previous day. It will gradually turn dark and then turn black and shrink.

The bud at the left will open in a day or so.

I estimate these are the same two buds as in the previous photo, but at a different angle.

This is a male flower—they are much more common than the female ones.

June 28, 2023, 2:25pm.

Concluding Comments on *Leuenbergeria lychnidiflora* (DC.) Lodé listed in most Books and Articles and Databases as *Pereskia lychnidiflora* DC

Since there are so many different cactus genera and species in Guatemala it is not realistic to be a full-time specialist in each individual species. So our goal is to provide to the leading cactus scholars photographic documentation of the manzanote cactus of bosque seco areas of El Progreso, Zacapa, Chiquimula and other parts of Guatemala (and elsewhere in Mesoamerica).

Better close-up photos are needed of the details of male and female flowers, especially the rare female flowers. Need photos of a cross-section (and line drawings). Great research for a student undergraduate thesis or MA thesis.

Also lacking are 3-dimensional drawings of all the different sizes and shapes of the limbs, branches and twigs—especially the fresh young shoots that sprout up from the trunk.

Plus to learn, understand, and write about how a fallen *Leuenbergeria lychnidiflora* can continue to grow even when the trunk is broken off from the base of the trunk so the fallen trunk has no roots—but still continues to grow, sending up shoots in many places from the upper part of the fallen trunk (something we saw on our late May field trip, 2025).

Another aspect we are focused on is how to describe an area with hundreds and hundreds and hundreds of manzanote cactus trees all growing close to each other (yes, with other trees, other bushes and other cacti all over the place, but with the *Leuenbergeria lychnidiflora* as the dominant plant). In Peten, if an area has 70% corozo palms it is called a corozera. If an area has hundreds of guano palms it is called a guanal—if there are hundreds of escoba palms the area is called an escobal (in local Spanish). So what should we call the area with at least 400 and possible as many as 600 manzanote cactus trees occupying the area—a manzanotal or a manzanotera? Standley and Steyermark say “Los Manzanotes is an aldea of Zacapa, Manzanotal is a caserio of El Progreso, and both names probably are very appropriate ones.” (1962: 225), so I will name the tree cactus forest that we found on May 21st, 2025 a “manzanotal”. Standley and Steyermark correctly already noticed these stands: “This is one of the most abundant trees about Zacapa, forming stands of great extent on the plains, in association with spiny Leguminosae and other shrubs and trees.” (ibid.) but the FLAAR team can now document that these extensive stands exist—and surely can be found in more areas of Zacapa and El Progreso.

Also need more photos of the fruits, and why in the world something of this narrow shape is considered a manzana? To create the name manzanote?

It would help to show precisely what is it that pollinators are going deep into the lower part of the stamens to collect. And what attracts these pollinators to the female flowers?

We find the books and articles on *Las Cactáceas de Guatemala* by Mario Esteban Véliz-Pérez very helpful, plus the recent article by Bunkenberg and Haurie.

List of FLAAR Reports of 2025 on White-Flowering Manzanote Cactus Trees of Aldea Caliente, Municipio de Cabañas, Departamento de Zacapa

Leuenbergeria lychnidiflora, white flowering mutant of Manzanote Cactus Tree, Aldea Agua Caliente, Rio Tambor, Zacapa, Guatemala, June 21, June 27 and June 28, 2023. (al these FLAAR Reports are published in June 2025)

The Largest and Rarest White-Flowering Manzanote Cactus Tree of Zacapa, Guatemala Is blown over in a Wind Storm, May 2025

White Flowers of a rare mutant of *Leuenbergeria lychnidiflora* (DC.) Lodém Manzanote Cactus Tree, Previous accepted name *Pereskia lychnidiflora* DC, July 6 and 7, 2023

Leuenbergeria lychnidiflora, *Pereskia lychnidiflora*, Manzanote Cactus Tree Flowers, June 29, 2023, Pink at 9:30am, turning more White by 9:38am

White-Flowering *Leuenbergeria lychnidiflora*, Manzanote Cactus Tree, Rarest Mutant Cactus Tree of all Guatemala, Aldea Agua Caliente, Rio Tambor, Zacapa, Guatemala

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.

Later in June we will also be posting our complete photo corpus of aerial photos 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 back out of the white manzanote flower. Page 35 shows this bee before it dives down into the center of the flower.

Additional Reading on Manzanote Tree Cactus

BRITTON, N. L. and J. N. ROSE
1919 The Cactaceae, Descriptions and Illustrations of Plants of the Cactus Family. Volume I. The Carnegie Institution of Washington. Available as easy download: https://opuntiads.com/records/britton-rose-cactaceae-1.pdf

Obviously more recent cactus publications will have more documentation available. But this 1919 is a start: pages 12 and 13. In 1919 the documentation for *Pereskia lychnidiflora* was only for Mexico.

STANDLEY, Paul and Julian STEYERMARK
1962 Flora of Guatemala. Field Natural History Museum. *Fieldiana Botany*, 24, Part VII, Number 2:187-234. Was named *Pereskia autumnalis* (Eichlam) Rose, in the 1960's.

Recommended Reading specifically on *Pereskia* cacti (in addition to list on previous page):

LEUENBERGER, Beat Ernst
1986 Pereskia. *Memoirs of the New York Botanical Garden 41*: 1–140.

LEUENBERGER, Beat Ernst
2008 Pereskia, Maihuenia, and Blossfeldia—taxonomic history, updates, and notes. *Haseltonia* 14: 54–93.

We do not have funding to buy articles or monographs so would greatly appreciate if a kind botanist could send us a PDF of each of these essential publications of Leuenberger. Our email is: NHellmuth@FLAAR.org