# Edible Wasp Honey and Wasp Nests that you can Eat

Finca El Plan, Chipemech, Senahu towards Cahabon, Alta Verapaz

Photos by Javier Archila and Norma Chu Cu, March 19, 2025
Text by Nicholas Hellmuth, Panal 11, 12, and 13

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

**Wednesday, March 19, 2025**

We drove on the narrow gravel and often mud road from Senahu, past Chipemech, towards Cahabon. We stopped in the area of Finca El Plan, along the highway, and then hiked several hundred meters into the hills. Here one of our helpful local Q'eqchi' Maya guides had a house. It had two wasp nests under construction on the wooden beams. We took snapshots of one when another wasp attacked the wasp constructing his hive. But our main focus was to study and photograph two mid-sized wasp hives that the guide, Domingo Ba Chub. had harvested from a low tree.

Both these mid-sized hives were the same Genus species of black wasps. These were the smallest wasps that I have ever seen. I had no idea that wasps this small existed. These small wasps never attacked. Whenever a wasp fell onto my hand, it simply wandered around. I would put my finger in front and when the wasp jumped onto my finger, I would move it back to the hive.

This is a wasp species that makes edible honey. It was the most delicious honey I have ever tasted in my entire life. And you could eat the hive itself—that had honey inside. The hive was like smooth slightly soft-crunchy material with a great honey flavor. The local people eat the hive with both honey and young larvae. I preferred not to yet taste the larvae—but they are edible. I do not yet know whether when they get much larger as pupa, whether the local Maya also eat them. But thousands of years ago, anything that was edible was probably helpful to local Maya people. I estimate that no book on "The Maya" or "The Classic Maya" mention wasp honey or edible wasp nests. That the Maya eat wasp larvae is better known. Now we can add edible honey and edible wasp nests to books on the Maya—food that does not require slash-and-burn milpa agriculture and to have more edible wasp honey it helps not to chop down all the trees.

We put all the pieces of the hive outside so the wasps could fly away and work on building a new hive. I did not notice any queen inside but probably only a wasp entomologist could detect which of the wasps was the queen. Or it may have been that the queen had already flown away to start a new hive.

**Panal 11a, Finca El Plan, bodega,**
**11:43am, March 19, 2025**

These are relatively small wasps. These are honey wasps—local Maya people eat the nest to enjoy the honey.

Finca El Plan, photos are by Javier Archila unless noted in the caption. All photos by all photographers are in the FLAAR Digital Photo Archive of Flora, Fauna and Biodiverse Ecosystems of Guatemala.

Notice that these cells are in PERFECT rows.

These honey wasps are 97% black with only a few narrow bands of yellow.

There is a lot more engineering to create a wasp nest than just the impressive honeycombs. All the eggs, larvae and pupae need to be protected from rain storms. So the outside layer has to start on the inside.

The broken open area allows you to see larvae or pupae on an inner layer.

Very thin yellow bands around the abdomen.

An oval yellow band around the thorax.

Hopefully these designs can assist a wasp entomologist to be able to identify the genus and species of this honey wasp. We call it a honey wasp because in other photos of other parts of the nest you can see honey, plus the local people opened the nest and gave us pieces of the nest to eat, since that part of the honeycomb had tasty sweet honey in most of the otherwise empty cells.

Since the honeycomb areas are “stacked on top of each other” how is the “roof” held up? Otherwise the weight of the honeycomb above would fall down and crush the pupae on the next layer.

**Panal 11b,**
**Finca El Plan, bodega,**
**12:45pm**

These wasps are actually much smaller than others that we have photographed in other nests.

Here you can see a dull-yellow band around the thorax and two yellow bands around the abdomen.

Even though out of focus you can see that one hexagon (in the upper middle) is twice as wide as all the others.

The local Maya people brought a nest with fresh honey for Nicholas and Senaida to study, plus for us to experience eating a chunk of the honeycomb (cells that had honey). We did not want to eat any larvae or pupae.

This mass of wasps are literally all over each other.

Most of the cells are in neat rows, but a few are not.

Some cells have mature larvae or pupae inside but other cells that are “empty” seem to have only eggs or young larvae.

All the following photos are by Norma Cho with iPhone 15 Pro Max, cropped by Nicholas Hellmuth.

You can see four or more reflective clear-gold colored spheres of wasp honey in the lower part of each photo. This is the honey the local Maya people eat, and since each “drop” is small, and is inside a “paper” cell, it is easier to get the honey by eating the actual honeycomb segment.

The local Q’eqchi’ family kindly brought us this wasp nest to study and then to eat the outer area that had honey.

If you Google Japan eat wasp larvae you get several educational websites.

Google A1 Overview warns you that “Eating wasp nests, however, is extremely dangerous due to the risk of being stung.” But they have never been to the many areas of Guatemala where wasp nests are routinely eaten. Yes, some honey wasps sting, but not one wasp of either Panal 11a or Panal 11b stung any of us.

A1 Overview also warns you of other materials inside a wasp nest that could be toxic for your health. Plus, if the wasp has collected nectar from a toxic plant, the honey will also be toxic. We were told of a person in Zacapa that died after eating wasp honey that evident-ly had toxic nectar. That said, people all up and down the Americas eat wasp larvae and I estimate lots eat portions of the nest as well—just that this is an ethno-zoological aspect not what a Hymenopterist will study. I study ethnozoology and ethnobotany because I have worked for decades to learn what the Classic Maya had available to eat and what flora and fauna were featured in their art.

Not one single wasp is attacking the woman who is holding the nest.

She later gave the nest to me, still filled with wasps, since she knew we wanted to study them. I then ate a piece of the nest that had spheres of honey in the cells. None of the wasps stung me (obviously I did not eat the wasps themselves, nor the larvae or pupae).

Crop from the previous photo. Here you can better see the reflective glow from the spheres of wasp honey, especially at the left.

Wasp honey is visible in lots of the cells that are not occupied by larvae/pupae.

I estimate what is brightly reflecting are spheres of honey. I estimate what are light brown are wasp eggs that have been growing for several days. In the rows above the wasp are lots of developing larvae which have not yet grown high enough to reach up outside their cell like the dozens of “white towers” in the other cells.

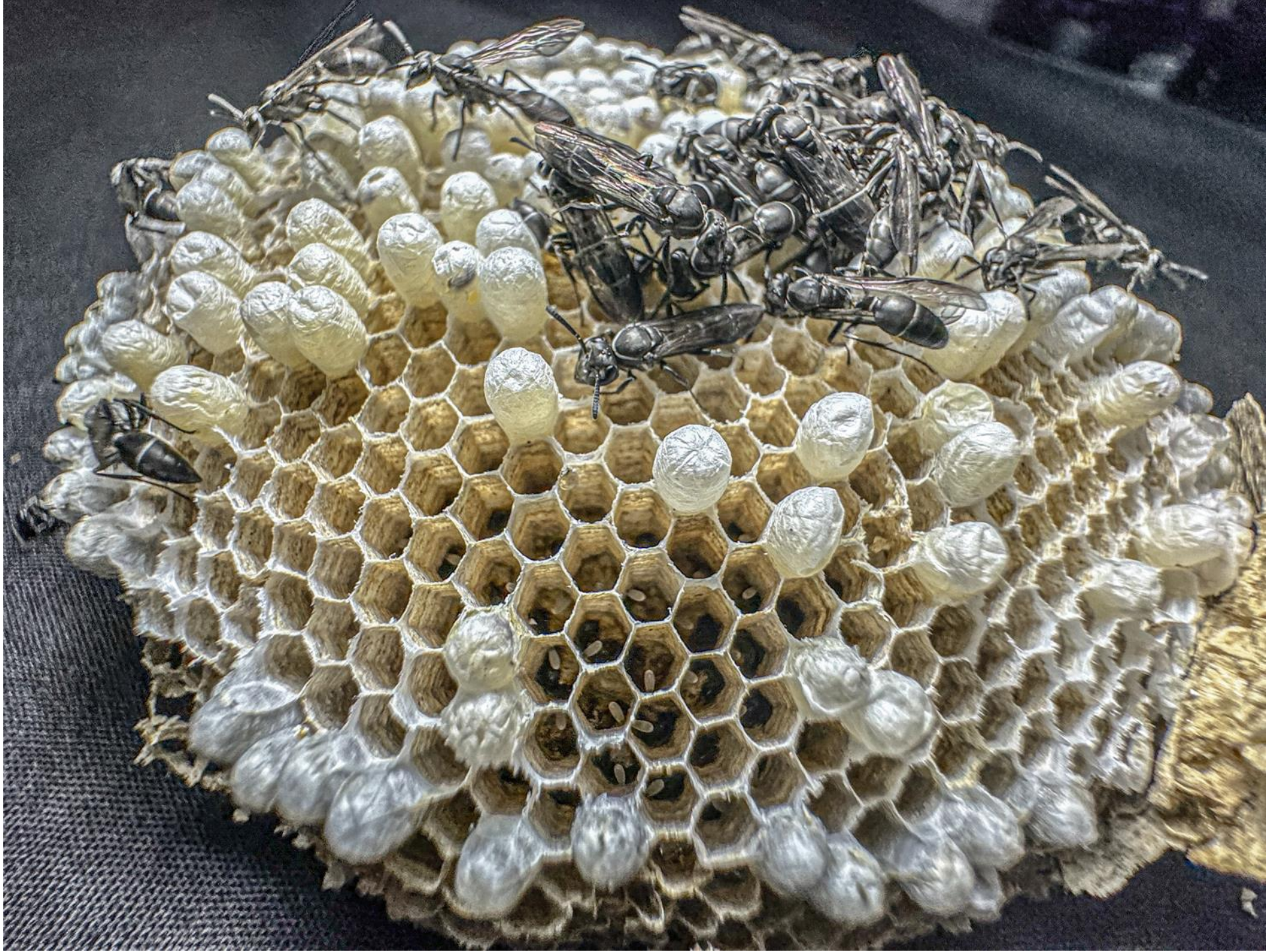
Wasps tending to their eventual assistants.

This is a lower level of this nest. A mass of wasps is at the top. Whey they are “all over each other” is not yet known to me.

Not one single wasp attacked or stung any of us the entire time we were studying the different layers of this nest.

The pupae have grown quite tall—the white towers that have black inside are the next ones to hatch.

It helps to take photos at different angles of each part of the nest. In the present angle you can see all the eggs at the bottom of many of these cells (that is my estimate that these are eggs—we would welcome comments by wasp entomologists).



The mass of wasps remains a mass, but all the other wasps are constantly moving to a different part of the honeycomb.

Interesting stack of horizontal “ridges” on visible on the left side of many cells.

At the lower right, hexagons are distorted (at the left because they were crushed when the guide brought the nest to the table).

The cells are very deep but the pupae have risen very high.

Here you can see that the horizontal ridges are of course on all sides of the cells. The details on the two wasps in focus at the right can allow a wasp entomologist to identify this species.

I estimate that the objects at the bottom of the cells are hatching eggs, but I prefer to learn from a wasp entomologist.

Why there is a drop of liquid up on top is unknown. It is not honey colored and is not down inside a cell.

The cells at the left “hit” the neat rows of cells from all across the right, so again, each side of nest is built by different wasp team?

## Panal 12a, Wasp Nest hanging from Bull Horn Acacia tree, Chipemech, near House of Senaida's Mother

We are preparing a separate FLAAR Reports on all the wasp nests we have found in various species of Bull Horn Acacia trees in Guatemala during recent years of field work.

The genus *Acacia* is now named *Vachellia* but the common name is bull horn *Acacia*.

There are several different species of genus *Vachellia* in Guatemala, and several of these different "bull horn" Acacia have wasp nests. This relationship is even shown on a Late Classic Maya vase that we show in our work-in-progress.

If you wish to undertake a major project on wasp nest size and shapes, you need to bring a powerful telescopic flash system. But you can also use RAW format to get slightly better view of an area of the nest that is not illuminated by the sun.

An 800mm lens is also needed—our Sony lens only goes to 600mm, but at least we can show a preliminary view of the underside of this nest. These wasp workers are covering over one layer. They will probably continue building additional layers, since our visit was in March.

# Panal 12b, Chipemech, House of Senaida's Mother

Lots of wasp larvae and pupae in the lower half of this area. Lots of other cells where eggs have not yet grown into larvae.

In the next photo we show a closer view where rows of cells “collide” with rows coming from the other side.

At the left, all rows go perfectly rounded-upwards, but the the upper right, there is helter-skelter. Is this because one group of wasps is building from the left-to-the-right and another group is building from the right-to-the-left—and where they meet the rows are not aligned? On the following page I show a closer view of this “collision” of the two sets of rows.

Cells here are not well organized.

This black wasps are the builders—the gold yellow wasp that we see later is an invader.

On the following page we show another of Javier Archila’s photos so you can see the mish-mash of many of the hexagons.

Another view of the rows of cells “wandering around a bit” Plus, why are the cells at the upper right “filled” but neither with honey nor larva nor pupae?

In the right of the middle, the invasive *Polybia emaciata* wasp has pulled a complete immature wasp out of its cell. The invasive wasp will fly away with its victim and land on a leaf to enjoy his meal.

We have a separate FLAAR Reports on *Polybia emaciata* wasps from San Jose Se Raxtul, Senahu.

This nest belongs to the black wasps. The much larger golden-winged yellow-banded wasp is coming to steal a pupa to take away to eat. Curious that the black wasps do not defend their pupae.

Black wasp is the builder of this nest. Honey-winged, yellow banded wasp is an invader—he has grabbed a compete wasp pupa.

I estimate this is a *Polybia emaciata* wasp. They build their nests out of mud (that we show in a 2025 FLAAR Reports). This wasp is on the nest of another species, stealing a pupa (that is below its head).

Google A1 Overview says “No, there is no evidence to suggest that *Polybia emaciata* wasps rob larvae from other wasps' nests. While they are known for their unique mud nests and defensive behaviors, their interactions with other wasps primarily involve nest defense and colony establishment, not kleptoparasitism (larval theft).”

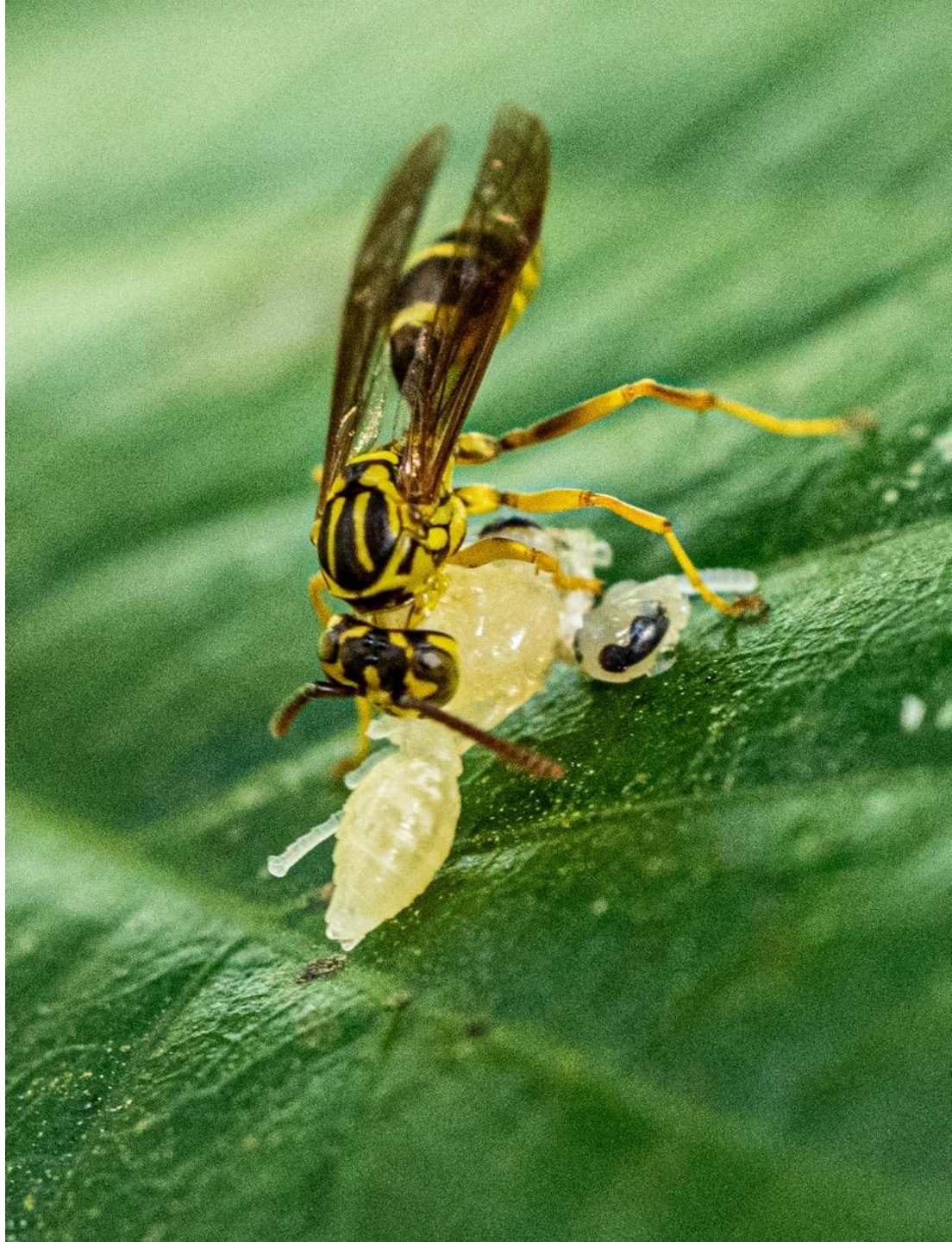
So, have we misidentified the yellow-banded brown wasp species? Or have we documented something not well known for this species?

Although out of focus, you can see that this probable *Polybia emaciata* wasp has pulled an unhatched pupa out of its cell.

The *Polybia emaciata* wasp then flies away to a nearby leaf to eat the pupa.

This wasp, that I estimate is the same *Polybia emaciata*, has carried the pupa of another wasp species to where he can peacefully eat the pupa. The head of the pupa has fallen off. The wasp is chewing on the end of the thorax, the abdomen of this pupa has not yet grown to its full size.

This pupa is the same size and shape of an adult wasp—so how was it possible for this *Polybia emaciata* wasp to fly while carrying his own weight? Has this been documented by wasp entomologists before?



I estimate that this wasp seems to be licking up material on the top of this dead plant part. Both bananas and some species of palm have these plant parts peeling off their trunks.

## Panal 13a, San Jose Se Raxtul, 3:45pm

Byron, Franklin, and Senaida had visited San Jose Se Raxtul on a reconnaissance field trip of March 3, 4, 5, and 6. They found so many wasp nests that we decided to dedicate a second field trip with two lead photographers: Archila and Hellmuth.

This is the largest wasp nest that I have yet seen in Guatemala, but surely there are others even a bit larger. Depends on what month you are doing your field trip—obviously not a good idea to try to study and photograph wasp nests at the height of the rainy season.

Another example of different groups of wasps creating their pattern—but when their area meets an adjacent area started from a different area—the rows don't "merge"—they collide.

Would be great if a wasp entomologist and/or a PhD candidate could photograph (and DRAW) each layer and show what sometimes happens when two, or more, groups of wasps start on other sides of the nests.

## Panal 13b, San Jose Se Raxtul, Alta Verapaz, Guatemala

We have found lots of wasp nests hanging from the central ridge of a banana leaf. Bananas are not native to Latin America but there are millions throughout Guatemala—we have several producing bananas in the FLAAR Ethnobotanical Research Garden at 1,500 meters elevation on the northeast edge of Guatemala City. The birds and squirrels are very happy.

Panel-13b, San Jose Se Raxtul wasp nest photo by Javier Archila, March 19, 2025 3:51pm.

Hundreds of these wasps are busy at work.

This photo shows that the abdomen has one noticeable yellow band, but there is actually a second thin yellow band also on the abdomen. This pattern allows you to suggest Genus and species as possibly *Polybia plebeja*.

So far, *Polybia plebeja* is one of the species most common for Alta Verapaz.

Panel 13b, San Jose Se Raxtul wasp nest, photo by Javier Archila, March 19, 2025, 3:51pm.

The first thing you notice is how neat and precise are the rows of hexagons. But when you look closely at each individual cell you notice that there are lots of variations.

Most of the cells at the middle to right to below have a reflective “liquid?” inside each cell. Is this honey or a shiny egg?

At the top center one cell has a straight top, so is not a complete hexagon.  That said, 99.99% are usually a hexagon. But, it is helpful to discover an exception.

At far lower left are a few more cells that are not hexagons.

The “black” color of this wasp has brownish tint.

All these photos are wasp nest (Panal) 13b.

Panel 13c is a mud nest not a paper nest, so we have a special FLAAR Reports just on this rare wasp nest made from mud.

Another separate FLAAR Reports shows the wasp nests found on March 20th, 2025.

On March 19th, 2025, we drove from Senahu north, on a narrow dirt road towards Cahabon, but we went only as far as Chipemech since we wanted to return to overnight in Senahu and then drive to Teleman and then back to the research office in Guatemala City. All this area is high in the mountain ranges that cross Alta Verapaz. When we drove back it was early evening and as the sun had set we had arrived to the mountain tops before you descend down into Senahu. From this high level (before we descended) there were endless miles of clouds covering 75% of the panorama—with dozens of mountain peaks sticking up above the clouds. Although this area is not considered a "cloud forest" like the quetzal areas to the west, quite frankly the clouds were all over the forests below us.

When you drive from Senahu all the way to Cahabon, there are mountains and valleys all around you—the views are awesome. In Cahabon there are economical places to stay and plenty of local restaurants. All the Q'eqchi' Maya people in all the large towns are friendly. Frankly this whole area is great for research on flora and fauna. There are surely lots of areas around Cahabon that have wasps nests to study but there were so many around Senahu and since lots of our staff come from Senahu this Municipio was an easier area to accomplish field work. The helpful maps of Byron Pacay are on the following pages.

Surely there are more wasp genera and species than the several that we found, but in the meantime our documentation is probably the first for wasps of this area. As soon as a wasp entomologist can help us identify which genus and species occupied each nest, this documentation can assist other scholars.

Since wasp nests of the Neotropics are stated to last only one year, none of the nest locations will have the nests in 2026—but… the same wasp species will have fresh new nests nearby.

There are lots of separate FLAAR Reports on our initial visits to the same areas plus other areas of the Municipio de Senahu on the exploratory field trip of March 4, 5, and 6, 2025.

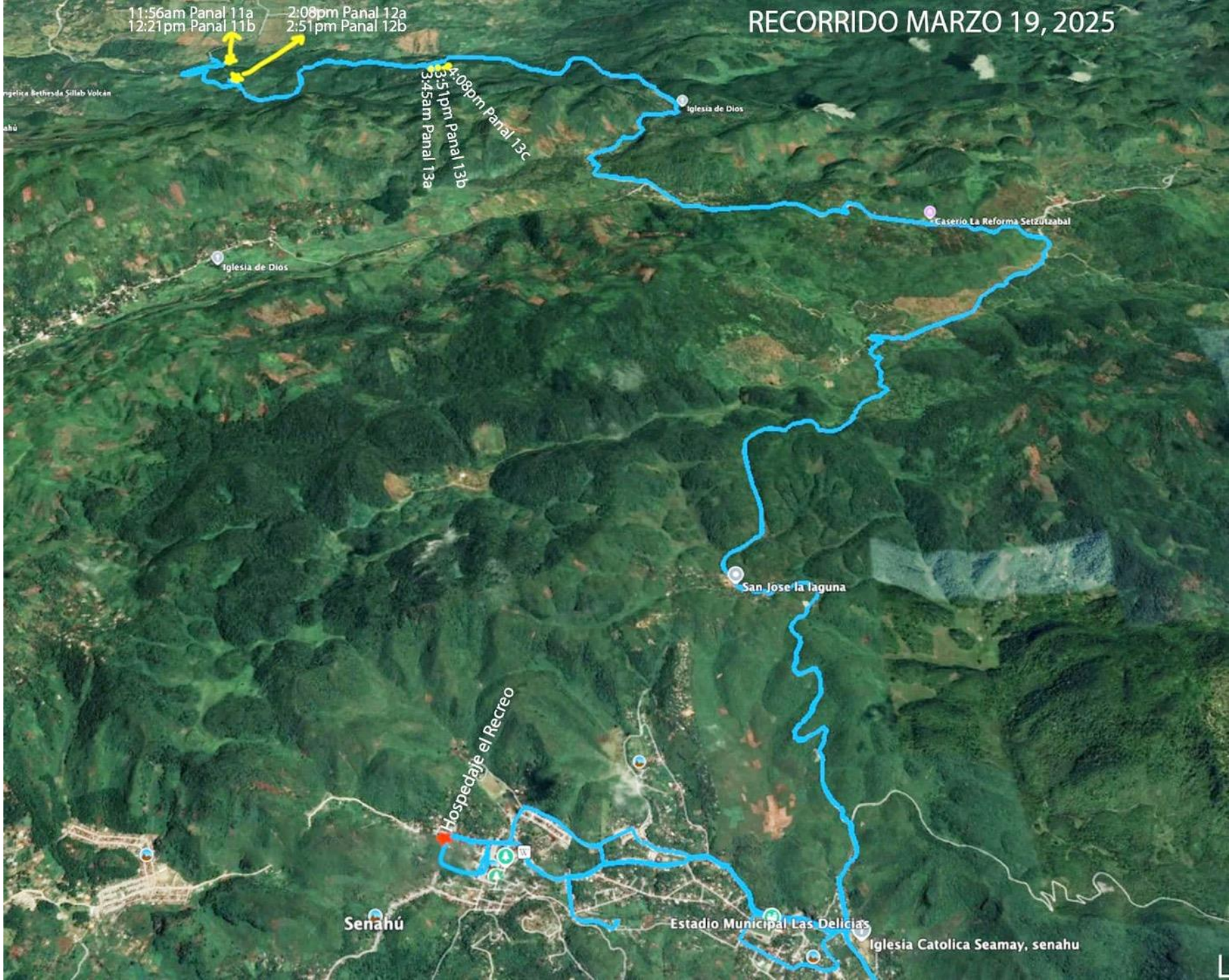

Cropped by Hellmuth from the helpful map by Byron Pacay.

To reach these remote areas you can take a Tuk Tuk from Senahu, or you can drive here with most sizes and shapes of vehicles. What cannot handle the roads are a giant long pickup like a double-cabin Dodge Ram—on the curves it would be difficult. And in many areas one side of the road has been washed out—so having a wide vehicle is not a good idea. Keep in mind you are driving through the mountains, so often there is a cliff rising up on one side and a free-fall on your other side down to a valley. It's beautiful landscape, but it helps to have an experienced driver.

There are no gas stations or restaurants anywhere on this route. But in aldeas there are stores that sell soda and other junk food. We always bring our lunch with us, and then return to the hotel for dinner.

Showing the route from the town of Senahu north towards Cahabon (which is much further to the north, outside this map). There are coffee plantations and lots of cardamom being grown, plus milpa agriculture.

Helpful map by Byron Pacay, from Google Earth Pro, with route and notes added by Byron.



Since you can find all the webpages and scientific articles about wasps on-line, there is no need for a bibliography in this 1st edition (especially since Alta Verapaz has only occasionally been studied by wasp entomologists). But I would like to share one webpage, on edible wasps from Yucatan. Jim Conrad is a knowledgeable botanist and zoologist:

https://www.backyardnature.net/mexnat/waspmex.htm

If you Google Have you ever try wasp nest eating | Wasp nest salad | How to eat wasp nest

Then you will get a video showing how to prepare wasp larvae to eat.

So it is well known that the wasp larvae are edible—what we wish to expand upon, is that the wasp nest itself is also edible. Google, avispa panal comestible and you get several educational results. The URLs are too long, so we show the name of each:

Comiendo PANAL DE AVISPAS en un Pueblo de Oaxaca

Comemos PANAL de AVISPA is an excellent educational video by Miguel Babo (Guatemala) but these wasps did sting a bit. This URL is definitely worth watching: https://www.youtube.com/watch?v=2qHExcHLHh4

The research team consisted of Byron Pacay, experienced driver and co-pilot when Hellmuth drives. He also prepares the maps. Norma Cho does all the basic preparation and prepares all the camera equipment, lighting equipment, tripods to load onto the double-cabin pickup truck. Since Senaida Ba comes from Senahu she helps preparing the itinerary and contacts with local people. Franklin Xol is also from Senahu and he also participated in both the field trips to Senahu areas. The lead photographer is Javier Archila. Nicholas Hellmuth plans the focus of the trips and does the library research (on-line) for the reports. Vivian Hurtado is manager of all field trips but since she is also manager of lots of other activities of FLAAR Mesoamerica, she usually does the organization from her home office.