Parachartergus smithii

Golden-Colored Wasps making their Nest Affixed to a Wall—not hanging from a branch

Aldea Seamay, Senahu, Alta Verapaz, March 5, 2025

Photographs by Byron Pacay and Franklin Xol, Text: Nicholas Hellmuth

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Introduction to the relatively small, “Soft Golden Colored” Wasps near Aldea Seamay, Senahu, Alta Verapaz

These wasps are much shorter than the many other genera and species that we have photographed. They are a beautiful golden color, very “soft golden”, so different than other (larger) golden-colored wasps that we have also found and photographed in Alta Verapaz.

Their other significant difference is that these short wasps construct their nests pegged to a pillar of a house. I would estimate that they can also build such a nest “glued” to the trunk of a tree. *Synoeca septentrionalis* wasps build giant nests up and down tree trunks (Hellmuth 2025).

Google Images suggests *Parachartergus smithii*. And one of the helpful web pages that turns up with lots of photos is https://mexico.inaturalist.org/taxa/740936-Parachartergus-smithii/browse_photos Plus, the nests of *Parachartergus smithii* are pegged to trees and the bottom pattern (like a thick splattered spider web) is the same as the nests near Aldea Seamay, Senahu, Alta Verapaz. But… Portal de Biodiversidad de Guatemala has zero results for this species for Guatemala. So once again, the FLAAR team seems to be finding wasps previously not fully documented in Guatemala.

For Guatemala, Carpenter et al. (2012: 279, Appendice 1) list :
Parachartergus apicalis (Fabricius 1804), but almost pure black, with white ends to its wings—so not the wasp we found in Aldea Se Amay.
Parachartergus aztecus Willink 1959, no results in biodiversidad.gt/portal/, almost pure black, with white ends to its wings—so again, not the wasp we found near Aldea Seamay. Curious that two species of genus *Parachartergus* are pure black and yet *Parachartergus smithii* is golden, and, much different body proportions than these two other species of same genus.

One feature of the Aldea Se Amay area wasp is that its wings have an area of black—identical to photos on line for *Parachartergus smithii*. After looking at photos on-line for *Parachartergus smithii*, I feel this is a potential identification, however best if a wasp entomologist provides their professional opinion.

If indeed the team of FLAAR Mesoamerica found a *Parachartergus smithii* wasp, this is one of the best series of documentary photos yet available for Guatemala. This is our goal, to provide information for entomologists and students so they can more easily know where to find various species for their own research.

Fortunately, lots of these wasps have their wings open, so you can see the color of their abdomen.

Photos on this and following pages are by Byron Pacay, FLAAR Meso-america, with Google Pixel 8 Pro camera, FLAAR Digital Photo Archive of Flora, Fauna and Bio-diverse Ecosysems of Guatemala.

Fig. 1, a and b.

The present crop allows you to see the color of the thorax and abdomen and the black areas on the wings. These details are what allowed me to suggest that this wasp is *Parachartergus smithii*.

All photos by Byron Pacay were taken in RAW mode, so better resolution than JPG. All photos cropped and processed by Nicholas Hellmuth in RAW mode.

Fig. 2.

This wasp nest is not hanging from a branch, a twig or a vine. This wasp nest is glued to a concrete pillar of a house in Aldea Seamay, Municipio de Senahu.

Fig. 3, a and b.

Most wasp nests always have workers all over the surface, as we see here. But we have found a few other nests, of different species, with no wasps all over the outside. Maybe they were completely finished, or getting ready to be abandoned by the queen?

The field team consisted of Franklin Xol, driver of the Tuk Tuk and photographer, Byron Pacay, photographer, and Senaida Ba Mucu, organizer of the guides and places to look for wasp nests.

Norma Cho Cu helped suggest Genus and species names. Nicholas Hellmuth did library research (on-line) and documented Genus and species names.

If a wasp entomologist wishes to add their comments to our captions, we will cite their name and their comments.

Fig. 4.

The lower row of wasps are on a lower level, on the inside of the nest.

The wasps above are on the outside.

As the final photo in this report, we show a close-up of the unfinished outside.

Fig. 5.

Fig. 6.

The entry-exit hole in this nest is oval, not round.

Only one wasp is near the entry-exit to the inside of this nest.

Fig. 7.

Fig. 8, a and b.

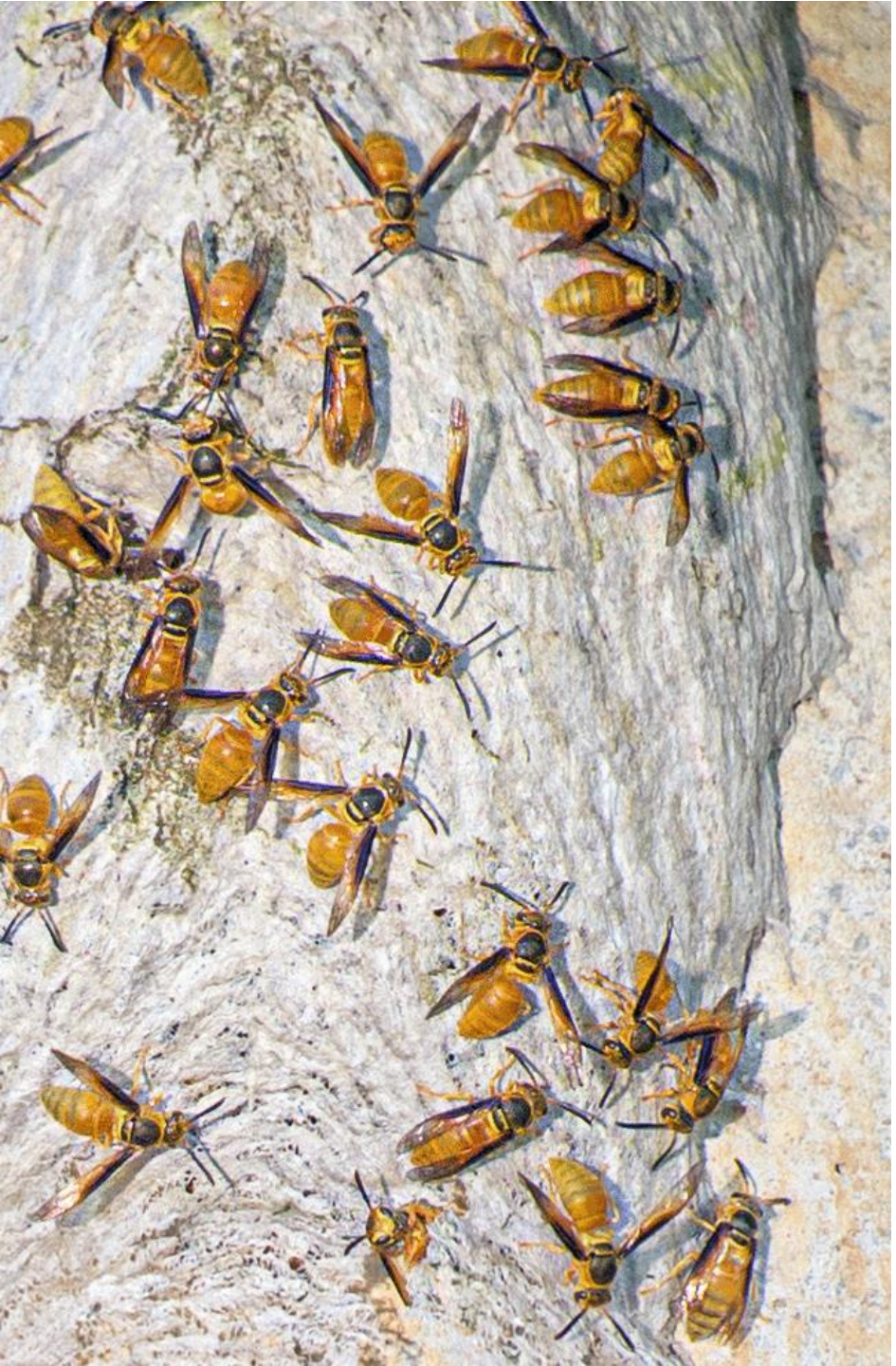

Fig. 9, a and b.

Fig. 10, a and b.

All photos up to here are by Byron Pacay with Google Pixel 8 Pro, taken in RAW mode, processed in RAW mode by Nicholas Hellmuth.

All following photos are by Franklin Xol with his Honor Magic 5 Lite, Modelo: RMO-NX3, taken in JPG but processed in RAW mode by Nicholas Hellmuth.

Franklin said he was stung, but just one time.

Fig. 11.

All the following photographs are by Franklin Xol, FLAAR Mesoamerica, with his Honor Magic 5 Lite, model RMO-NX3, in JPG, processed by Nicholas Hellmuth by “Open in Camera Raw” (right click on the JPG file opens the image same way as if it was really a RAW file). That said, in the future he will see whether RAW model option is available on his telephone. RAW mode is available in Google Pixel, iPhones and other telephone cameras. The resolution is higher so you can crop in to see better close-ups. iPhones also have a manner for you to tell the camera where you want the focus to be. I estimate other cell phones have same option.

Fig. 12.

In this photo you can see the two yellow bands of color around the dark thorax.

You can also see the two levels of this nest, with lots of wasps working on the lower level.

Fig. 13.

Fig. 14,
a and b.

The pattern of the unfinished top of this layer is a design of construction that surely occurs in nests of other species, but I have not yet seen this elsewhere.

In other words, some wasps construct their paper nests with engineering concepts that are different than some other wasp species.

Fig. 15.

Fig. 16.

Fig. 18.

It is rare to see the construction details of an unfinished wasp nest. What is visible across the bottom of this helpful photo by Byron Pacay is what helped me accept the genus species as most likely *Parachartergus smithii*, because photos in biology web sites show the same pattern for this species.

Fig. 19.

Concluding Comments

I suggest *Parachartergus smithii* but field trip assistant Norma Cho asked whether or not it might be *Parachartergus colobopterus*. But *Parachartergus colobopterus* is not listed for Guatemala by Portal de Biodiversidad de Guatemala. That said NEITHER is *Parachartergus smithii* listed for Guatemala by biodiversidad.gt/portal/ !

The two species of genus that are listed by Carpenter et al. are black—not soft golden yellow.

Carpenter et al. list *Parachartergus apicalis* and *Parachartergus aztecus.* Google AI Overview lists *Parachartergus apicalis* and *Parachartergus fraternus* for Guatemala. *Biodiversidad.gt/portal/* shows only *Parachartergus apicalis. Parachartergus fraternus* is black and the exterior of its nest has wandering parallel ridges. So NONE of these are the soft golden yellow wasps that FLAAR Mesoamerica found and photographed in Aldea Se Amay, Municipio de Senahu, Alta Verapaz, Guatemala.

Parachartergus colobopterus has two brown-gold bands across its yellow abdomen and then narrow brown-gold bands. (https://www.inaturalist.org/taxa/740920-Parachartergus-colobopterus).

Parachartergus smithii has the identical scrabbled nest structure when under construction (https://mexico.inaturalist.org/taxa/740936-Parachartergus-smithii). *Parachartergus smithii* pegs its entire nest against concrete columns (ibid.). The photos in Garcete, Drechsel and Carpenter 2014: Fig. 4 have a pattern on their abdomen that is more similar to the wasps we photographed in Alta Verapaz. But best if a wasp entomologist who has undertaken decades of research in Guatemala or adjacent areas can assist by identifying this peaceful honey-yellow colored wasps of Guatemala. Whatever species they are, the photos of the team of FLAAR Mesoamerica are the first documentation for Alta Verapaz, and the most complete portfolio of helpful photos for this species for Guatemala.

Map by Byron Pacay.

← Wasp nest

Fig. 20.

References Cited and additional Suggested Reading

There are hundreds and hundreds of articles on wasps of the Americas plus lots of excellent books, but the publications that I have on my desktop in PDF format are what help me the most.

CARPENTER, James Michael, GARCETE Battett, Bolivar Rafael and Joseph Aledander FREIRE
2012 Las Vespidae (Hymenoptera: Vespoidea) de Guatemala. Chapter, pages 269-279 in *Biodiversidad de Guatemala*, Volumen 2, Universidad del Valle de Guatemala.

Available as helpful download from ResearchGate and elsewhere.

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1997 Morphological Caste Differences in the Neotropical Swarm-Founding Polistine Wasps: *Parachartergus smithii* (Hymenoptera: Vespidae). *Journal of the New York Entomological Society*, Vol. 105, No. 3/4 (Summer - Fall,1997), pp. 129-139.

Acknowledgements

The itinerary of this field trip was organized by Senaida Ba and her husband Franklin Xol, since they both live in Senahu. Franklin is a Tuk Tuk driver when not working for FLAAR Mesoamerica, so for this field trip the team rented a Tuk Tuk and Franklin drove them. Byron Pacay assists on all field trips plus he is a good photographer with our Google Pixel 8 Pro. Byron also prepares the highway maps to show where and at what hour we stopped to photograph each wasp nest.

We sincerely appreciate the assistance of the Q'eqchi' Maya guides that told us which areas had wasp nests with edible honey.

Vivian Hurtado is research project manager for FLAAR Mesoamerica. She works from her home office and from the office of FLAAR Mesoamerica.

If you are a wasp entomologist we would welcome your suggestions for genus and species of the wasps that we have been photographing. Please contact Vivian Hurtado via email: flaar-mesoamerica@flaar.org You can write in English o en español. Please also include Sergio Jerez, botany-zoology@flaar.org