Golden-Yellow-Brown Wasps, Genus *Polistes*, Panal 4d, March 17, 2025

Photos by Javier Archila and Norma Cho, Aerial Photos by Drone Pilot Javier Archila
Text by Nicholas Hellmuth, Panal 4d

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

Panal 4d, Santa Ana, Candelaria, 12:15pm

I love golden-colored wasps and yellow-colored wasps of Guatemala. They deserve their own FLAAR Reports to show enough images that a wasp entomologist can let us know what species of genus *Polistes* is in each photo.

Panal 4d was found during a several-day field trip in the mountains and cloud forests of the Municipio de Senahu, Departamento de Alta Verapaz, Guatemala. Several of the Maya-language team at FLAAR Mesoamerica come from Senahu and speak Q'eqchi' Mayan language. To accomplish field work in remote areas it is essential to have local Maya people on your field work team.

One of our goals is to document the biodiversity of genera and species of wasps native to Guatemala and to provide photos for entomologists and students. At the end of this FLAAR Reports we show the map of where this wasp nest was found.

Fig. 1. I estimate that most of the "empty" cells actually have wasp eggs with several cells in a vertical row that seem to have recently hatched future wasps. Photo by Javier Archila.

To identify the genus and species of each wasp it helps to have photographs in profile, frontal and views from above.

Cropped by Hellmuth and processed in RAW mode from photo by Javier Archila.

Fig. 2.

Two of the wasps are out of focus but the wasp on top is posing for a helpful profile view.

If you ask Google do Polistes wasps make honey, A1 Overview says “No, Polistes wasps do not make honey” yet there is a video showing a person eating the honey from a nest of a European paper wasp, *Polistes dominula* (Paper Wasp Honey Taste Test, https://www.youtube.com/watch?v=g4DD2B6A4JM Plus there are several articles on Polistes wasps that mention the word honey. I cite two in the References Cited at the end of this report.

Fig. 3.

Photo by Javier Archila.

Now the wasps across the middle are in focus. It is essential to see the pattern of colors on the thorax.

Photograph by Javier Archila, with Sony camera.

Fig. 4.

Photo by Javier Archila. On the following page I show a closeup of the wasp that is in focus.

I estimate that these wasps do make honey but to know for sure it will be necessary to look inside the nests later in the year and see whether spheres of honey can be found.

Fig. 5.

Fig. 6. Photo by Javier Archila cropped, processed and rotated by Nicholas Hellmuth.

Fig. 7.

Helpful photo by Javier Archila allows you to see the different colors of the hind legs and the antennae.

Carpenter, Garcete and Freire 2012 list nine species of Genus *Polistes* in Guatemala (Appendix 1, page 279):
Polistes apicalis de Saussure 1858, different pattern on abdomen. Listed by Portal de Biodiversidad de Guatemala for Departamento de Guatemala and Alta Verapaz.
Polistes canadensis canadensis (Linnaeus 1758), listed for Huehuetenango and Solola.
Polistes carnifex carnifex (Fabricius 1775), more golden, especially wings. Listed for Guatemala, Izabal, Peten, Jutiapa, Chimaltenango and Solola.
Polistes dorsalis neotropicus Bequaert 1940, different pattern on abdomen. Departamento de Guatemala.
Polistes franciscanus Richards 1978, wings pale yellow not dark gold, abdomen not same as wasp we photographed. Listed for Peten and Alta Verapaz.
Polistes instabilis de Saussure 1853, many similar patterns of color but its antennae are completely golden with no black. That said, another photo on https://www.inaturalist.org/taxa/300637-Polistes-instabilis *Polistes major major* Beauvois 1818 has the same antennae as the wasp we photographed. But wings are more golden and design on thorax is different than in our photos. Listed for Guatemala, Chimaltenango, Peten, Quiche, Sacatepéquez, Baja Verapaz, Alta Verapaz, Jutiapa, Zacapa, Izabal.
Polistes oculatus Smith 1857. Some photos in iNaturalist are identical and others are totally completely different. Not listed anywhere for Guatemala in the Biodiversidad de Guatemala.
Polistes pacificus Fabricius 1804, top of head and thorax and beginning of abdomen are solid black (with a few yellow patterns). Not yet in the map for Guatemala

So, most likely *Polistes oculatus* or *Polistes instabilis*. Best if a wasp entomologist can kindly help us document the correct name.

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.

There are hundreds of scientific articles on wasps of the Americas, and several of the genera here also occur in Europe and elsewhere. An entomologist and a Department of Biology will have huge databases of articles, but I cite two articles that suggests to me that wasps of genus *Polistes* do indeed make honey (keeping in mind there are many definitions of this sugary substance).

HUNT, James H., ROSSI, Anthony M., HOLMBERG, Nels J., SMITH, Samuel R. and William R. SHERMAN

1998 Nutrients in Social Wasp (Hymenoptera: Vespidae, Polistinae) Honey, *Annals of the Entomological Society of America*. 91(4):466-472. Available as easy download on ResearchGate.net

PREZOTO, Fabio and Nivar GOBBI

2003 Patterns of honey storage in nests of the neotropical paper wasp *Polistes simillimus* Zikán, 1951 (Hymenoptera, Vespidae). *Sociobiology*, v. 41, n. 2, p. 437-442,

Drawing by Byron Pacay on Google Earth Pro satellite view.

The town of Senahu is up at the top left. This is where we spent each night.

Fig. 8.

Wasp nest 4d was photographed circa 12:15pm in the same location as lots of other wasp nests, south of the town of Senahu, on the highway downhill towards Teleman, in the river valley far far below (not shown because it was not close).

In the following photo we show the complete route of March 17th, from the town of Senahu, south, on the highway to Teleman. But all the wasp nests were in the mountain area, not down in the valley.

Crop from the map of Byron Pacay with his text and route placed on top of Google Earth Pro satellite view. Google Earth Pro is slightly better than the normal Google Earth, but you need to download the access on-line (at no cost).

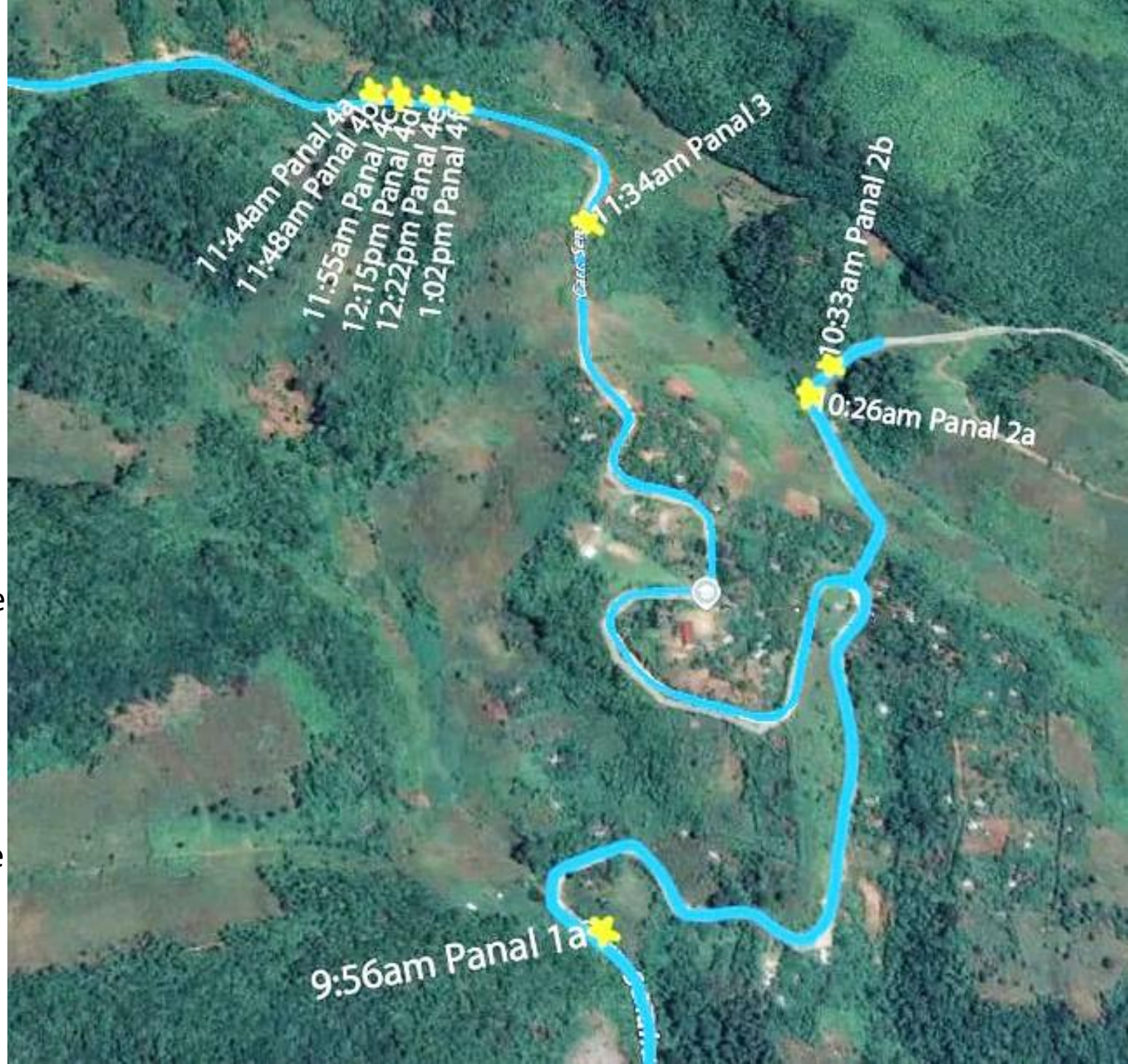

Fig. 9.

FLAAR Mesoamerica Field Work Research Team:

Nicholas Hellmuth, field trip concept organizer and photographer
Byron Pacay, helps packing the equipment then as driver (while Nicholas drives, then Byron is the co-pilot).
Norma Cho Cu, organizes all the equipment and packing, and photographer
Senaida Ba Mucu, field trip assistant for over a decade.
Franklin Xol, the husband of Senaida who works in the office and also field trips
Javier Archila, lead photographer, video photographer, and drone pilot (from Coban, Alta Verapaz).
The two children of Senaida and Franklin came in the vehicle from Guatemala City to Senahu; then Fernanda stayed with her paternal grandmother. 10-month old Nicolas came along with her mother Senaida every day of both the pre-trip and the mid-March field trip.

Each day a local Q'eqchi' Maya individual comes along as a helpful guide, Manolo Mucu Chub worked with us the first morning (it began to rain after lunch). He also worked with the team all the following days.

The grandfather of Senaida Ba, Tomas Mucu Choc, assisted us on Wednesday. Domingo Ba Chub also assisted us on Wednesday. We brought a large selection of food for each family that welcomed us to their homes and surrounding property.

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, please contact Vivian Hurtado via email: flaar-mesoamerica@flaar.org You can write in English o en español. Please include Sergio Jerez, botany-zoology@flaar.org