

***INSTITUTE FOR STRATEGIC BIOSPHERIC STUDIES CONFERENCE CENTER
HUNTSVILLE, TEXAS***

Mantis/Arboreal Ant Species

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1.0 INTRODUCTION

This was a short observation trip Huntsville, Texas to perform the identification of the mantis and arboreal ant species found in the Institute for Strategic Biospheric Studies Conference Center (ISBSCC) with permission from George H. Russell who owned the 3,000 acres of preserved land dedicated to preservation of native gene pools and scientific research. ISBSCC is located at west of Huntsville, Texas next to Trinity River, under San Jacinto County.

My visit to ISBSCC was from August 18th to August 19th, 2017. Due to the limited availability of time, my collection concentrated mainly on specimens near Rain Lily Sanctuary from our living quarter. The living quarters is facing grassy fields in the front and Trinity River at the back.

2.0 COLLECTING

Arriving late on August 18th, Light trap was set up in front of the quarter using black light (Figure 2-1) and white sheets to attract praying mantis. The weather was breezy (<10 mph) and the temperature was around 85°F with high humidity.



Figure 2-1: Light Trap Setup

Many insects were attracted by black light but no mantis were observed (See Figures 2-2 to 2-5).



Figure 2-2: Moth



Figure 2-3: Mantidfly



Figure 2-4: Katydid



Figure 2-5: Moth

On second day early morning, an adult male mantis has been spotted on the sheet (See Figure 2-6).



Figure 2-6: Adult male mantis next to a large moth

Collecting methods were also performed by sweeping the grasses in front of the quarters using a butterfly net or by spotting the mantis on vegetation by eyesight unaided by any optical instruments. However, no praying mantis was spotted.

Effort was also given for locating any possible arboreal ants by observing any dried up twig or stem. No ants were observed residing within any hollow twig. However, a wasp-like ant was observed crawling along the column along the house which appeared to live in wooden structure (See Figure 2-7). The lone ant appear to have “hump-back” thorax, indicating the possibility of a queen ant.



Figure 2-7: Arboreal Ant

Walking along the wooden bridge connecting between the living quarters along the river side, a male praying mantis was located on a column (See Figure 2-8) next to a boat load-out area.



Figure 2-8: Adult male mantis

3.0 MANTIS AND ANT DESCRIPTION

3.1 Mantis 1



Diagnosis

The brownish gray body was slender with long wings, which extended beyond the tip of the abdomen. There were two circular, protuberant eyes.

Detailed Description

The triangularly shaped head had two large circular compound eyes that slightly bulged anteriorly with rounded, lateral margins. The frontal shield was transverse with a distinct subantennal ridge. The middle of the vertex was almost straight and carried three ocelli (one anteriorly and two in the posterior) in an isosceles triangular arrangement. The antenna was long, exceeding 20 mm and dark brown.

The prothorax was elongated and slender while the metazona was about three times the length of the prozona with scattered small tuberculates on the lateral margins of both the prozona and metazona. The pronotum had a distinct expansion at the supracoaxal with a transverse sulcus separating the prozona from the metazona. The pronotum was brown and smooth with an obvious mid-dorsal carina on the metazona. The ventral portion of the prothorax was flat and smooth with a light brownish green hue. The fore coxa had about five (5) dark pointed spines with several smaller teeth between the distinct spines on the anterior edge. The posterior edge had a scattering of smaller teeth. There was a very dark patch on the coxae joint. The fore femur had four (4) external spines, four (4) discoidal spines, and fifteen (15) internal spines. Both the femora and dorsal coxae had darker brown stripes. There was no obvious stigma or black spot on any claw groove or the trochanter. The fore tibia had thirteen (13) internal spines and ten (10) external spines. The apical claw was not considered a spine. The mid and hind femora and tibiae were smooth and darker brown near the femur/tibia joint.

The tegmen was long and narrow. It extended beyond the last segment of the abdomen. There were loose, dark spots speckled on the tegmen that was almost hyaline in appearance. A distinct black stigma spot near the apex of the costal region was noted on each tegmen.

The hindwing was wider than the tegmen yet almost the same length as the tegmen. The costal vein area was hyaline while the anal vein area had a dark brown smoky patch.

The abdomen was slender and elongated. There was no visible stripe or stigma present.

Measurements

Parameter		Measurements (mm)
Body length (head to tip of abdomen)		58
Pronotum	Width ⁽¹⁾	1.5-3
	Length	18
Fore femur		13
Fore coxa		9
Head	Width	6.5
	Depth	2.5
Tegmina length		39

Note:

1. Range from widest at supracoxal to narrowest along the pronotum.

Remarks

The large pair of wings coupled with a slender body and long antennae indicate that this specimen is capable of flight, which is an essential tool for males actively engaging in seeking females for pairing.

Conclusion

Adult male *Stagmomantis carolina*.

3.2 Mantis 2





Diagnosis

The body was brown in color, very elongated and slender with long, slender legs. The head was small and round. Two rather long and large pairs of wings were evident and capable of flight but did not extend beyond the tip of the abdomen.

Physical Description

The body of the specimen was light brown. The head, small and much wider than tall, was compressed with an obvious ridge next to the apex of both eyes. The eyes were round and extended more laterally than anteriorly, with rounded lateral margins. The antennae were long (20 mm) and brown.

The prothorax was elongated and brown. The pronotum was smooth with a slight expansion at the supracoxal. The metazona was more than thrice the length of the prozona, although light brown in color except for the ridge which was darker brown. The forelegs were brown in color. The fore coxa was smooth without any visible spine, but a visible lobe was present on the anterior edge near the femur. The fore femur was slightly longer than the fore coxa. Spines count was challenging due to the extremely fine and fragile nature of the dead specimen, and due to the lack of proper magnifying device along from two frail specimens, the number is just a rough estimate. Fore femur has about 3 internal spines with few rather inconspicuous spines (might be of broken spines prior to the demise), with 3 external spines and 4 discoidal spines. The fore tibia was short and only about one third the length of the fore femur, and with just two internal spines closer towards to tarsus and no external spines. The tarsus was long and at least twice the length of the fore tibia.

The tegmen was long and light brown. The costal area was brown while the costal and subcostal veins were darker brown. The rest of the tegmen was hyaline with a light brown hue and very light brown smoky blotches (see Figure 5-24). There were visible brown veins on the discoidal area while the tegmen lacked any visible stigma. The hindwing was wider than the tegmen but slightly shorter. The costal vein was continuously dark brown to the caudal region with the rest hyaline in nature with a light brown hue. There were visible

brown veins on both the discoidal and anal area. The wings did not extend beyond the tip of the abdomen.

The middle and hind femora and coxae were long. The hind legs extended beyond the tip of the abdomen when extended back. The abdomen was very elongated and slim with visible cerci.

Measurements

Parameter		Measurements (mm)
		BMM1
Body length (head to tip of abdomen)		47
Pronotum	Width	1 - 1.5
	Length	13
Fore femur		8
Fore coxa		8
Head	Width	2
	Depth	1
Tegmina length		18
Hindwing length		22

Remarks

The large pair of wings coupled with a slender body indicates that the specimen is capable of flight, which is an essential tool for males actively engaged in seeking females for pairing. The male was found on the sheet attracted to a light source, further confirming its gender identity.

Conclusion

Adult male *Thesprotia graminis*

3.3 Ant

The specimen was not captured so the physical description is based on photo.

Head as broad and width, appear elongated. Orange head and black thorax. Two petioles, body long and slender. Gaster is black. Body length around 9-10 mm.

Conclusion

Pseudomyrmex gracilis, an arboreal ant that resides mainly in hollow twig, also called elongated twig ants.