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Insec(tc)ure*:

Are you insecure about your insect cures?

A UT Urban IPM Lab Newsletter for the Pest Management Industry

New World Army Ants, *Neivamyrmex spp.*

Karen Vail, UT Entomology & Plant Pathology

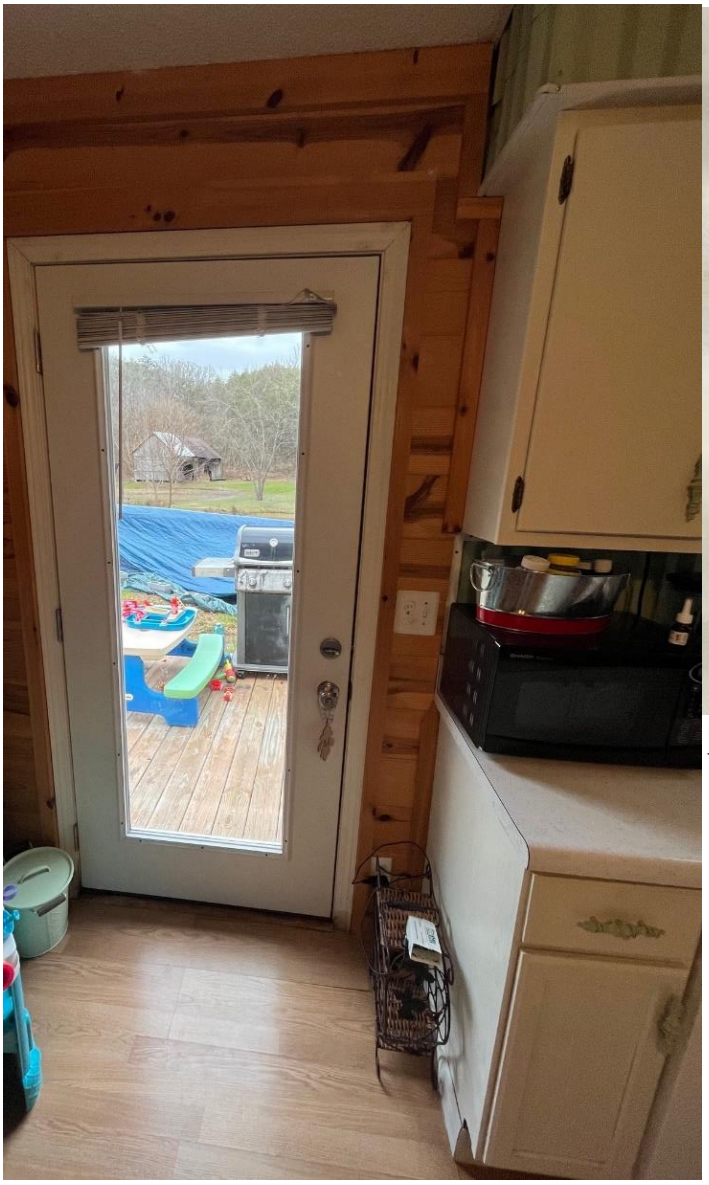

Figure 2. *Neivamyrmex* was seen from floor to ceiling along the right side of this door during January 2023. Credit: Gary Spears.

Figure 1. *Neivamyrmex* sp., new world army ant from Sevier County, TN. Credit: Gary Spears.

At the Smoky Mountain Pest Management Conference on January 18, 2023, Gary Spears of Tennessee Exterminators showed me an image of an ant from a Sevier County home which he later forwarded to me (Figure 1). These ants were found behind the wall from the ceiling to the floor on the right side of the kitchen door, coming out from behind the tongue and groove wood paneling (Figure 2).

Although I can't determine the species from this photo, I can identify it as *Neivamyrmex* or a new world army ant - not a genus you encounter every day. Browsing through the specimen submission records to my lab from 1997 to February 2023, I found that 19 of nearly 4100 submissions were either male or worker *Neivamyrmex* species. The only species identified were *N. nigrescens* (Figure 3) or *N. opacithorax (Figure 4)*.

Neivamyrmex carolinensis (worker Figure 5 and male Figure 6) is also present in the state, according to Snelling and Snelling (2007). Ants (Formicidae) of the Southeastern United States lists all three species as occasional stinging pests and *N. nigrescens* as an occasional nuisance.

I mentioned that I could identify this ant as *Neivamyrmex* but not to species, and this was based on gestalt (the overall appearance) because I was familiar with this genus. If I had an actual worker specimen, I would have confirmed the presence of 12-segmented antennae; a two-segmented waist; frontal carinae close together not covering the base of the antennae; eyes very small, like ocelli, but no ocelli present; and the concave surface of the tarsal claw without a small tooth (MacGown 2003).

Figure 3. *Neivamyrmex nigrescens* worker. Credit: April Nobile *https://www.antweb.org/bigPicture.do?name=casent0102766&shot=p&number=1*

Figure 4. *Neivamyrmex opacithorax*. Credit: April Nobile https://www.antweb.org/bigPicture.do?name=casent0005334&shot=p&number=1

Figure 5. *Neivamyrmex carolinensis* worker. Credit: April Nobile https://www.antweb.org/bigPicture.do?name=casent0104130&shot=p&number=1

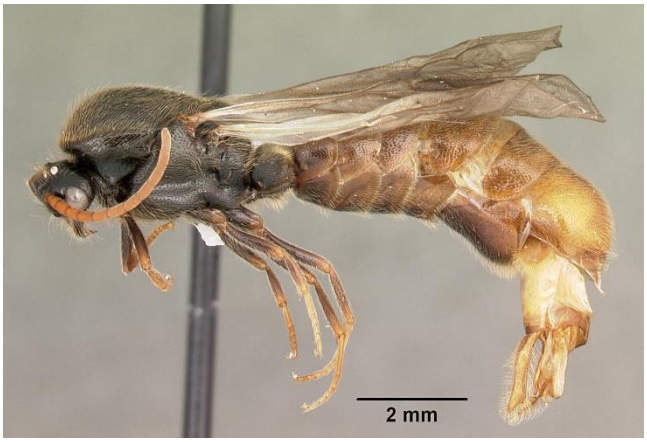

Figure 6. *Neivamyrmex carolinensis* male. Credit: April Nobile, https://www.antweb.org/bigPicture.do?name=casent0104129&shot=p&number=1

Rather than review the biology all three species, I'll use *N. nigrescens* as an example. Like other army ants, *N. nigrescens* has a nomadic and statary cycle. The colony goes into the nomadic phase when new workers emerge from pupae. At night, columns as long as nearly 300 ft. capture insects and raid ant nests before settling into a temporary site or bivouac before the sun rises. Bivouacs may include recently raided ant nest sites or natural cavities. While ants seem to be the primary food source, other insects also serve in this capacity. These army ants continue to raid each night until the larvae pupate, so for about 3 weeks. Each night they carried the larvae as they moved temporary nest sites. For the next two weeks or so, they'll stay at the same nest site (statary phase),

possibly under stones, in the ground or in an abandoned ant nest. Around homes, they may be found beneath basement floors or in and around foundation walls. Although raids may continue in the statary phase, the entire colony, which may contain 100,000s of members, does not participate. Occasionally *Neivaymrme*x are confused with fire ants because of their stinging ability, but these two species are easily distinguished. While workers of both species have a two-segmented waist and sting, fire ants, *Solenopsis* spp., have a ten-segmented antenna with a two-segmented club and *Neivamyrmex* have a 12-segmented antenna and no club.

Before the latest submission, I received worker *Neivamyrmex* from March – June and October - November. The June *Neivamyrmex* workers were found in a water intake valve of a washing machine. We suspected the ants had entered from the outside well. Gary's worker specimen was the first submitted in January. It's difficult to envision a colony remaining active throughout the Sevier County winter. More likely, brood production stopped as did the nomadic behavior. The colony may have relocated to the kitchen wall in the late fall or early winter because it was better protected from cold winter temperatures.

The first male *Neivamyrmex* sent to the UT Urban IPM Lab in the fall of 1997 was challenging to identify. The male was 10 – 11 mm long and looked more like a wasp than an ant. In fact, I was fairly new to my job and had asked more experienced faculty to help with this first male *Neivamyrmex* identification and they suggested a tiphiid wasp. But I wasn't satisfied that a wasp was the correct identification because I couldn't get the identification keys to work. Fortunately, I was asked to speak about fire ants at Mississippi State University, whose insect museum has one of the best ant collections in the southeast. I started pulling the drawers for the tiphiid wasps and could not find any specimens similar to the one I was trying to identify. So, since they had an outstanding ant collection, I took advantage of this opportunity and started pulling the ant drawers to learn more about ants. Lo and behold, there in front of me was a male *Neivamyrmex*. Although it's not unusual for the reproductive castes to be larger than the workers, as you see in Figure 6, this was incredibly confusing because the male had a one-segmented waist and the workers (Figures 3-5) had a two-segmented waist. No wonder I couldn't key out this specimen. I've since learned to recognize the winged males of this genus. Males are attracted to lights and thus catch the client's attention. The reproductive queens do not have wings, so aren't commonly encountered. But I now know that males of *N. carolinensis* fly from mid-May through the beginning of June*, N. nigrescens* fly mid-August to mid-November, and *N. opacithorax fly* from late August through the beginning of December. The males also have three apical teeth (two large teeth on the ends and a smaller one in the middle) on the subgenital plate (Figure 7).

Figure 7. *The Neivamyrmex* male's subgenital plate with three apical teeth (two large teeth on the ends and a smaller one in the middle).

Flights in homes often cause termite scares, but most people can see the one-segmented waist to distinguish it from a termite. Males soon die after an indoor flight. If *Neivamyrmex* colonies are found indoors during the warmer, active months, no management effort is often needed because the colony will disperse when they enter the nomadic stage. Cracks in the foundation or slab should then be repaired and other pest-proofing efforts undertaken to prevent re-entry. In the Sevier County case, the colony was treated with 1% Tempo Dust and no activity was found indoors one week later. Did the pyrethriod dust application kill all colony members, cause them to move to another area or did the colony enter the nomadic phase? As mentioned earlier, I doubt the colony continued to produce brood through the winter months; thus, it isn't likely that they entered the nomadic phase.

I hope I've enlightened you about another interesting ant pest. Remember the wasp-like males may be seen in the spring or fall flying to lights and the workers can sting so contact should be avoided.

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Insec(tc)ure is produced by:
Karen Vail, Ph.D., Professor,
Extension Urban Entomologist
Entomology and Plant Pathology
370 Plant Biotechnology Bldg.
2505 E J Chapman Drive
Knoxville, TN 37996-4560
ph: (865) 974-7138
email: kvail@utk.edu
web:
http://epp.tennessee.edu/people/directory/dr-karen-vail/
https://epp.tennessee.edu/urban-ipm/

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