

# *Tapinoma melanocephalum* (Hymenoptera: Formicidae), a new exotic ant in Mississippi

Joe MacGown<sup>1,2</sup> and JoVonn G. Hill<sup>1</sup>

<sup>1</sup>Mississippi Entomological Museum, Mississippi State University, Mississippi State, MS, 39762

**Corresponding Author: Joe MacGown**

*Tapinoma melanocephalum* (Fabricius) (Hymenoptera: Formicidae), commonly called the ghost ant, is an exotic tramp species thought to have originated from tropical regions of Africa or Asia (Smith, 1965). Due to its spread by commerce, it is now widespread in subtropical and tropical regions around the globe. However, it also has become established in greenhouses and other buildings in temperate regions (Nickerson and Bloomcamp, 2006). In the United States, the ghost ant is well established in Florida, where it is ranked as one of the top three urban pest ants in the state along with the red imported fire ant, *Solenopsis invicta* Buren, and the crazy ant, *Paratrechina longicornis* (Latreille) (Klotz et al., 1995), and it is also considered to be a significant pest in Hawaii (Nickerson and Bloomcamp, 2006). This species was discovered in Texas in the mid 1990's, when it was thought to have been accidentally introduced with plants shipped from Florida (Chenault, 1997). Although this species has been found in some northern states in the United States and even in Winnipeg, Manitoba, Canada, these occurrences were in greenhouses or in other heated structures (Nickerson and Bloomcamp, 2006).

Here, we report the first record of *T. melanocephalum* in Mississippi. Specimens were collected by Hill and MacGown on 30 April 2008 at an outdoor nursery specializing in palm trees (Arecaceae) in Bay St. Louis, Hancock County, Mississippi. This particular nursery was known to import plants from Florida, and our investigation of this nursery (and others in the region) was based on the idea that it had a higher probability of harboring exotic species from Florida, the state with the highest number of exotic ants (Deyrup et al., 2000). Therefore, it is likely that this species was accidentally introduced to the nursery with the plant material from Florida, as this species is known to

nest in bases of palm fronds (Harris, 2005). Many of the palm trees at the nursery were planted directly in the sandy soil on the property, which was open and adjacent to both natural and urban areas. *Tapinoma melanocephalum* workers were first observed as they foraged on the ground within two meters of the base of a large palm tree that was planted in the soil and on the tree itself. Workers were abundant and a series of specimens was collected, stored in 95% ethanol, and deposited in the Mississippi Entomological Museum. Scattered foraging workers were also found in several other areas of the nursery. It is not known whether this species is established in the region, but based on its relative abundance at this site, and the generally subtropical climate of the Gulf Coast counties, it is possible that this species could become established in the area.

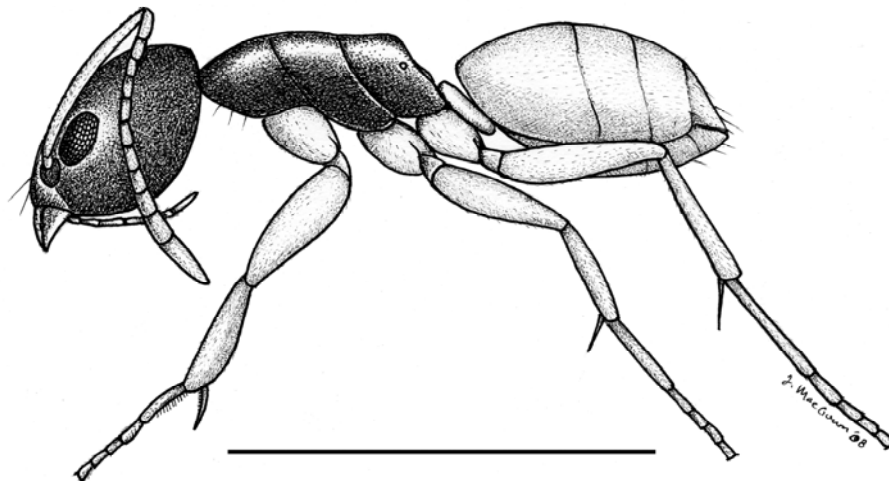
In addition to the ghost ants, several other species of ants, all of which were exotic, were collected at the site, including *Brachymyrmex patagonicus* Mayr (the dark rover ant), *Paratrechina longicornis*, *Hypoponera opaciceps* (Mayr), *Solenopsis invicta*, and *Pheidole moerens* Wheeler. With the exception of *P. longicornis*, these introduced species are known to be well established in southern Mississippi. *Paratrechina longicornis*, however, is much less frequently found in this area, and it is possible that this population was also accidentally introduced with plant material from Florida.

Ghost ants are known to nest both indoors and in disturbed areas outdoors. They have polygyne, unicolonial colonies that vary from having only a few workers to thousands per nest. They are opportunistic colonizers, and queens from one colony may be dispersed in smaller subcolonies, with workers freely being exchanged between different nests (Harris, 2005). They nest in a variety

of places outdoors, some of which are temporary, including plant stems, dried grass clumps, debris, dead tree limbs, in plant pots, under objects on the ground, under bark, at bases of palm fronds, or other similar situations, and indoors they nest in wall voids or potted plants (Harris, 2005; Nickerson and Bloomcamp, 2006). This species does not sting or bite, but is considered a nuisance pest in houses and businesses because it invades food stores, especially sweet substances such as sugar and syrup (Smith, 1965).

*Tapinoma melanocephalum* workers (Figure 1) can be easily identified by their extremely small size and distinctive coloration. Workers are

monomorphic and are only 1.3 to 1.5 mm in total length. They are bicolored with the head and mesosoma being dark brown to blackish brown and appendages, petiole, and gaster being milky white. Additional characteristics include their having 12-segmented antennae, lack of spines, lack of a stinger, lack of large erect hairs on the body, and the lack of a protruding node on the petiole. The petiole is often hidden by the gaster, which often overlaps it. These minute ants are difficult to detect because of their diminutive size and partially light coloration



**Figure 1. Profile view of a *Tapinoma melanocephalum* worker. Scale bar equals 1.0 mm.**

#### **ACKNOWLEDGEMENTS**

This research was supported by Mississippi Agricultural and Forestry Experiment Station State Project MIS-311080, the USDA-ARS Areawide Management of Imported Fire Ant Project (Richard L. Brown, P.I.), and the Bureau of Plant Industry.

#### **LITERATURE CITED**

- Chenault, E. A. 1997. Ghost ants now in Texas. Texas A&M Agriculture News. <http://agnews.tamu.edu/dailynews/stories/ENTO/Feb2697a.htm> (accessed 6 May 2008).
- Deyrup, M., S. Cover, and L. Davis. 2000. Exotic ants in Florida. Transactions of the American Entomological Society 126 293-

325.

Harris, R. 2005. Invasive Ant Risk Assessment: *Tapinoma melanocephalum*. A report for Biosecurity New Zealand. 59 pp.

Klotz J. H, J. R. Mangold, K. M. Vail, L. R. Davis Jr., and R. S. Patterson. 1995. A survey of the urban pest ants (Hymenoptera: Formicidae) of peninsular Florida. Florida Entomologist 1: 109-118.

Nickerson, J. C. and C. L. Bloomcamp. August 2006. Featured Creatures: *Tapinoma melanocephalum* (Fabricius) (Hymenoptera: Formicidae). [http://creatures.ifas.ufl.edu/urban/ants/ghost\\_ant.htm](http://creatures.ifas.ufl.edu/urban/ants/ghost_ant.htm) Accessed 5 May 2008.

Smith, M. R. 1965. House-infesting ants of the Eastern United States: Their recognition, biology, and economic importance. United States Department of Agriculture, Technical Bulletin No. 1326: 1-105.