

The Tawny Crazy Ant, *Nylanderia fulva*, in Georgia

Benjamin Gochnour¹, Joe A. MacGown², and Daniel R. Suiter¹

¹University of Georgia, Department of Entomology, Griffin Campus, Griffin, Georgia

²Mississippi Entomological Museum, Mississippi State University, Department of Biochemistry, Molecular Biology, Entomology, and Plant Pathology

The tawny crazy ant (TCA), *Nylanderia fulva* (Mayr), is a growing economic, ecological, and nuisance pest in the southeastern United States (Figure 1). Despite the importance of this species, its specific identity was not confirmed until 2012 (Gotzek et al. 2012), before which time it was referred to by a variety of other scientific names (*Nylanderia pubens*, *N. sp. near pubens*, *Paratrechina pubens*, *Paratrechina* sp.) and common names (Caribbean crazy ant and Raspberry crazy ant). Similar to the invasive Argentine ant, *Linepithema humile* (Mayr) (Figure 2), the tawny crazy ant is a supercolonial species native to South America. The earliest report of the tawny crazy ant in the United States is from Texas in 1938 (Trager 1984), but apparently it was not established there at that time. Records dating from around 2000 from Texas likely represent a recent, separate introduction (Meyers 2008). It is unclear when TCAs first arrived in Florida due to confusion about its identity in comparison to *Nylanderia pubens*, which is also known from Florida. Regardless, TCAs have been in Florida at least as long or longer than the recent introduction into Texas.

Differentiating the Tawny Crazy Ant from the Argentine Ant.

The tawny crazy ant's biology and general visual appearance, to the untrained eye, are similar to the Argentine ant. While the tawny crazy ant was first detected in Georgia in 2013, the Argentine ant, commonly known as the "sugar ant," has been established in the U.S. for more than 100 years.

A few important traits can help differentiate these two pest ants without the help of an ant expert. Tawny crazy ant workers are small, orange to reddish-brown, hairy ants. Under magnification they have fine hairs covering much of the body and less numerous larger, stiff, erect hairs, often present in pairs (Figures 1 and 3). Argentine ant workers are dark brown and under magnification lack erect, visible

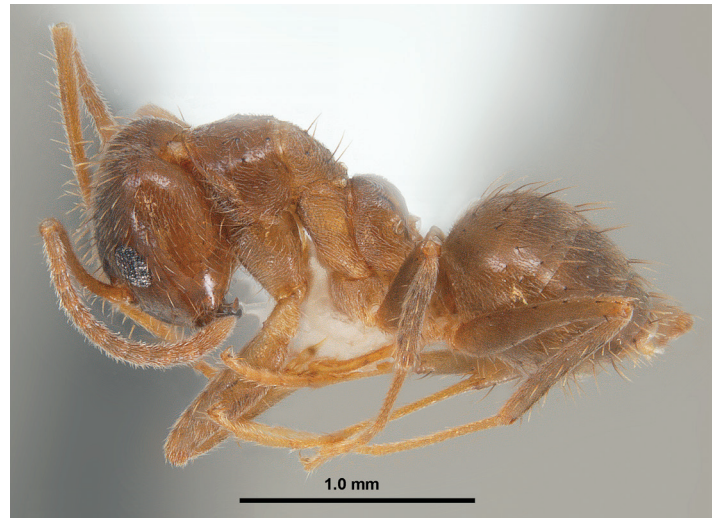


Figure 1. Tawny crazy ant, *Nylanderia fulva* (Mayr). Exotic, invasive ant native to South America; first Georgia discovery in August 2013 (Albany, Dougherty County); orange to reddish-brown; 2.0-2.5 mm (1/12-1/10 inch) and all ants the same size; entire body and legs with numerous stiff, elongate setae (hairs) and dense pubescence; foraging columns move erratically, trails not as well-defined as those in the Argentine ant (Figure 2); forage into tree canopy to tend honeydew producers; multiple queens per colony (polygynous) resulting in large super-colonies. Photo: J. A. MacGown



Figure 2. The Argentine ant, *Linepithema humile* (Mayr). Exotic, invasive ant native to South America, first discovered in the U.S. in the late 1800s; the most widely-distributed ant pest in the southeast U.S., commonly known as the "sugar ant"; dark brown; 2.2-2.6 mm (1/12-1/10 inch) and all ants the same size; body lacks erect hairs; foraging columns move in relatively direct, well-defined straight lines; forage into tree canopy to tend honeydew producers; multiple queens per colony (polygynous) resulting in large super-colonies. Photo: D. R. Suiter

hairs giving it a bald appearance (Figures 2 and 3). Trails of the tawny crazy ant are fast moving and erratic, and are often accompanied by a large number of dead workers in corners and along walls (Figure 4); trails of Argentine ants lack the presence of numerous dead workers. Both tawny crazy ant and Argentine ant workers tend honeydew producing insects, so trails of both species can be seen on the bark of trees as they move from ground nest sites into the canopy of the tree to collect the sweet, sugary honeydew.

From 2009 to 2014 the tawny crazy ant was reported in Alabama, Louisiana, Mississippi, and Georgia (Hooper-Bui et al. 2010, Klotz et al. 1995, MacGown and Layton 2010). It is unclear whether these introductions are from Florida, Texas, or South America. It is found primarily in states bordering the Gulf of Mexico because it is thought to have entered the U.S. accidentally through a maritime port(s) of entry.

The tawny crazy ant was detected for the first time in Georgia in August 2013 from a site in Albany, Dougherty County. As of August 2014 it had been reported from numerous locations in Camden and Glynn counties, Georgia. It is suspected that the ants were transported from Florida, where the species is widespread. For a current list of infested U.S. counties see: tinyurl.com/knf5gjk.

Biology. Tawny crazy ant colonies are typically found nesting in and under rotting wood, in soil and leaf litter, in and under various types of man-made and natural debris, landscape objects, under mulch and bark, in potted plants, in vehicles, and in structures (Figure 5). Colonies typically consist of multiple queens that share the reproductive responsibility of the nest, a trait that allows colonies to achieve large populations of worker ants.

Tawny crazy ants spread by a process called budding. Budding occurs when one or more queens from a colony moves, often aided by people, to an adjacent area outside the range of the parent colony. Movement commonly occurs in potted plants, automobiles, or yard debris. Budding allows TCAs to build large populations in neighboring areas. Queens have never been observed flying, and thus budding would typically inhibit dispersal over long distances without the inadvertent aid of humans.

In areas where the TCA is well established, the number of worker ants can be in the millions. These colonies can occupy wide swaths of land. In addition to being an enormous nuisance, such high densities can cause other problems, such as damage to electrical equipment and minor structural damage to buildings and vehicles (Drees 2009, MacGown and Layton 2010, Meyers 2008, MacGown personal observation). In natural habitats the number and density of tawny crazy ants may result in a decline in the number of native ant species as well as a reduction in the number of vertebrates (LeBrun et al. 2013). Ecologically, this phenomenon can negatively impact the integrity of local plant and animal communities. Workers do not have a sting but can bite and spray small amounts of formic acid, a chemical that can irritate skin and eyes.

Dead ants can easily accumulate in hundreds of thousands around buildings and in yards (Figure 4). Reports of such high numbers of dead ants have been described as looking like a drift of dead ants.

Control of the tawny crazy ant is similar to control of the Argentine ant, and includes labeled applications of liquid sprays directly to trailing ants and nest sites--i.e., concentrations of workers, brood, and queens. Baits are also used, but due to colony size and distribution, baits may be slower than liquid sprays at immediately alleviating this pest's nuisance status.

Movement of tawny crazy ants into un-infested areas is aided by human beings. Because the tawny crazy ant is commonly found nesting in and amongst human debris and piles of refuse and other materials stored outdoors (Figure 5), it is important, in conjunction with chemical treatments, to maintain a tidy property free of excessive debris and potential nest sites. If this entails maintaining and cleaning the outside environment in an area where the ant is already present, it is critical that infested debris from one location is not moved to another; otherwise the problem will become worse. Prior to debris removal, it is important that all items be ant free.

Report Findings of the Tawny Crazy Ant. Should you find what you think to be a tawny crazy ant infestation in Georgia, contact your local extension agent by calling 1-800-ASK-UGA1. It is important to collect a physical sample for confirmation of their identification.

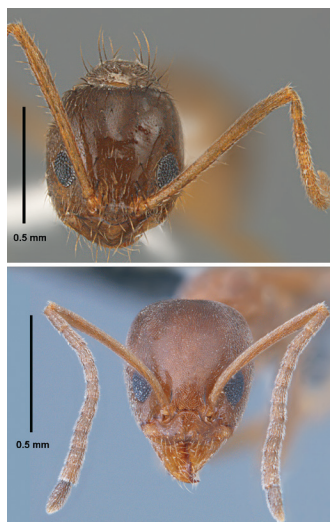


Figure 3. Under magnification, the numerous setae on the tawny crazy ant give it a hairy appearance (Top); Argentine ants lack similar hairs (Bottom). Photos: J. A. MacGown



Figure 4. When colonies are well established, large numbers of dead tawny crazy ants can be found on the ground in areas where the ant is known to forage and trail. Camden County, GA, August 2014. Photo: D. R. Suiter



Figure 5. The tawny crazy ant is adapted to living in a variety of habitats. A high reproductive potential (polygyne) combined with excessive debris provides the conditions required for the development of large ant populations. Photo: D. R. Suiter

References

- Drees, B. M. 2009. Raspberry crazy ant – a new threat to nurseries. *American Nurseryman*. 209(11): 6-8.
- Gotzek, D., S. G. Brady, R. J. Kallal, and J. S. LaPolla. 2012. The importance of using multiple approaches for identifying emerging invasive species: the case of the Raspberry crazy ant in the United States. *PlosOne*. 7(9): e45314.
- Hooper-Bui, L. M., R. Strecker, X. Chen, D. Aguiard, and A. Miller. 2010. Super colonies of crazy ants in Louisiana, pp. 13-16. *In Proceedings of the 2010 Imported Fire Ant and Invasive Ant Conference, 19-22 April 2010, Little Rock, Arkansas.*
- 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*. 78: 109-118.
- LeBrun, E. G., J. Abbott, and L. E. Gilbert. 2013. Imported crazy ant displaces imported fire ant, reduces and homogenizes grassland ant and arthropod assemblages. *Biological Invasions*. 15: 2429-2442.
- MacGown, J. A. 2009. Ants (Formicidae) of the southeastern United States: *Nylanderia fulva*. http://mississippiantomologicalmuseum.org.msstate.edu//Researchtaxapages/Formicidae/genericpages/Nylanderia_fulva.htm. Accessed 21 September 2014.
- MacGown, J. A. and B. Layton. 2010. The invasive Raspberry crazy ant, *Nylanderia* sp. near *pubens* (Hymenoptera: Formicidae), reported from Mississippi. *Midsouth Entomologist* 3: 44-47.
- Meyers, J. M. 2008. Identification, distribution and control of an invasive pest ant, *Paratrechina* sp. (Hymenoptera: Formicidae), in Texas. Ph.D. dissertation, Texas A & M University, College Station.
- Trager, J. C. 1984. A revision of the genus *Paratrechina* (Hymenoptera: Formicidae) of the continental United States. *Sociobiology*. 9: 49-162.

The University of Georgia, Fort Valley State University, the U.S. Department of Agriculture and counties of the state cooperating. UGA Extension offers educational programs, assistance and materials to all people without regard to race, color, national origin, age, gender or disability. The University of Georgia is committed to principles of equal opportunity and affirmative action.