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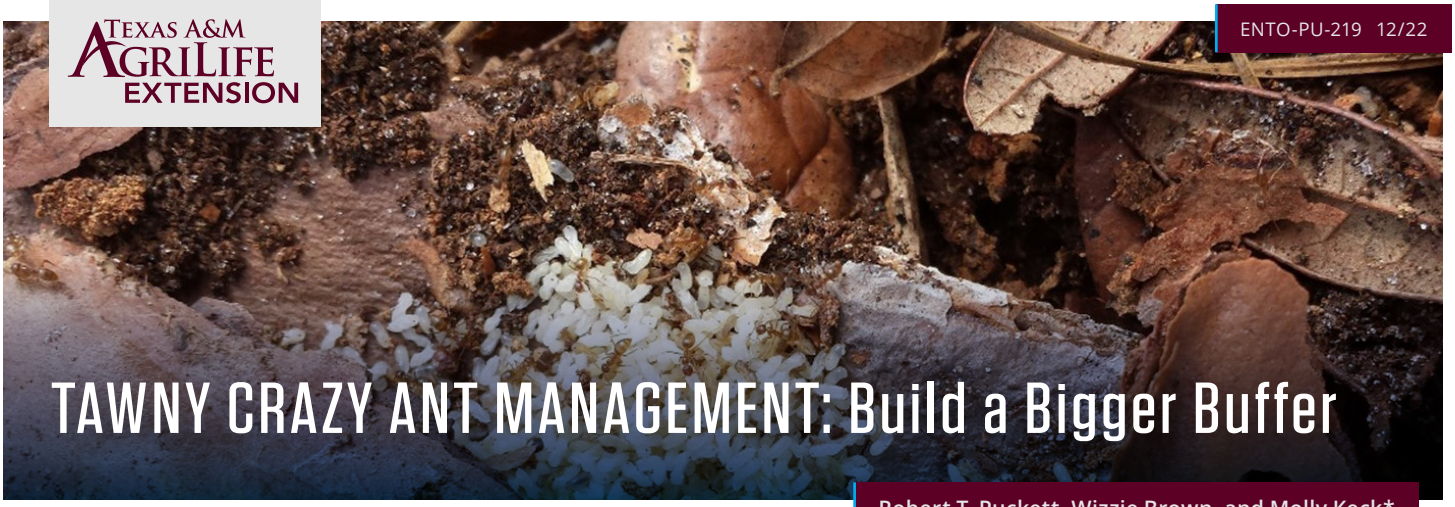

TAWNY CRAZY ANT MANAGEMENT: Build a Bigger Buffer

Robert T. Puckett, Wizzie Brown, and Molly Keck*

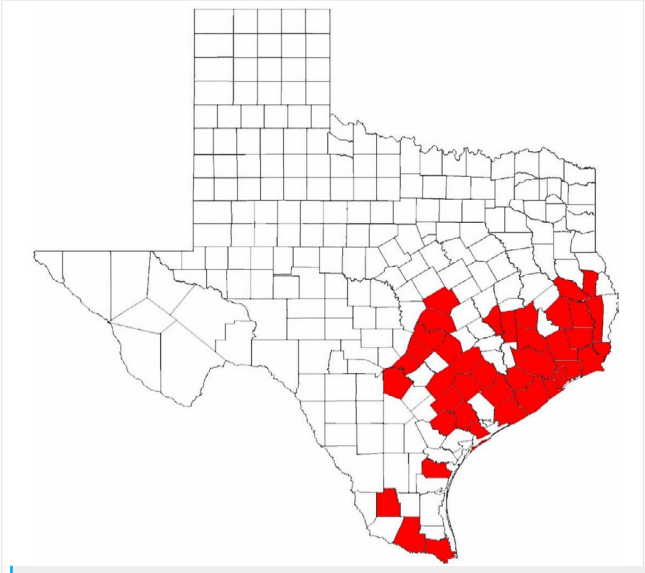

Figure 1. Distribution of Texas counties with at least one tawny crazy ant population as confirmed by the Rollins Urban and Structural Entomology Facility at Texas A&M University as of October 2022. Counties include Angelina, Atascosa, Bastrop, Bee, Bell, Bexar, Blanco, Brazoria, Brazos, Caldwell, Calhoun, Cameron, Chambers, Colorado, Comal, DeWitt, Fayette, Grimes, Fort Bend, Galveston, Goliad, Gonzales, Hardin, Harris, Hays, Hidalgo, Jasper, Jefferson, Jim Hogg, Lavaca, Liberty, Matagorda, Montgomery, Nueces, Orange, Polk, San Augustine, Travis, Tyler, Victoria, Walker, Wharton, and Williamson.

Since discovery in Harris County, Texas, in 2002, tawny crazy ants (*Nylanderia fulva* Mayr), also known in Texas as Rasberry crazy ants, have expanded their invasive range to include 43 Texas counties (Fig. 1). These ants have also been confirmed in Louisiana, Mississippi, Alabama, Georgia, and Florida. This rapid range expansion is the direct result of human-assisted movement as infested materials such as plants, construction materials, mulch, yard debris, hay bales, and recreational vehicles are transported. Currently, there is no federal quarantine in place to limit the movement of materials infested with tawny crazy ants (hereafter, TCA). As a result, it is imperative that people remain diligent with regard to the potential transport of these ants across Texas and the United States.

After introduction to a new location, these ants can reach extraordinary densities within a year or two and become significant pests of urban, rural, and unmanaged natural areas. In urban systems, TCA can quickly become key nuisance pests of residential and commercial structures and require significantly greater management effort than most species of invasive pest ants. As a result, professional pest management can be quite costly in terms of time and money and can require the application of significantly more contact insecticide than is required for other pest ants. As with other invasive pest ants (red imported fire ant, for example), TCA have been observed to infest and destroy electrical equipment in homes and vehicles (Meyers, 2008). They are also known to protect populations of honeydew-producing insects such as aphids and scale insects, utilizing the carbohydrate-rich honeydew these insects produce as a food resource. This can lead to high populations of honeydew-producing insects, which are often key pests of lawn and ornamental plants, as well as row-crop agricultural settings (Wetterer & Keularts, 2008).

*Texas A&M University AgriLife Extension

COMMON NAME CONFUSION

When first discovered in Texas, it was known that TCA belonged to the greater group of crazy ants of the same genus, but it was unclear which species of crazy ant Texans were dealing with. Quite organically, due to the fact that the person who first drew the attention of Texas A&M University entomologists to the infestation was a pest management professional named Mr. Tom Rasberry, the media began referring to these ants as "Rasberry crazy ants." The genus to which TCA belong (*Nylanderia*) has since been revised, TCA have been confirmed as *N. fulva*, and the Entomological Society of America has established "tawny crazy ant" as the official common name of this invasive species. It is important to keep in mind that "tawny crazy ant" and the former "Rasberry crazy ant" are synonymous common names.

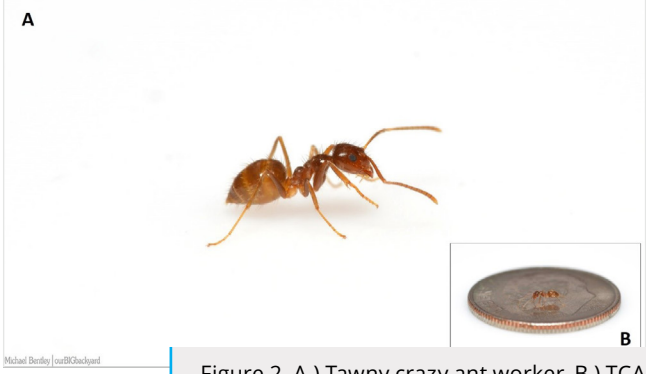

Figure 2. A.) Tawny crazy ant worker. B.) TCA worker on U.S. dime for size reference.
Photo Credit: Dr. Michael Bentley (National Pest Management Association).

IDENTIFICATION

Tawny crazy ant workers (Fig. 2) are relatively small (~2 millimeters long), and all workers are the same size. TCA queens (Fig. 3) are approximately twice as long as workers (MacGowan & Layton, 2010). The "tawny" in their common name refers to the orange-brown appearance of TCA. They have long legs and very long 12-segmented antennae. TCA are hairy, with a single node on their petiole (narrow "waist" between thorax and gaster), and they lack a stinger. Their appearance is very similar to many other species of ants in the genus *Nylanderia*. The most reliable morphological character that separates TCA from other closely related *Nylanderia* ants is the presence of two pairs of erect macrosetae (stiff hairs or bristles) on the mesothorax (the middle section of the thorax; Fig. 4). It is important to note that these ants are difficult to positively identify without high-resolution microscopy. As a result, if TCA are suspected, it is recommended to reach out to a trained

Figure 3. Tawny crazy ant queen.
Photo Credit: Dr. Michael Bentley (National Pest Management Association).

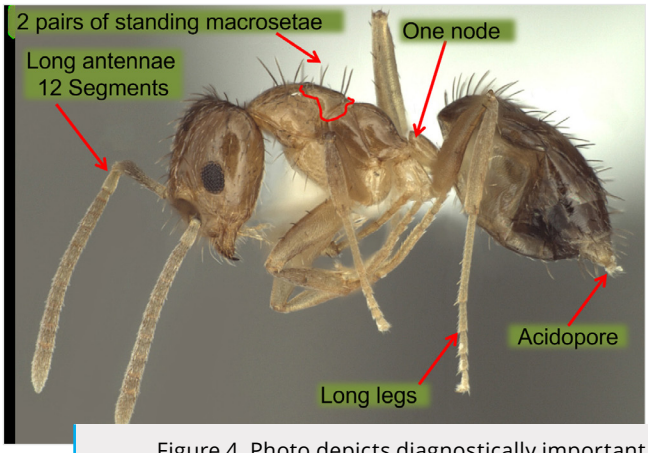

Figure 4. Photo depicts diagnostically important morphological characters necessary for identification.

entomologist to confirm their identification. In Texas, all newly discovered TCA infestations that are located in counties not highlighted on the map in Figure 1 should be reported to the Rollins Urban and Structural Entomology Facility at Texas A&M University (979-845-5855, *https://urbanentomology.tamu.edu/*) for continued monitoring of expansion of TCA in Texas.

BIOLOGY

TCA belong to a large group of ants that, in natural systems, utilize leaf litter on the forest floor as habitat. They are not mound-building ants, but exist in the layer of moist, decaying vegetative matter that is present under forest canopies. In turfgrass habitats, they tend to utilize the moist layer of thatch that exists above the soil surface and below living grass blades, as well as mulch- or leaf litter-covered landscape beds as nesting habitat (Fig. 5). They are also found nesting underneath potted plants, paving stones, wood debris, or any other objects that hold moisture underneath them. TCA are supercolony ants (Eyer et al., 2018), which means that unrelated workers and queens exist together without aggression and separation of resources.

Figure 5. Tawny crazy ants utilizing tree bark as a nest site. Note that under this one small piece of bark, there are hundreds of developing brood.

This fact, along with the numerous queens found in infestations, contributes to rapid local population growth of TCA. Such growth can contribute to local destruction of other ant species and arthropods as TCA outcompete them for food and other resources (Wang et al., 2016). In fact, since first documented by LeBrun (2014), many researchers have observed local declines in red imported fire ant population densities as a direct response to TCA population density growth and competition.

In 2015, Plowes et al. described a microsporidian parasite (*Myrmecomorba nylanderiae*) that was recently discovered infecting populations of TCA in Texas, Florida, and St. Croix. Such parasites had only previously been described from ants belonging to the genus *Solenopsis*, the genus to which red imported fire ants belong (*Solenopsis invicta*). Microsporidian parasites can convey negative health consequences to their hosts. As a result, they have been intensively investigated as a potential biological control organism for suppression of *S. invicta* populations (Jouvenaz & Ellis, 1986; Moser et al., 2000; Oi & Williams, 2002). In 2022, LeBrun et al. published results from field studies that suggested the introduction of *M. nylanderiae* to field populations of TCA resulted in significant population density reductions. While these investigations are in their early stages, there is some promise that *M. nylanderiae* may serve as an appropriate biocontrol organism for TCA. However, this parasite is not yet commercially available.

MANAGEMENT

The best management practice for TCA is to avoid introducing them to the vicinity of a property. Caution should be taken when selecting plants and growing media prior to moving such materials to the property. Inspect these materials for the presence of ants (and other arthropods) to avoid accidental movement of TCA.

If a population of TCA has spread to a property, it will likely be necessary to manage the population. While there are a variety of granular and gel baits that include TCA as a target species on their label, research has demonstrated that they are only marginally effective at long-term management of established TCA populations. Once applied, baits offer little to no residual protection from reinvasion. Many worker ants and queens are killed after feeding on baits, but after only a short period of time (2 to 4 weeks), ants from the larger population typically reinvade the area that was previously baited. Applying a non-repellent insecticide containing the active ingredient fipronil twice per year to the exterior perimeter of the structure may provide protection from TCA. If the TCA population is recently established and ant densities are low, this treatment may be adequate to prevent TCA from foraging on/in structures. However, if the structure to be protected is embedded within a dense and well-established TCA population, it will likely become necessary to extend the treated area around the structure to include the surrounding lawn and landscape with another contact insecticide that is labelled for use on tawny crazy ants. We refer to this approach as the “Build a Bigger Buffer” insecticide application technique. Research has shown that doing so can reduce the number of pesticide applications to once per quarter during the warm season in Texas, and this has become the standard approach of pest management professionals when attempting to manage TCA. Without experience and/or pesticide application training, this can be a daunting task for homeowners or novice pest management professionals. It is advised that people who find themselves dealing with TCA contact several pest management professionals to discuss cost and projected outcomes of professional pest management for TCA.

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