

## Tawny Crazy Ant (previously known as Caribbean crazy ant) *Nylanderia* (formerly *Paratrechina*) *fulva* (Mayr) (Insecta: Hymenoptera: Formicidae: Formicinae)<sup>1</sup>

Shweta Sharma, John Warner, and Rudolph H. Scheffrahn<sup>2</sup>

### Introduction

*Nylanderia fulva* was previously confused with *Nylanderia pubens* (Synonym: *Paratrechina pubens*). *Nylanderia fulva* is native to South America where the type locality is Brazil (Gotzek et al. 2012), whereas *Nylanderia pubens* may have originated from the St. Vincent Island and the Lesser Antilles (Trager 1984, Forel 1893). Samples of *Nylanderia pubens* collected in Coral Gables and Miami, Florida, date from 1953 (Trager 1984). Klotz et al. (1995) report infestations in Boca Raton, Homestead, and Miami and state that “in 1990, hundreds of these ants were found on the second floor of a large Miami hospital.” Deyrup et al. (2000) report that it “is abundant on the campus of the University of Miami, where it resembles a pale *Nylanderia bourbonica*, foraging on sidewalks and running up and down tree trunks.” L. Davis, Jr. (2003 personal communication) has seen these ants from Everglades National Park, Fort Lauderdale, Jacksonville, and Port St. Lucie. Specimens from Sarasota (F. Santana 2003, personal communication) were also confirmed. These ants seem to have large populations where they occur and are considered a pest in Colombia (Davis 2003, personal communication).

In the West Palm Beach area, two heavily infested sites were observed about three miles west of the Intracoastal Waterway. These sites are adjacent to a utility right-of-way

running to the port of Palm Beach (site of a Florida Power and Light electrical generating plant). The port may have been the point of debarkation of *Nylanderia pubens* into Palm Beach County. In 2002, a significant infestation of an ant was found around Houston (Harris County), Texas, that is being referred to by the media and others as the “Raspberry crazy ant” (*Nylanderia* nr. *pubens*) because it was discovered by a pest control operator named Tom Raspberry. The Texas ants were slightly larger than those from Florida, so the Texas ants were called *Paratrechina* sp. near *pubens* (MacGown and Layton 2010). However Gotzek et al. (2012) hypothesized that pest outbreaks attributed to *Nylanderia pubens* in most of the southern United States may actually be *Nylanderia fulva*. The ants from South Florida have not been studied but are believed to be *Nylanderia fulva* as well.



Figure 1. A tawny crazy ant, *Nylanderia fulva* (Mayr), worker. Credits: Lyle J. Buss, University of Florida

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2. Shweta Sharma; John Warner; and Rudolph H. Scheffrahn, Entomology and Nematology Department, UF/IFAS Extension, Gainesville, FL 32611.

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*Nylanderia pubens* and *Nylanderia fulva* workers are morphologically similar, but the two species can be differentiated by examining the paramere of males or by genetic comparisons (Gotzek et al. 2012). The paramere of *Nylanderia fulva* is sparsely pilose and uneven whereas the paramere of *N. pubens* has dense fringe of macrochaetae.

## Distribution

*Nylanderia fulva* has been reported from 27 counties of Florida and 27 counties of Texas. The ant infestation has also been reported from Louisiana, Mississippi, Alabama and Georgia.

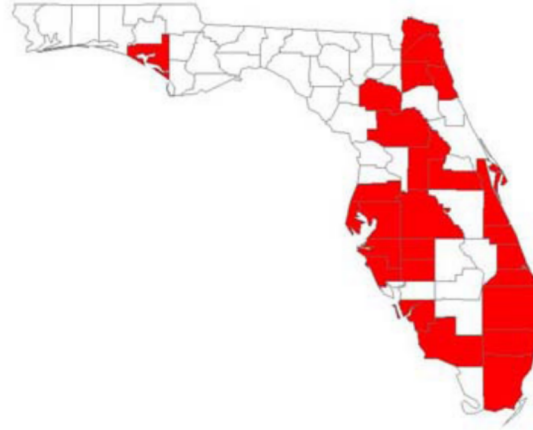


Figure 2. Tawny crazy ant, *Nylanderia fulva* (Mayr), distribution in Florida as of April 2014. Note: Recently confirmed infestation in Osceola County is not in the image.  
Credits: D. H. Oi, USDA-ARS

## Description

*Nylanderia fulva* is part of a group of ants referred to as “crazy ants” due to their quick and erratic movements.

The tawny crazy ant is a medium-small, monomorphic, golden-brown to reddish-brown ant. Workers are 2.0-2.3 mm in length, males are slightly larger (2.4-2.7 mm), and queens are ~4.0 mm or longer (MacGown and Layton 2010). The body surface is smooth and glossy, and covered with dense pubescence (hairs). After feeding, the ant’s gaster (rear portion of the abdomen) will appear to be striped due to stretching of the light-colored membrane connecting segments of the gaster. Antennae have 12 segments with no club. The antennal scape is nearly twice the width of the head. This ant has one petiolar segment and an acidopore is present at the tip of gaster in place of the stinger. Males have 13-segmented antennae (Zenner-Polania 1990) and both male and female reproductives have three ocelli on top

of their head, whereas ocelli are absent in workers. Other than the size of the reproductive females, other features are similar to the workers (Zenner-Polania 1990).

## Similar Ants

*Nylanderia guatemalensis* (Forel 1885), the Guatemalan crazy ant, has pale middle and hind coxae, shorter, stouter, and darker pilosity (Davis 2003, personal communication), and is notably smaller than *Nylanderia fulva*, total length 2.0 to 2.5 mm as compared to 2.6 to 3.0 mm for *Nylanderia fulva* (Trager 2004 personal communication). Deyrup et al. (2000) state that *Nylanderia guatemalensis* is a common species in Dade, Broward and Monroe Counties, but is less common farther north to Hillsborough and Indian River counties, and Deyrup (2002) adds that it is found in south Florida, north to Sarasota and Indian River counties.

*Prenolepis imparis* (Say 1836), the false or small honey ant, has a severely constricted hourglass-shaped alitrunk (mesosoma), and is found in north Florida, south into Orange County (Deyrup 2002).



Figure 3. The false or small honey ant, *Prenolepis imparis* (Say). Arrow shows constriction forming an hourglass shaped alitrunk.  
Credits: Tim Linksvayer, Carleton College



Figure 4. Tawny crazy ant, *Nylanderia fulva* (Mayr), workers tending brood.  
Credits: M. B. Layton, Mississippi State University, Mississippi



Figure 5. Profile view of *Nylanderia fulva* (Mayr), worker.  
Credits: J. A. MacGown. Mississippi State University, Mississippi



Figure 6. Profile view of *Nylanderia fulva* (Mayr), male.  
Credits: J. A. MacGown. Mississippi State University



Figure 7. Profile view of *Nylanderia fulva* (Mayr), queen.  
Credits: J. A. MacGown. Mississippi State University

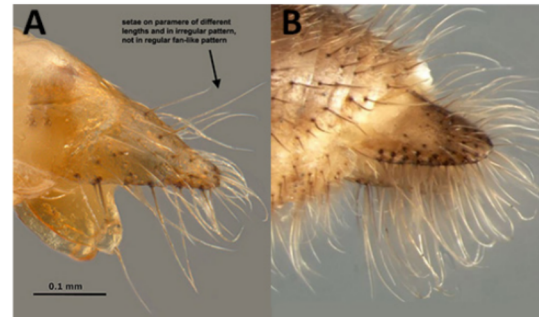


Figure 8. Male paramere of *Nylanderia fulva* (A) and *Nylanderia pubens* (B). Note the sparse and uneven setae on A, and dense fringe of setae on B.

Credits: A by J. A. MacGown. Mississippi State University, Mississippi. Photograph B is modified from Gotzek et al. (2012)

## Foraging and Feeding

*Nylanderia fulva* is omnivorous (MacGown and Layton 2010). As ambient temperatures increase (20°C), foraging trails become several ants wide (Sharma et al. 2013a). Colonies consist of a large number of ants with more than one queen (polygyne) and are polydomous (nesting in several locations). *Nylanderia fulva* nests occur in leaf litter, soil, rotten logs, under potted plants, and along underground electrical conduits. MacGown and Layton (2010) reported that *Nylanderia fulva* often occur in huge numbers and display supercolony characteristics such as yellow crazy ants, *Anoplolepis gracilipes* Smith (Hymenoptera: Formicidae), Argentine ants, *Linepithema humile* (Mayr) (Hymenoptera: Formicidae), and big headed ants, *Pheidole megacephala* (F.) (Hymenoptera: Formicidae), where multiple, interconnected nests could be hundreds of kilometers long (Giraud et al. 2002).

Observation of *Nylanderia fulva* in South Florida suggests that populations of this ant grow explosively and displace other ants within these epizootics. Infestations of these super colonies occupy large tracts such as golf courses or whole neighborhoods. Ants nest in and under rocks, logs, and other debris in overgrown lots or natural areas. These nesting areas are often hundreds of meters from foraging sites making it difficult or impossible to treat because of property ownership boundaries. As quickly as populations appear, they also suddenly disappear. Modest permanent populations are not a trademark of transient species. This “boom or bust” population pattern for *Nylanderia fulva* has also been observed in the West Indies (Wetterer et al. 2014)

*Nylanderia fulva* made shelters on the branches and trunks of magnolia trees and southern red cedar trees. In each tree, when the shelters were broken apart, tuliptree scales

and juniper aphids were exposed, respectively (Sharma et al. 2013b). They are also attracted to sweet parts of plants, including nectaries and over-ripe fruit.



Figure 9. Intact (right) and broken (left) carton shelters showing tuliptree scale (*Toumeyella liriodendri* (Gmelin)) on a magnolia (*Magnolia grandiflora* L.) branch.

Credits: Eileen A. Buss, University of Florida

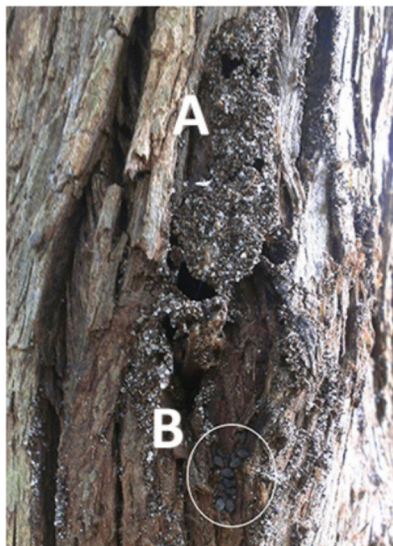


Figure 10. Carton shelters on the bark of a southern red cedar (*Juniperus silicicola* (Small)) tree. Intact (A) and broken carton shelters (B) showing juniper aphids (*Cinara juniperivora* (Wilson)).

Credits: Shweta Sharma, University of Florida

## Pest Status

*Nylanderia fulva* can be a nuisance. Huge number of workers in infested areas can make human activities uncomfortable and difficult (MacGown and Layton 2009). Pest control operators report infestations of sidewalks, buildings and gardens. *Nylanderia fulva* has caused electrical damage to phone lines, air conditioning units and computers (Meyers

2008). *Nylanderia fulva* has killed honey bee larvae and used the hives as their nests (Harmon 2009). The hemipteran population rises in some of the Caribbean Islands due to the tending by these ants, and the damage to fruit crops by hemipteran insects increased (Wetterer and Keularts 2008).

Introduction of *Nylanderia fulva* reduced the abundance of native ants in a natural reserve in Valle del Cauca, Colombia, by 74% (Aldana et al. 1995) and it has also caused reduction in diversity of ant species in Colombia (Zenner-Polania, 1990). It has also been reported by LeBrun (2014) that *Nylanderia fulva* is displacing red imported fire ants, *Solenopsis invicta* Buren, where the two populations overlap in Texas.

## Management

Controlling hemipteran populations may reduce food sources utilized by *Nylanderia fulva* (Sharma et al. 2013b). Avoid transporting infested plant materials, mulches, pots, etc. to uninfested areas.

Granular baits over a large area could be applied by broadcasting. Given that a colony of *Nylanderia fulva* may contain  $\geq 16,000$  individuals (D. Calibeo, personnel communication) contact insecticides are rendered ineffective when treated surfaces are covered by dead ants, preventing further contact with the insecticide.

Large *Nylanderia fulva* infestations can be difficult to control and may require a professional pest control service. More information on *Nylanderia fulva* control is available at: <http://edis.ifas.ufl.edu/pdffiles/IN/IN88900.pdf>.

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