

Slender Twig Ant *Pseudomyrmex gracilis* (Fabricius) (Insecta: Hymenoptera: Formicidae: *Pseudomyrmecinae*)¹

Patricia L. Toth²

The Featured Creatures collection provides in-depth profiles of insects, nematodes, arachnids and other organisms relevant to Florida. These profiles are intended for the use of interested laypersons with some knowledge of biology as well as academic audiences.

Introduction

The slender twig ant, *Pseudomyrmex gracilis* (Fabricius), often called the elongate or Mexican twig ant, is a neotropical, arboreal ant best known for its associations with plants and its terrible sting (Wheeler and Wheeler 1956; Ward 1990).

Synonymy

Pseudomyrma gracilis var. *longinoda* Enzmann (1945)

Pseudomyrma gracilis var. *velifera* Stitz (1933)

Pseudomyrma gracilis var. *glabriventris* Santschi (1922)

Pseudomyrma gracilis var. *guayaquilensis* Forel (1907)

Pseudomyrma pilosula F. Smith (1877)

Pseudomyrma variabilis F. Smith (1877)

Pseudomyrma canescens F. Smith (1877)

Pseudomyrmex mexicanus Roger

Pseudomyrma mexicana Roger (1863)

Pseudomyrma dimidiata Roger (1863)

Pseudomyrma sericata F. Smith (1855)

Pseudomyrma bicolor Guérin (1844)

Formica gracilis Fabricius (1804)

(From Ward 1993 and Deyrup 2003)

Distribution

Originally from Mexico, *Pseudomyrmex gracilis* is found from the southern United States to Argentina and Brazil (Ward 1993). In the United States, *Pseudomyrmex gracilis* is only found in Texas, Florida, and Hawaii, but could possibly be established in Louisiana (Whitcomb et al. 1972; Ward 1985; Starr et al. 2004). *Pseudomyrmex gracilis* is also found in Jamaica (Ward 1985, 1993).

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2. Patricia L. Toth, graduate assistant, Department of Entomology and Nematology; UF/IFAS Extension, Gainesville, FL 32611.

See the [Interactive distribution map for *Pseudomyrmex gracilis*](#) at [Discover Life](#).

Pseudomyrmex gracilis was first discovered in Florida at Dade Co. in the 1960s (Whitcomb et al. 1972; Deyrup et al. 1988; Ferster et al. 2000). Currently, *Pseudomyrmex gracilis* can be found throughout most of the Florida peninsula and some locations in the panhandle (Johnson 1986; Deyrup et al. 1989; Klotz et al. 1995; Ferster et al. 2000).

Description

Adult

The adult is best described as a large (8 to 10 mm (~ $\frac{1}{3}$ in)), slender, wasp-like ant (Whitcomb et al. 1972; Ward 1985, 1990; Ferster et al. 2000). It has large eyes, a two-segmented petiole, and a well-developed sting (Whitcomb et al. 1972; Ward 1990). Its head is broad and has a twelve-segmented antenna (Ward 1985, 1993; Ferster et al. 2000). Erect hairs cover its body (Ferster et al. 2000).



Figure 1. Head of adult slender twig ant, *Pseudomyrmex gracilis* (Fabricius), collected in tropical hardwood hammock, Collier—Seminole State Park, Collier County, Florida.
Credits: April Nobile, California Academy of Sciences. www.antweb.org

The color of *Pseudomyrmex gracilis* specimens differs greatly due to large geographical variations (Ward 1985, 1993). The color can range from dark brown-black, to orange-brown, or a mixture of orange and brown [bicolored] (Ward 1985, 1993). Bicolored ants usually have a dark head and abdomen while the thoracic region is light orange in color, but variations occur (Whitcomb et al. 1972; Ward 1993; Ferster et al. 2000). The variation found in Florida is mostly described as bicolored with a black head, black abdomen, and an orange middle region. This bright color pattern may serve as a warning to predators, especially vertebrates, of the ant's painful sting (Holldobler and Wilson 1990).



Figure 2. Head of adult slender twig ant, *Pseudomyrmex gracilis* (Fabricius), collected in sand pine scrub, Archbold Biological Station, Highlands County, Florida.
Credits: April Nobile, California Academy of Sciences. www.antweb.org



Figure 3. Head of adult slender twig ant, *Pseudomyrmex gracilis* (Fabricius), collected on roadside vegetation, in Venezuela.
Credits: April Nobile, California Academy of Sciences. www.antweb.org



Figure 4. Lateral view of adult slender twig ant, *Pseudomyrmex gracilis* (Fabricius), in tropical hardwood hammock, Collier—Seminole State Park, Collier County, Florida.
Credits: April Nobile, California Academy of Sciences. www.antweb.org



Figure 5. Lateral view of adult slender twig ant, *Pseudomyrmex gracilis* (Fabricius), collected on roadside vegetation—in Venezuela.
Credits: April Nobile, California Academy of Sciences. www.antweb.org

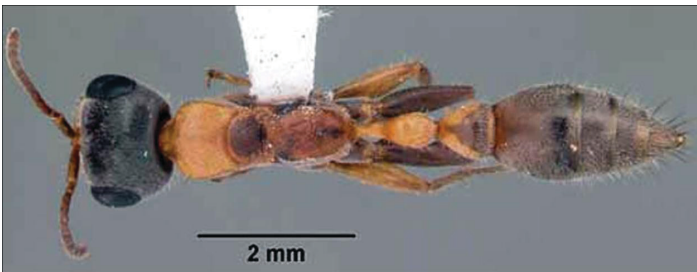


Figure 6. Dorsal view of adult slender twig ant, *Pseudomyrmex gracilis* (Fabricius), collected on tropical hardwood hammock, Collier—Seminole State Park, Collier County, Florida.
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Larva

A worker larva is long (6 mm (¼ in)), slim, subcylindrical, and covered with short hairs (Wheeler and Wheeler 1956). Like the adult, it is arboreal and can be found inhabiting plant cavities (Wheeler and Wheeler 1956; Holldobler and Wilson 1990). The most distinguishing characteristic is the trophothylax (Wheeler and Bailey 1920; Wheeler and Wheeler 1956). The trophothylax is an enlarged pocket just behind the mouth but located on the 1st thoracic segment. The larva is fed by a worker adult, which places a firm, dry

pellet into the larva's trophothylax (Wheeler and Wheeler 1956).



Figure 7. Dorsal view of adult slender twig ant, *Pseudomyrmex gracilis* (Fabricius), collected on roadside vegetation in Venezuela.
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Figure 8. Dorsal view of adult slender twig ant, *Pseudomyrmex gracilis* (Fabricius), collected on roadside vegetation—in Venezuela.
Credits: April Nobile, California Academy of Sciences. www.antweb.org



Figure 9. Dorsal view of winged reproductive of adult slender twig ant, *Pseudomyrmex gracilis* (Fabricius), collected in sand pine scrub, Archbold Biological Station, Highlands County, Florida.
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Life Cycle

There is no specific information relating to the colony life cycle of *Pseudomyrmex gracilis*, but the following is common to most ant species. Ant species are perennial and colony growth can be achieved through three stages

of development: founding, ergonomic, and reproduction (Holldobler and Wilson 1990). During the founding stage, virgin queens leave the nest to mate with a male reproductive. The queen mates and then begins a new nest by laying eggs and tending the brood. Once the first group of workers develops, the workers take over colony maintenance and the queen's only responsibility is to lay eggs. The colony grows by producing more and more sterile workers; this is the ergonomic stage. Finally, the colony is large enough to produce reproductives (alates) that will disperse generating new colonies, which is the reproduction stage (Holldobler and Wilson 1990).

Nests

Nests are small, monogyne (single queen) colonies that can be found in a wide range of habitats including rainforests, mangroves, thorn scrub, secondary growth fields, and hardwood hammocks (Ward 1985, 1993). There is only one small entrance into the nest (Ferster et al. 2000).

There are no known pheromone trails associated with *Pseudomyrmex gracilis* to aid nest relocation. Instead, adult workers carry other aged workers, queens, and males to the new nest site. This is done by the worker seizing its nestmate by the petiole or head and then curling the nestmate over the worker's body (Holldobler and Wilson 1990).

Pseudomyrmex gracilis is most likely to be found nesting in naturally occurring hollow cavities such as dead twigs, small branches, or large plant stalks (Wheeler and Wheeler 1956; Whitcomb et al. 1972; Deyrup et al. 1988; Holldobler and Wilson 1990; Ward 1993). This species is able to excavate their own nesting cavity if the material is pliable, but it is not unusual for nests to be found in tunnels made by cerambycids (long-horned beetles) or other insects (Whitcomb et al. 1972, Holldobler and Wilson 1990). However, *Pseudomyrmex* spp. are best known to be associated with bull horn acacias (Wheeler and Wheeler 1956; Whitcomb et al. 1972; Deyrup et al. 1988; Ward 1993).

Hosts

Unlike other members of Pseudomyrmecines, *Pseudomyrmex gracilis* is not an acacia-specialist, but rather a generalist, nesting in a wide range of different vegetation (Ward 1993). Its nest can be high up in trees, in blades of grass or herbs, and in shoulder high shrubs (Whitcomb et al. 1972; Ward 1985; Ferster et al. 2000). Known nests of *Pseudomyrmex gracilis* have been found in exotic ant-acacia trees in Florida such as *Acacia cornigera* (Wetterer and Wetterer 2003). Nests also have been found in Brazilian peppertrees,

Schinus terebinthifolius Raddi, that have died due to freezing temperatures (Whitcomb et al. 1972; Cassani 1986).

Pseudomyrmex gracilis will defend its host plant by swarming and stinging intruders (Wheeler and Wheeler 1956).

Damage

There is little or no ornamental plant or structural damage caused by *Pseudomyrmex gracilis*. However, a survey by Klotz et al. (1995) reported *Pseudomyrmex gracilis* nesting in wooden doors inside several homes.

Management

Pseudomyrmex gracilis can have a relatively painful sting, but because they are usually only encountered outside in small numbers, management is not necessary (Ferster et al. 2000).

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