

## **Bee Killers, *Mallophora bomboides* (Wiedemann), *Mallophora orcina* (Wiedemann), and *Mallophora nigra* Williston (Insecta: Diptera: Asilidae)<sup>1</sup>**

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### **Introduction**

Three large predaceous robber flies of the genus *Mallophora* occur in Florida.

- *Mallophora bomboides* (Wiedemann) is known as the "Florida bee killer,"
- *Mallophora orcina* (Wiedemann) is known as the "southern bee killer," and
- *Mallophora nigra* Williston is known as the "black bee killer" (Bromley 1950).

Two other species are recorded from Florida: *M. rex* Bromley and *M. chrysomela* Bromley. Structurally, there is nothing to distinguish them from *M. bomboides* (Wiedemann), and they are considered to be color variants of the latter. Also, *M. nigra* Williston may be merely a wholly-black color variant of *M. bomboides* (Cole and Pritchard 1964).

### **Distribution and Phenology**

At least 20 species in seven genera of asilid flies in the southeastern United States prey on various Hymenoptera, including honey bees (*Apis mellifera* L.). Of these, *M. orcina* is the most prominent, with 80% or more of its diet comprised of honey bees (Bromley 1946).

*Mallophora bomboides* occurs in the southeastern United States including North Carolina, South Carolina, Georgia, Florida, Alabama and Mississippi. Flight time in Florida is from April through December, though they are most common in late summer.

*Mallophora orcina* occurs in the eastern U.S. from Florida north to Ohio and west to Missouri and Arkansas. Flight time in Florida is from April through August, though they are most common in mid-summer.

*Mallophora nigra* is uncommon. It is apparently even more rare outside of Florida, having been

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**Figure 1.** The "Florida bee killer," *Mallophora bomboides* (Wiedemann), with honey bee prey. Image taken near Wimauma, Florida. Credits: Jeff Hollenbeck



**Figure 2.** The "southern bee killer," *Mallophora orcina* Williston. Credits: Gary Steck, FDOACS-DPI

recorded only from "N.C." (Cole and Pritchard 1960), presumably North Carolina. Flight time in Florida is from July through September.

## Description

Members of this genus in Florida are large, robust flies. The wings are smoky brown and the body has dense patches of black and yellow or white hairs. Bee killers resemble bumblebees and carpenter bees in shape and coloration. They generally mimic all of the five bumblebee species occurring in Florida (Stange 1992). They make a beelike hum or buzz when flying (Linsley 1960).

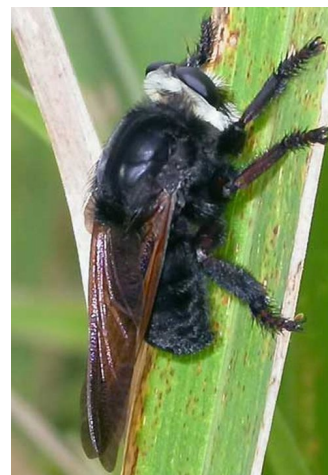
## Biology

Adults typically occur in open habitats, often in the vicinity of apiaries. They perch on stalks of

weeds or on tips of shrubs from which they launch their attack (Brower et al. 1960). Prey are primarily social bees and wasps, including honey bees, bumble bees, carpenter bees, *Polistes* and *Vespa* wasps. Honey bees may be particularly suitable as prey because of their slow flight, local abundance, and appropriate body size (Poulton 1906). Eggs are laid into the soil. Specific feeding habits of larvae of the species discussed here are unknown, but larvae of other *Mallophora* species are ectoparasites on scarabaeid beetle grubs in the soil (Knutson 1972).

## Key to the *Mallophora* of Florida

1. Abdomen and scutellum wholly black-haired..... *Mallophora nigra*

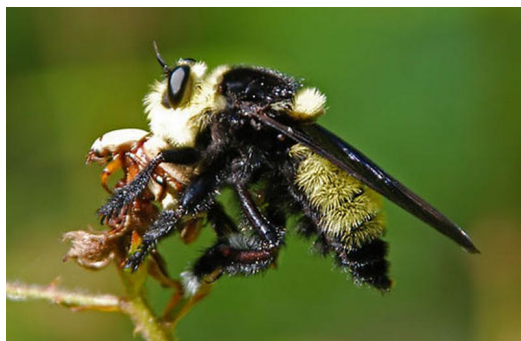


**Figure 3.** Lateral view of the "black bee killer," *Mallophora nigra* (Wiedemann). Credits: Jeff Hollenbeck

1'. Abdomen and scutellum with white or yellow hairs.....2

2. Basal four or five abdominal tergites densely covered with yellow hairs; and remaining segments wholly with black hairs; ventrum of abdomen wholly black haired. Average body length about 20 mm.....*Mallophora orcina*

2'. Basal three abdominal tergites densely covered with yellow hairs, 4th and 5th tergites with black hairs, and final 2 segments with pale hairs; ventrum of abdomen with yellow hairs. Average body length about 25 mm.....*Mallophora bomboides*



**Figure 4.** The "southern bee killer," *Mallophora orcina* (Wiedemann), with scarab beetle prey. Image taken at James River National Wildlife Refuge, Virginia. Credits: Dawn Griffith, [www.awestruckphotos.com](http://www.awestruckphotos.com)



**Figure 5.** Frontal view of the "Florida bee killer," *Mallophora bomboides* (Wiedemann). Credits: Jeff Hollenbeck



**Figure 6.** Dorsal view of the "Florida bee killer," *Mallophora bomboides* (Wiedemann). Credits: Jeff Hollenbeck

### Economic Importance

Instances of economic losses to beekeepers due to the depredations of asilid bee killers are sporadic, but Florida is one of the few states where such losses have been reported (Bromley 1950). During July 2008, hundreds of these insects were seen attacking



**Figure 7.** Ventral view of the "Florida bee killer," *Mallophora bomboides* (Wiedemann). Credits: Jeff Hollenbeck

bee hives in a watermelon field in Little Lake City, in Gilchrist County, Florida (Halbert 2008).

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