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Florida Bee Killers: *Mallophora* (Diptera: Asilidae)[1]

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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"; *M. orcina* (Wiedemann) as the "southern bee killer"; and *M. nigra* Williston as the "black bee killer" (Bromley 1950). Two other species have been 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). At least 20 species in 7 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). 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).

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 (Fig. 1). Bee killers resemble bumblebees and carpenter bees in shape and coloration. They generally mimic all of the five bumblebee species occurring in Florida (see Stange 1992). They make a beelike hum or buzz when flying (Linsley 1960).

Key to the *Mallophora* of Florida

1 Abdomen and scutellum wholly black-haired . . . . . *Mallophora nigra*
1′ Abdomen and scutellum with white or yellow hairs 2
2 Basal 4 or 5 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 3 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*

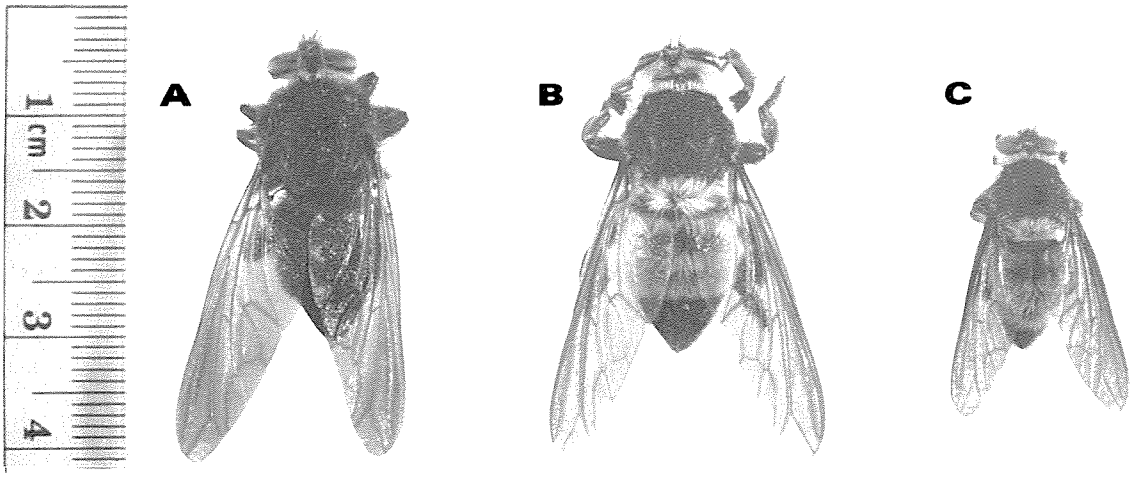

Fig. 1. A) *Mallophora nigra* Williston; B) *Mallophora bomboides* (Wiedemann); C) *Mallophora orcina* (Wiedemann). Photography credit: Jeffrey W. Lotz.

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DISTRIBUTION AND PHENOLOGY: *Mallophora bomboides* occurs in the southeastern United States including North Carolina, South Carolina, Georgia, Florida, Alabama and Mississippi. Florida county records (Florida State Collection of Arthropods (FSCA)) include Alachua, Clay, Dade, Flagler, Gadsden, Highlands, Hillsborough, Indian River, Levy, Martin, Nassau, Palm Beach, Pinellas, Polk, Putnam, Taylor, Volusia; also Duval and Orange (Bromley 1950). 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. Florida county records (FSCA) include Alachua, Broward, Clay, Columbia, Dade, Duval, Liberty, Monroe, Nassau, Okaloosa, Orange, Polk, Santa Rosa, Sarasota, Wakulla; also Dixie and Pasco (Cole and Pritchard 1964), Columbia and Putnam (Bromley 1950). Flight time in Florida is from April through August, though they are most common in mid-summer.

Mallophora nigra is uncommon. FSCA county records include only Alachua, Duval, Highlands, and Volusia. It is apparently even more rare outside of Florida, having been recorded only from "N.C." (Cole and Pritchard 1960), presumably North Carolina. Flight time in Florida is from July through September.

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).

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