

## The Tiphid Wasps Of Florida (Hymenoptera: Tiphidae)<sup>1</sup>

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**INTRODUCTION:** Tiphid wasps are among the most conspicuous parasitic wasps in Florida because of their large size and the swarming habits of *Myzinum* males. These wasps attack soil-inhabiting beetle larvae, principally white grubs (Coleoptera: Scarabaeidae) which are lawn and turf pests. There are about 26 Florida species classified in 4 genera and 3 subfamilies. Male tiphids (always winged) can be recognized from all other Florida wasps by the upcurved hook at the end of the abdomen (Figs. 2, 4). The females can be distinguished from the similar Scoliidae by having the wing membrane non-striate distally.

**BIOLOGY:** Female tiphids burrow into the ground to oviposit on white grubs or, rarely, tiger beetle (Coleoptera: Cicindelidae) larvae. They are considered to be the most efficient and abundant of the white grub parasite complex (Davis 1919). Three species of *Tiphia* were introduced into the eastern U.S. for control of the Japanese beetle (Davis 1919), but only *T. popilliavora* Rohwer is established. Male *Myzinum* often form swarms of hundreds of individuals flying about bushes probably in a mating frenzy. The females can sting when handled, but are not aggressive.



Fig. 1. *Methoca* ♀.



Fig. 2. *Methoca* ♂.



Fig. 3. *Paratiphia* ♀.

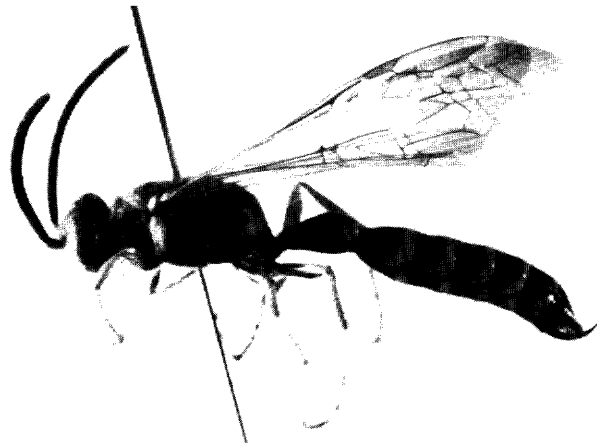


Fig. 4. *Myzinum* ♂. Photography credit: Jeffrey W. Lotz (DPI).

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Key to Subfamilies and Genera of Florida Tiphidae  
(modified from Pate (1947))

1. Female apterous (Fig. 1); eye of male with short setae; male hind coxa with erect basal lamella on upper surface (in Florida, only *M. formosa* Krombein) . . . . . (Methochinae) *Methoca* Latreille  
Female winged; eye of male glabrous; male hindcoxa without erect lamella . . . . . 2
2. Antennae arising from beneath frontal ridges; tegula short, not completely covering axillary sclerites of forewing (Myzininae) . . . . . 3  
Antennae arising from simple, reflexed sockets; tegula large, covering axillary sclerites of forewing (Tiphinae) . . . . . 4
3. Male with inner eye sockets deeply emarginate; female with marginal cell separated from costal margin; antennal pedicel hidden . . . . . *Myzinum* Latreille  
(7 species are known from Florida; keyed in Krombein (1938))  
Male with inner eye sockets entire; female with marginal cell confluent with costal margin; antennal pedicel fully exposed . . . . . *Pterombrus* Smith  
(*P. rufiventris* (Cresson) may occur in Florida) . . . . .
4. Forewing with three cubital cells, first obsolete posteriorly (Fig. 3); first abdominal tergite with sensorial area depressed laterally; male clypeus pale . . . . . *Paratiphia* Sichel  
(*P. texana* Cameron only Florida species) . . . . .  
Forewing with two transverse cubital veins, the first absent or occasionally present anteriorly as a trace; first abdominal tergite without sensorial area; male clypeus always black . . . . . *Tiphia* Fabricius  
(17 species are known in Florida; keyed in Allen (1966))

**SURVEY & DETECTION:** The smaller "black digger wasps" (*Tiphia* or *Paratiphia* spp.) are often found running about leaves. The larger *Myzinum* spp. are attracted to flowers and the males swarm around bushes. White grubs can be dug up and examined for the presence of flesh-colored eggs or white external parasitic larvae (Fig. 5). Cocoons are usually constructed in the old grub-cells.

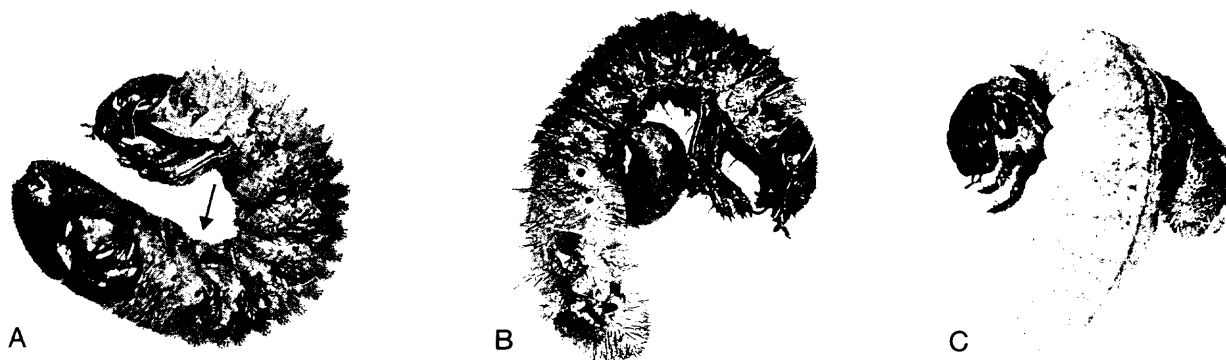


Fig. 5. Japanese beetle grub parasitized by *Tiphia*. A) Egg (see arrow); B) and C) Larva (from King (1930)).

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