

New Records of the Rarely Collected Ant-decapitating Fly *Apocephalus tenuipes* Borgmeier (Diptera: Phoridae)

JoVonn G. Hill^{1,*} and Brian V. Brown²

Abstract - The ant-decapitating fly *Apocephalus tenuipes* (Diptera: Phoridae) was known previously only from two Florida specimens. Here we report two additional Florida records and a Mississippi record that represents a significant range extension. Field observations of *A. tenuipes* are presented as well.

Species in the genus *Apocephalus* (Phoridae) are all parasitoids, the majority of which attack ants. Some develop in the heads of their hosts, and are commonly known as “ant-decapitating flies.” A female fly will hover over an ant of its preferred host species, dart down to pierce it with a sword-like ovipositor, and lay a single egg inside the ant’s body. After the egg hatches, the larva begins to feed on the muscles and tissues inside the head capsule, and sometimes cause the head of the ant to fall off before the rest of the body stops moving (Brown 1995, 2002; Pergande 1901).

Apocephalus tenuipes Borgmeier (Fig. 1) was described from a single female specimen collected in Polk County, FL, on 11 September 1938 (Borgmeier 1963). This species is structurally interesting because the apical foretarsomere is elongate and narrowed, apparently serving a sensory function; similar narrowing is known in the apical tarsomeres of a number of other phorids, such as *A. tenuitarsus* Brown, *Dacnophora* spp., and *Myrmosicarius* spp., all of which are ant parasitoids. Burges (1979) provides the only behavioral and host information concerning *A. tenuipes*, and reported collecting a single female from a group of two or three flies that he observed

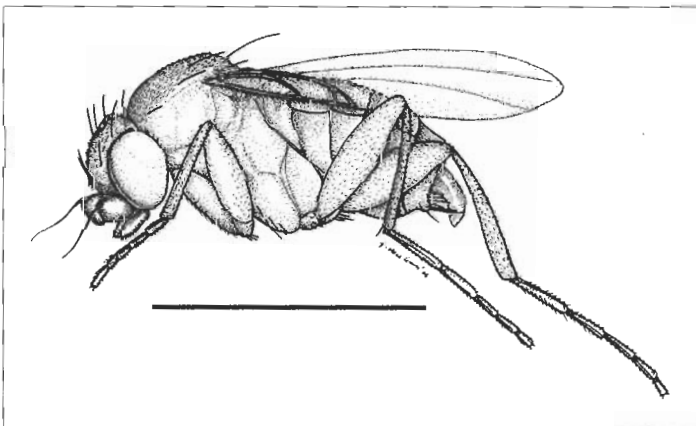


Figure 1.
Left lateral
view of a fe-
male *Apo-
cephalus*
tenuipes.
Scale line =
1 mm.

¹Mississippi Entomological Museum, Box 9775, Mississippi State, MS, 39762.

²Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, CA, 90007. *Corresponding author - jgh4@entomology.msstate.edu.

hovering above and landing on minor workers of the ant, *Pheidole dentata* Mayr, in Palm Beach County, FL, on 26 September 1978.

Here we report three additional records of *A. tenuipes*, two from Florida and one from Mississippi, the latter record representing a significant range extension. Two of the records confirm the host record of *P. dentata*. Additional information on the behavior of *A. tenuipes* is given as well. Voucher specimens have been deposited in the Natural History Museum of Los Angeles County and the Mississippi Entomological Museum.

New Records

Florida

Highlands County. Lake Placid, Archbold Biological Station, 14–16 April 1989, B. Brown, D. Feener; attacking *Pheidole dentata* workers on tuna baits. (3 females).

Putnam County. Hollister, 26 April 1985, E.G. Milstrey; emerged from puparium in gopher tortoise burrow (1 female).

Mississippi

Oktibbeha County. Osborn, 33°30'21"N 88°44'09"W, 24 July 2003, J.G. Hill; attacking *Pheidole dentata* majors in Black Belt Prairie (2 females).

At approximately 9:00 a.m. on 24 July 2003 a *Pheidole dentata* colony in a Black Belt prairie remnant in Mississippi was excavated in order to collect major workers. As the workers were being collected, several flies were noticed hovering approximately 4–6 cm above the mass of ants. The flies would dart down and quickly touch the heads of the *Pheidole* majors in an apparent attempt to oviposit. No attempts by the flies to oviposit on the *Pheidole* minors were observed. Two of the flies were collected with an aspirator as they hovered above the colony.

Acknowledgments

Thanks to Richard Brown, Terry Schiefer, and Clarence Collison for their comments on this manuscript, and to Joe MacGown for providing the illustration of *A. tenuipes* and comments on the manuscript. This research was supported by the USDA-ARS Area-Wide Management of Imported Fire Ant Project.

Literature Cited

- Borgmeier, T. 1963. Revision of the North American phorid flies. Part 1. The Phorinae, Aenigmatiinae, and Metopininae, except *Megaselia* (Diptera, Phoridae). *Studia Entomologica* 6:1–256.
- Brown, B.V. 1995. Ant-decapitating flies: Nature's executioners. *Terra Magazine* 32(1–2):4.
- Brown, B.V. 2002. Revision of the *Apocephalus pergandei*-group of ant-decapitating flies (Diptera: Phoridae). *Contributions in Science* No. 496. 58 pp.
- Burges, R.J. 1979. A rare fly and its parasitic behavior toward an ant (Diptera: Phoridae; Hymenoptera: Formicidae). *Florida Entomologist* 62(4):413–414.
- Pergande, T. 1901. The ant-decapitating fly. *Proceedings of the Entomological Society of Washington* 4:497–502.