Mortal Mimicry in the Fly, *Plocoscelus* sp. (Diptera, Micropezidae)

**Key words:** Diptera; Micropezidae; mimicry; Plocoscelus.

Micropezid flies that strongly resemble ants in the ponerine genus *Ectatomma* include *Cardiacephala* (Wheeler 1924) and *Plocoscelus* (Eberhard 1994, pers. obs.). Resemblance to these ants, which deliver painful stings, presumably reduces the likelihood that the fly will be attacked by potential predators. The incident described in this note shows that this resemblance, however, has also at least occasional negative consequences for the fly.

On 21 February 1997, in an area of early secondary growth at La Selva Biological Station near Puerto Viejo, Heredia, Costa Rica, a male *Plocoscelus* sp., possibly *camptomerus* (Bigot) or *podiagrius* (Rondani), was courting a female on a large leaf of *Xanthosoma* sp. There were at least two *Ectatomma* sp. ants on the same leaf. As in *Cardiacephala myrmex* Schiner and *Taeiniaptera* sp. (Wheeler 1924; W. Eberhard, pers. obs.), courtship consisted of repeated attempts by the male to sidle up to the anterior end of the female. When a female of these species is receptive, it does not turn or move away from the male; the male then runs behind the female and mounts (Wheeler 1924; W. Eberhard, pers. obs.). It seemed that a mating by the *Plocoscelus* sp. female was imminent, as several times it nearly allowed the male to get close enough to attempt mounting before it walked away. Nevertheless, when the male’s sidling maneuvers became quicker, the female responded by flying abruptly to another leaf.

The male, however, apparently failed to notice that the female had gone, and proceeded to sidle up in the same manner to a nearby *Ectatomma*. The ant immediately struck rapidly at the fly, and the two animals tumbled to the ground. A moment later, the ant had the now immobile fly in its mandibles, and was carrying it away when they were collected.

This observation suggests that the resemblance between *Plocoscelus* sp. and *Ectatomma* sp. is strong enough to fool at least an excited male fly, that both the mimic and its presumed model occur together in at least one microhabitat, and that mimicry of this dangerous model at least occasionally has catastrophic consequences for the fly.

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