

Family Embolemidae parasitoids of leafhoppers.

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The Embolemidae family constitutes a small group of Aculeate Hymenoptera and Chrysidoidea Superfamily with only a dozen species in the world, apparently parasitoids and with morphological characteristics that make them easily identifiable. The Embolemidae family are parasitoid wasps with a wide worldwide distribution. They measure 2 to 4 mm in body length, whose biology is little known. Males are winged and females can be winged, micropterous, or wingless. They are known to parasitize Homoptera nymphs from the Achilidae family (Figures 1-2) [1-4].



Figure 1. *Ampulichomorpha* sp. Source: Photo#313950 Contributed by Scott Justis.



Figure 2. Embolemidae (Hymenoptera: Chrysidoidea) from the Middle East male. Source: <https://www.mapress.com/zt/article/view/zootaxa.5138.3.5>.

The species of *Embolemus* Westwood, 1833, parasitize nymphs of Achilidae and Cixiidae (Hemiptera), nymphs of *Epiptera floridae* (Walker, 1851) and *Epiptera pallida* (Say, 1830) (Hemiptera, Achilidae). The discovery of a female species in Japan that was collected from an ant colony of the *Myrmica* Latreille, 1804, assuming that the wasp was a parasite of the latter. Perhaps some homopterous symbiont ant species could have been the true host in this case [5-8].

EOL has data attributes, including Body symmetry: bilaterally symmetric; diurnal behavioral circadian rhythm; multicellular cellularity; holometabolous mode of development; temperate habitat; trophic guild ectoparasitoid type specimen repository University of Kentucky (UKY-HIC) (Figure 3) [8-10].

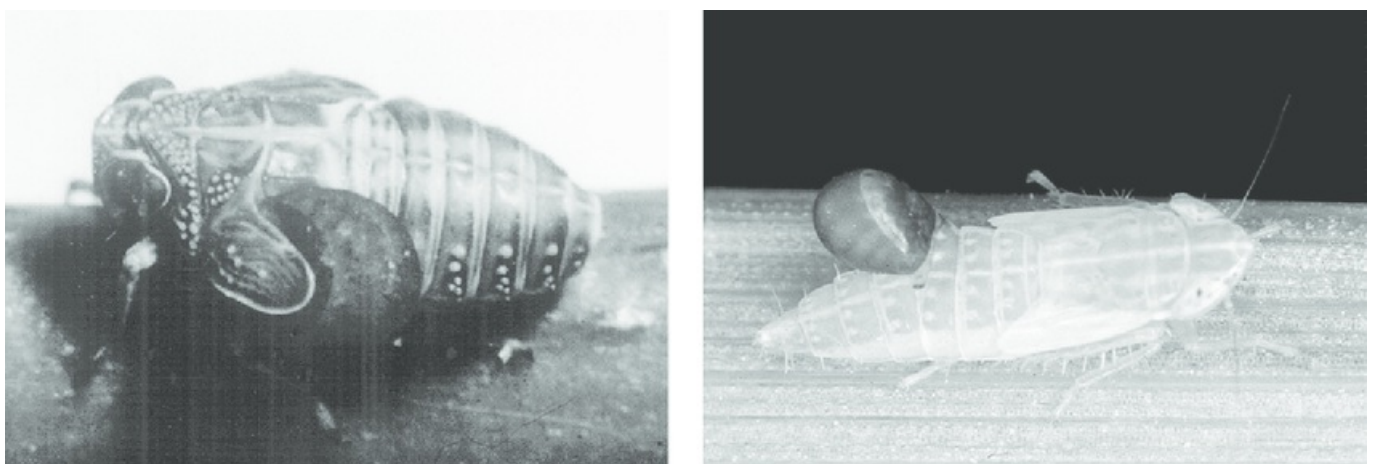


Figure 3. Dryinidae and Embolemidae as parasitoids of *Auchenorrhyncha* sp. (Hemiptera: Cicadellidae). 1: Plant hopper (*Issus* sp.) parasitized by a dryinid (*Dryinus* sp.). The parasitoid larva, hidden by its exuviae, is ectophagous and projects as a sac from the host's body. Embolemid larvae are also parasitizing planthoppers and have the same aspect. Length of planthopper 4.00 mm. 2: Leafhopper (*Psammotettix* sp.) parasitized by a dryinid (*Gonatopus* sp.). Source: <https://www.researchgate.net/figure/2-Dryinidae-and-Embolemidae-as-parasitoids-of->.

Classification of Afrotropical Hymenoptera.

Genus: *Ampulicomorpha* Ashmead, 1893 and *Embolemus*.

Distribution: Worldwide.

Biology: Poorly known. A Nearctic species was reared from homopteran nymphs (Achilidae) feeding on subcortical fungi. Females have been collected in ant nests and small mammal burrows.

Diversity: About twenty species in 2 genera.

Species: *Ampulicomorpha madecassa* Olmi, 1999, *Ampulicomorpha magna* Olmi, 1995 and *Ampulicomorpha nzigidaherai* Olmi, 2011.

Distribution: Worldwide.

Biology: Parasitoids of homopteran nymphs (Achilidae; Hemiptera).

Species: *Embolemus africanus* (Risbec, 1957), *Embolemus ambrensis* Olmi, 2004, *Embolemus brothersi* Olmi, 2006, *Embolemus burundensis* Olmi, 2011, *Embolemus capensis* Olmi, 1997, *Embolemus fisheri* Olmi, 2010, *Embolemus harteni* Olmi, 1997 and *Embolemus sanborni* Olmi, 1997.

Distribution: Worldwide.

Biology: Host: unknown.

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Distribution: Worldwide.

Biology: Host: unknown [11-17].

Specie

Embolemus ruddii Westwood, 1833

Females do not have wings and are much less common than winged males, although some Nearctic species are also wingless. Among the characteristics of the group, the insertion of the antennae in a very frontal prominence, far from the clypeus, with 10 segments in both sexes, stands out. They are strictly ectoparasitoids of other insects, both the parasitic habits and the host of *E. ruddii* are unknown. Our only data on the subject refer to a Nearctic species that develops at the expense of Homoptera nymphs (Figure 4) [16-17].



Figure 4. *Embolemus ruddii* (Westwood, 1833). Source: <https://bwars.com/index.php/wasp/embolemidae/embolemus-ruddii>.

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