Merothripidae

Australian fauna

Link to genera and species of Australian Merothripidae

Two genera and four species of Merothripidae have been found in Australia, but they are probably all introduced to this continent.

Biology

The 15 species recognised in this family are usually found on dead twigs or in leaf litter, where they presumably feed on fungal hyphae. Most adults are wingless. The males of Merothrips species have the dorsal surface of the head developed as a large glandular area, and males in this genus sometimes have the fore femora considerably enlarged. Unfortunately, no studies on the biology or behaviour of any of these species are available.

Geographic distribution

Erotidothrips has been taken widely but rarely in the Old World tropics, including northern Australia, but Damerothrips is known only from Brazil. Most of the species of Merothrips are from the Americas, particularly the Neotropics, but M. floridensis is particularly widespread around the world, including southern Europe and Australia (Mound & O'Neill, 1974).

Recognition

The antennae of Merothripidae species are either 8- or 9-segmented, with the distal segments fully distinct from each other, and the sensoria on segments III and IV transverse or lenticular to slightly inflated. Sternite VII of females bears a pair of lobes each with two setae on the posterior margin, but these lobes are not easy to see unless slide-mounted specimens have been well cleared. This character state is shared only with Melanthripidae species. The head and thorax differ in structure considerably between species of Merothripidae. Most Merothrips species are minute and wingless, with the head unusually small and the tentorial bridge not developed, and the dorsal surface of the head of males is occupied by a large glandular area. In contrast, the larger species in the family are winged with a larger head in which the tentorial bridge is well-developed, but the males of these species are not known.

Genus and species diversity

The family Merothripidae comprises three genera and 15 species of living insects (ThripsWiki, 2020), with three further genera described from fossils. Merothrips comprises 13 species, with three further species known from fossils (ThripsWiki, 2020), whereas both Damerothrips and Erotidothrips each include only a single species. In contrast, (Bhatti, 2006) placed the latter two genera into a separate family, Erotidothripidae, and placed three of the more distinctive species of Merothrips each into a separate genus.

Family relationships

Members of this family are considered to retain some of the ancestral character states of Thysanoptera, particularly the presence in females of a pair of lobes each bearing two setae on the posterior margin of the seventh sternite. These structures are considered to represent a reduced eighth sternite (Mound et al, 1980), and they are
otherwise found only in species of Melanthripidae. Bhatti (2006) treated this family as a superfamily, Merothripoidea, with two families: Erotidothripidae with two genera and Merothripidae with four genera. However, this classification is considered to emphasise structural differences rather than relationships (Mound & Morris, 2007).

**Thysanoptera systematics**

The classification adopted here is a compromise between practicality and the ideal of a classification based on phylogenetic relationships. The two sub-orders, Terebrantia and Tubulifera, are probably sister-groups (Buckman et al., 2013), but relationships among the eight families of Terebrantia remain far from clear (and there are also five families based on fossils - see ThripsWiki 2020). A radically different classification was proposed by Bhatti (1994, 1998, 2006) that recognised two Orders, 10 superfamilies and 40 families. This classification is based on autapomorphies rather than synapomorphies, and thus is essentially phenetic rather than phylogenetic.

**References**


