

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



Merothrips brunneus, female aptera



Merothrips brunneus, antenna



Erotidothrips mirabilis, antennal segments III-V



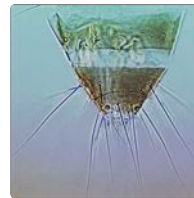
Merothrips brunneus, head & pronotum female aptera



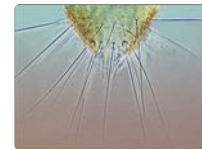
Erotidothrips mirabilis, head



Merothrips floridensis, wing



Merothrips brunneus, tergites IX-X



Merothrips floridensis, tergite X



Merothrips brunneus, female sternite VII



Merothrips brunneus, female sternite VII

otherwise found only in species of Melanthripidae. Bhatti (2006) treated this family as a superfamily, Merothripodea, 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

- Bhatti JS (1994) Phylogenetic relationships among Thysanoptera (Insecta) with particular reference to the families of the Order Tubulifera. *Zoology (Journal of Pure and Applied Zoology)* **4** (1993): 93–130.
- Bhatti JS (1998) New structural features in the Order Tubulifera (Insecta). 1. Amalgamation of labro-maxillary complex with cranium and other cephalic structures. *Zoology (Journal of Pure and Applied Zoology)* **5**: 147–176.
- Bhatti JS (2006) The classification of Terebrantia (Insecta) into families. *Oriental Insects* **40**: 339–375.
- Buckman RS, Mound LA & Whiting MF (2013) Phylogeny of thrips (Insecta: Thysanoptera) based on five molecular loci. *Systematic Entomology* **38**: 123–133.
- Mound LA, Heming BS & Palmer JM (1980) Phylogenetic relationships between the families of recent Thysanoptera. *Zoological Journal of the Linnean Society of London* **69**: 111–141.
- Mound LA & Morris DC (2007) The insect Order Thysanoptera: classification versus systematics. Pp 395–411, in Zhang ZQ & Shear WA [eds], Linnaeus Tercentenary: Progress in Invertebrate Taxonomy. *Zootaxa* **1668**: 1–766.
<http://www.mapress.com/zootaxa/2007f/zt01668p411.pdf>
- Mound LA & O'Neill K. (1974) Taxonomy of the Merothripidae, with ecological and phylogenetic considerations (Thysanoptera). *Journal of Natural History* **8**: 481–509.
- ThripsWiki (2020) *ThripsWiki - providing information on the World's thrips*. Available from: http://thrips.info/wiki/Main_Page [accessed 23.x.2019].