

# A REVIEW OF THE AUSTRALIAN SPECIES OF CLUSIIDAE (Diptera, Acalyptrata)

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(Figs. 1-36)

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## SYNOPSIS

Characters for recognition of both adult and larval specimens of Clusiidae are given. A larva from Australia is described, and some characters of the puparium of one species are noted.

The morphology of the male terminalia is discussed in order to determine the homologies of the parts and to provide a sounder basis for classification. It is shown that those genera which have been sufficiently investigated can be distinguished from one another by characters of the male postabdomen.

The geographical origin of the Australian forms is discussed.

Keys to the genera of Clusiidae, to all described species of *Allometopon* and to the Australian species of other genera are provided. Two genera and 19 species are described as new.

## INTRODUCTION

The species of the family Clusiidae, once called Heteroneuridae, are, in Australia as in other regions, difficult to collect in numbers. This is no doubt due to rarity (small population size) of many of the species and to extreme localization of others. The known larvae live in rotting wood and the adults inhabit forest country.

The only previously recorded Australian species are the two species of *Heteromeria* described by Malloch (1926, 1930) on the basis of three specimens. The present work is based on more than 170 Australian specimens, but most of these were collected within a short distance of Sydney and in a few localities in Queensland. A few specimens from Western Australia and one from Tasmania have been examined, but no material from other States is available. The family is probably absent from the drier part of the continent.

Hennig (1958) considers that the family Clusiidae belongs to the group of families which includes the Helomyzidae and its allies. This position is tentatively accepted, though the long, divergent postverticals are a discordant character. The only other possible location seems to be in Hennig's superfamily Pallopteroidea.

The monograph on the Clusiidae by Melander and Argo (1924) may be consulted for references to earlier papers, generic synonymy and keys to and descriptions of the species then known.

## RECOGNITION OF CLUSIIDAE

### Adult Characters

Head with strong vibrissae; postvertical bristles divergent or absent; fronto-orbital bristles two to five; epistomal ridge between face and buccal region absent, the cuticle in this region soft and not sclerotized. Antenna porrect or almost so; second segment produced into a short, angular lobe on outer distal edge. Thorax with sternopleural, mesopleural and at least two pairs of dorsocentral bristles. Wings with subcosta, second basal cell and anal cell complete.

In distinguishing representatives of this family from other Acalyptrata, first check the venation. If it agrees with the above description check the vibrissae, antennae, face and postverticals. Only if all these characters are in agreement is the specimen a clusiid.

### Larval Characters

The larvae of Clusiidae are very distinct from those of other acalyptrate families. The cephalopharyngeal armature is vestigial and unpigmented. The posterior end of the larva is not truncated, but bears two short, rigid processes on which the spiracles open. These characters, together with the fact that the only known habitats are in rotting wood and termite galleries, should make them easy to distinguish from other muscoid larvae.