



## The first record of Goniagnathini from Australia with description of four new species of *Goniagnathus* Fieber (Hemiptera: Cicadellidae: Deltocephalinae)

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### Abstract

*Deltocephalus centralis* Evans is transferred from *Arawa* Knight (Tribe Athysanini) to *Goniagnathus* Fieber (Tribe Goniagnathini) as *Goniagnathus centralis* (Evans) **comb. nov.** and the male genitalia described for the first time. Four new Australian species of *Goniagnathus* are described: *G. osmelaki* Fletcher, *G. venenensis* Fletcher, *G. crocodontis* Fletcher and *G. pectinatus* Fletcher. This represents the first record of the tribe Goniagnathini in Australia. A key for the identification of the Australian species is provided.

**Key words:** Arid zone, leafhopper, morphology, Homoptera, Auchenorrhyncha, taxonomy, key

### Introduction

Australia has extensive regions with low average annual rainfall which, although not true deserts, are regarded by many superficial observers as relatively lifeless environments. However, close examination of these regions has revealed an abundance of interesting life forms, many uniquely adapted for living in arid regions. The extraordinary species of *Alleloplasis* Waterhouse (Nogodinidae) in inland South Australia and Western Australia and the species of *Barsac* Fletcher (Flatidae) from many parts of inland Australia are notable species of Auchenorrhyncha which show a marked association with drier regions.

R.E. Turner made collections in 1936 at Dedari in Western Australia following one of the wettest summers recorded in the region (Day and Fletcher, 1994). Many of the leafhoppers collected by Turner at Dedari remain as the only representatives of their species in collections despite the attempts of others to find further material in the Dedari region. A good example of this is the leafhopper *Occiplanocephalus ravus* Evans (Deltocephalinae: Deltocephalini) known only from the holotype and a single paratype (Evans, 1966), both collected by Turner at Dedari. This indicates that arid zone insects may have adaptations to desert life comparable to those that have been documented for amphibia and certain groups of aquatic Crustacea in which survival in a quiescent state, sometimes for many years, enables species to survive between unpredictable breeding periods.

Taxonomic work on the Australian Deltocephalinae has revealed a number of forms of leafhoppers which are short and squat in appearance, often brachypterous, and which have been collected in arid regions of Australia. These insects are frequently collected in pitfall traps indicating that they are probably ground dwelling. Some of these species represent the first records of the deltocephaline tribe Goniagnathini in Australia. All species are placed in the nominal genus *Goniagnathus* Fieber after comparison with *G. brevis* (Herrich-Schaeffer), the type species.