

An Appraisal of the Higher Classification of Cicadas (Hemiptera: Cicadoidea) with Special Reference to the Australian Fauna

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ABSTRACT. The history of cicada family classification is reviewed and the current status of all previously proposed families and subfamilies summarized. All tribal rankings associated with the Australian fauna are similarly documented. A cladistic analysis of generic relationships has been used to test the validity of currently held views on family and subfamily groupings. The analysis has been based upon an exhaustive study of nymphal and adult morphology, including both external and internal adult structures, and the first comparative study of male and female internal reproductive systems is included. Only two families are justified, the Tettigarctidae and Cicadidae. The latter are here considered to comprise three subfamilies, the Cicadinae, Cicadettinae **n.stat.** (= Tibicininae *auct.*) and the Tettigadinae (encompassing the Tibicinini, Platypediidae and Tettigadidae). Of particular note is the transfer of *Tibicina* Amyot, the type genus of the subfamily Tibicininae, to the subfamily Tettigadinae. The subfamily Plautillinae (containing only the genus *Plautilla*) is now placed at tribal rank within the Cicadinae. The subtribe Ydiellaria is raised to tribal rank. The American genus *Magicicada* Davis, previously of the tribe Tibicinini, now falls within the Taphurini. Three new tribes are recognized within the Australian fauna, the Tamasini **n.tribe** to accommodate *Tamasa* Distant and *Parnkalla* Distant, Jassopsaltriini **n.tribe** to accommodate *Jassopsaltria* Ashton and *Burbungini n.tribe* to accommodate *Burbunga* Distant. Additional tribal changes occur within the Australian fauna: *Anapsaltoda* Ashton, *Arenopsaltria* Ashton, *Henicopsaltria* Stål, *Neopsaltoda* Distant and *Psaltoda* Stål are transferred from Cyclochilini to Cryptotympanini leaving Cyclochilini monotypic; *Chrysocicada* Boulard is transferred from Parnisini to Taphurini; *Diemeniana* Distant, *Gudanga* Distant and *Quintilia infans* (Walker) (representing a new genus) from Parnisini to Cicadettini; and *Marteena* Moulds and *Abricta borealis* (Goding & Froggatt) (the latter also representing a new genus) from Taphurini to Cicadettini. A new subtribe is proposed in the tribe Taphurini, Tryellina **n.subtribe**. Diagnostic descriptions are provided for all families, subfamilies, tribes and subtribes treated in this work. Keys to families and subfamilies are presented together with a key to the tribes of Australian Cicadoidea.

Terminologies for external and internal morphology of the Cicadoidea are summarized in 30 detailed figures. New structures and features of significant taxonomic importance are identified and named. A stridulatory mechanism found in the Australian genus *Cyclochila* is described for the first time.

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