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Phylogeny for the Tribe Thophini (Cicadoidea: Cicadidae) with the Description of a New Subspecies of *Thopha sessiliba* Distant from Western Australia

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Abstract. A molecular phylogeny for the cicada tribe Thophini (*Thopha* + *Arunta*) is provided together with a cladistic analysis based on morphological data. A new subspecies, *Thopha sessiliba clamoris*, is described from the eastern fringe of the Pilbara region of Western Australia, based on molecular, morphological, and behavioral evidence. All described species of *Thopha* are figured and a revised key to the five species and two subspecies provided. A discussion on the biogeography of the genus is also included.

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The two genera of the tribe Thophini, *Thopha* Amyot & Serville and *Arunta* Distant, are recognized by greatly swollen timbal covers (Moulds, 2005, 2012). *Thopha* species inhabit *Eucalyptus* trees while *Arunta* species are found in mangroves or trees growing on coastal sand dunes, primarily *Banksia integrifolia* and *Casuarina* species (Moulds, 1990).

In a recent paper (Moulds, 2008), a colour form of *Thopha sessiliba* Distant was recorded from Western Australia, west of the Great Sandy Desert. This form showed distinctive bold markings on the head nd thorax, especially evident on the pronotum. The differences in markings were so distinct that it was believed that the western form represented another species, but this argument was abandoned when differentiating molecular and other evidence was found to be absent. Here we present molecular evidence showing that western *T. sessiliba* are a separate evolutionary lineage but insufficiently distinguished to warrant species status although, in conjunction with their striking colour difference and geographic isolation, worthy of subspecific status. A formal description follows. We also provide an analysis of the song and compare songs of allied species.

Molecular and morphological data have also been used to investigate phylogenetic relationships between all seven species of the tribe Thophini, viz. the five species of *Thopha* and the two species of *Arunta*. Molecular results are compared with morphological results and song measurements, and a phylogeny of the combined data is presented.

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