



## A new *Arthula* Cameron (Ichneumonidae, Cryptinae) parasitoid of *Ropalidia plebeiana* Richards (Vespidae) and host of *Amoturoides breviscapus* Girault (Torymidae) (Hymenoptera)

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### Abstract

*Arthula plebeja* Ubaidillah and Kojima, **sp. nov.**, a parasitoid of the Australian paper wasp *Ropalidia plebeiana* Richards, and host of the torymid hyperparasitoid *Amoturoides breviscapus* Girault, is described and illustrated. Both *A. plebeja* and *A. breviscapus* are estimated to have a bivoltine life cycle, the first overwintering in the pupal stage, and the second in the prepupal and/or pupal stage.

**Key words:** Cryptinae, *Arthula*, *Ropalidia plebeiana*, Torymidae, Vespidae

### Introduction

Girault (1932) described *Amoturoides breviscapus* based on specimen(s) collected in Townsville, Queensland, Australia. Bouček (1978) designated the lectotype, and mentioned “[...] identified as *breviscapus* a long series [...] reared from a nest of a wasp, *Ropalidia plebeiana*”. Later, Bouček (1988: 138) referred to the biology of *A. breviscapus* mentioning “[...] a recent record of the same *Amoturoides* species from India reveals that it develops as a secondary parasite in the nest of the wasps via the tachinid fly *Koralliomysia portentosa*”, which “is also supposed to occur in Australia”. Yet, it is still unknown whether this torymid parasitoid is the primary parasite of *R. plebeiana* Richards or hyperparasitic on a primary parasite of *R. plebeiana*.

We successfully reared *A. breviscapus* from nests of *R. plebeiana* and found that it is a hyperparasitoid of an *Arthula* species; this genus is part of the Sphecophagina, and three valid species have been recognized. Gauld (1984: 150), dealing with *Arthula*, stated “Australian species. I have seen two undescribed species”, without giving any data of the specimens; since then, no species of this genus has been formally described from Australia. As shown below, our Australian *Arthula* parasitoid is distinctly different from the three valid *Arthula* species recorded from the Oriental and the eastern part of palearctic region.

The aim of this paper is to describe a new *Arthula* parasitoid, as well as provide biological information about its association with *R. plebeiana*, and its torymid hyperparasitoid, *A. breviscapus*.

### Materials and methods

Nests of *R. plebeiana* were collected in the fall (late March through late April) and in the winter (July) of 2004, and in early May of 2005, in Canberra, and at four sites along Kings Highway, about 5 to 20 km from