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 Ubadillah 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 Koralliomyia 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