

# A Key to the Australian Genera of Eumeninae (Hymenoptera: Vespidae)

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**ABSTRACT.** An illustrated identification key to the genera of potter wasps occurring in Australia is presented. Hitherto there has been no published key to these genera, making routine identification impossible, and allowing taxonomic study of these wasps to be carried out only by specialists. This has greatly inhibited biological study of these wasps, which are known to exhibit interesting behavioural ecology. For the same reason, their use as biological control agents has scarcely been investigated. And as a result, the conservation status of any of the species is unknown. Our aim is that this key should begin to rectify this situation.

## Introduction

Potter wasps or mud wasps are common elements of the Australian Hymenoptera. Comprising the subfamily Eumeninae of the family Vespidae, they are by far the most species rich part of that family worldwide (nearly 4,000 species; see Pickett & Carpenter, 2010: table 1). Some Australian species can be quite abundant locally, and the mud nests of some of the larger species are a familiar sight. Because they provision their nests with caterpillars (Fig. 49), they are potential biological control agents. Aspects of their behaviour, including nest construction and mating systems, have attracted the interest of evolutionary biologists (Smith & Alcock, 1980; Matthews & Matthews, 2004, 2009, 2010).

Nearly 300 species are described from Australia, but the fauna is far from well known, with many undescribed species.

A better understanding of the fauna is greatly hampered by the lack of a basic identification key to the genera. There has been no key to the genera since the only worldwide monograph of the Vespidae, de Saussure (1852–1858), which is now of course well out of date. When Giordani Soika (1962) broke up the old, broad concept of the genus *Odynerus* Latreille, 1802, the key he provided was characteristically limited almost entirely to the genera he described or in which he described new species (and was in Italian). The key did not include such common Australian taxa as *Abispa* Mitchell, 1838, or *Paralastor* de Saussure, 1856, so it does not even correspond to a key to the tribe Odynerini in the sense of Hermes *et al.* (2014). Giordani Soika (1969) published a key to Australian genera of the tribe Zethini (as subfamily Discoeliinae; also in Italian), but there has never been a modern key to genera of the tribe Eumenini, let alone a key including all three tribes.

**Keywords:** potter wasps; mud wasps; identification key; taxonomy; Hymenoptera; Vespidae; Eumeninae

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