



## Genera of the parasitoid wasp family Monomachidae (Hymenoptera: Diaprioidea)

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### Abstract

The genera of the family Monomachidae are revised. *Chasca* Johnson & Musetti, **new genus**, is described, with two species: *Chasca andina* Musetti & Johnson, **new species** (type species, Chile) and *C. gravis* Musetti & Johnson, **new species** (Peru). The genus *Tetraconus* Szépligeti is treated as a junior synonym of *Monomachus* Klug (**new synonymy**), and its type species is transferred to *Monomachus* as *M. mocsaryi* (Szépligeti), **new combination**. A phylogenetic analysis places *Chasca* and *Monomachus* as sister-groups; within *Monomachus*, the three species of Australia and two species of New Guinea are basal, and the radiation of 21 species in tropical America and Valdivia is recovered as a monophyletic group.

**Key words:** Hymenoptera, key, phylogeny, parasitoid

### Introduction

The family Monomachidae (Hymenoptera: Diaprioidea) is a small group of parasitoid wasps with two recognized genera: *Monomachus* Klug and *Tetraconus* Szépligeti (Naumann 1985, Musetti & Johnson 2004). Adults are generally small to medium-sized, and females are readily recognized by their elongate, loosely articulated, weakly sclerotized, and acuminate metasoma. Males are more generalized in appearance, with an elongate petiole and clavate gaster (metasoma beyond the petiole), and have the general appearance of small ichneumonoids. The autapomorphic structure of the female metasoma and the strongly reduced ovipositor suggest that the family is monophyletic. Monomachidae traditionally has been relegated to the superfamily Proctotrupoidea (e.g., Naumann & Masner 1985), but Rasnitsyn (1980) and, more recently, Sharkey (2007) have placed them in a separate superfamily of the infraorder Proctrupomorpha, the Diaprioidea, together with the New Zealand endemic Maamingidae and the cosmopolitan and speciose Diapriidae. This relationship was suggested by Downton & Austin (2001), Castro & Downton (2006), Heraty *et al.* (2011) and Sharkey *et al.* (2011), but was not supported by the analysis of Vilhelmsen *et al.* (2010). Sharkey *et al.* (2011) also included the family Ismaridae within Diaprioidea; in other studies this taxon was considered a subfamily of Diapriidae.

Little is known of the biology of monomachids. Naumann (1985, 1991) reported that one Australian species, *Monomachus antipodalis* Westwood, is an egg-larval or egg-pupal parasitoid of species of the soldier fly genus *Boreoides* (Diptera: Stratiomyiidae: Chiromyzinae). The Neotropical species *M. fuscator* Perty and *M. eurycephalus* Schletterer have been reared from the coffee pest *Chiromyza vittata* Wiedemann (also Chiromyzinae) (Musetti & Johnson 2004). Males predominate in collections: Musetti & Johnson (2004) reported that only 17.2% of specimens in collections are females, suggesting that the two sexes occupy different habitats as adults.