

A key to the Mymaridae (Hymenoptera) egg parasitoids of proconiine sharpshooters (Hemiptera: Cicadellidae) in the Nearctic region, with description of two new species of *Gonatocerus*

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Abstract

An illustrated identification key to the three genera and 14 named species of Mymaridae (Hymenoptera) egg parasitoids of the proconiine sharpshooters (Hemiptera: Cicadellidae: Cicadellinae: Proconiini) in the Nearctic region, is provided. Two new species, *Gonatocerus morgani* and *G. walkerjonesi*, are described from California, USA. A synopsis of the included species is given, with emphasis on their distributional records and known host associations.

Key words: Mymaridae, *Acmopolynema sema*, *Anagrus epos*, *Gonatocerus* spp., parasitoid, Cicadellidae, Proconiini

Introduction

Proconiine sharpshooters (Hemiptera: Cicadellidae: Cicadellinae: Proconiini) are represented by the following four genera in the Nearctic region (north of Mexico): *Cuerna* Melichar, *Homalodisca* Stål, *Oncometopia* Stål, and *Paraulacizes* Young. In addition, *Phera* Stål may marginally extend into this region from its mostly Neotropical range. The most notorious of them is the glassy-winged sharpshooter, *Homalodisca coagulata* (Say), which is a vector of plant diseases caused by the phytopathogenic bacterium *Xylella fastidiosa* (Blua *et al.* 1999). Glassy-winged sharpshooter is a self-introduced pest in California from southeastern USA (Blua *et al.* 1999). Turner and Pollard (1959) provided a brief overview of proconiine sharpshooter egg parasitoids (Mymaridae and Trichogrammatidae) in Georgia. Triapitsyn (2003) reviewed the trichogrammatid egg parasitoids of proconiine sharpshooters in southeastern USA. Here, the mymarid egg parasitoids of Proconiini are reviewed for the entire Nearctic region.

The establishment of *H. coagulata* in California in the 1990s, later in Hawaii and French Polynesia, and even more recently in Easter Island (Chile) (Pilkington *et al.* 2005) prompted interest in proconiine sharpshooter investigations, including studies of their egg parasitoids in North America (Triapitsyn and Phillips 1996, 2000; Triapitsyn *et al.* 1998; Phillips *et al.* 2001; Triapitsyn, Bezark and Morgan 2002; Triapitsyn, Hoddle and Morgan 2002), mainly for classical biological control purposes (Morgan *et al.* 2000; Jones 2001; Triapitsyn and Hoddle 2001, 2002; Morgan *et al.* 2002; Pilkington *et al.* 2004, 2005). Most of the reported mymarid egg parasitoids of *Homalodisca* and *Oncometopia* are members of *Gonatocerus* Nees (Turner and Pollard 1959; Triapitsyn *et al.* 1998, Triapitsyn and Phillips 2000; Triapitsyn, Bezark and Morgan 2002), particularly its *ater* species group (Triapitsyn 2002a, 2002b). All the North American *Gonatocerus* species that parasitize eggs of Proconiini are solitary parasitoids, with an exception of *G. fasciatus* Girault, which is a gregarious parasitoid (Triapitsyn *et al.* 2003). Parasitoids of *Cuerna*, the most speciose genus of Proconiini in the Nearctic region, are less known except for those of *C. costalis* (Fabricius) (Triapitsyn and Rakitov 2005). Tipping *et al.* (2006) recorded the first mymarid parasitoid of *Paraulacizes irrorata* (Fabricius) eggs in Florida.