Zootaxa 3608 (3): 204–214
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3608.3.4
http://zoobank.org/urn:lsid:zoobank.org:pub:A185558F-DD40-4C25-AA5D-D1058FC1B901

Revision of North American *Aleiodes* (Part 9): the *pallidator* (Thunberg) species-group with description of two new species (Hymenoptera: Braconidae, Rogadinae)

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Abstract

The *Aleiodes pallidator* species-group is defined, and an identification key is provided for the five species known to occur in the U.S.A. and Canada. Two new species are described: *Aleiodes martini* Shaw and Marsh, from Florida, and *A. xanthoclypeus* Shaw and Marsh, known from Canada and Wisconsin, and reared from Lymantriidae species including *Dasychira plagiata* (Walker) and *Olene grisefacta* (a new host record for the genus *Aleiodes*). Five species are illustrated, and their host associations are summarized.

Key words: Nearctic, parasitoid, Lymantriidae, gypsy moth, new host records

Introduction

The rogadine braconid genus *Aleiodes* Wesmael is worldwide in distribution, but is particularly species-rich across the Holarctic Region (S. Shaw 2006). *Aleiodes* is well-diversified in North America, with at least 90 species in the United States and Canada (S. Shaw *et al*. 1997). This study is the ninth in a series of papers on *Aleiodes* species-groups, intended to provide a complete revision of the genus for North America (see S. Shaw *et al*. 1997, 1998a, 1998b, 2006; Marsh and S. Shaw 1998, 1999, 2001, 2003; Shaw and Marsh 2004). The purpose of this paper is to provide a taxonomic revision of the *pallidator* species-group, a monophyletic lineage of *Aleiodes* that is distinguished by its large ocelli with the diameter of the lateral ocellus greater than ocellar-ocular distance (Figs 1, 6, 10, 13, 18), hind wing vein RS sinuate with marginal cell narrowest in middle (Figs 4, 16), and tarsal claws either entirely pectinate to apex (Fig. 12) or with strong pre-apical spines (Fig. 3) (Fortier and Shaw 1999). The *pallidator* species-group is of particular interest to forest ecologists and park managers since it includes parasitoids of potential woodland pests such as tussock moth (Fig. 27) and gypsy moth (Fig. 24). Three of the species discussed in this paper were introduced to the United States as biological control agents for suppressing the gypsy moth (Shaw 2006).

Aleiodes species are koinobiont endoparasitoids of lepidopterous larvae, especially macrolepidoptera of the superfamilies Noctuoidea and Geometroidea, and to a lesser extent, Arctioidea, Sphingoidea and Papilionoidea (S. Shaw *et al*. 1997; Shaw 2006). So far as is known, the species of the *pallidator* species-group, covered in this paper, are all parasitoids of Lymantriidae caterpillars. The method of parasitism, unique to the tribe Rogadini, is noteworthy: the *Aleiodes* larva completes its feeding and pupates within the shrunken and mummified remains of the host caterpillar (Figs 23–28). In most cases, the form of the mummy caused by a particular *Aleiodes* species is characteristic for that host and parasitoid, so mummified remains are of considerable diagnostic value and should be retained with the parasitoid when reared. For a more complete discussion of *Aleiodes* biology, readers may refer to M. Shaw (1983, 1994), M. Shaw and Huddleston (1991), S. Shaw (1995) S. Shaw *et al*. (1997), and S. Shaw (2006).

 Accepted by J. Jennings: 4 Dec. 2012; published: 18 Jan. 2013