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**A review of the Nearctic species of *Erythmelus*
(Hymenoptera: Mymaridae), with a key and new additions to
the New World fauna**

SERGUEI V. TRIAPITSYN, VLADIMIR V. BEREZOVSKIY, MARK S. HODDLE
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Serguei V. Triapitsyn, Vladimir V. Berezovskiy, Mark S. Hoddle & Joseph G. Morse

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SERGUEI V. TRIAPITSYN, VLADIMIR V. BEREZOVSKIY, MARK S. HODDLE & JOSEPH G. MORSE

Department of Entomology, University of California, Riverside, CA, 92521, USA. E-mail: serguei.triapitsyn@ucr.edu; mark.hoddle@ucr.edu; joseph.morse@ucr.edu.

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Abstract

The 12 Nearctic species of the fairyfly genus *Erythmelus* Enock (Hymenoptera: Mymaridae) are revised, and the described species in the Neotropical region are reviewed. A key to females of the 30 named, valid species of *Erythmelus* in the New World is provided. *Erythmelus vladimir* S. Triapitsyn & Fidalgo is transferred from subgenus *E. (Parallelaptera)* Enock to the nominate subgenus as *E. (E.) vladimir* comb. n. *Erythmelus dentatus* Ogloblin is synonymized under *E. (E.) brachialis* Ogloblin, *E. empoascae* Subba Rao is synonymized under *E. (E.) flavovarius* (Walker), *E. flandersi* Doutt is synonymized under *E. (E.) picinus* (Girault), *E. gracilipes* (Girault) and *E. io* (Girault) are synonymized under *E. (E.) gracilis* (Howard), and *E. longicornis* Dozier is synonymized under *E. (E.) noeli* (Dozier). A lectotype is designated for *E. (E.) picinus*. The following new species are described: *E. (E.) burtik* S. Triapitsyn (Canada), *E. (E.) coviellai* S. Triapitsyn (Argentina), *E. (E.) fidalgoi* S. Triapitsyn (Argentina), *E. (E.) gak* S. Triapitsyn (Chile), *E. (E.) klopomor* S. Triapitsyn (USA), *E. (E.) logarzoi* S. Triapitsyn (Argentina), *E. (E.) mikrob* S. Triapitsyn (Canada), *E. (E.) mudrila* S. Triapitsyn (Mexico and USA), *E. (E.) podaypodnos* S. Triapitsyn (Bolivia), and *E. (E.) toreador* S. Triapitsyn (Argentina). A synopsis of the included species is given, with emphasis on their distributional records and known host associations in the families Miridae and Tingidae (Hemiptera).

Key words: Mymaridae, *Erythmelus*, egg parasitoid, Miridae, Tingidae

Introduction

Members of *Erythmelus* Enock, which is one of the more speciose genera of Mymaridae (Hymenoptera), are egg parasitoids of Miridae and Tingidae (Hemiptera). Twenty-four nominal species of *Erythmelus* were described from North America (Howard 1881; Girault, 1911b, 1911c, 1915; Gahan 1937; Doutt 1949), the Caribbean islands (Dozier 1932, 1937) and South America (Ogloblin 1934; Soares 1942; Triapitsyn & Fidalgo 2001; Triapitsyn 2003), but identification in the New World has been difficult or impossible except for the species in the subgenus *Parallelaptera* Enock, which were recently revised by Triapitsyn (2003). Girault's (1929) key to the North American species of *Erythmelus* is badly outdated, besides being based mostly on highly variable characters. Therefore, identification of the North American species of the nominate subgenus of *Erythmelus*, as defined by Triapitsyn (2003), have been made mostly using the key to the species from California, USA, by Doutt (1949). However, his review and key were not based on a study of type specimens of the described North American species, but instead on the specimens from California, which were partially misidentified by A.B. Gahan. For instance, *E. miridiphagus* Dozier, described from Puerto Rico (Dozier 1937), was incorrectly recorded by Doutt (1949) as being from northern California, although the female voucher specimens clearly have much shorter ovipositors than the female holotype and paratypes of *E. miridiphagus*, and thus apparently belong to the common Nearctic species *E. gracilis* (Howard). Likewise, the records of *E. miridiphagus* from Quebec, Canada, by Sohati *et al.* (1989) and Sohati *et al.* (1992) are misidentifications of the common Old World species *E. flavovarius* (Walker), which is for the first time recorded here from the New World. Thus, most of the previous identifications and published records (partially summarized in Peck 1963) of the North American *Erythmelus* need verification. Unfortunately, many of the older voucher specimens, when such exist, are in a very poor condition that prevents their correct identification.

Sexual dimorphism in *Erythmelus* makes identification of males difficult, unless a series of reared specimens of both sexes is available. Unfortunately, two of the species from the New World, *E. io* (Girault) (Illinois, USA) and *E. noeli* (Dozier) (Haiti), were described from single male specimens. Finding conspecific