Taxonomic changes for fifteen species of North American Mordellidae (Coleoptera)

Anneke E. Lisberg Department of Entomology University of Wisconsin-Madison 445 Russell Labs 1630 Linden Dr. Madison, WI 53706, U.S.A.

Abstract. In an attempt to more consistently apply generic concepts, 13 species of Mordellidae are transferred to different genera. Mordellistena bihamata (Melsheimer) and Mordellistena discolor (Melsheimer) are transferred to Falsomordellistena Ermisch, 1941, while 11 species (Mordellistena ancilla LeConte, Mordellistena floridensis Smith, Mordellistena guttulata Helmuth, Mordellistena impatiens LeConte, Mordellistena infima LeConte, Mordellistena lecontei Ermisch, Mordellistena minutalis Liljeblad, Mordellistena nigricans Melsheimer, Mordellistena parva Liljeblad, Mordellistena semiusta LeConte, and Mordellistena testacea Blatchley) are transferred to Mordellina Schilsky, 1908. Two species, Mordellistena rufa Liljeblad and Mordellina ustulata (LeConte), are proposed as junior synonyms of Mordellina ancilla (LeConte).

Introduction

Mordellidae is a speciose and widely distributed family. There are approximately 1500 species worldwide, comprising 113 genera in two subfamilies. The 201 species of North American Mordellidae are encompassed by 17 cosmopolitan genera within three tribes (Conaliini, Mordellini, and Mordellistenini) in the subfamily Mordellinae (Jackman and Lu 2002, Lisberg unpublished notes). Despite the relative abundance of Mordellidae, taxonomy and phylogeny within the family are poorly understood. Taxonomic keys to adult Mordellidae are considerably outdated (e.g., Liljeblad 1945), potentially useful character sets (e.g., Burne 1987) have yet to be critically analyzed and worked into taxonomic keys, characters defining many genera are not definitive (Jackman and Lu 2001, 2002), and larval taxonomy is nearly unknown (Odnosum 1992, Lisberg and Young 2003).

Generic placement for many species of Mordellidae is tenuous. The reassignment of 27 species into 11 genera not included in the only existing key to North American species (Lilieblad 1945) was discussed by Jackman (1991) and Jackman and Lu (2001, 2002). Characters defining these genera are largely based on Franciscolo (1957, 1965, 1967) for African species and many are difficult to apply to North American species. Adequate illustrated descriptions of mordellid larvae and pupae, which may aid our understanding of generic-level systematics, are rare. Only two North American species have complete, illustrated, formal larval descriptions: Tomoxia biguttata Gyllenhal (Perris 1876) and Tomoxia lineella LeConte (Lisberg and Young 2003). Ongoing research focusing on male genitalia (Lu et al. 1997) and ecological data including plant associations for adults and larvae (Frost 1913, Criddle 1922, Robertson 1928, Ford and Jackman 1996, Lu 1997, Williams 1999, Sumerford et al. 2000, Lisberg and Young 2003) may also contribute to generic-level systematics of Mordellidae. However, a world-wide revision is likely necessary for accurate placement of North American species. Until such a revision is coordinated, several additional changes to the taxonomic placement of North American species would enhance the consistency and efficacy of generic keys (Jackman and Lu 2002) as applied to North American species.

Taxonomic Changes

Transfers to Falsomordellistena Ermisch, 1941

Species in the genus Falsomordellistena are characterized by deeply emarginate, bilobed, or apically dilated penultimate prothoracic and metathoracic tarsomeres (Fig. 1), triangular or securiform ultimate maxillary palpomeres (Figs. 2-3), and small, ovoid, entire compound eyes with fine facets. Jackman and Lu (2001, 2002) included two North American species, Falsomordellistena pubescens (Fabricius) and Falsomordellistena hebraica (LeConte), in this genus. I propose the two following additions:

Falsomordellistena bihamata (Melsheimer, 1846) **new** combination

 $Falsomordellisten a \, discolor \, ({\rm Melsheimer}, 1846) \, {\bf new} \\ {\bf combination}$

Remarks. These two species clearly show the deeply emarginate prothoracic and mesothoracic penulti-

mate tarsomeres and ovoid eyes characteristic of *Falsomordellistena*.

Transfers to Mordellina Schilsky, 1908

Characters separating the genera Mordellistena Costa, 1854 and Mordellina involve the appearance of the compound eyes, which are described as smaller, entire, and finely faceted (facets 0.015 mm or smaller in diameter) in *Mordellistena* and larger, slightly emarginate around the antennae, and coarsely faceted (facets 0.022 mm or greater in diameter) in Mordellina (Jackman and Lu 2001, 2002). While some North American specimens clearly fall into one genus based on this character set, in many other cases these characteristics are not definitive and sometimes fall along a continuum within a species. It is possible that, in the African species largely used by Franciscolo to define these genera, these characters are more distinct. It is possible, too, that Nearctic Mordellistena and/or *Mordellina* show a similar range of eye characters through convergence or perhaps have not diverged as completely.

Jackman and Lu (2001, 2002) listed 131 North American species of *Mordellistena* and five North American species of *Mordellina*. I propose the transfer of 10 species, all currently placed in *Mordellistena*, to the genus *Mordellina* as follows:

Mordellina floridensis (Smith, 1882), new combination

Mordellina guttulata (Helmuth, 1864), new combination

Mordellina impatiens (LeConte, 1862), **new combination**

 $Mordellina\,infima\,(LeConte, 1862),$ **new combination**

Mordellina lecontei (Ermisch, 1953), new combination

Mordellina minutalis (Liljeblad, 1945), **new combination**

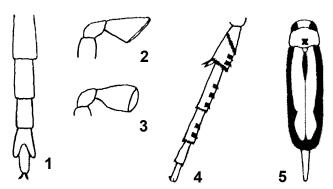
Mordellina nigricans (Melsheimer, 1846), **new combination**

Mordellina parva (Liljeblad, 1945), **new combination**

Mordellina semiusta (LeConte, 1862), new combination

 $Mordellina\ testacea\ (Blatchley, 1910),$ new combination

Remarks. These species fit the description of *Mordellina*, with a range of eye shape and facet size similar to those North American species already placed in *Mordellina*. Also, all have a distinctly long and ob-



Figures 1-5. 1) Falsomordellistena hebraica (LeConte), prothoracic tarsus, dorsal view; 2) Falsomordellistena discolor (Melsheimer), triangular ultimate maxillary palpomere; 3) Falsomordellistena pubescens (Fabricius), securiform ultimate maxillary palpomere; 4) Mordellina guttulata (Helmuth), metathoracic tibia and tarsus, lateral view; 5) Mordellina ancilla (LeConte), dorsal habitus.

lique proximal ridge on the metathoracic tibiae (Fig. 4) as do all but one North American *Mordellina*: *M*. pustulata (Melsheimer). This ridge, although slightly variable, occurs far more consistently than other characters presently used to distinguish members of Mordellina. Species with this distinctive ridge are also similar in size (length from head to tip of pygidium ranges from 2.75-4 mm, with the exception of M. floridensis which reaches 6 mm and M. wickhami which reaches 5.5 mm) and overall body shape (slender with long pygidium); they are likely closely related. Additional species currently placed in *Mordellis*tena that have this ridge may require transfer to Mordellina, but I have not yet seen representative specimens and can not propose their transfer at this time.

Other Taxonomic Changes to Mordellina

Liljeblad (1945) considered both Mordellistena ancilla LeConte, 1862 and Mordellistena ustulata LeConte, 1862 as mere variations of Mordellistena andreae LeConte, 1862. Jackman and Lu (2001) transferred M. ustulata to Mordellina and reinstated species rank, but proposed no changes for M. andreae andreae and Mordellistena andreae ancilla. However, M. andreae ancilla and M. ustulata differ only slightly in the width of the black marginal color of the elytra (Fig. 5). Specimens of this species I have examined from Wisconsin, clearly consistent with the definition of *Mordellina*, show a continuum of the black marginal elytral coloration, supporting the synonymy. Mordellistena andreae differs from M. ancilla by the presence of a long, black spot in the center of each elytron (Liljeblad 1945). Jackman and Lu (2002) also noted that the penultimate segments of the anterior and middle tarsi are emarginate in *M. andreae*; not truncate as in *M. ancilla*. Having not examined *M. andreae*, no changes in status are recommended. However, the emarginate tarsomeres suggest the species is not well placed in either *Mordellina* or *Mordellistena*.

Liljeblad separated *Mordellistrena rufa* Liljeblad, 1917, from *M. ustulata* based solely on the additional transverse ridge associated with the first metathoracic tarsomere: *M. rufa* with four ridges, *M. ustulata* with three. He did suggest, however, (Liljeblad 1945: p. 142) that these might be the same species. The variability of leg ridges in Mordellistenini and the similarity of Wisconsin specimens fitting both descriptions support this suggestion.

Based on the above observations and discussion, the synonymy of M. ancilla is summarized as follows:

Mordellina ancilla (LeConte, 1862), resurrected name and new combination

Mordellistena ancilla LeConte 1862: 50.

Mordellistena varians LeConte 1862: 50.

Mordellistena ustulata LeConte 1862: 50; new synonym.

Mordellistena rufa Liljeblad 1917: 11; new synonym.

Mordellistena andreae ancilla LeConte; Liljeblad 1945: 125.

Mordellistena andreae ustulata LeConte; Liljeblad 1945: 126.

Mordellina ustulata (LeConte); Jackman and Lu 2001: 32.

Concluding Remarks. Relative to the North American mordellid fauna, the taxonomic changes outlined above leave the number of species at 201, the number of Falsomordellistena becomes four, the number of Mordellistena is reduced to 117, and the number of Mordellina increases to 15.

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