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Taxonomic changes in the genus *Diabrotica* Chevrolat (Coleoptera: Chrysomelidae: Galerucinae): results of a synopsis of North and Central America *Diabrotica* species

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Abstract

The following new synonyms in *Diabrotica* Chevrolat 1836 are proposed: *D. flaviventris* Jacoby 1887 and *D. tibialis* Jacoby 1887 are synonyms of *D. adelpha* Harold 1875; *D. peckii* Bowditch 1911 is a synonym of *D. bioculata* Bowditch 1911; *D. nummularis* Harold 1877 is a synonym of *D. circulata* Harold 1875; *D. linensis* Bechyné 1956 is a synonym of *D. trifurcata* Jacoby 1887; *D. brunneosignata* Jacoby 1887 is a synonym of *D. sinuata* Olivier 1790; *D. duplicata* Jacoby 1887 is a synonym of *D. viridifasciata* Jacoby 1887. *Diabrotica cyaneomaculata* Jacoby 1887 does not share the synapomorphies of *Diabrotica* and is treated as *incertae sedis*. *Diabrotica tripunctata* (Fabricius) is removed from synonymy with *D. sinuata* Olivier and is considered to be a valid species. The original combination is restored for *Diabrotica fasciata* Kirsch, the species being transferred from *Paranapiacaba* Bechyné back to *Diabrotica*. It was found that the type series of *D. godmani* Jacoby contains seven different taxa: one is *D. godmani* itself; one is *D. championi* Jacoby; one is *D. quadricollis* Jacoby; three are unidentified *Diabrotica* species, each different from the others; and one is not a *Diabrotica*. The type series of *D. viridicollis* Jacoby contains four different taxa, *D. viridicollis* Jacoby itself and three different unidentified *Diabrotica* species.

Key words: *Diabrotica*, new synonyms, lectotypes

Introduction

Diabrotica Chevrolat, 1836 [type species *Diabrotica fucata* (Fabricius 1787) designated by Barber (1947)] with over 400 described species is one of the most speciose leaf beetle genera in the New World. Many *Diabrotica* species feed on flowers, leaves and roots of a wide variety of herbaceous plants, including agricultural crops, vegetables, fruits and ornamentals, and they are vectors of viral and other lethal plant diseases. For example, a single species, *D. virgifera* LeConte, costs approximately one billion dollars to the US economy annually (Burchett 2001). This makes *Diabrotica* one of the most economically important genera of leaf beetles. However, species identification in *Diabrotica* remains a problem because of a lack of modern treatments and keys (excluding a key for the *virgifera* species group [Krysan and Smith 1987]). Therefore, a project was launched to provide a synopsis of North and Central American *Diabrotica* and prepare a richly illustrated, morphologically based, interactive key to species.

The study focused on documenting the type specimens of all 123 *Diabrotica* species and subspecies known from North and Central America (Smith and Lawrence 1967). As a result, we found several new synonyms, new combinations, a need to restore an original combination, revised species status, discrepancies in the type specimen gender attribution, and identifications that are the subject of this paper.

Study of the type specimens also revealed some extreme cases of misidentification in the type series. For example, the type series of *D. godmani* Jacoby contains seven different taxa: one is *D. godmani* itself, one is *D. championi* Jacoby; one is *D. quadricollis* Jacoby; one is not a *Diabrotica*; and three different unidentified *Diabrotica* species. The type series of *D. viridicollis* Jacoby contained four different taxa, *D. viridicollis* Jacoby itself and three different unidentified *Diabrotica* species.