



New Mexican and Central American species of *Agrilus* Curtis (Coleoptera: Buprestidae) mimetic of flies

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Abstract

The genus *Agrilus* participates in a number of mimicry complexes. At least 23 species in México and Central America are considered to belong to one of the complexes that putatively have flies as models. In this complex, characterized by the color pattern of red-blue/black-pale, 11 new species are described—*Agrilus updikei*, **new species**; *Agrilus marthae*, **new species**; *Agrilus dipterooides*, **new species**; *Agrilus opitzi*, **new species**; *Agrilus exquisitus*, **new species**; *Agrilus zumbadoi*, **new species**; *Agrilus coloradoensis*, **new species**; *Agrilus frankparkeri*, **new species**; *Agrilus cavei*, **new species**; *Agrilus alajuensis*, **new species**; and *Agrilus percaroides*, **new species**. Two species groups are recognized, based on *Agrilus basalis* Chevrolat and *A. percarus* Kerremans. Previously described species are provided with a diagnosis or re-described, and additional specimen records are given. All species are illustrated.

Key words: *Agrilus*, Buprestidae, Central America, Coleoptera, flies, México, mimicry

Years ago I suggested that a recurring color pattern in the buprestid genus *Agrilus* and in a diverse assemblage of other beetles resembled that of certain flies (Hespenheide 1973, 1995). Beetle species usually have the pattern of a red head and anterior portion of the pronotum, a black or metallic blue area of the posterior portion of the pronotum and anterior portion of the elytra, and the posterior 2/3 portion of the elytra with pale reflections and/or covered by silvery or golden setae. Additional species of *Agrilus* with this pattern have been described subsequently from México and Central America (*A. muscicoloratus*, Hespenheide, 1989; *A. hectori*, *A. incredulous*, and *A. rossanae* Curletti, 2005) and similar mimetic species have been reported and described from South America (*A. dives* Kerremans, and *A. cerdai*, *A. colleti*, and *A. tristani* Curletti & Brûlé, 2011). Buprestids with similar color patterns have been reported from Papua New Guinea (*Coraebus cupricollis* Deyrolle, Hawkeswood & Turner 1993) and elsewhere in Asia (C.L. Bellamy, personal communication). A number of Central American fly mimic *Agrilus* remain undescribed, and this paper describes 11 species, including 5 species that are unusual within the complex for their size greater than 7 mm in length. Two putative fly-mimicking species with the names *Agrilus basalis* Chevrolat and *A. percarus* Kerremans have each been found to be a group of closely related species, rather than single species as I thought earlier (Hespenheide 1979). The types of all previously described species have been reexamined to determine how these names should be applied correctly.

Specimens in this mimicry complex are not common in collections and six—two previously described species and four described here—are known only from unique types. Three additional unique specimens from México and Costa Rica known to me cannot be assigned to any of the 23 species treated here and must represent additional species, but are not described at this time. Rarity of specimens of mimics is expected in Batesian mimicry relationships, and is found in other groups of mimetic *Agrilus* (Hespenheide 1996, 2010, and in preparation).

Resemblance of species in this complex can be extremely close due to the mimicry, in what I have elsewhere termed mimetic homoplasy (Hespenheide 2005). Combined with the small number of specimens available for study, in some cases it is difficult to interpret small differences among specimens. For example, I have interpreted some such differences as natural variation in my treatment of *A. percarus*, but as representing separate species in the treatment of *A. incredulous*. Single female specimens from México included here under *A. basalis* and *A. percarus* may represent yet additional species.