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The genus *Phyllophaga* Harris (Coleoptera: Scarabaeidae: Melolonthinae) in the Colombian Andean Mountains

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Abstract

The number of species in the genus *Phyllophaga* Harris (Coleoptera: Scarabaeidae: Melolonthinae) in Colombia is updated to 33. This group represents one of the most common components of the “white grubs” complex, known to damage important agricultural crops, especially in the Colombian Andean Mountains. A commented taxonomic history of the genus is provided, including five new records for the country (*P. schizorhina*, *P. onoreana*, *P. densata*, *P. guanacasteca*, and *P. gigantea*) and *Phyllophaga tesorito* is described as a new species. A key to the identification of male specimens of 30 species is included with a catalogue illustrating their key structures. Finally, aspects related to their ecological importance, geographic distribution, and phenology are discussed.

Key words: Coleoptera, Scarabaeidae, Melolonthinae, *Phyllophaga*, white grubs, Colombia

Resumen

La lista de las especies del género *Phyllophaga* Harris (Coleoptera: Scarabaeidae: Melolonthinae) para Colombia es actualizada a 33. Este grupo representa uno de los componentes más frecuentes del complejo “chisa” que daña importantes cultivos agrícolas ubicados especialmente en las Montañas Andinas Colombianas. La historia taxonómica del género es comentada, cinco nuevos registros para el país (*P. schizorhina*, *P. onoreana*, *P. densata*, *P. guanacasteca* y *P. gigantea*) son presentados y *P. tesorito* es descrita como una nueva especie para la ciencia. Igualmente, se incluye una clave para identificar los machos de 30 especies y nuevas ilustraciones de las estructuras clave para la diagnosis precisa de cada especie son proporcionadas en forma de un catálogo; finalmente se discuten algunos aspectos que relacionan su importancia ecológica, distribución geográfica y su fenología.

Introduction

Phyllophaga Harris (Coleoptera: Scarabaeidae: Melolonthinae) is one of the most numerous and best known genera of New World beetles, with approximately 500 species adapted to different environments, including coniferous forests, pine-oak forests, tropical dry forests, cloud forests, and tropical rain forests. Species are distributed from Canada to Argentina at altitudes ranging from sea level to more than 3,000 m. The highest species richness is found in Central American countries where the genus is associated with numerous ecosystems, including agricultural crops (Morón 2003).

In Colombia, species of the genus *Phyllophaga* are generally restricted to the foothills and valleys of the Andean mountain ranges, including ecosystems such as dry forests in the lowlands and cloud forests and moors (páramos) in the highlands. A variety of agricultural crops are grown throughout the geographic ranges of *Phyllophaga*, which are exploited by adults and larvae of some species. It is known that these species attack more than 100 species of cultivated and wild plants (Rippere 1998), especially crops of importance to rural economies (beans, potatoes, corn, grass, vegetables, cassava) and agricultural industry (flowers and coffee for export). The losses are substantial, given that larvae, popularly known as “white grubs” or “beetle grubs”, obtain their food from the tissues of the root systems causing the death of the host plant. Conversely, the adults consume the foliage. Their control is based on the use of synthesized chemicals, often leading to negative consequences for ecosystem health.

Taxonomic history of *Phyllophaga*

The generic name *Phyllophaga* (from the Greek: *Phyllos-phagos*, “leaf eaters”) was proposed by the American