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FIRST RECORD OF *PHYLLOPHAGA* SP. AFF. *CAPILLATA* (COLEOPTERA: MELOLONTHIDAE) AS A SOYBEAN PEST IN THE BRAZILIAN "CERRADO"

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Insects known in Brazil as "corós" are beetle larvae (Coleoptera) of the family Melolonthidae (*sensu* Endrödi 1966; Morón 1997, 2001a; Morón et al. 1997). Many of these species feed on roots of a wide range of cultivated plants and are considered pests worldwide (Morón 1997). The genus *Phyllophaga* Harris stands out as one of the most important due to the damage many cause to agricultural systems (Saylor 1942). They could be considered one of the most serious pests in Mexico and Central America (Morón et al. 1996). Damage caused by *Phyllophaga* in the Americas have been recorded in several crops, including corn (*Zea mays* L.), potato (*Solanum tuberosum* L.), sugar cane (*Saccharum officinarum* L.), peanut (*Arachis hypogea* L.), bean (*Phaseolus vulgaris* L.), pepper (*Capsicum annum* L.), coffee (*Coffea arabica* L.), pastures, vegetables, ornamental plants (Pardo-Locarno et al. 2005; Morón 1997; King 1984), soybean (*Glycine max* (L.) Merrill) (Oliveira et al. 2004; Salvadori & Oliveira 2001), and wheat (*Triticum aestivum* (L.) Thell) (Salvadori & Silva 2004; Salvadori & Oliveira 2001).

About 369 species of *Phyllophaga* are known in Mexico (Morón 2003). Although many related studies have been conducted in Mexico and Central America, information on their bioecology, lifecycle, host preference, and reproductive behavior are still rare for most species (Morón 1986; King 1984). In South America, the knowledge of *Phyllophaga* is also critical, and extensive taxonomic reviews are required (Morón 2004).

In 1985, serious damage attributed to "corós" in Brazil started being recorded in soybean fields in

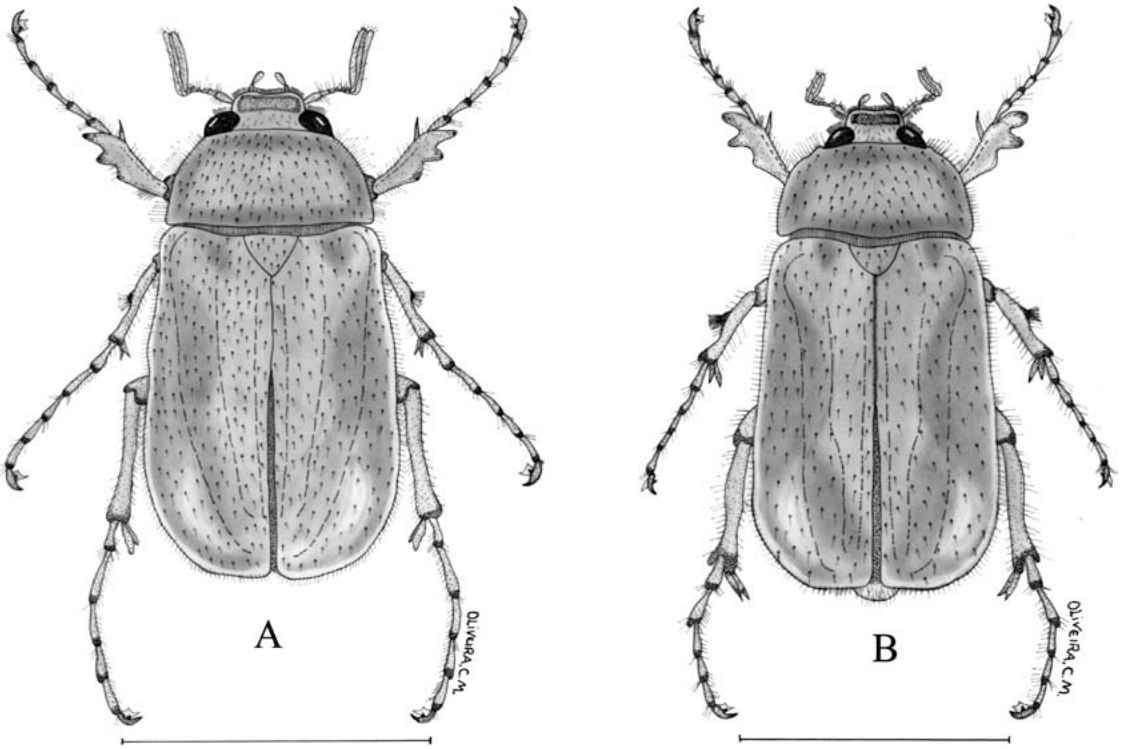


Fig. 1. *Phyllophaga capillata*. A) male adult, dorsal view; B) female adult, dorsal view (line = 1 cm).

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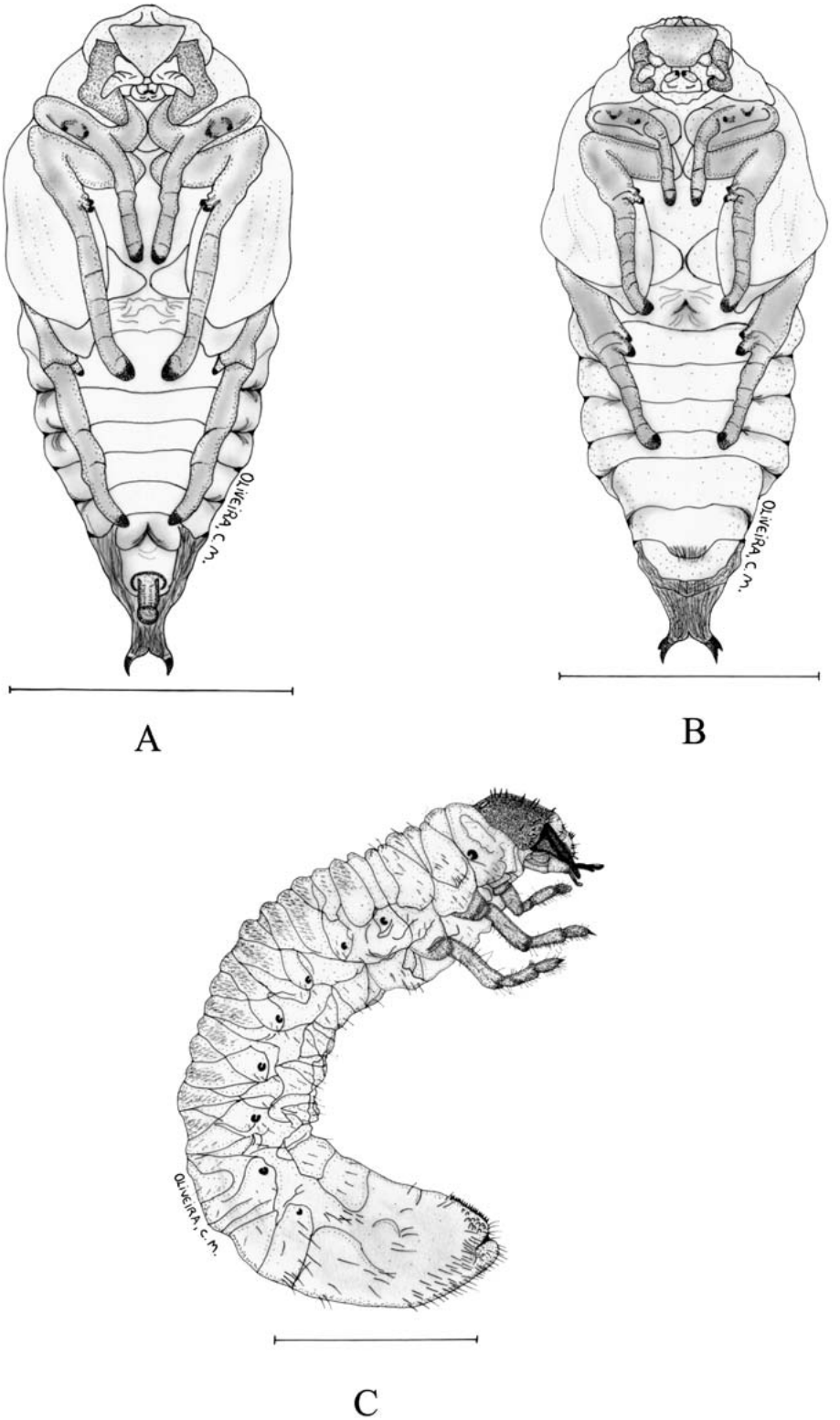


Fig. 2. *Phyllophaga capillata*. A) male pupae, ventral view; B) female pupae, ventral view; C) third instar, lateral view (line = 1 cm).

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the state of Paraná (Hoffmann-Campo et al. 1989; Oliveira et al. 1992). Since then, *Phyllophaga* larvae have become one of the most important soil pests in several cereal crops in the southern region (Salvadori & Oliveira 2001). In Brazil, there are 38 species of *Phyllophaga*, and 31 of them can be reliably identified (Morón 2001b, 2004). Until now, only 2 of these species reached major pest status in high economic value crops: *P. cuyabana* (Moser) in soybean (Oliveira et al. 2004) and *P. triticophaga* Morón & Salvadori in wheat (Salvadori & Silva 2004).

In the last decade, expensive and systematic yield losses have been observed in large soybean commercial areas in the Federal District (Middle-Western Region) as a function of the damage of edaphic larvae pertaining to the Coleoptera order. Crops sown in November show symptoms following the initial stage of larval development. Small and yellowish plants either die or have reduced yield potential. These symptoms occur in patches of variable size in a non-uniform pattern within agricultural fields. In the 2005/2006 harvest, adults of these insects reared in the laboratory and collected in the field were sent to the Department of Soil Biology, Ecology Institute, A. C., México, for specific taxonomic identification. Specimens were identified as *Phyllophaga* sp. aff. *capillata* Blanchard (Coleoptera: Melolonthidae) (Figs. 1 and 2) and will be referred to here by the common name of "coró-da-soja-do-cerrado". It is part of the "anodentata" group distributed in South America. *Phyllophaga capillata* was originally described from specimens collected in Bolivia, and a similar species also is known in Brazil and Colombia. Bioecological studies on *P. capillata* are in progress by Embrapa Cerrados (Planaltina/DF-Brazil) in laboratory and field conditions.

There are reports of *P. capillata* in the state of Goiás (Morón 2001b; 2004) and in the Atlantic Forest of Pernambuco state (Moura et al. 2003); however, the association of this species as a crop pest was not mentioned. In the Federal District, the "coró-da-soja-do-cerrado" has been observed causing damage to crop plants since the end of 1990. The larval populations appear in the field from the middle of Nov and remain feeding on plant roots until Mar. There is a synchrony of the active phase of the insect with the soybean cycle in this region. Soybeans are presently one of the most important crops in Brazil and in the "Cerrado" region (Middle-Western Region) that accounts for about 50.2% of the national production (CONAB 2006). In many soybean fields in the middle region of the country, *P. capillata* is considered one of the main pests. On the other hand, no efficient control strategies for *P. capillata* have been developed.

Few studies on *Phyllophaga* conducted in Brazil suggest that the transition region between "Cerrado" and Atlantic Forest biomes is the diversification center of this genus. The incorporation of new "Cerrado" areas for agricultural purposes in the last 20 years may be one of the factors that contributed to these species dispersal in the middle region of the country (Morón 2001b). In this context, the correct taxonomic identification of species that cause damage in different regions is the first step for the development of control strategies for this pest. This is the first record of *P. capillata* as a soybean pest and the first report of its occurrence in the Federal District.

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Summary

In recent decades, white grubs (Coleoptera: Melolonthidae) have become a serious problem in soybean crops *Glycine max* (L.) Merrill in Brazil. The most important species in southern Brazil is *Phyllophaga cuyabana* (Moser). Recently, serious damage by white grubs of *Phyllophaga* sp. aff. *capillata* (Blanchard) in soybean crops were detected in the "Cerrado" of Federal District. This is the first record of *P. capillata* as pest of soybean cultures, and the first report of such species in the Federal District.

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