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Species Richness of the Genus *Phyllophaga* (Coleoptera: Melolonthidae) in the North of the State of Veracruz, MexicoJulián Hernández-Cruz¹, Miguel A. Morón², and José A. Sánchez-García^{1*}

Abstract. In Ozuluama region in northern Veracruz, Mexico, 1,888 specimens of the genus *Phyllophaga* were collected. Six species were recognized from three subgenera and five species groups. The most abundant species was *Phyllophaga trichodes* (Bates). The numbers of *P. crinita* (Burmeister), *P. xkumuka* Morón, and *P. temora* Saylor are new state records.

Resumen. En la región de Ozuluama, norte del Estado de Veracruz se colectaron 1888 ejemplares del género *Phyllophaga*. Se reconocen seis especies, las cuales están incluidas en tres subgéneros y cinco grupos específicos. La especie más abundante fue *Phyllophaga trichodes* (Bates). *P. crinita* (Burmeister), *P. xkumuka* Morón, y *P. temora* Saylor representan nuevos registros estatales.

The northern region of Veracruz is covered with vegetation dominated by grassland, a variety of shrubbery, and some tropical evergreen forests, which provide a suitable habitat for a diversity of insects. Beetles are particularly common, especially during the rainy season. In recent years, the Melolonthidae species in the central and southern regions of Veracruz, Mexico have been well studied. However, information on May beetles in the northern region is scarce. One of the most diverse and important groups in the family is the *Phyllophaga* genus. This group of species is of economic importance because the larvae can damage roots of grassy crops. Not all larvae of the species cause crop damage; however, once they become pests, achieving effective control is almost impossible without adequate knowledge of the biology of the species. The main objective of this work was to contribute to information on *Phyllophaga* beetles in northern Veracruz.

Specimens were collected by hand under houselights at night from May to June in the village of El Mercado in the municipality of Ozuluama, Veracruz, Mexico (Fig. 1), 150 m above sea level. The climate is warm with an average annual temperature of 23.5°C and annual rainfall of 1,377.2 mm. The dominant vegetation is native or introduced grasses. In the region are small isolated areas of primary vegetation such as tropical evergreen forest and tropical deciduous forest (approximately 8,500 hectares). Diverse natural environments of palm, mangrove, coastal dune vegetation, and coastal oaks occur there.

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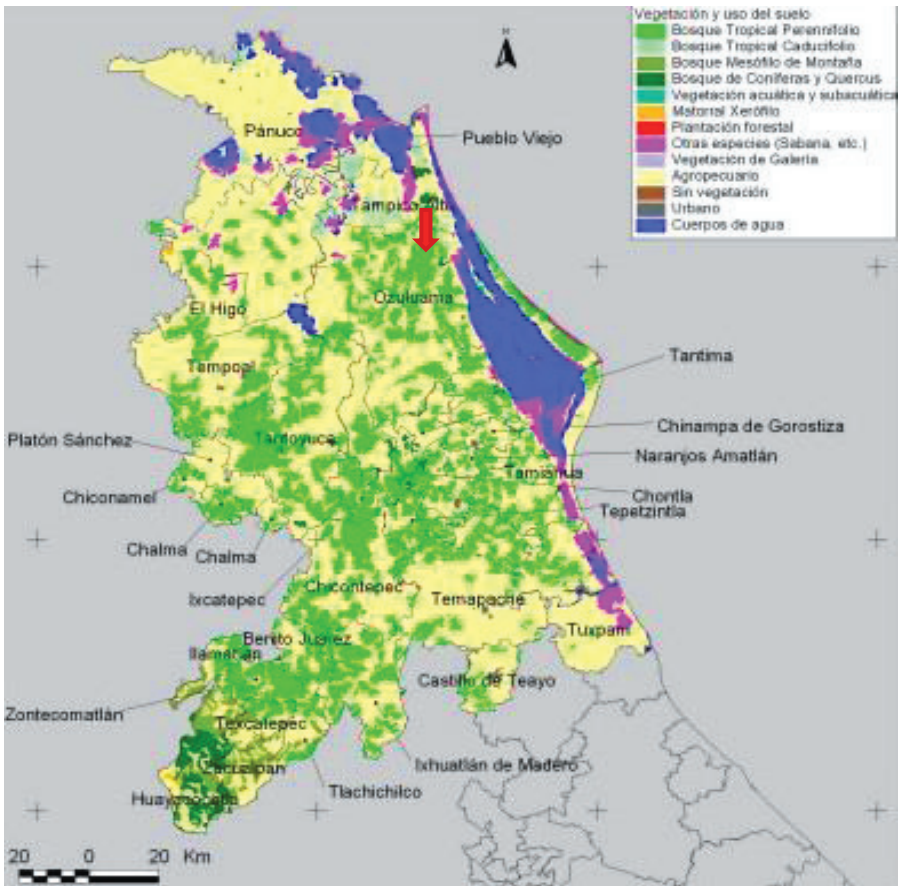


Fig.1. Map showing the general characteristics of the study region.

Raising livestock is the primary activity in the area where the *Phyllophaga* specimens were collected. Here are native grasses, *Paspalum* spp., *Axonopus* spp., *Cynodon* spp., and *Desmodium* spp., as well as introduced grasses such as Guinea (*Panicum maximum* Jacq.), estrella de África (*Cynodon plechtostachyus* K. Schum.), pangola (*Digitaria decumbens* Stent), and *Brachiaria brizantha* (Hochst. ex A. Rich.) Stapf. Trees such as palo de sol (*Gliricidia sepium* (Jacq.) Kunth ex Walp) and guasima (*Guazuma ulmifolia* Lam.) are common in the region, and their foliage is used as forage.

Beetle specimens collected were preserved in 70% ethanol, and individuals of each species and their genitalia were pinned in accordance with procedures by Morón and Terrón (1988). The number of species and number of individuals (females and males) of each species were recorded.

Three species (*P. trichodes* (Bates), *P. vexata* (Horn), and *P. menetriesi* (Blanchard)) in this study have been previously recorded in Veracruz (Morón 2003).

They are commonly found in tropical forests and plantations from sea level to 1,600 m. In rainy regions, large specimens such as *P. trichodes* are dominant and abundant (Table 1).

Table1. Number of Individuals of Each Species of *Phyllophaga* (*sensu lato*) Recorded in 2013 in the Village of El Mercado, Municipality of Ozuluama, Veracruz, Mexico

Subgenus	Group	Species	Individual	
			♂	♀
<i>Phytalus</i>	<i>pruinosa</i>	<i>P. trichodes</i> (Bates, 1888)	1,659	88
<i>Phyllophaga</i>	<i>anodontata</i>	<i>P. crinita</i> (Burm, 1855)	101	20
<i>Chlaenobia</i>	<i>vexata</i>	<i>P. vexata</i> (Horn, 1885)	14	32
<i>Phyllophaga</i>	<i>rorulenta</i>	<i>P. temora</i> Saylor, 1943	9	6
<i>Phyllophaga</i>	<i>incerta sedis</i>	<i>P. xkumuka</i> Morón, 1999	12	0
<i>Phyllophaga</i>	<i>setidorsis</i>	<i>P. menetriesi</i> (Blanch, 1850)	3	1
Total	3	5	6	1,888

According to Morón (2003) and Rodríguez-del Bosque et al. (2003), *P. crinita* (Burmeister) is common in the northeastern region of Mexico and in Texas, United States, but has never been collected in areas of Veracruz. Recent publications (Rodríguez-del Bosque et al. 2003, Rodríguez-del Bosque 2010) have shown it to be a new pest of several crops and abundant in the regions (several thousand individuals per year). Although the species was not associated with crop damage in the study, it would be interesting to record its future behavior. *Phyllophaga xkumuka* Morón was originally recorded in Chiapas, and the finding in Ozuluama represents a new record for the State of Veracruz. Its presence in northern Veracruz is unusual because the species is commonly found in tropical deciduous forests at elevations of 800 to 1,200 m. It is possible that *P. xkumuka* might inhabit diverse environments at different altitudes. The third new state record was *P. temora* Saylor, a species that inhabits diverse tropical forests and mesophyll forests between sea level and 1,000 m of elevation in the states of Nuevo León and San Luis Potosí.

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