Description of the immature stages of nine species of *Veturius* (Coleoptera: Passalidae)

KAREN SALAZAR-NIÑO¹² & JOSÉ EDUARDO SERRÃO³

¹Investigation group in Insects of Colombia, Universidad Nacional de Colombia, Bogotá, Colombia
²Post-graduate program in Entomology, Departamento de Entomologia, Universidade Federal de Viçosa, Viçosa 36570-000, Brazil. E-mail: karen.nino@ufv.br
³Departamento de Biologia Geral, Universidade Federal de Viçosa, Viçosa 36570-000, Brazil. E-mail: jeserrao@ufv.br

Abstract

The third instar of *Veturius aspina* Kuwert, *V. assimilis* (Weber), *V. simillimus* Kuwert, *V. simuacolpis* Kuwert, *V. sinuatus* (Eschsoltz), *V. crassus* (Smith), *V. impressus* Hincks (as well as pupal stage), *V. negroensis* Boucher, and the first instar of *V. oberthuri* (Hincks) (Coleoptera: Passalidae) are described for the first time based on specimens from Argentina, Brazil, and Colombia. The most distinctive characters for these species are the presence and distribution of primary setae and the position, number, and size of the teeth of the metathoracic legs. An evident difference in the number of micro-conical projections on the maxillary stipes and measurements of the pars stridens (mesocoxae) suggests that these characters are useful for species identification. We present an identification key to the species of known larval *Veturius* (13), representing the 17.6% of total species recognized into genus. Light micrographs and scanning electronic micrographs are included for detailed characters.

Key words: Argentina, Brazil, Colombia, bess beetle, larva, pupa

Introduction

The Passalidae (Coleoptera) are saproxylic insects with subsocial behavior and a life cycle occurring in decaying logs. The family group may be formed by a pair of adult founders, first generation adults, eggs, larvae of different instars, and pupae (Reyes-Castillo & Halffter 1983), which facilitates the association of the larvae with the species when are found in the field.

In general, bess beetle larva have an elongate body that is cream-white color, curved posteriorly; a prognathous head, antennae with two antennomeres; and maxillary palpi and mandibles with three apical teeth. The metathoracic legs (plectrum) are single segmented with darker, sclerotized apical teeth that, together with the pars stridens on the mesocoxae, form the stridulatory apparatus. That last character is the main feature for identification of Passalidae larvae (Baker 1971; Reyes-Castillo & Jarman 1980; Schuster & Reyes-Castillo 1981; Costa & Fonseca 1986). The pupae are exarate adecticous, cream-white, with head visible; elliptical abdominal stigmata and margins of abdominal tergites sinuous (Reyes-Castillo 2004).

The genus *Veturius* Kaup has widespread geographic distribution from Los Tuxtlas, Mexico to Bolivia, Misiones Province and northern of Corrientes Province, Argentina, southern Paraguay, southern Brazil and the Guyana massif, including Gorgona Island (Colombia) and Trinidad and Tobago. The genus is found on an altitudinal gradient from 0 to almost 3800 m (Boucher 2006).

Although the genus has been well studied (see Boucher 2006), the immature stages are poorly known with only six larvae described of the 74 species recognized. Schuster & Reyes-Castillo (1981) described the larvae of *V. cirratus* Bates, *V. platyrhinus* (Hope & Westwood), and *Publius* species. Costa & Fonseca (1986), described the larvae of *V. transversus* (Dalman), *V. platyrhinus*, and *V. cephalotes* (LePeletier & Serville). Schuster (1992) described the first and second instars of the *Publius* species described in Schuster & Reyes-Castillo (1981). Costa *et al.* (1988) redescribed the larva of *V. transversus*. However, taking into account the geographical distribution and
Acknowledgments

This research was supported by Brazilian research agencies Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Fundação de Amparo à Pesquisa do estado de Minas Gerais (FAPEMIG), and Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES). We thank the entomological collection at Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá, Colombia, for the opportunity to check their specimens; the Nucleus of Electron Microscopy and Microanalysis at the Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil (UFV) for technical support; and the Laboratório de Orthopterologia do Departamento de Biologia Geral (DBG/UFV) for support with the equipment for digital photographs. Professors Pedro Reyes Castillo (Instituto de Ecología, Mexico, INECOL) and Jack C. Schuster (Universidad del Valle de Guatemala, Guatemala, UVG) are thanked for reviewing the manuscript. Professor Stéphane Boucher (Muséum National d’Histoire Naturelle, France, MNHN) is acknowledged for confirming the species identification and for his suggestions. The first author thanks professor Germán Amat García (ICN) for unconditional help and for stimulating her to work with the bess beetles of Colombia.

References cited

http://dx.doi.org/10.2307/2423934


http://dx.doi.org/10.11646/zootaxa.3701.2.4

http://dx.doi.org/10.1002/mmnd.18710150306


http://dx.doi.org/10.2307/3495857