



## New position of an abdominal defensive gland complex in Staphylinidae (Coleoptera) with redescription of *Piestus heterocephalus* Fauvel, 1902 (Piestinae)<sup>1</sup>

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### Abstract

A Neotropical rove beetle, *Piestus heterocephalus* Fauvel, 1902 (Coleoptera, Staphylinidae, Piestinae), is redescribed and illustrated. Its abdominal defensive gland complex is described using drawings, photos and scanning electron micrographs. This complex is reported for the first time in Piestinae and its distinctive position is unique in Staphylinidae. Our preliminary survey suggests that the presence of this gland complex is restricted to part or all of the genus *Piestus* Gravenhorst, 1806.

**Key words:** South America, glands, defensive secretion, scanning electron micrographs, taxonomy

### Introduction

Exocrine glands are found in Staphylinidae (Coleoptera) in different body segments and their secretions are involved in diverse specific functions. Examples are observed in *Stenus* Latreille, 1797, in which the adhesive secretions of the labium are used to capture fast-fleeing prey, such as Collembola (Kölsch 2000); in *Aleochara* Gravenhorst, 1802, in which the porous structures of antennae are associated with communication (Skilbeck & Anderson 1994); and in many free-living staphylinids with abdominal gland complexes that are related with defensive functions (Dettner 1993).

The first mention of a chemical defense in Staphylinidae was given by Linné in 1732 (Huth & Dettner 1990), who observed a species emitting an odor similar to the oil of a plant. Since then, many authors have recorded abdominal gland complexes of known or presumed defensive function in different positions and of different structure in several subfamilies (Araujo 1978; Gnanasunderam *et al.* 1981; Dettner & Schwinger 1982; Dettner & Reissenweber 1991; Kellner & Dettner 1992; Steidle & Dettner 1993; Newton & Thayer 1995; Quennedey *et al.* 2002).

Dettner (1993) commented that the occurrence of defensive glands is due to high predatory pressure. According to this author, the free abdomen of staphylinids is completely unprotected from predatory attack and as a result many taxa of Staphylinidae evolved defensive glands independently. Therefore, some authors have used the presence of such glands, mainly the position and structure of the gland complexes, as an informative character in phylogenetic analyses (Herman 1970, 1975; Steidle & Dettner 1993; Newton & Thayer 1995; Hanley 2002; Solodovnikov & Newton 2005).