



<http://dx.doi.org/10.11646/zootaxa.3737.3.7>

<http://zoobank.org/urn:lsid:zoobank.org:pub:8E1E18AE-EE9A-4BCB-AB82-B261986E4D93>

Three new species of the genus *Brachinus* Weber, 1801 from the Philippines, with a modified key to species (Coleoptera: Carabidae: Brachininae)

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Abstract

Three new *Brachinus* species namely *B. grootaerti* n. sp. (Palawan Island), *B. palawanensis* n. sp. (Palawan Island), *B. mindanaoensis* n. sp. (Mindanao Island) from Philippines were described. In addition, a modified key to the known *Brachinus* Philippine species is provided.

Key words: Coleoptera, Carabidae, Brachininae, *Brachinus*, new species, the Philippines

Introduction

The Philippines is one of the few nations that is, in its entirety, both a hotspot and a megadiversity country, placing it among the top priority hotspots for global conservation. The patchwork of isolated islands, the tropical location, and the once extensive areas of rainforest have resulted in high species diversity in some groups of organisms and a very high level of endemism. About 70 percent of the Philippines' nearly 21,000 recorded insect species are found only in this hotspot (International, 2013). Hence as one of the 25 hotspots of biodiversity (Myers et al., 2000), fauna from the Philippines region has great conservational significance.

Bombardier beetles are ground beetles (Carabidae) in the tribes Brachinini, Paussini, Ozaenini, or Metriini—more than 1000 species altogether—which are most notable for the defense mechanism that gives them their name: when disturbed, they eject a hot noxious chemical spray from the tip of their abdomen, with a popping sound. Taxonomy of bombardier beetles from the Nearctic Region is well known (Erwin, 1970), but poorly known from the Oriental Region (Andrewes, 1930; Csiki, 1933; Jedlička, 1963) although several species of the dominant genus *Brachinus* Weber, 1801 have been occasionally described in recent years (Kirschenhofer, 1994, 1996, 2010, 2011a,b; Hrdlička, 2009a,b; Gao & Tian, 2011). Four *Brachinus* species namely, *B. luzonicus* Chaudoir 1876, *B. piceus* Chaudoir 1876, *B. philippinensis* Tian & Deuve 2007 and *B. solidipalpis* Tian & Deuve 2007 were reported from the country. Kirschenhofer (2010) transferred *Brachinus nigerrimus* (Jedlička, 1935) from the genus *Pheropsophus* Solier. But from our point of view, it is a member of *Pheropsophus*, rather than of *Brachinus* because of its sharp elytral costae and pronotal structure. In the present effort, three new species of *Brachinus* were described with a modified key from the Philippines.

Materials and methods

All specimens for the study were collected with light traps. Identified specimens were deposited in the Muséum National d'Histoire Naturelle, Paris (MNHN) and Institut Royal des Sciences naturelle de Belgique, Brussels (IRSNB). Method of analysis and abbreviations of measurements used in the text are same as in Tian & Deuve (2007).

6	Elytra broad, with shoulders square	<i>B. grootaerti</i> n. sp.
-	Elytra slender, with shoulders broad	<i>B. mindanaoensis</i> n. sp.

Acknowledgements

Authors thank Mr. Alain Drumont, Dr. Patrick Grootaert (IRSNB, Brussels) and Ms. Azadeh Taghavian (MNHN, Paris) for providing specimens under their care. Mr. Erich Kirschenhofer (Perchtoldsdorf, Austria) kindly sent us the nice pictures of *Pheropsophus nigerrimus* Jedlička. The submitted draft of the manuscript was carefully reviewed by Dr. Sabu K. Thomas (St. Joseph's College, Devagiri, India) and an anonymous expert. We thank their critical remarks and suggestions which are helpful to improve the manuscript. In particular, the first author would express his sincere appreciations to MNHN, Paris for the long-term financial and logistic support on his studies. This work is also partly sponsored by the National Natural Science Foundation of China (Grant no. 41271062).

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