



Review of the Elmidae of Ecuador with the description of ten new species (Coleoptera: Elmidae)

CINZIA MONTE¹ & ALESSANDRO MASCAGNI²

Museo di Storia Naturale, Sezione di Zoologia “La Specola”, Università degli Studi di Firenze, Via Romana 17, I – 50125 Firenze, Italy.

¹E-mail: cinzia.monte@alice.it ²E-mail: pcfmas@tin.it

Abstract

Material collected during a biodiversity expedition in some protected areas of Ecuador, located in the provinces of Cotopaxi, Pichincha and Napo, resulted in ten new species and three first records. The new taxa are: *Cylloepus bartolozzii* **sp. nov.**, *Cylloepus cesari* **sp. nov.**, *Cylloepus fabianorum* **sp. nov.**, *Cylloepus francescae* **sp. nov.**, *Cylloepus mazzai* **sp. nov.**, *Cylloepus terzanii* **sp. nov.**, *Cylloepus whitmanae* **sp. nov.**, *Macrelmis eliciei* **sp. nov.**, *Pharceonus cianferonii* **sp. nov.** and *Stenhelmoides onorei* **sp. nov.** The three records are: *Cylloepus vicinus* Hinton, 1940, *Hexacylloepus nirgua* Hinton, 1973, *Phanocerus congener* Grouvelle, 1898. Habitus photographs and illustrations of aedeagi for all the new taxa and other useful characters for some of them, a key to the *graniger* species-group of *Macrelmis*, and a checklist of the Ecuadorian species with their general and local distributions are hereby included.

Key words: Neotropical region, Ecuador, Elmidae, Elminae, Larinae, new species, new records, checklist

Introduction

This paper is based on the study of the Elmidae, a family of small aquatic beetles with a worldwide distribution and subdivided in two subfamilies, Elminae and Larinae, both of which are present in the Neotropical Region. The species studied in this work were collected in Ecuador during three entomological expeditions to the provinces of Cotopaxi, Pichincha and Napo (Ecuador) with the support of the Otonga Foundation. Two expeditions (1993, 2000) were organized by the entomologists of the Zoological Section “La Specola” of the Natural History Museum of the University of Florence in collaboration with the Universidad Católica del Ecuador with the aim to increase the knowledge of Ecuadorian biodiversity. A third expedition was carried out in 2009 in collaboration with the Otonga Foundation. We also studied some specimens collected in Ecuador and donated to the museum by Prof. Giovanni Onore and Dr. Elicio Tapia, respectively President and Secretary of the Otonga Foundation, which also supported this biodiversity research.

Most of the material was collected in semideciduous, evergreen and mixed evergreen dense rainforests within the Bosque Integral Otonga (BIO) Reserve (Cotopaxi-Pichincha provinces; Plate 1, Fig. 1), and the remainder in the Yasuní National Park rainforest (Napo province; Plate 1, Fig. 2). The BIO reserve (Plate 2, Figs. 1–2) is located on the western slopes of the Andes, (1300–2300 meters), about 100 km West of Quito and 5 km from the village of San Francisco de Las Pampas. Otonga includes in the lowest area, the Otongachi forest (650–900 meters; Plate 2, Figs. 3–4), very close to the village of La Unión del Toachi. Two environmental typologies can be found in the BIO reserve: the higher mountain area corresponding to the typical cloudy woodland, and the lower part belonging to the tropical rainforest; these typologies include different ecosystems with extremely diversified living organisms. Yasuní National Park, located in Ecuadorian Amazonia, is a tropical rainforest and is considered one of the largest reserves of genetic biodiversity on the planet (Bonilla & Proaño, 2011).

Few investigations and few systematic works have been published on the Coleoptera family Elmidae in Ecuador and most of them are relatively recent. The main paper which lists several taxa for this country is the one of Deleve (1968), who examined Elmidae distribution in different altitudes and recorded 9 genera, and 19 species.