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The Peruvian Amazonian species of *Epirhyssa* Cresson (Hymenoptera: Ichneumonidae: Rhyssinae), with notes on tropical species richness

ISRRAEL C. GÓMEZ¹, ILARI E. SÄÄKSJÄRVI¹, LIISA PUHAKKA¹,
CAROL CASTILLO¹ & SANTIAGO BORDERA²

¹Zoological Museum, Section of Biodiversity and Environmental Sciences, Department of Biology, FI-20014 University of Turku, Finland

²Departamento de Ciencias Ambientales y Recursos Naturales/Instituto de Investigación de Biodiversidad CIBIO, Universidad de Alicante, Alicante, Spain

³Corresponding author. E-mail: israel.gomez@yahoo.com

Abstract

Epirhyssa Cresson 1865 is a large tropical genus of the family Ichneumonidae. It is the most diverse genus of the subfamily Rhyssinae with about 118 species worldwide. In this study we conducted four long-term field inventories to review the Peruvian Amazonian species of the genus. We provide illustrations, diagnosis and an identification key to the species currently known to occur in the region, including descriptions of 10 new species. In addition, we describe the female of *E. wisei* Porter and the male of *E. pertenuis* Porter, discuss the biogeographical patterns of species richness of the genus and provide new faunistic records for Brazil, Colombia, Ecuador, French Guiana, Paraguay and Peru. The Peruvian Amazonia is, according to our results, among the most species-rich areas in the world for this genus. Some of the new species described in this work were named by the public in Finland and Peru during two innovative competitions to name these beautiful species. The aims of these competitions were to draw attention to the plethora of unknown species lurking in the shades of tropical forests and the necessity to protect these highly diverse areas.

Key words: new species, Neotropical region, parasitoid, biodiversity, Andes, rain forest, taxonomy, idiobiont

Resumen

Epirhyssa Cresson 1865 es un género tropical de Ichneumonidae que comprende un gran número de especies. Es el género más diverso de Rhyssinae con alrededor de 118 especies en todo el mundo. En este trabajo conducimos cuatro muestreos de largo plazo para revisar las especies de *Epirhyssa* de la Amazonia peruana. Se proporcionan ilustraciones y una clave para la identificación de las especies actualmente conocidas en la Amazonia Peruana, incluyendo la descripción de 10 especies nuevas. Adicionalmente, se describe la hembra de *E. wisei* Porter y el macho de *E. pertenuis* Porter, y se discuten los patrones biogeográficos de la riqueza de especies del género, proporcionando nuevos registros faunísticos para Brasil, Colombia, Ecuador, Guyana Francesa, Paraguay y Perú. La Amazonia peruana es, de acuerdo a nuestros resultados, una de las áreas de mayor riqueza de especies del género *Epirhyssa* en el mundo. Algunas de las nuevas especies descritas en este trabajo fueron nombradas por el público en Finlandia y Perú durante dos concursos innovadores para llamar la atención sobre la abundancia de especies sin describir en los bosques tropicales y la necesidad de proteger estas áreas altamente diversas.

Palabras clave: Nuevas especies, Región Neotropical, biodiversidad, Andes bosques tropicales, taxonomía, idiobionte

Introduction

The parasitoid wasp family Ichneumonidae is one of the most diverse groups of insects (Townes 1969; Gauld 1991; Gauld *et al.* 2002). Despite the high species richness and fascinating biology of these parasitoids, only a few

(Gómez *et al.* 2014). Furthermore, to our knowledge this is the first study of *Epirhyssa*, at least in South America, where four extensive Malaise inventories (total sampling effort of 358 MTM) were applied to study the diversity of this genus at regional level.

Epirhyssa species are widespread and species rich in the lowlands of the Neotropical region and further sampling in Peru and other countries will yield many new species. According to the examination of all the Neotropical *Epirhyssa* species available to us it seems that there may be two major assemblages of Neotropical *Epirhyssa* species. The main one in South America, covering the lowland areas of Amazonia and the Andean-Amazonian interface, and a second one from Central America north to Mexico with the Panama area acting as a natural transition zone between these two main assemblages.

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