

First record of Oxytorinae (Hymenoptera: Ichneumonidae) from South America, with description of a new species of *Oxytorus* Förster, 1869

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Abstract: The monotypic subfamily Oxytorinae is recorded for the first time from South America. *Oxytorus peruvianus* sp. n. from a Peruvian premontane rain forest is described and illustrated. Information on the habitat and phenology of the new species is reported.

Key words: *Oxytorus*; new species; taxonomy; parasitoid wasp; Neotropic; Amazonia; Peru

Introduction

The Oxytorinae is a monotypic small-sized subfamily of Ichneumonidae (Wahl 1990), including 17 described species which all belong to *Oxytorus* Förster, 1869. Nine species are Palearctic, three Nearctic and five are Neotropical in distribution (Yu et al. 2005). The Neotropical component of the genus includes four species described from Costa Rica (Gauld 2000), one of them also distributed in Mexico, and one species only known from Mexico (Kasparyan & Ruíz-Cancino 2000). The subfamily is relatively difficult to identify. The most distinctive features of the Neotropical species are elongate maxillary palpi, reaching back beyond mid coxa; ovipositor sheath quite rigid, short and rather leaf-like in profile; subgenital plate of female large and conspicuous, and antenna with distal flagellomeres each bearing a central cluster of small placoid sensilla (Gauld 2000). Nothing is known about the biology of the genus.

This subfamily was not known from South America before, until we found a new species from a Peruvian premontane rain forest. This finding constitutes the first record of the subfamily from South America. The aim of this paper is to describe and illustrate the new species and to provide the diagnostic characters that distinguish it from other Neotropical species of the genus. In addition, we provide data on habitat and phenology of the species.

Material and methods

All specimens were collected at the “Fundo Genova” in Chanchamayo, Department of Junín (Peru), at an altitude

between 1,066–1,080 m a.s.l. This area is a premontane rain forest strongly perturbed by traditional agricultural activities represented by small *Inga*-shaded coffee plantations, maize and citrus cultivations. Large areas of the forest have been deforested, making way for the formation of secondary forest, grassland and degraded areas known as “shapumbales”. However, there are still some areas of primary forests, which have survived due to their inaccessibility, selective extraction and conservation conducted by their owners. Tree genera present in the area include, e.g., *Inga* Mill., *Ficus* L., *Nectandra* Rol. ex. Rottb., *Crecropia* Loefl. and *Ocotea* Aubl. There are also abundant epiphytes such as bromeliads, orchids, mosses and lichens; palm trees of the genus *Phytelephas* Ruíz & Pav., terrestrial ferns as *Pteris altissima* Poir., *Polypodium* sp., *Adiantum* sp., *Nephrolepis* sp. and fungi of the genus *Favolus* P. Beauv. and others of the order Agaricales. The local climate is tropical, the precipitation is high with an annual average of 2,010 mm total/year, and there are two quite different periods: one with higher (December to March) and another with lower precipitation (June to August). The local temperature is warm, with some months of mild temperature; with an annual average of 23.1 °C, maximum temperature average is 30.1 °C (October – November) and minimum of 16.7 °C (July).

The study area was sampled using four white Malaise traps placed into the following locations: Trap 1, 11°05′44.1″ S, 75°21′17.1″ W, 1066 m a.s.l.; Trap 2, 11°05′44.8″ S, 75°21′17.7″ W, 1069 m a.s.l.; Trap 3, 11°05′44.4″ S, 75°21′19.6″ W, 1080 m a.s.l.; Trap 4, 11°05′45.1″ S, 75°21′21.8″ W, 1075 m a.s.l. Traps were functioning from February 2008 to February 2009, and collecting pots were replaced fortnightly.

Type specimens of the Neotropical species *Oxytorus alfredi* Gauld, 2000, *O. isabellae* Gauld, 2000, *O. knappa* Gauld, 2000 and *O. woolleyi* Kasparyan et Ruíz Cancino, 2000, and non type specimens of the Nearctic species

O. elongatus Davis, 1898, *O. albopleuralis* (Provancher, 1879) and *O. antennatus* (Cresson, 1864), reported by Dash (1992), were studied. All this material is deposited in the following Institutions: Insect Museum of Universidad Autónoma de Tamaulipas (Ciudad Victoria, Tamaulipas, Mexico), American Entomological Institute (Gainesville, Florida, USA) and INBio (Santo Domingo de Heredia, Costa Rica). The type material of the new species described in the present paper is deposited in the Museo de Entomología Klaus Raven Büller, Universidad Nacional Agraria la Molina, Lima, Peru (MEKRB), in the Colección de Entomología de la Universidad de Alicante, Spain (CEUA) and in the Zoological Museum, University of Turku, Turku, Finland (ZMUT).

Terminology used in descriptions for surface microsculpture of sclerites is that of Eady (1968). Other morphological terminology follows Gauld (2000).

Scanning electron microscope images were taken using a Hitachi S-3000N in low vacuum mode. Layer photos of female and male paratypes (deposited in ZMUT) were taken in ZMUT using an Olympus SZX16 stereomicroscope attached to an Olympus E520 digital camera. Digital photos were combined by using the software Deep Focus 3.1.

***Oxytorus peruvianus* sp. n.** (Figs 1A–C, 2A–B, 3)

Diagnosis. Pronotum with epomia present as a low short ridge more or less parallel to anterior margin (Fig. 1B). Propodeum with the anterior transverse carina and lateromedian longitudinal carinae entirely absent, posterior transverse carina present and well defined, sometimes evanescent laterally, lateral longitudinal carinae always present distad posterior transverse carina, anteriorly rarely well defined and complete (Fig. 1C); area superomedia absent, area lateralis and spiracularis confluent (Fig. 1C). Metasoma with tergite I granulose tending to smooth at the apex, quite slender, 2.0–2.3 as long as posteriorly broad.

Description. Female. Body length (without ovipositor) 6.0–6.4 mm, head length \times width 0.6 \times 1.2–1.3 mm, mesosoma length \times width (mesoscutum) 2.0–2.1 \times 0.8–0.9 mm, length of ovipositor sheath 0.5–0.6 mm, fore wing length 4.8–6.5 mm.

Head. Mostly granulose, transverse, in dorsal view, 0.48–0.52 times as long as broad. Genae 0.18–0.35 times as length of eyes. Antenna with 28–29 flagellomeres, distal ones each bearing a central cluster of small placoid sensilla (Fig. 1A). Mandibles very long and slender, quite strongly tapered towards apex, upper tooth longer and stouter than the lower tooth, with outer-basal surface granulose and slightly polished and the apical part polished, ventrally with a sharp rim. Maxillary palpi, reaching back beyond mid coxa. Last labial palpi elongate. Malar space 0.5–0.8 times basal mandibular width. Clypeus about 0.44–0.50 times as high as broad, abruptly convex basally, flat or weakly concave in its 0.7 apical, this area usually smooth and polished, apical margin sharp and slightly rounded. Posterior ocellus separated from eye by 0.87–1.25 times its own maximum diameter; distance between posterior ocelli 0.75–1.3 times its own maximum diameter. Occipital carina

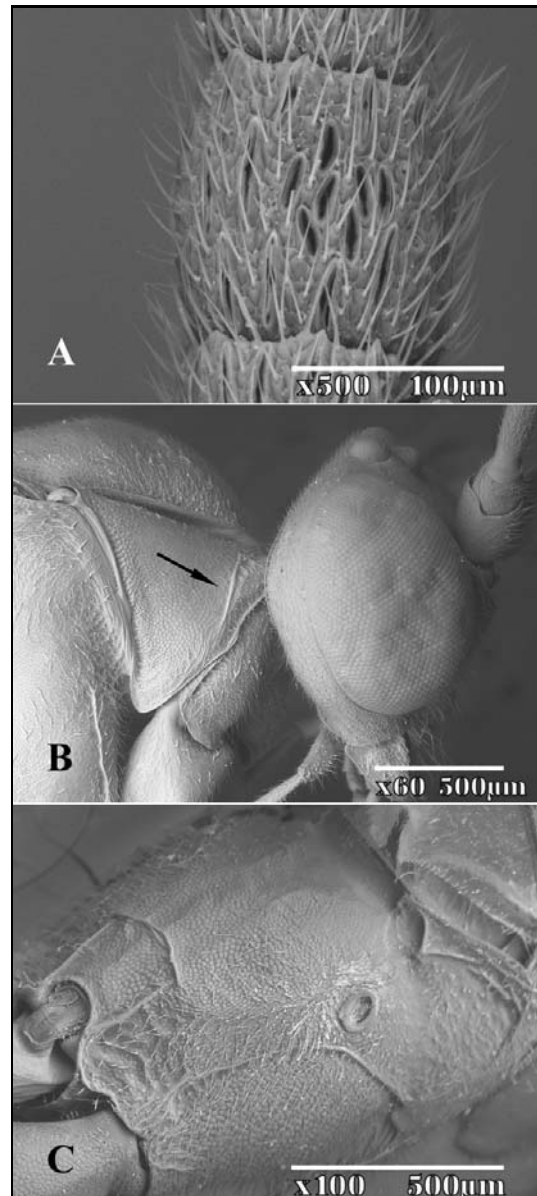


Fig. 1. Morphology of *Oxytorus peruvianus* sp. n.: A – Sensilla of distal flagellomere, female; B – Head and mesosoma, male, lateral view (epomia, arrow); C – Propodeum of male.

complete, reaching to the hypostomal carinae before the base of the mandible.

Mesosoma. Mostly granulose. Pronotum with epomia present as a low short ridge more or less parallel to anterior margin (Fig. 1B, arrow). Notauli absent. Scutellum strongly convex, without lateral carinae. Mesopleuron granulose with short silvery pilosity, not polished; speculum granulose tending to be smooth above mesopleural impression. Epicnemial carina incomplete, its upper end reaching slightly above the level of lower corner of pronotum. Sternaulus wide and slightly impressed in anterior half of mesopleuron, obsolescent posteriorly. Posterior transverse carina of the mesosternum absent. Posterior margin of metanotum expanded into two continuous blunt rounded teeth, the more lateral the larger, and with these teeth opposite low prominences on the propodeum (Fig. 1C).

Propodeum granulose with short dense silvery pilosity, with the anterior transverse carina and lateromedian longitudinal carinae entirely absent; posterior transverse carina present and well defined, sometimes evanescent laterally; lateral longitudinal carinae always present distad posterior transverse carina, anteriorly rarely well defined and complete; area supermedia absent, area lateralis and area spiracularis confluent (Fig. 1C). Submetapleural carina strong, anteriorly broadened. Fore wing with areolet pentagonal, strongly convergent anteriorly; vein *3rs-m* usually complete, with a single bulla in the inferior half; *2m-cu* vertical with a single bulla in the superior half; abscissa of M between *2m-cu* and *3rs-m* longer than the abscissa between *2m-cu* and *2rs-m*; first abscissa of *Cu1a* 1.7–2.0 times *Cu1b*. Hind wing with first abscissa of *Rs* 1.5–1.9 times as long as *1rs-m*; distal abscissa of *Cu1* present, basally much closer to *1A* than to *M*; 5 distal hamuli. Leg with tarsal claws simple.

Metasoma. Compressed apically. Tergite I granulose tending to smooth at the apex, quite slender, 2.0–2.3 as long as posteriorly broad, without lateromedial longitudinal carinae, lateral longitudinal and ventral lateral carinae present. Tergite II 0.8–1.0 as long as posteriorly broad, tyridium transverse, oval and impressed near the base of tergite. Tergites II–VIII generally smooth and polished. Subgenital plate large and conspicuous. Ovipositor sheath quite rigid, short and rather leaf-like in profile, the apex pointed, 0.20–0.28 times as long as hind tibia (Fig. 2A). Ovipositor with distinct subapical dorsal notch.

Coloration. Black. Front leg, clypeus and scape below, light brown. Mid and hind leg dark brown. Palpi, flagellomeres 10–13 seen from above, rarely 9–14, apices of coxae, trochanters, apical half of tarsomere 1 and tarsomeres 2–4 of hind leg, tergite VI apically, and tergites VII and VIII centrally, white. Wings hyaline (Fig. 2A).

Male. Similar to female (Fig. 2B) except as follows: body length 5.6–5.9 mm; head length \times width 0.6–0.7 \times 1.1–1.2 mm; mesosoma length \times width (mesoscutum) 2.0–2.3 \times 0.9–1.1 mm; fore wing length 4.3–5.8



Fig. 2. Habitus of *Oxytorus peruvianus* sp. n., lateral view: A – Female; B – Male. Scale 2 mm.

mm; antenna with 31–35 flagellomeres; metasoma depressed; tergites VI–VIII entirely black; flagellomeres 10–13 (15), seen from above and claspers, white.

Material examined. Holotype: ♀, Peru, Junín, Chanchamayo, Fundo Génova, Malaise Trap 3, 21.III.–04.IV.2008 (MEKRB). **Paratypes:** Peru, Junín, Chanchamayo, Fundo Génova, Malaise Trap 1: 2 ♀♀, 04.–19.IV.2008 (1 ♀, CEUA; 1 ♀, MEKRB). Malaise Trap 2: 2 ♀♀, 4 ♂♂, 10.–24.III.2008 (2 ♀♀, 2 ♂♂, CEUA; 2 ♂♂, MEKRB); 1 ♀, 1 ♂, 21.III.–04.IV.2008 (MEKRB); 1 ♀, 1 ♂, 04.–19.IV.2008 (CEUA); 1 ♀, 19.IV.–03.V.2008 (MEKRB); 1 ♂, 08.–22.XI.2008

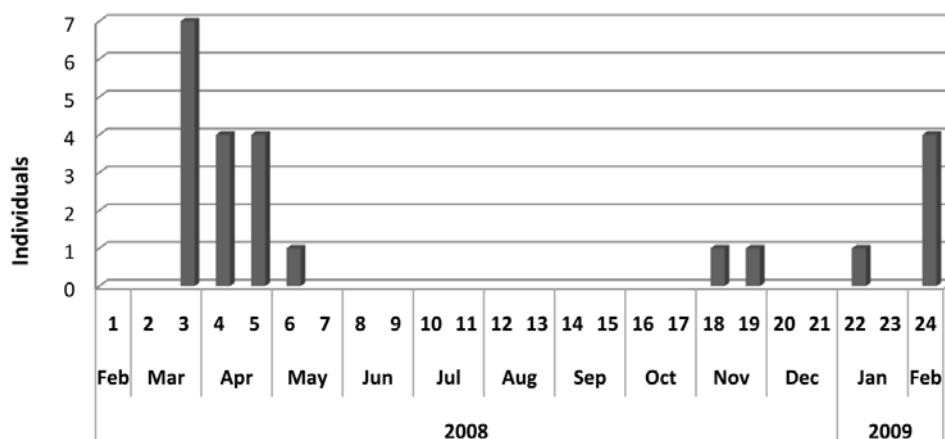


Fig. 3. Phenology of *Oxytorus peruvianus* sp. n.

(CEUA); 1 ♂, 1 ♀, 21.XII.2008–03.I.2009 (ZMUT); 1 ♀, 2 ♂♂, 17.–31.I.2009 (1 ♀, 1 ♂, CEUA; 1 ♂, MEKRB), Malaise Trap 3: 1 ♂, 17.–31.I.2009 (MEKRB), Malaise Trap 4: 1 ♀, 10.–24.III.2008 (MEKRB); 1 ♂, 21.III.–04.IV.2008 (MEKRB); 1 ♂, 25.X.–08.XI.2008 (CEUA). Same locality, 1 ♀, 1 ♂, VIII.–IX.2008 (1 ♀, MEKRB; 1 ♂, CEUA).

Etymology. The species name means “from Peru”.

Phenology. This species shows its maximum activity from January to April, corresponding with the rainy season (Fig. 3).

Distribution. Peru.

Remarks. The new species is closely related with Nearctic species and the Neotropical species *O. knappa* Gauld, 2000 by having the epomia present as a short ridge close to and parallel with anterior margin of pronotum. However, it maybe easily distinguished from all Neotropical and Nearctic species of the genus by lacking most of the propodeal carinae mentioned in the diagnosis.

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