Zootaxa 1155: 51–60 (2006)
www.mapress.com/zootaxa/

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

1155

A new Mexican species of *Oxyporus* (Coleoptera: Staphylinidae: Oxyporinae)

JUAN MÁRQUEZ[1] & JULIETA ASIAIN[2]

Laboratorio de Sistemática Animal, Centro de Investigaciones Biológicas, Universidad Autónoma del Estado de Hidalgo, Apartado postal 1-69, Plaza Juárez, Pachuca, Hidalgo, CP 42001, México.
E-mail: [1] jmarquez@uaeh.edu.mx, [2] asiainae@yahoo.com.mx

Abstract

Oxyporus bautistae Márquez & Asiain, **sp. nov.** is described based on three female specimens collected from mushrooms of the genus *Boletus* in an oak forest of Oaxaca, Mexico. The new species is similar to *O. lawrencei* Campbell, known from Distrito Federal, Guerrero, Jalisco, Mexico, Michoacan and Morelos, Mexico, and represents the eighth Mexican species of the genus.

Key words: *Oxyporus*, Staphylinidae, Mexico, new species

Resumen

Oxyporus bautistae Márquez & Asiain, **sp. nov**. es descrita con base en tres ejemplares colectados sobre hongos del género *Boletus* en un bosque de encino de Oaxaca, México. Esta nueva especie es similar a *O. lawrencei* Campbell conocida del Distrito Federal, Estado de México, Guerrero, Jalisco, Michoacán y Morelos, México, y representa la octava especie Mexicana de este género.

Palabras clave: *Oxyporus*, Staphylinidae, México, especie nueva

Introduction

In a recent paper, Márquez *et al*. (2005) described the seventh Mexican species of *Oxyporus* Fabricius, 1775, *O. delgadoi* Márquez, Asiain & Fierros-López, 2005, and presented recent advances related to the study of the New World species of this genus. The authors included additional information for two other poorly known species and modified

Accepted by V. Gusarov: 3 Feb. 2006; published: 20 Mar. 2006

the key to the identification of the Mexican species proposed by Navarrete-Heredia and Novelo-Gutíerrez (1990) to include *O. delgadoi*. Navarrete-Heredia *et al*. (2002) briefly outlined biology of *Oxyporus*, described the geographical distribution (state records only) of six Mexican species and illustrated their habitus.

During 2004, Silvia Bautista (mycologist, Instituto de Biología, UNAM) collected two female specimens of an unidentified species of *Oxyporus* from mushrooms of the genus *Boletus* in an oak forest located in the Sierra Madre del Sur province, Oaxaca, Mexico. In July and September, 2005 we attempted to collect more specimens in the same locality by sampling as many mushrooms as possible, and by installing three flight intercept traps at the site. We collected only one more female specimen of the species that we consider to be new. However, it will be very important to collect at least one male to describe the aedeagus and the possible variation between sexes.

The specimens of the new species were compared with three specimens of *O. lawrencei* Campbell, 1974.

The goal of this paper is to describe and illustrate a new species of *Oxyporus* from Mexico.

Depositories

CC-UAEH — Colección de Coleoptera, Universidad Autónoma del Estado de Hidalgo, Pachuca, Hidalgo, México (Juan Márquez)

JLN — personal collection of José Luis Navarrete-Heredia, Zapopan, Jalisco, México

***Oxyporus (Oxyporus) bautistae* Márquez & Asiain, sp. nov.**
(Figs. 1 & 2)

Type material

Holotype, ♀: "México: Oaxaca, Santiago Yosondua, camino a El Vergel, La Cascada. Bosque de encino. 1893 m. N 16° 50´10.6", W 97° 34´33.9". Sobre *Boletus* sp. en descomposición. 16-VII-2004. S. Bautista col. / Holotype *Oxyporus* (*O.*) *bautistae* Márquez & Asiain des. 2005" (CC-UAEH). Paratypes, 2 females: ♀, same data as holotype (CC-UAEH); ♀, same as holotype, except: "1917 m. N 16° 50´49.6", W 97° 34´47.5". Sobre *Boletus* sp. 10-VII-2005. J. Asiain y J. Márquez cols." (CC-UAEH).

Description

FEMALE. Total body length 9.7–11.3 mm. Head black; labrum, palpi and antennae orange. Pronotum, scutellum, posterior borders of elytra in a diagonal spot, prosternum, mesosternum, anterior third of metasternum, coxae, trochanters and femurs of all legs (except external half of metacoxae that are red), and two lateral spots on fourth visible abdominal tergite black. Elytra (except posterior borders), main part of metasternum, lateral half of metacoxae, tibiae and tarsi of all legs and abdomen (except black spots on

fourth visible tergite) orange.

Head. Length 1.6–1.9 mm; width behind eyes 2.2–2.5 mm. Shape transverse, with lateral margins rounded. Dorsal surface glossy, with sparse fine punctures and net-like microsculpture feebly visible. With one seta near anterior third of each eye, and one seta near posterior margin. Eye length 0.6–0.7 mm. Antennae nearly as long as head; antennomeres 1–4 elongate; first antennomere reddish-brown, slightly longer than the two following combined, second shorter than third and fourth, antennomeres 3–4 are similar in length; antennomeres 5–10 transverse increasing in size to apex, slightly asymmetrical and flattened, apical antennomere conical and narrower than apex of previous antennomere; all antennomeres with long setae near apex, antennomeres 6–10 with their axial part glabrous and lateral parts covered with fine setae. Clypeus narrowed anteriad. Labrum strongly narrowed anteriad, with subapical line of short setae, one seta at each side of the line is longer and darker than the remaining setae; with brush of yellow setae at anterior margin. Mandibles longer than head, length 1.90–2.35 mm; with lateral channel at 2/3 of their length; medial margin of right mandible even, medial margin of left mandible serrated; ventral surface of right mandible with small lateral tooth; ventral surface of left mandible with two acute teeth: lateral tooth slightly longer than medial tooth. Maxillary palps with first segment shortest, second longer than third, third longer than fourth, which is slightly acute and flattened apically. Apical segment of labial palps as wide as length of eye; mentum long, apically narrows forming two acute points, with longitudinal carinate line in main part of their length and with lateral borders sinuate. Ventral surface of head even. Gular sutures separated. Neck with net-like microsculpture.

Thorax. Pronotum transverse, narrow backward, length 1.55–1.60 mm; maximum width at anterior third 2.05–2.20 mm. Pronotum with curved lateral sides; anterior margin narrows slightly; with two punctures on each lateral and anterior margin; with marginal posterior border slightly carinate. Scutellum short, with apex rounded. Length of elytra 2.5–2.7 mm (humeral to posterior margin); width at humeral level 2.3–2.4 mm. Each elytron with two close, almost parallel longitudinal rows of punctures, lateral row of ten or more punctures slightly impressed, medial row of nine or less punctures not impressed; punctures are not present on black spot of posterior border of elytron; additionally, several sparse punctures present on medial and lateral side of two rows. Anterior and lateral margins are cariniform forming a rectangular figure; posterior half of metasternum with sparse brown setae placed on the lateral sides.

Legs. Tibiae of all legs with more than ten spines at lateral margin, and with two apical spines, one slightly shorter, the other slightly longer than first tarsomere. Front legs with first tarsomere as long as third tarsomere; second slightly longer than first and third; fourth the shortest; and apical tarsomere as long as previous three tarsomeres combined. Middle and hind legs with first tarsomere as long as fourth tarsomere; second tarsomere longer than first, third or fourth tarsomere; third tarsomere longer than first tarsomere; and apical tarsomere slightly shorter than previous three tarsomeres combined.

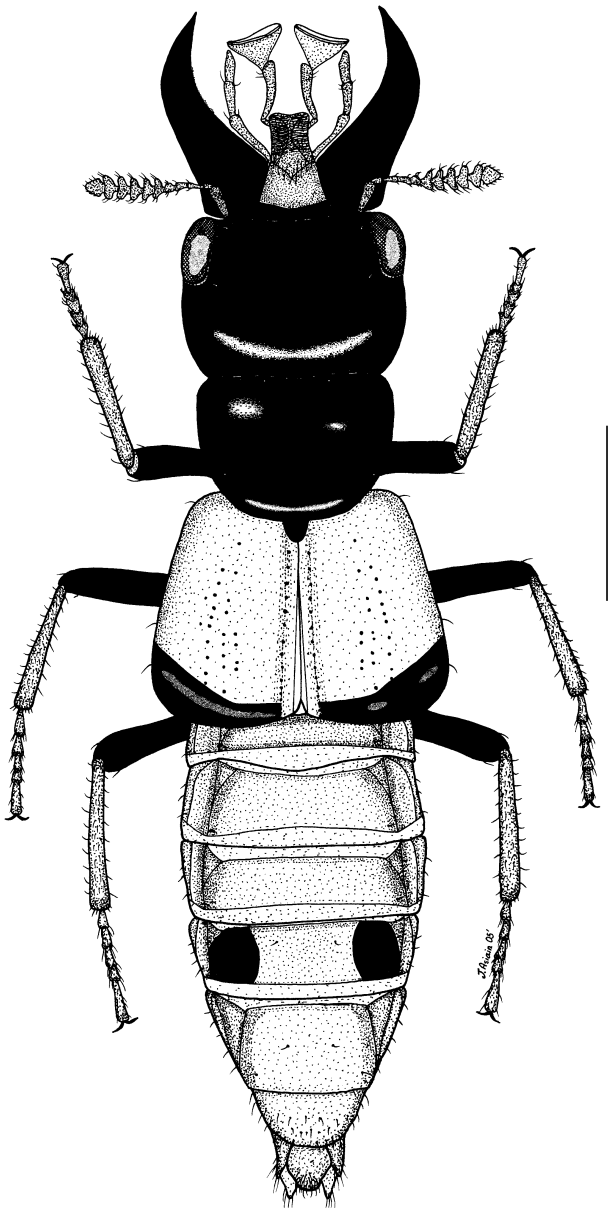

FIGURE 1. Habitus drawing of *Oxyporus bautistae*, dorsal view. Scale bar 2 mm.

Abdomen. Tergites with net-like microsculpture. First five visible tergites with antero-lateral curved impression; first four visible tergites with short, black seta near each posterior corner; fifth and sixth visible tergites with more than one short and black setae. Black spots of fourth visible tergite as long as length of entire tergite, and as wide as 1/4 of total width of tergite. All sternites covered with black setae slightly more densely than tergites.

MALE. Unknown.

FIGURE 2. Photo of *Oxyporus bautistae* (paratype). Scale bar 2 mm.

Diagnosis

Oxyporus bautistae is the only species with orange abdomen with two black spots on fourth visible tergite, bicolored legs (coxae, trochanters and femora black, tibiae and tarsi orange), with the first antennomere darker than the remaining antennomeres and with the mandibles longer than the head.

Variation

The two paratypes have a smaller head (cephalic length 1.60 and 1.75 mm, respectively) and pronotum (1. 55 mm, both) than the holotype (cephalic length 2.00 mm and pronotal length 1.70 mm), with the medial base of the mandibles red and with elytra with sparse punctures laterad of the rows of punctures on the elytra.

Geographical distribution and comments

Oxyporus bautistae represents the eighth Mexican species of this genus, occurring at the type locality in the Sierra Madre del Sur province. The geographical distribution of the Mexican species of *Oxyporus* is presented in figure 3. The Mexican biogeographical provinces with the records of most *Oxyporus* species are the Sierra Madre del Sur (*O. bautistae*, *O. guerreroanus* Bernhauer, 1910, *O. mexicanus* Fauvel, 1865, and *O. smithi* Bernhauer, 1910) and the Transmexican Volcanic Belt (*O. balli* Campbell, 1969, *O. guerreroanus*, *O. lawrencei* and *O. mexicanus*) each with four species, followed by the Sierra Madre Occidental province (a questionable record of *O. guerreroanus* in Durango, and *O. mexicanus*); the Gulf of Mexico and Sierra Madre Oriental provinces present only one species (*O. flohri* Sharp, 1887 and *O. delgadoi*, respectively; Navarrete-Heredia *et al*., 2002).

Discussion

Oxyporus bautistae is similar to *O. lawrencei*, but it can be distinguished by the bicolored legs (black and orange), the fourth visible abdominal tergite bearing two black spots, by the first antennomere darker than the remaining antennomeres, by the head transverse (cephalic width more than 1.2 times its length) and slightly wider than pronotum (almost 1.1 times the pronotal width), and by the bright, nearly light orange color of the body. *Oxyporus lawrencei* has entirely orange legs and abdomen, the first antennomere is orange as are the remaining antennomeres, the head is less transverse (cephalic width 1.2 times or less its length) and almost as wide as the pronotum (1.02 times or less the pronotal width), and the orange color of the body is darker, nearly red.

The following specimens of *O. lawrencei* have been examined: ♀, "México: Distrito Federal, Delegación Milpa Alta, límite sur con Morelos. 3300 m. Bosque de pino. En hongo sobre tronco. 15-IX-1998. J. Márquez col. / *Oxyporus lawrencei* Campbell, 1974, J. Márquez det. 2003" (CC-UAEH, the specimen previously cited by Márquez *et al*., 2005); ♀(?), "México: Méx., San Rafael, cerca Caseta, 9.IX.1989, J. L. Navarrete, hojarasca cerca de hongo / *Oxyporus lawrencei* Campbell, 1974 J. L. Navarrete det." (JLN); ♀(?), "México: Méx., Atlauta, Tepecoculco, 13.IX.1992. G. A. Quiroz, hojarasca cerca de hongo / *Oxyporus lawrencei* Campbell, 1974 J. L. Navarrete det." (JLN).

Oxyporus bautistae displays the characters of the subgenus *Oxyporus s. str.* (Nakane & Sawada 1956, Campbell 1969).

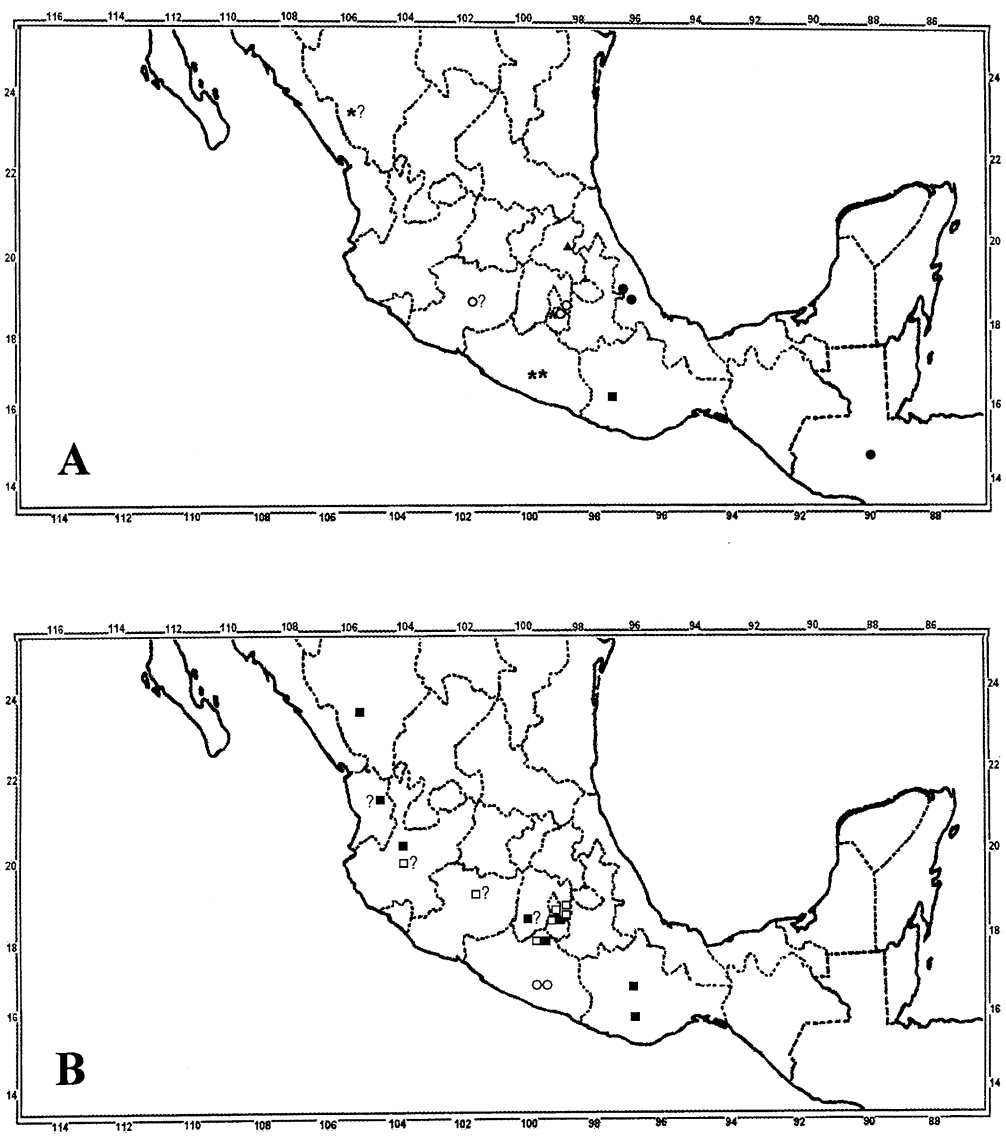

FIGURE 3. Geographical distribution of the Mexican species of *Oxyporus*: **a**, *O. balli* (white circles); *O. bautistae* (black squares); *O. delgadoi* (black triangles); *O. flohri* (black circles, also recorded from Guatemala); *O. guerreroanus* (asterisks); **b**, *O. lawrencei* (white squares); *O. mexicanus* (black squares, also recorded from U.S.A.); and *O. smithi* (white circles). Question marks indicate state record only. The distributional records were obtained from Campbell (1969); Navarrete-Heredia & Novelo-Gutiérrez (1990); Navarrete-Heredia (1992); Navarrete-Heredia & Márquez (1995); and Márquez *et al.* (2005).

The key to Mexican species of *Oxyporus*, proposed by Navarrete-Heredia and Novelo-Gutiérrez (1990) and modified by Márquez *et al*. (2005), may be further modified as follows to accommodate the new species:

3 (2). Abdomen with apical segment and at least part of penultimate segment black 4
3´. Abdomen with both apical and penultimate segment orange or reddish yellow 5
4 (3). Body orange; head, pronotum, a broad oblique vitta on apical fourth of each elytron, and penultimate two segments of abdomen black; surface smooth, shining; pronotum slightly transverse; length 7.8–10.3 mm ..... *O. mexicanus* Fauvel
4´. Body light orange; head, pronotum, lateral apical angles and very narrow vitta on apical margin of each elytron, ultimate segment and apical half or more of penultimate abdominal segment black; surface finely granulate, not shining; pronotum with sides rounded, widest at anterior third, rapidly narrowed to apex, gradually narrowed to base; length 6.8–10.2 mm ..... *O. guerreroanus* Bernhauer
5 (3). Pronotum black; abdomen entirely orange or orange with two black spots on fourth visible tergite 6
5´. Pronotum yellow, piceus or red; abdomen not entirely red, with at least one entire segment black 7
6 (5). Abdomen orange, lacking any black markings; legs entirely orange; length 6.5–10.3 mm ..... *O. lawrencei* Campbell
6´. Abdomen orange, with two black spots on fourth visible tergite; legs bicolored, coxae to femurs black, tibiae and tarsi orange (Figs. 1–2); length 9.7–11.3 mm .... *O. bautistae*, sp. nov.
7 (5). Head and pronotum yellow or piceous, with some variable black spots; abdomen with only fourth, or third and fourth visible abdominal segments black; length 8.8 mm ..... *O. flohri* Sharp
7´. Head black, with two red spots between eyes; pronotum red; abdomen with posterior half of third, entire fourth and major part of fifth visible abdominal segments black (Figs. 1–2, 5 in Márquez e*t al*. 2005); length 9.6–11.5 mm..... ..... *O. delgadoi* Márquez, Asiain & Fierros-López

Bionomics

Oxyporus bautistae was collected from mushrooms of an unidentified species of the genus *Boletus*. The first two specimens were collected by Silvia Bautista (mycologist, Instituto de Biología, UNAM) in July, 2004 on a decaying mushroom of the genus *Boletus*. As she collected the mushroom, several specimens of *O. bautistae* escaped quickly, and only two female specimens were recovered from the soil. Due to the advanced state of decay of the mushroom, the identification was only possible to genus, and it was not possible to make biological observations.

During five days in July and four days in September, 2005, we attempted to collect more specimens of this new species, sampling as many mushrooms as possible, especially those of the genus *Boletus*. Additionally, we installed three flight intercept traps in the same site where the previous two specimens were collected. This type of trap has been very effective for collecting staphylinids that could not be collected on other substrates or

by using baited traps. Only one additional female was collected; the specimen was found in the galleries excavated in the mushroom pileus of the same unidentified species of *Boletus*. Several specimens of *Belonuchus oxyporinus* (Sharp, 1885) were collected abundantly in the same and other mushrooms. *Belonuchus oxyporinus* is very similar in appearance to several species of *Oxyporus* (hence its specific epithet); for this reason, there is a possibility that the specimens escaped during the initial collection by Silvia Bautista were not *O. bautistae*.

The poor biological information obtained from this new species does not permit us to assign it to some pattern of host selection described by Hanley and Goodrich (1995).

Etymology

We are pleased to dedicate this species to Silvia Bautista Hernández (Instituto de Biología, Universidad Nacional Autónoma de México), the discoverer of this new taxon.

Acknowledgments

We thank D. Gernandt, I. Castellanos (Centro de Investigaciones Biológicas, Universidad Autónoma del Estado de Hidalgo), and two anonimous reviewers for the critical revision of the paper; S. Bautista, R. Bautista (Instituto de Biología, Universidad Nacional Autónoma de México) and F. Ramírez (biology student, Centro de Investigaciones Biológicas, Universidad Autónoma del Estado de Hidalgo) for their assistance in the field work. We thank Vladimir Gusarov (University of Oslo, Natural History Museum) for editing our manuscript. We thank J. L. Navarrete-Heredia (Centro de Estudios en Zoología, Universidad de Guadalajara) for the loan of two specimens of *O. lawrencei*.

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