

A new species of *Philonthus* (Coleoptera: Staphylinidae) from Sonora, México

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Abstract

Philonthus yaqui sp. nov. is described based on 51 specimens collected in Yécora, Sonora, México. A key for recognition of this species and those close related from México and the United States is provided.

Key words: Beetles, Staphylinidae, *Philonthus*, key, México, USA

Introduction

The genus *Philonthus* Stephens, 1829 is the second largest genus of the Staphylinidae after *Stenus* Latreille, 1797 (Steninae) with 1255 species (Herman 2001). They are recorded from all zoogeographical regions (Herman 2001; Smetana 1995). For North America north of México, 112 species are recorded, whereas 87 are known from México (Navarrete-Heredia 1995; Navarrete-Heredia *et al.* 2002; Smetana 1991, 1995).

The taxonomy of the Mexican species is not well known. Smetana (1991) reviewed *Philonthus furvus* Nordmann and its allies in México and Central America and Navarrete-Heredia (1995) redescribed two species (now placed in *Belonuchus*) providing biological notes. Smetana (1995), in his revision of the subtribe Philonthina of America north of Mexico (Coleoptera: Staphylinidae), provided an excellent taxonomic treatment of the genus *Philonthus* recognizing and defining several species groups. Most of the Mexican species can be placed readily in Smetana's species groups, but the species are in need of revision.

A recent field trip to Sonora provided the opportunity to collect a variety of several staphylinid species. A new species of the *Philonthus furvus* group (*sensu* Smetana 1995) is described herein to update the knowledge of the single Mexican group treated recently.

Terms and descriptions follow those used by Smetana (1995), except for the numbers used for segments (Roman instead of Arabic). Identified specimens of *P. hoegei* Sharp, 1885, *Ph. roscius* Smetana, 1995, and *P. testaceipennis* Erichson, 1840 used for comparison were provided in a loan from The Natural History Museum (BMNH, Sharp Collection) and the Field Museum of Natural History (FMNH, Paratype). Acronyms for collections where type material will be deposited are: the Colección Entomológica del Centro de Estudios en Zoología, Universidad de Guadalajara, (CZUG), Colección Nacional de Insectos, Instituto de Biología, UNAM (CNIN), Instituto de Ecología (IEXA), Field Museum of Natural History (FMNH), Canadian National Collection (CNC), The Natural History Museum (BMNH) and my personal research collection (JLNC).

Taxonomic discussion

Species of this group can be recognized (Smetana 1995) by the following combination of characters: body and appendages variably pigmented; head with scattered setiferous punctures; temporal carina on head absent; mandible stout; dorsal rows on pronotum each with two punctures; lateral margins of pronotum each sinuate posteriorly in front of basal margin; first three or four tarsomeres of front tarsus sub-bilobed, less markedly dilated in female than in male; first tarsomere of hind tarsus moderately longer than last tarsomere; elytra each with subhumeral and lateral seta; elytral punctation simple; abdomen with first three visible tergites with two basal lines; posterior basal line on visible tergites two and three straight at middle; punctation of abdominal tergites moderately fine and dense; elevated area between two basal lines of visible tergites two and three punctate, with striate microsculpture; basal impression on visible tergites one and two simple; tergite VIII simply arcuate apically; male sternite VIII with two, three or four large setae on each side, medio-apical emargination with semi-membranous extension; male genital segment with styli of tergite IX simple, not modified; tergite X mostly not pigmented, with apex entire or emarginate; median lobe of aedeagus simple, not spoon-like dilated, with or without tooth on face adjacent to paramere, with apical portion straight; paramere fully developed, without semi-membranous apical stylus, entire, rarely bifurcate, symmetrically located, with apical setae and peg setae, latter forming two longitudinal rows; female genital segment without accessory sclerite; second gonocoxites each with minute stylus; tergite X pigmented or not, apex arcuate in most species, rarely emarginate to bilobed; styli of tergite IX simple, not modified.

Philonthus yaqui Navarrete-Heredia sp. nov.

(Figs. 1–4)

Description: Length 10.4–14.0 mm (from anterior border of head to apex of tergite VIII). Black, head and pronotum with faint luster, elytra pale red, abdomen iridescent; maxillary

and labial palpi piceous to piceous-black, antennae black; legs piceous, iridescent, protibia with a yellow macula on posterior face, with last four tarsomeres brunneous to brunneo-testaceous. Head of rounded quadrangular shape, with obtusely rounded hind angles, moderately wider than long ($HW/HL= 1.20-1.38$) and slightly narrower than pronotum ($HW/PW= 0.81-0.98$); eyes large, tempora about as long as length of eyes; lateral and medial interocular punctures moderately distant, distance separating medial punctures 2.1–2.8X as large as distance separating medial punctures from lateral punctures; temporal area with moderately dense and coarse punctation; entire dorsal surface with fine and dense microsculpture of transverse and oblique waves mixed with sparse micropunctules. Antennomeres 1–3 with few macrosetae, antennomeres 4–11 with few macrosetae (number decreasing to outer segments) and many microsetae, antennomere 2 shorter than antennomere 3, antennomeres 4, 5 and 6 each slightly longer than wide, length of 5–10 decreasing, their width increasing but never strongly transverse, last antennomere shorter than two preceding antennomeres combined. Pronotum somewhat wider than long ($PW/PL= 1.08-1.09$), about equally narrowed both posteriad and anteriad; microsculpture similar to that on head but micropunctules hard to see. Scutellum densely punctate, with golden-rusty pubescence. Elytra moderately long, a little shorter at suture than sides; punctation fine and dense, transverse distance between punctures no more than twice diameter of punctures; pubescence fine, golden-rusty with few scattered black macrosetae; surface between punctures without microsculpture. Profemur on apical anterior lower edge with four to six distinct spine-like setae. Abdomen with tergite VII with distinct whitish apical border (“palisade fringe”); punctation of tergites fine and sparse, becoming in general sparser toward apex of abdomen; pubescence black, surface between punctures with exceedingly fine and dense microsculpture of transverse striae.

Male. First four tarsomeres of front tarsus moderately dilated, sub-bilobed, each moderately densely covered with modified pale setae ventrally; segment four narrower than three preceding segments. Sternite VII vaguely sinuate in middle of apical margin; sternite VIII with deep and wide, obtuse medio-apical emargination partially filled by semi-membranous extension with shallow, arcuate medio-apical emargination. Genital segment with tergite X minutely emarginate apically, with numerous apical and two subapical setae; sternite IX deeply emarginate, with two subapical large setae. Median lobe of the aedeagus narrowed into slender apical portion, with a small tooth opposite the basal $\frac{1}{3}$ of peg setae area of paramere; paramere elongate, apical portion more or less parallel-sided, with apex not reaching narrowed apical portion of median lobe; peg setae on underside of paramere numerous, forming longitudinal bands along the margins, which meet at apex of paramere (Figs. 2–4).

Female. First four tarsomeres of front tarsus vaguely dilated, much narrower than those of male, each ventrally with pale setae only at apical margin. Genital segment with second gonocoxite with minute stylus bearing two long setae; tergite X strongly narrowed to apex, with numerous apical setae.

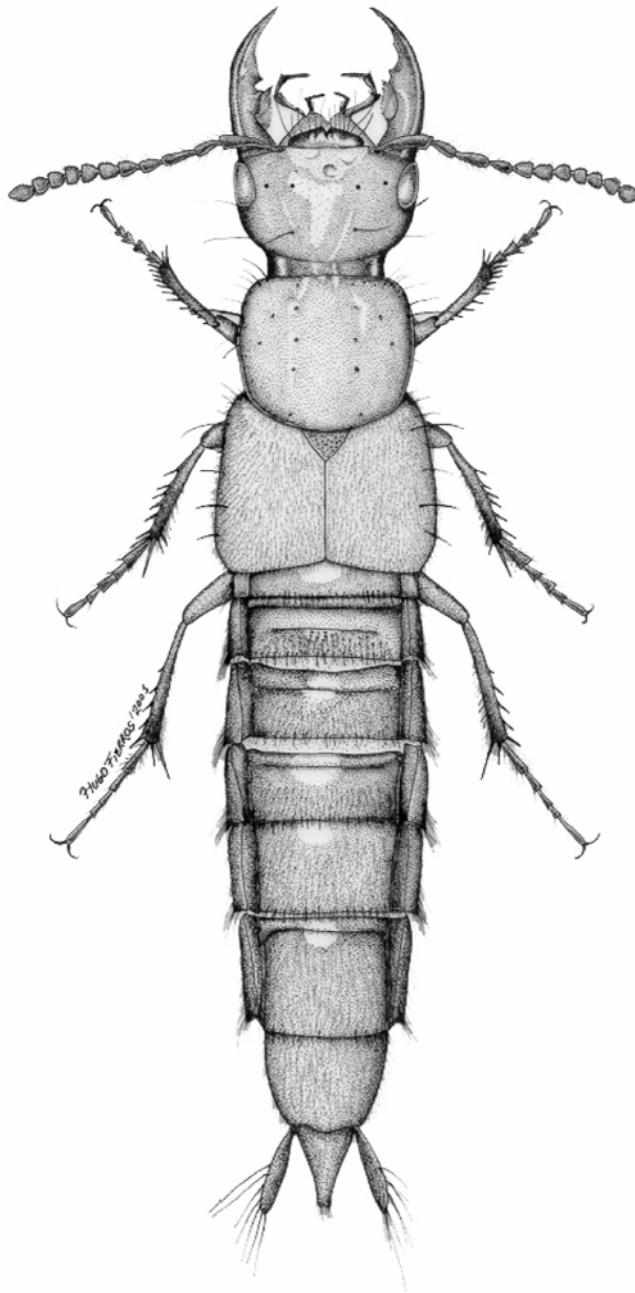
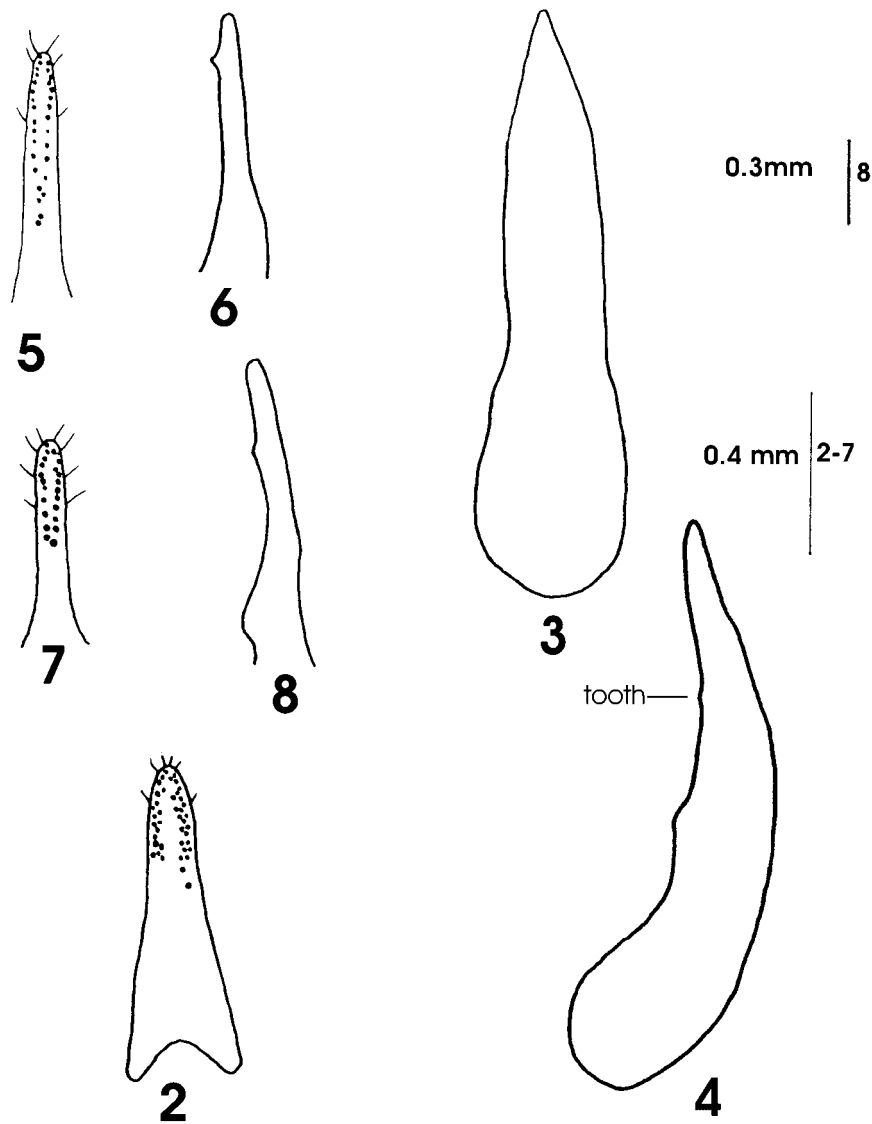


FIGURE 1. *Philonthus yaqui* Navarrete-Heredia sp. nov.

Type material: Holotype (male), and 35 paratypes (22♂, 13♀): México: Sonora, Yécora, bosque de encino-pino, 1400m, necrotrampa calamar, 10-17.VIII.2000, G.A. Quiroz, L.A. Navarrete-Quiroz, and J.L. Navarrete-Heredia cols.; same data except for: 1650m, bosque de pino (11♂, 4♀), 9.VIII.2000, *ex excremento*. Holotype and 20 paratypes

deposited in CZUG. Other paratypes will be deposited in: CNIN, IEXA, FMNH, CNC, BMNH, and JLN.

Distribution. *Philonthus yaqui* is known only from Yécora in the State of Sonora in México.



FIGURES 2–8. 2–4. *Philonthus yaqui*: 2, underside of paramere, with peg setae; 3, aedeagus (dorsal view; paramere removed); 4, aedeagus (lateral view; paramere removed). 5–6. *Philonthus hoegei*: 5, apical portion of underside of paramere, with peg setae; 6, apical portion of aedeagus (lateral). 7–8. *Philonthus roscius*: 7, Apical portion of underside of paramere, with peg setae (modified after Smetana 1995); 8, apical portion of aedeagus (lateral).

Bionomics. The adults were collected with carrion traps using squid, and in dung. As for other members of this genus, the adults of this species presumably occur in these habitats for food, usually immatures of other insects, primarily maggots.

Discussion. Within the *Philonthus furvus* group, *P. yaqui* sp. nov. closely resembles *P. roscius* Smetana, 1995 from Arizona (U.S.), *P. hoegei* Sharp, 1885, and *P. testaceipennis* Erichson, 1840, the last two from some Mexican States (Navarrete-Heredia *et al.* 2002; Asiain 2002). These species share the red elytra, in contrast with the remaining species of the group, that the elytra have different colors, including bright blue (Smetana 1991, 1995).

Etymology. The specific name refers to one of the most important ethnic groups from Sonora, the yaquis; it is a noun in apposition.

Taxonomic comments: The *Philonthus furvus* group is represented in México by at least the following species: *Philonthus alutaceus* Horn, *P. flohri* Sharp, *P. furvus*, *P. hoegei*, *P. melampus* Smetana, *P. nigerrimus* Erichson, *P. oenotrus* Smetana, *P. sallaei* Sharp, *P. testaceipennis* Sharp and *P. yaqui*, however additional species probably will be included here after more taxonomic work can be done in the future.

Key to North American *Philonthus* species with red elytra close to *P. hoegei* (*furvus* group in part, *sensu* Smetana 1995)

1. Anteroapical lower edge of front femora with four to seven distinct spine-like setae.. 2
 - Both anterior and posterior lower edges of front femora with distinct spine-like setae 3
2. Males: sternites VII-VIII conspicuously emarginate, deeper in sternite VIII; metatibiae slightly curved..... *P. testaceipennis* Sharp
 - Males: sternite VII not conspicuously emarginate, VIII emarginate; metatibiae not curved *P. yaqui* sp. nov.
3. Tarsi dark; paramere with peg setae extending one half its length, median lobe with a well developed tooth near the apex (more evident in lateral view) (Figs. 5–6).....
 - *P. hoegei*
 - Tarsi brunneous to brunneo-testaceous; paramere with peg setae extending 1/3 its length, median lobe with a small projection, but never close to the apex (Figs. 7–8)....
 - *P. roscius*

Acknowledgments

Thanks are due to Dr. A.F. Newton (FMNH) for the loan of specimens of *Philonthus roscius*; Mr. M. Brendell (BMNH) for his kind help during my visit to The Natural History Museum, especially for his friendship; H.E. Fierros-López for his art work in Fig. 1; G.A.

Quiroz-Rocha for inking line drawings; Dr. A.F. Newton and Dr. M.K. Thayer (FMNH) for the critical review of the first manuscript; to the Del Hierro Parra family, especially to my friend Elizabeth, for their kind hospitality during our visit to Cd. Obregón, Sonora.

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