

Research Article

A new species of *Chrysobothris* (s. str.) Eschscholtz, 1829 (Coleoptera: Buprestidae) from northwestern Peru

Una nueva especie de *Chrysobothris* (s. str.) Eschscholtz, 1829 (Coleoptera: Buprestidae) del noroeste de Perú

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Abstract. *Chrysobothris* (*Chrysobothris*) *fallax* **sp. nov.**, collected from dry ecosystems of northwestern Peru is described and illustrated. The species has been confused with *Chrysobothris* (*C.*) *acutipennis* Chevrolat from which it can be distinguished by the form of the tooth on the profemora and the male genitalia. Comments on its ecology and distribution in the country are provided.

Key words: Jewel beetles; Neotropical region; South America; taxonomy; Piura region.

Resumen. Se describe e ilustra a *Chrysobothris* (*Chrysobothris*) *fallax* **sp. nov.**, recolectada en los ecosistemas secos del noroeste de Perú. Esta especie ha sido confundida con *Chrysobothris* (*C.*) *acutipennis* Chevrolat de la que se distingue por la forma del diente presente en los profémures y configuración del genital masculino. Se proporcionan comentarios sobre su ecología y distribución en el país.

Palabras clave: Escarabajos joya; región neotropical; región de Piura; Sur América; taxonomía.

Introduction

The genus *Chrysobothris* Eschscholtz, 1829 is a large and cosmopolitan genus of Buprestidae with more than 700 described species (Bellamy 2008). The genus is most diverse in North and Central America; however, it is poorly known and studied in South America (Hespenheide & Chaboo 2015). In Peru, only five species of *Chrysobothris* are known: *Chrysobothris decolorata* (Gory & Laporte, 1837), *Chrysobothris hypochloris* Erichson, 1847, *Chrysobothris banghaasi* Théry, 1911, *Chrysobothris peruviae* Obenberger, 1924 and *Chrysobothris freyi* (Pochon, 1972) (Obenberger 1940; Pochon 1972; Hespenheide & Chaboo 2015); however, there are probably many still undescribed species in the country (Hespenheide & Chaboo 2015).

The northwestern Peruvian dry ecosystems are recognized as among the world's most threatened ecosystems. The territory of Piura region contains extensive areas of dry ecosystems composed of coastal desert and seasonally dry forests and are recognized as important conservation areas preserving several endemic species of flora and fauna (MINAM 2018).

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During taxonomic research on this genus and on other South American Buprestidae, several specimens of a *Chrysobothris* collected in Peru and previously identified as *Chrysobothris acutipennis* Chevrolat, 1835 were located in museums and private collections. Closer examination of the specimens and comparison to the literature revealed it to be an undescribed species, which is described below.

Materials and Methods

Measurements of specimens were made using a vernier caliper with 0.05 mm precision, with total length measured from the front of the head to the elytral apices and width measured at widest point of elytra. The photographs were taken with a Nikon Coolpix L320 camera of 16.1 mega pixels, while the software used for digital image processing was freeware CombineZ4. Holotype and paratypes material labels data are cited verbatim, with a single slash (/) indicating the change of line, and double slash (//) indicating the change of label.

Collection abbreviations used are as follows:

GJNC: Gino Juárez Noé Collection, Piura, Peru.

MUPRG: Museo de Historia Natural "Víctor Baca Aguinaga" de la Universidad Nacional Pedro Ruiz Gallo, Lambayeque, Peru.

Results

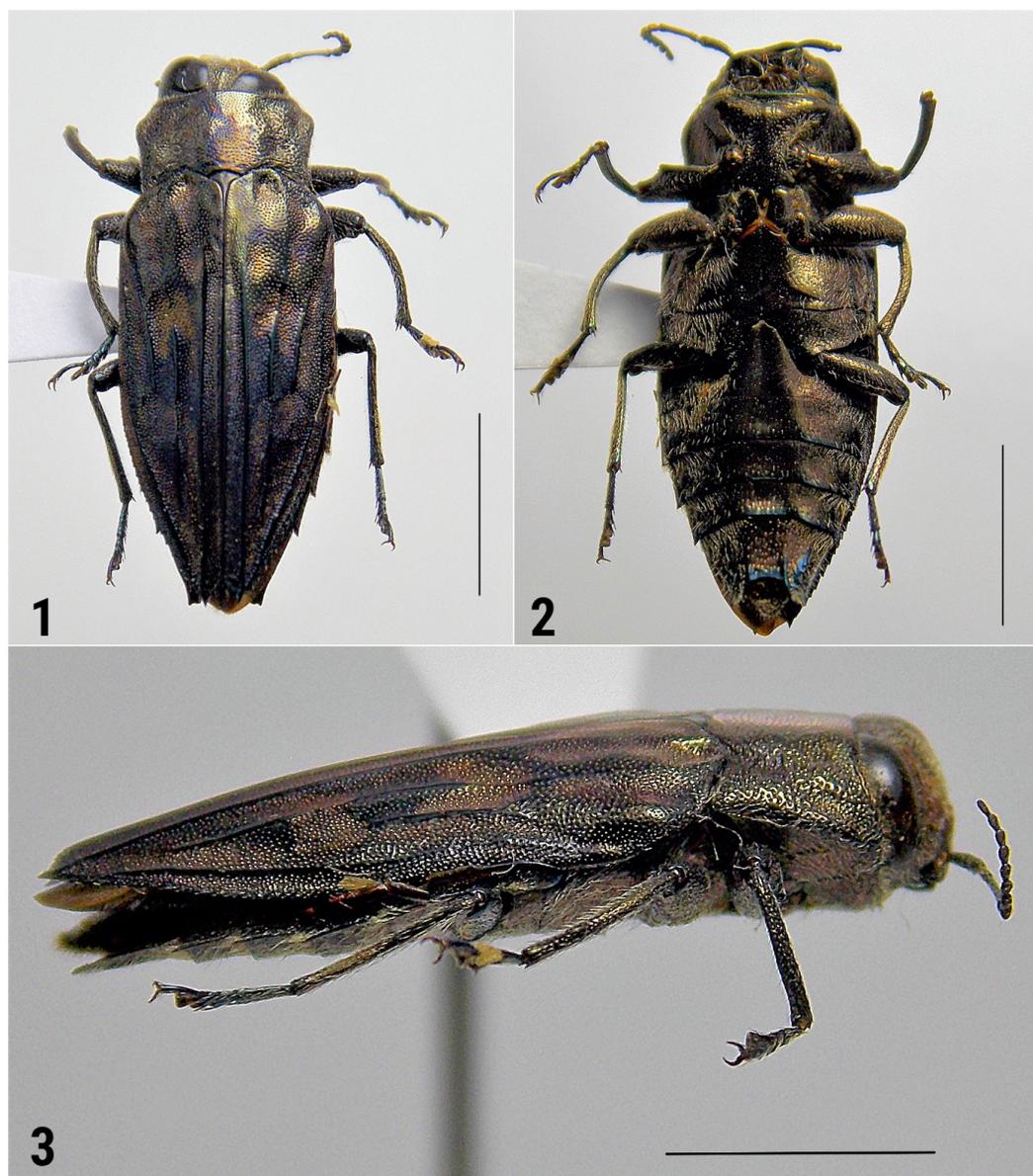
Chrysobothris (Chrysobothris) fallax Juárez-Noé & González-Coronado, **sp. nov.**
(Figs. 1-7)

Type material. Holotype male. PERÚ, Piura, distrito Castilla / Universidad Nacional de Piura / 05°10'51"S-80°37'31"O, 29 m, 12.IV.2017 / colecta manual, U. González & G. Juárez leg. [MUPRG]. Paratypes. 2 females, 1 male / PERÚ, Piura, distrito Piura, Universidad de Piura / 05°10'11"S-80°36'51"O, 26 m // 19-II-2017, colecta manual / G. Juárez & U. González leg. [MUPRG]. 1 male / PERÚ, Piura, Talara, distrito Los Órganos / 04°10'38"S-81°07'27"O, 10 m // 05-V-2017, golpeteo de vegetación / G. Juárez leg. [GJNC]. 2 females, 1 male / PERÚ, Piura, Sechura, Vice, Desierto de Sechura / 05°59'47"S-80°27'02"O, 10 m // 12-XII-2017, golpeteo de vegetación / G. Juárez leg. [GJNC]. 1 female / PERÚ, Piura, Sechura, Illescas / 05°58'38"S-81°05'51"O, 10 m // 12-XI-2017, golpeteo de vegetación / G. Juárez leg. [GJNC]. 1 female, 1 male / PERÚ, Piura, Morropón, distrito Chulucanas / 05°05'47"S-80°09'39"O, 350 m // 22-I-2015, colecta manual / G. Juárez leg. [GJNC]. 1 male / PERÚ, Piura, Morropón / 05°51'67"S-80°09'78"O, 653 m // 11-III-2011, golpeteo de vegetación / G. Juárez leg. [GJNC]. 1 female / PERÚ, Piura, Ayabaca, distrito Suyo / 04°30'45"S-80°02'10"O, 554 m // 20-VI-2011, colecta manual / G. Juárez leg. [GJNC]. 1 female / PERÚ, Piura, distrito Veintiséis de Octubre / 05°10'55"S-81°40'08"O, 25 m // 04-I-2023, colecta manual / U. González leg. [GJNC].

Description. Male holotype (Figs. 1-5). Length 16.10 mm, width 5.10 mm. Elongate, depressed above; dorsal surface black shiny with coppery-gold reflections and faint greenish-blue reflections; frons with coppery-gold reflections; vertex with golden and green reflections; clypeus with coppery-gold and green reflections along margin; antennomeres 1-3 with faint green reflections, antennomeres 4-11 with reddish-brown reflections; basal pits and foveae of elytra brassy; legs with coppery-gold reflections, tarsi with greenish-blue reflections. Ventral surface black shiny with coppery-gold reflections and faint greenish-

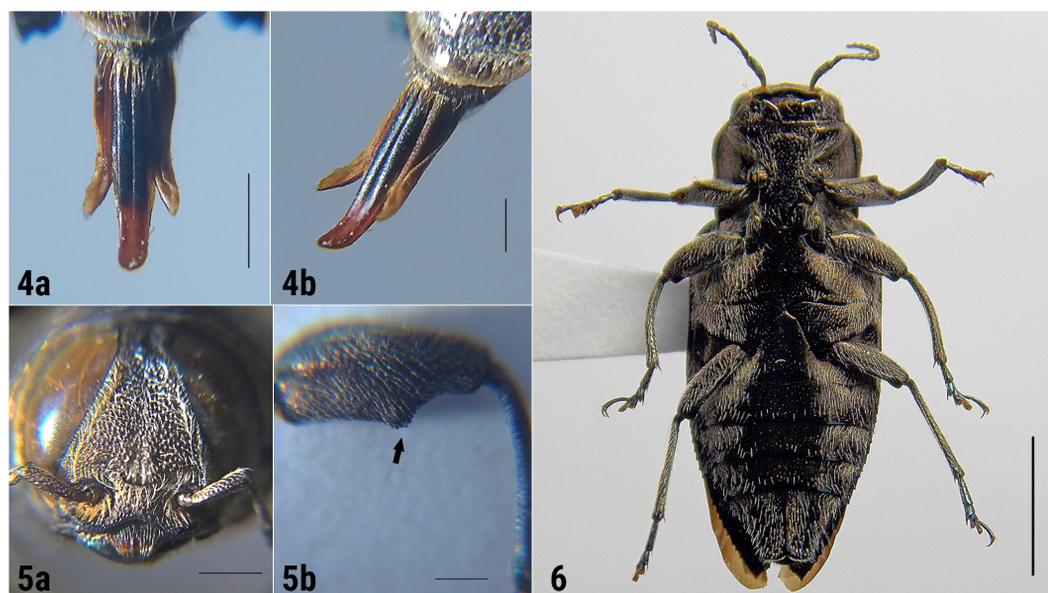
blue reflections; tarsi and posterior margins of ventrites with greenish-blue reflections. **Head.** Frons convex, shallowly and densely reticulate-punctate, densely clothed with long, silver-white hairs; with a median longitudinal carina and coarsely elevated ridge above clypeus and arching above antennal insertions; vertex densely punctate, punctures small, with a fine median carina; clothed with short, silver-white hairs; clypeus with anterior margin broadly, deeply, arcuately emarginate; antennomeres clothed with anteriorly-directed, silver-white hairs; antennomere 1 longer with wide, wider at apex (Fig. 5a); antennomere 2 short, longer than wide; antennomere 3 slender and slightly equal size than antennomere 1; antennomeres 4-11 serrate. **Thorax.** Pronotum with surface evenly convex, wider than long, widest at apical fourth, with irregular depressions on each apical margin, near lateral margin at middle and before basal margin; punctures of disk fine and shallow, punctures coarse, deep and rugose laterally around depressions; apical angles weakly produced, basal angles bluntly triangular; hind margin strongly bisinuate, arcuately emarginate in front of scutellum. Prosternum sparsely punctate, clothed with short, semierect, silver-white hairs; prosternal process wide, flat, sparsely punctate, front margin subtruncate; meso and metasternum densely punctate, with disk glabrous and laterally clothed with short, semierect, silver-white hairs. **Elytra.** 1.7 times longer than wide, width at humeral angles 1.1 times wider than pronotum at hind angles, sides wider at middle, then strongly tapering to apex; lateral margins serrate on apical half, apices terminating in distinct acute tooth; surface finely densely punctate. Each elytron with a deep median basal pit, a transverse discal fovea at basal third, and an irregularly rounded discal fovea, behind middle; four strongly elevated costae as follows: costa 1 from near base, extending uninterrupted to apex, costa 2 from near base, extending to near apex, costa 3 short, from basal third to half, interrupted by apical fovea, costa 4 following outline of lateral margin, obsolete from near base to half, extending more distinctly from half to near apex; discal fovea at basal third between costae 1-3, discal fovea behind middle between costae 1-4. Scutellum strongly produced and acuminate posteriorly. **Legs.** Clothed with short, silver-white hairs. Anterior femur with a short, truncate tooth, denticulate on outer margin (Fig. 5b). Anterior tibia arcuate, somewhat wider on apical half, 5 small blunt teeth on apical half of inner margin, one spine at apex; middle tibia evenly arcuate, two spines at apex; hind tibia straight, unmodified, one spine at apex. **Pygidium.** Densely punctate, apical margin subtruncate. **Abdomen.** Shallowly concave, finely and densely punctate, glabrous on middle, laterally clothed with short, silver-white hairs laterally; broadly, feebly flattened at middle, lateral callosities absent; Ventrites with acute posterior angles; ventrite 5 deeply, semicircularly emarginate at apex, posterior angles broad, slightly emarginate and acutely produced externally; surface broadly, longitudinally concave at middle, limited on each side by a longitudinal carina, and with a slightly elevated, serrate submarginal ridge (Fig. 2). **Aedeagus.** Median lobe upcurved apically, tip narrowly rounded (Figs. 4a, 4b). **Female.** Similar to male, differs as follows: antennomeres dark with faint green reflections; pygidium with apical margin rounded; apex of ventrite 5 slightly emarginate at middle, with a median longitudinal carina (Fig. 6).

Variation. Most individuals are black with coppery-gold reflection and faint greenish-blue reflections; however, a few individuals greenish-blue reflections are absent. The frons of some specimens, including the holotype, is densely clothed with silver-white hairs, but in other individuals it is glabrous; the longitudinal carina and ridge on the frons are distinctly developed in most individuals, but in a few individuals they are weakly developed. Males vary from 15.10-16.10 mm long (mean = 15.80, $n = 6$) and 5.10-5.20 mm wide (mean = 5.10, $n = 6$) and females from 14.50-16.30 mm long (mean = 15.50, $n = 8$) and 5.0-5.30 mm wide (mean = 5.20, $n = 8$).



Figures 1-3. *Chrysobothris* (*C.*) *fallax* sp. nov., male holotype. 1. Dorsal view. 2. Ventral view. 3. Lateral view. Scale: 5 mm. / *Chrysobothris* (*C.*) *fallax* sp. nov., holotipo macho. 1. Vista dorsal. 2. Vista ventral. 3. Vista lateral. Escala: 5 mm.

Diagnosis. *C. fallax* sp. nov. is related to *C. acutipennis* by its greatly elongated, strongly acuminate scutellum, the size and form of the foveae and costae of the elytra, and the distinct tooth at each elytral apex. It can be distinguished from the latter by the short truncate tooth on the profemora and the narrowly rounded, upcurved tip of the median lobe in the male genitalia. In contrast, *C. acutipennis* has a short, rounded tooth on the profemora and the more broadly rounded tip of the median lobe on the male genitalia (Fisher 1942). *C. fallax* also resembles *Chrysobothris pseudacutipennis* Obenberger, 1940; however, the latter has the scutellum much shorter, and the elytral apices rounded with a minute tooth (Obenberger 1940).



Figures 4-6. *Chrysobothris* (*C.*) *fallax* sp. nov. 4-5. Male holotype. 4a-4b. Aedeagus, dorsal and lateral views. Scale: 1 mm. 5a. Head, frontal view. 5b. Tooth of the profemur. Scale: 1 mm. 6. Female paratype, ventral view. Scale: 5 mm. / *Chrysobothris* (*C.*) *fallax* sp. nov. 4-5. Holotipo macho. 4a-4b. Edeago, vistas dorsal y lateral. Escala: 1 mm. 5a. Cabeza, vista frontal. 5b. Diente del profemur. Escala: 1 mm. 6. Paratipo hembra, vista ventral. Escala: 5 mm.

Etymology. The specific epithet is from the Latin *fallax* (= deceptive, false); named in reference to its external similarity to *C. acutipennis*.

Distribution. Known only from the seasonally dry coastal forests and desert habitats (deserts scrub, coastal plains, mountain dry forests) up to 800 m altitude in the Piura region of northwestern Peru (Fig. 8).

Ecology. Most individuals have been beaten and collected on live or dead branches of *Neltuma piurensis* (L. Vásquez, Ecurra & Huamán) C.E. Hughes & G.P. Lewis (Fabaceae). A few individuals have been collected on live branches of *Vachellia* spp. (Fabaceae). Presumably, these species also serve as hosts for larval development, but this remains to be confirmed. Juárez-Noé & González-Coronado (2020, 2021), reported adults of *Chrysobothris* sp. collected on branches of *Prosopis pallida* (Humb. & Bonpl. ex Wild.) Kunth [= *N. piurensis*]; all these specimens, in fact, represent *C. fallax* sp. nov.

Remarks. Most of the *Chrysobothris* species cited for Peru are characterized by brilliant colorations on body (usually green, red and purple) and green spots or fasciae on the elytra (*C. hypochloris*, *C. banghaasi*, *C. perwoiae* and *C. freyi*). Only two species, *C. decolorata* and *C. fallax* sp. nov., have dull colorations (usually black) without metallic fasciae on the elytra, however, both species are not externally similar. The recognition of *C. fallax* as a distinct species necessitates reconsideration of records of distribution attributed to *C. acutipennis*. Based on available specimens, *C. fallax* appears to be restricted to coastal desert and seasonally dry forest habitats in northwestern Peru (Piura region). Conversely, *C. acutipennis* occurs widely from south Texas in the United States through coastal or near-coastal areas of Mexico (except Baja Peninsula) and Central America (Belize, Costa Rica, Honduras, Nicaragua, Panamá) to northern South America (Colombia, French Guiana, Venezuela) (Fisher 1942; MacRae 2022). Seasonally dry forests in northwestern South

America range from southern Ecuador to northern Peru (Tumbes, Lambayeque and La Libertad regions), and as a result it is possible that *C. fallax* also occurs in these areas, as well more extensively as along the Peruvian coastal desert. More collecting in these areas would be helpful in further delimiting the distribution of this species.

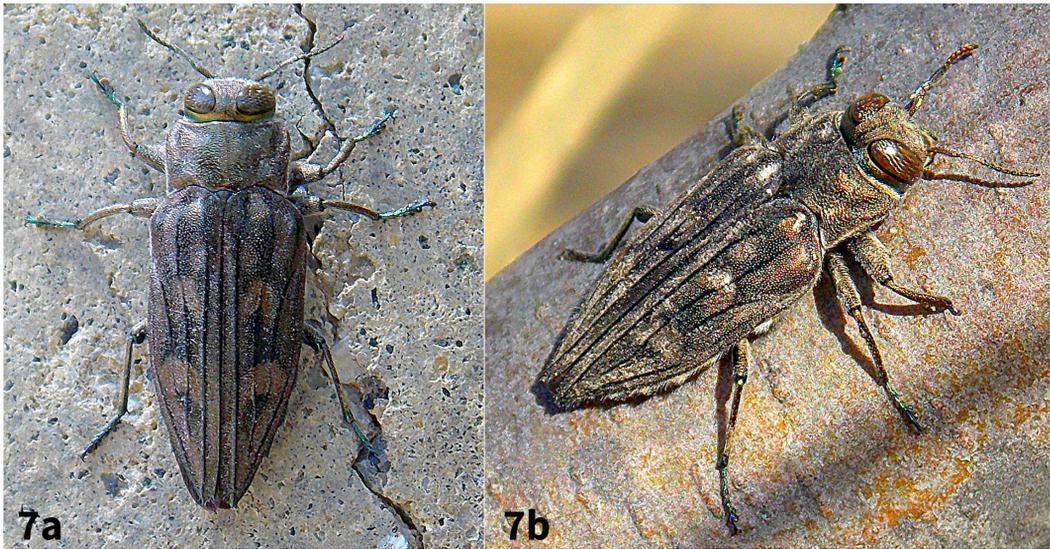


Figure 7. Live specimens of *Chrysobothris* (*C.*) *fallax* **sp. nov.** **7a.** Male holotype. **7b.** Female paratype. / Ejemplares vivos de *Chrysobothris* (*C.*) *fallax* **sp. nov.** **7a.** Holotipo macho. **7b.** Paratipo hembra.



Figure 8. Habitat of *Chrysobothris* (*C.*) *fallax* **sp. nov.**, seasonally dry coastal forests. / Hábitat de *Chrysobothris* (*C.*) *fallax* **sp. nov.**, bosques costeros estacionalmente secos.

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