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A new genus for *Drepanocanthoides larreae* (Horn, 1887) and description of a new congeneric Mexican species (Coleoptera: Scarabaeidae: Aphodiinae)

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Abstract. *Drepanocanthoides larreae* (Horn, 1887) (Coleoptera: Scarabaeidae: Aphodiinae) is transferred to the **new genus** *Hornosus* and the **new species** *Hornosus turnbowi* from Mexico (Nuevo León) is described. A complete set of figures is supplied for the taxa dealt with herein.

Key Words. Systematics, *Hornosus*, new genus, *H. turnbowi*, new Mexican species, Nearctic and Neotropical Aphodiinae.

Introduction

This work is part of a series of papers describing new taxa in preparation for a systematic revision of Mexican Aphodiinae (Coleoptera: Scarabaeidae).

Materials and Methods

Terminology used to describe morpho-anatomical features follows that of Dellacasa et al. (2001). Materials studied are in the following collections: **DCGI** – Dellacasa Collection, Genoa, Italy; **FSCA** – Florida State Collection of Arthropods, Gainesville, Florida, U.S.A.

Genus *Hornosus* new genus

Hornosus Gordon and Godwin, [1997] *in litteris*

Type species. *Aphodius larreae* Horn, 1887, here designated.

Description. Small species (length 4.0–5.0 mm), oblong, convex, head and pronotum shiny, elytra alutaceous, pubescent laterally and preapically. Entirely yellowish-testaceous or head and pronotum blackish, elytra pale brownish with a piceous discal stripe. Head with epistome feebly gibbous, almost evenly moderately punctured; clypeus deeply sinuate in middle, lobate on either side; lobes produced and curved upward, strongly so in males, thinly bordered, edge glabrous; genae obtusely round, cili-

ate, not protruding from eyes; frontal suture unarmed, without tubercles. Pronotum transverse, evenly punctured; sides thinly bordered, edge elongately ciliate; base very finely bordered. Scutellum small, triangular, unevenly punctured. Elytra elongate, finely striate; striae crenulate; interstices almost flat, microreticulate, finely punctured, pubescent laterally and on preapical declivity; epipleura almost entirely ciliate. Foretibiae distally tridentate and proximally not serrulate at outer margin; upper side impunctate. Pygidium shiny, glabrous, superficially sparsely unevenly punctured, apical margin with few sparse and rather elongate setae. Hind tibiae with rather feeble transverse carinae on outer face; apically fimbriate, with spinules elongate and irregularly unequal. Sexual dimorphism shown in males mainly by foretibial spur cultrate and clypeus more deeply sinuate and more strongly lobate. Aedeagus with slender, elongate and not membranous paramera, apically with ventral projection. Epipharynx transverse, strongly round on sides, sinuate and elongately ciliate on anterior margin; epitorma ogival; corypha not protruding from front margin, with apical clump of rather stout celtes, nearly equal in length; pedia densely pubescent toward corypha, with few long spines more or less serially arranged; chaetopariae moderately dense and moderately elongate.

Distribution. Nearctic and Neotropical regions.

Etymology. Named in honour of George Horn, eminent American nineteenth century authority on Aphodiinae. The gender is masculine.

Discussion. The diagnostic characters of *Hornosus*, new genus, are:

- scutellum small, triangular;
- clypeal margin deeply sinuate in middle, lobate on either side; lobes distinctly produced and curved upward, more strongly so in males;
- pronotum not flattened at sides, with basal margin thinly bordered;
- males foretibiae angularly sinuate on inner margin;
- hind tibiae apically fimbriate, with spinules elongate and irregularly unequal.

The new genus seems not to be closely allied to other genera of Aphodiini; the peculiar shape of the clypeus is similar to that of the South African Didactyliini genus *Coptochirus* Harold, 1859. In the key to genera of Aphodiini by Gordon and Skelley (2007), *Hornosus* could fall behind the couplet 62 as follow:

- 62a. Male clypeus with strong anterior projection on each side of middle. Length 4.0–5.0 mm. U.S.A. and Mexico ***Hornosus* new genus**
 — Male clypeus without anterior projection on each side of middle. Length 5.0–6.0 mm. Canada and U.S.A. ***Drepanocanthoides* Schmidt, 1913**

Key to species of *Hornosus*

1. Testaceous, pronotum often with a cloudy brownish spot at middle of each side; frontal suture distinctly impressed; pronotal punctation somewhat irregular and rather coarse, mainly laterally; first segment of hind tarsi longer than following two segments combined. Length 4.0–5.0 mm. Mexico (Chihuahua, Coahuila), U.S.A. (Arizona, New Mexico, Texas) ***H. larreae* (Horn)**
 — Head and pronotum blackish, pronotal sides and elytra yellowish, latter with discal longitudinal piceous stripes; frontal suture obsolete; pronotal punctation very fine, almost evenly scattered throughout; first segment of hind tarsi somewhat longer than following three segments combined. Length 4.0–4.5 mm. Mexico (Nuevo León) ***H. turnbowi* new species**

***Hornosus larreae* (Horn, 1887) new combination**

(Fig. 1–8)

Aphodius larreae Horn, 1887: 41.*Aphodius bifrons* Bates, 1887: 90; 1889: 392 (as synonym of *A. larreae*); Blackwelder 1944: 212; Dellacasa 1988: 97; Gordon and Skelley 2007: 329 (lectotype designation).*Aphodius (Erytus) larreae*; Schmidt 1913: 127; 1922: 81; Blackwelder 1944: 212; Dellacasa 1988: 150.*Drepanocanthoides larreae*; Dellacasa et al. 2002: 208; Gordon and Skelley 2007: 329 (lectotype designation and new combination); Skelley et al. 2007: 4.**Type locality.** El Paso, Texas [U.S.A.].**Type repository.** Museum of Comparative Zoology, Harvard University, Cambridge, MA (U.S.A.) (type not examined).

Redescription. Length 4.0–5.0 mm; oblong, moderately convex, alutaceous, glabrous except elytra laterally and subapically pubescent. Entirely yellowish; pronotum often with cloudy brownish spot at middle of each side; elytral suture narrowly darkened. Head with epistome feebly convex, distinctly, rather finely and evenly punctured throughout, punctation laterally coarser, median subclypeal depression impunctate; clypeus deeply sinuate in middle and strongly lobate on either side, lobes upturned, sides arcuate, thickly bordered, edge glabrous; genae round, elongately ciliate, not protruding from eyes; latter rather large; frontal suture distinctly impressed, not tuberculate; frons distinctly and sparsely punctured. Pronotum moderately transverse, moderately convex, rather unevenly punctured, punctation coarser and denser on sides; lateral margins arcuate, thinly bordered, edge elongately and sparsely ciliate; hind angles round; base evenly arcuate, very thinly bordered. Scutellum with curved sides, flat, distinctly punctured basally, punctures shortly setigerous. Elytra elongately oval, convex, slightly widened posteriorly, finely striate, striae rather fine, superficially but distinctly punctured, crenulate; interstices slightly convex, finely microreticulate, unevenly but distinctly punctured; pubescent on preapical declivity; epipleural margin fimbriate, with long pale setae. Upper spur of hind tibiae shorter than first tarsal segment; latter longer than following two segments combined. Male: clypeus relatively more deeply and narrowly sinuate in middle (Fig. 2); foretibiae with somewhat sinuate inner margin and with spur cultrate (Fig. 4); aedeagus Fig. 7–8. Female: clypeus relatively less deeply and more broadly sinuate in middle (Fig. 3); foretibiae with straight inner margin and with spur slender and acuminate.

Material examined. **MEXICO: Chihuahua:** C[udad]. Juarez (1 ex., DCGI); **Coahuila:** Boquilla del Carmen, 1850', 23.V.1959, leg. Howden & Becker, at light (1 ex., DCGD); San Pedro de Colonias, 3700', 20.VIII.1947, leg. Gertsch (1 ex., DCGI); Torreon, 28.V.1937 (1 ex., DCGI). **U.S.A.: Arizona:** Florence, VIII.1903, leg. Biederman (1 ex., DCGD); Phoenix (1 ex., DCGI).

Distribution. Southern U.S.A. (Arizona, New Mexico, Texas), Mexico (Chihuahua, Coahuila).

Biology. Almost unknown; most of specimens were taken in spring and summer, mostly at light. Horn (1887: 42) reported that *Aphodius larreae* was “taken [.....] on the flowers of *Larrea mexicana*” [Family Zygophyllaceae], which is a poisonous plant from semi-arid zones of the western areas between U.S.A. and Mexico, with resinous leaves and yellow solitary flowers, that usually blooms from April to May.

***Hornosus turnbowi* new species**

(Fig. 9–13)

Type locality. Hwy 58, 8 km E jct 57, Nuevo León, Mexico.**Type repository.** Florida State Collection of Arthropods, Gainesville, Florida, U.S.A.

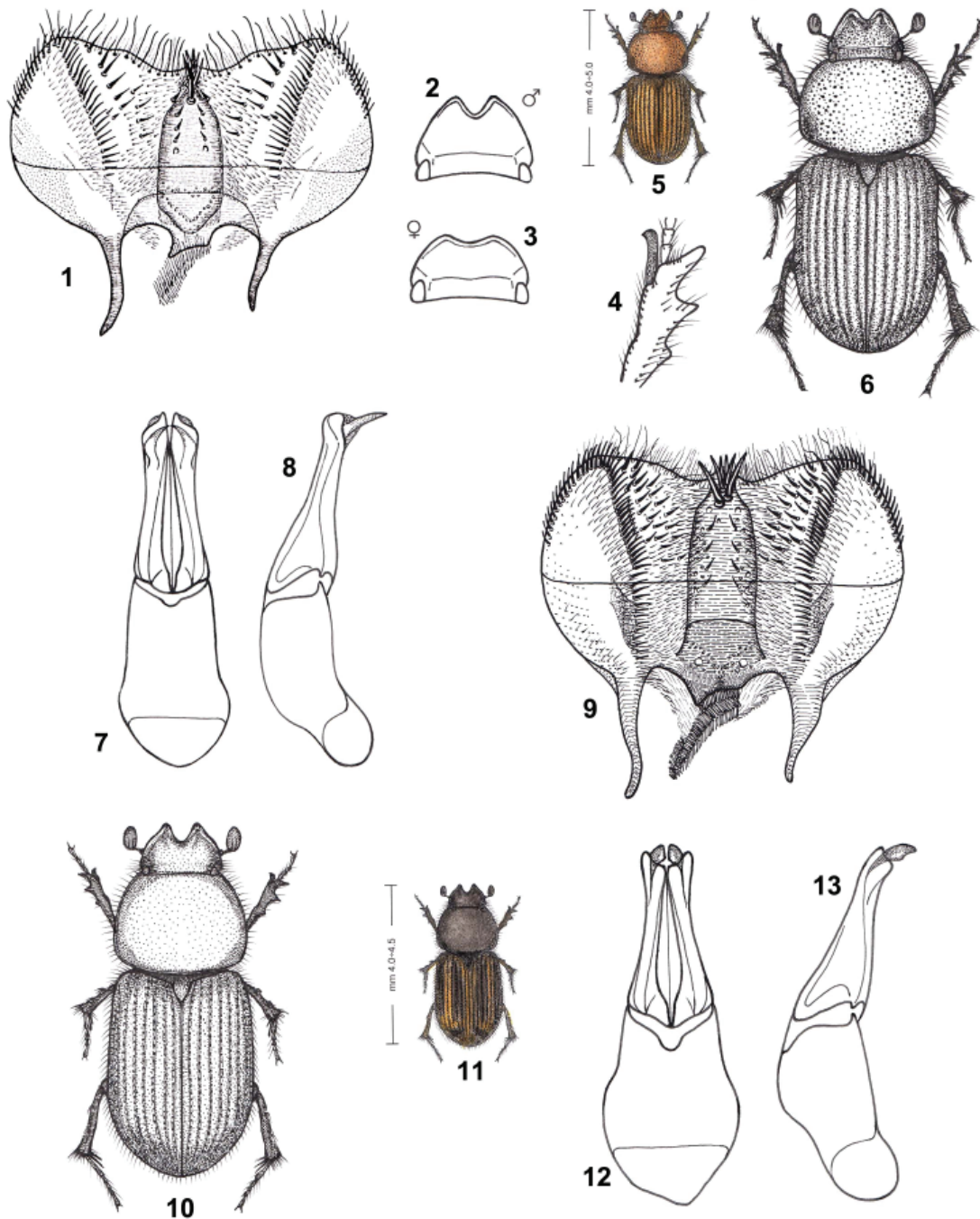


Figure 1–13. 1–8) *Hornosus larreae* (Horn, 1887) (Florence, Arizona, U.S.A.). 1) Epipharynx. 2–3) Outline of clypeus (male and female). 4) Male right foretibia (dorsal view). 5–6) Habitus (length ideogram and morphological details). 7–8) Aedeagus (dorsal and lateral views). 9–13) *Hornosus turnbowi* new species (Hwy 58, 8 km E jct 57, Nuevo León, Mexico). 9) Epipharynx. 10–11) Habitus (length ideogram and morphological details). 12–13) Aedeagus (dorsal and lateral views).

Description. Length 4.0–4.5 mm; oblong, moderately convex, semiglossy, glabrous except elytra laterally and subapically shortly pubescent. Head and pronotum blackish, latter with sides broadly brownish yellow; elytra brownish yellow with a dark brown elongate discal stripe on second, third and fourth interstices, interrupted on preapical declivity by an ocellar yellowish spot, and with a lateral longitudinal dark brown stripe on seventh and eight interstices; legs yellowish brown with paler tarsi; antennal club piceous. Head with epistome almost flat, antero-medially narrowly deflexed, with extremely fine, rather sparse punctures evenly scattered throughout; clypeus deeply sinuate in middle, strongly lobate on either side, lobes strongly reflexed distally, faintly reflexed laterally, not bordered with glabrous margin; genae almost obsolete, very elongately ciliate, hardly protruding from eyes; frontal suture obsolete; frons almost imperceptibly punctured. Pronotum hardly longer than wide, feebly convex, minutely alutaceous, evenly, finely, sparsely punctured, but with a median longitudinal narrow impunctate areola; lateral margins feebly arcuate, distinctly bordered, edge elongately and rather densely ciliate; hind angles round, base evenly arcuate, very thinly bordered. Scutellum flat, alutaceous, finely punctured in basal half. Elytra elongately oval, convex, almost parallel-sided, finely striate; striae superficially and rather closely punctured, subcrenulate; interstriae flat, superficially alutaceous, sparsely finely punctured, shortly pubescent toward apex; epipleural margin elongately ciliate. Hind tibial upper spur shorter than first tarsal segment; latter somewhat longer than following three segments combined. Male: clypeus deeply sinuate in middle, with strongly projecting, apically reflexed lobes on either side of median sinuosity; foretibiae with sinuate inner margin with cultrate spur; aedeagus Fig. 12–13. Female: clypeus moderately sinuate in middle, almost round on either side; foretibial inner margin not sinuate and with slender, acuminate spur.

Type material. MEXICO: Nuevo León: Hwy 58, 8 km E jct 57, 17.VII.1988., leg. R. Turnbow (**holotype**, male, **allotype** and 3 paratypes, FSCA; 1 paratype, DCGI); 4.7 mi E Galeana, 10.VI.1987, leg. B. K. Dozier (1 paratype, FSCA).

Distribution. Mexico (Nuevo León).

Etymology. Named in honour of Robert H. Turnbow, Jr., specialist in Central American Cerambycidae, who collected most of the type series.

Biology. Almost unknown; the type specimens were collected in late spring and early summer.

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