

APHODIINAE DESCRIBED OR RECORDED BY BATES IN BIOLOGIA CENTRALI-AMERICANA (COLEOPTERA SCARABAEOIDEA: APHODIIDAE)

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RESUMEN

Las especies de *Aphodius* descritas o registradas por Bates (1887, 1889) en la Biología Centrali-Americana son discutidas, resultando algunas combinaciones nuevas o *status* nuevos como sigue: *Aphodius dugesi* Bates, 1887 = *Diapterna dugesi* (Bates, 1887) comb. n.; *Aphodius sallei* Harold, 1863 = *Agrilinus sallei* (Harold, 1863) comb. n.; *Aphodius lansbergei* Harold, 1874 = *Agrilinus lansbergei* (Harold, 1874) comb. n.; *Aphodius indutilis* Harold, 1874 = *Agrilinus indutilis* (Harold, 1874) comb. n.; *Aphodius azteca* Harold, 1863 = *Agrilinus* (s. l.) *azteca* (Harold, 1863) comb. n.; *Aphodius oleosus* Harold, 1871 = *Pharaphodius* (s. l.) *oleosus* (Harold, 1871) comb. n.; *Aphodius innexus* Say, 1835 = *Liothorax innexus* (Say, 1835) comb. n.; *Aphodius cruentatus* LeConte, 1878 = *Agoliinus* (s. l.) *cruentatus* (LeConte, 1878) comb. n.; *Aphodius glyptus* Bates, 1887 = *Trichonotuloides glyptus* (Bates, 1887) comb. n.; *Aphodius latecrenatus* Bates, 1887 = *Trichonotuloides latecrenatus* (Bates, 1887) comb. n.; *Aphodius euprosopus* Bates, 1887 = *Agrilinus* (s. l.) *azteca* ab. *euprosopus* (Bates, 1887) stat. n. y comb. n.; *Aphodius constricticollis* Bates, 1889 = *Imelda constricticollis* (Bates, 1889) comb. n.; *Aphodius opisthius* Bates, 1887 (nuevo nombre para *Aphodius duplex* Bates, 1887) = *Gonaphodiellus opisthius* (Bates, 1887) comb. n.; *Aphodius panamensis* Harold, 1859 = *Aidophus panamensis* (Harold, 1859) comb. n. [Didactyliini]; *Aphodius guatemalensis* Bates, 1887 = *Blackburneus* (s. l.) *guatemalensis* (Bates, 1887) comb. n.; *Aphodius guatemalensis* var. *scotinus* Bates, 1887 = *Blackburneus* (s. l.) *guatemalensis* ab. *scotinus* (Bates, 1887) comb. n.; *Aphodius guatemalensis* var. *chiriquinus* Bates, 1887 = *Blackburneus* (s. l.) *guatemalensis* ab. *chiriquinus* (Bates, 1887) comb. n.; *Aphodius charmionus* Bates, 1887 = *Blackburneus* (s. l.) *charmionus* (Bates, 1887) comb. n.; *Aphodius diminutus* Bates, 1887 = *Blackburneus* (s. l.) *diminutus* (Bates, 1887) comb. n.; *Aphodius erythrinus* Bates, 1887 = *Blackburneus* (s. l.) *erythrinus* (Bates, 1887) comb. n.; *Aphodius xanthus* Bates, 1887 = *Blackburneus* (s. l.) *xanthus* (Bates, 1887) comb. n.; *Aphodius larreae* Horn, 1887 (sinonimia *major* de *Aphodius bifrons* Bates, 1887) = *Drepanocanthoides larreae* (Horn, 1887) comb. n.; *Aphodius hoguei* Bates, 1887 = *Cephalocyclus hoguei* (Bates, 1887) comb. n.; *Aphodius hoguei* var. *durangoensis* Bates, 1887 = *Cephalocyclus durangoensis* (Bates, 1887) stat. n. y comb. n. Además para *Aphodius pseudolividus* Balthasar, 1941 se establece la combinación nueva *Labarrus pseudolividus* (Balthasar, 1941). El género nuevo *Imelda* se describe con *Aphodius constricticollis* como especie tipo. *Aphodius* (*Trichonotuloides*) *fossulatipennis* Balthasar, 1945 es considerada como sinonimia *minor* de *Trichonotuloides latecrenatus* (Bates, 1887); y *Aphodius omiltemius* Bates, 1889 es colocada como sinonimia *minor* de *Cephalocyclus mexicanus* (Harold, 1862). Se designan lectotipos y paralectotipos cuando es necesario.

Palabras Clave: Aphodiinae, Bates, Biología Centrali-Americana, taxonomía, Mexico, *Imelda* género nuevo.

ABSTRACT

Species of *Aphodius* described or recorded by Bates (1887, 1889) in the *Biologia Centrali-Americana* are discussed, resulting in some new combinations or new status as follows: *Aphodius dugesi* Bates, 1887 = *Diapterna dugesi* (Bates, 1887) n. comb.; *Aphodius sallei* Harold, 1863 = *Agrilinus sallei* (Harold, 1863) n. comb.; *Aphodius lansbergei* Harold, 1874 = *Agrilinus lansbergei* (Harold, 1874) n. comb.; *Aphodius indutilis* Harold, 1874 = *Agrilinus indutilis* (Harold, 1874) n. comb.; *Aphodius azteca* Harold, 1863 = *Agrilinus* (s. l.) *azteca* (Harold, 1863) n. comb.; *Aphodius oleosus* Harold, 1871 = *Pharaphodius* (s. l.) *oleosus* (Harold, 1871) n. comb.; *Aphodius innexus* Say, 1835 = *Liothorax innexus* (Say, 1835) n. comb.; *Aphodius cruentatus* LeConte, 1878 = *Agoliinus* (s. l.) *cruentatus* (LeConte, 1878) n. comb.; *Aphodius glyptus* Bates, 1887 = *Trichonotuloides glyptus* (Bates, 1887) n. comb.; *Aphodius latecrenatus* Bates, 1887 = *Trichonotuloides latecrenatus* (Bates, 1887) n. comb.; *Aphodius euprosopus* Bates, 1887 = *Agrilinus* (s. l.) *azteca* ab. *euprosopus* (Bates, 1887) n. stat. and n. comb.; *Aphodius constricticollis* Bates, 1889 = *Imelda constricticollis* (Bates, 1889) n. comb.; *Aphodius opisthius* Bates, 1887 (new name for *Aphodius duplex* Bates, 1887) = *Gonaphodiellus opisthius* (Bates, 1887) n. comb.; *Aphodius panamensis* Harold, 1859 = *Aidophus panamensis* (Harold, 1859) n. comb. [Didactyliini]; *Aphodius guatemalensis* Bates, 1887 = *Blackburneus* (s. l.) *guatemalensis* (Bates, 1887) n. comb.; *Aphodius guatemalensis* var. *scotinus* Bates, 1887 = *Blackburneus* (s. l.) *guatemalensis* ab. *scotinus* (Bates, 1887) n. comb.; *Aphodius guatemalensis* var. *chiriquinus* Bates, 1887 = *Blackburneus* (s. l.) *guatemalensis* ab. *chiriquinus* (Bates, 1887) n. comb.; *Aphodius charmionus* Bates, 1887 = *Blackburneus* (s. l.) *charmionus* (Bates, 1887) n. comb.; *Aphodius diminutus* Bates, 1887 = *Blackburneus* (s. l.) *diminutus* (Bates, 1887) n. comb.; *Aphodius erythrinus* Bates, 1887 = *Blackburneus* (s. l.) *erythrinus* (Bates, 1887) n. comb.; *Aphodius xanthus* Bates, 1887 = *Blackburneus* (s. l.) *xanthus* (Bates, 1887) n. comb.; *Aphodius larreae* Horn, 1887 (senior synonym of *Aphodius bifrons* Bates, 1887) = *Drepanocanthoides larreae* (Horn, 1887) n. comb.; *Aphodius hogei* Bates, 1887 = *Cephalocyclus hogei* (Bates, 1887) n. comb.; *Aphodius hogei* var. *durangoensis* Bates, 1887 = *Cephalocyclus durangoensis* (Bates, 1887) n. stat. and n. comb. Moreover, the new combination for *Aphodius pseudolivividus* Balthasar, 1941 is *Labarrus pseudolivividus* (Balthasar, 1941). The new genus *Imelda* is described with *Aphodius constricticollis* as the type species. *Aphodius* (*Trichonotuloides*) *fossulatipennis* Balthasar, 1945 is considered a junior synonym of *Trichonotuloides latecrenatus* (Bates, 1887); and *Aphodius omiltemius* Bates, 1889 is placed as a junior synonym of *Cephalocyclus mexicanus* (Harold, 1862). Lectotypes and paralectotypes are designated where necessary.

Key Words: Aphodiinae, Bates, *Biologia Centrali-Americana*, taxonomy, Mexico, *Imelda* new genus.

INTRODUCTION

The present work is intended to update the systematics and nomenclature of Aphodiinae taxa listed by Bates in the volume II (1887) and supplement (1889) of the *Biologia Centrali-Americana*. The study is based primarily on the types preserved in Bates' collection at the Natural History Museum, London and on typical material preserved in Harold's and Oberthür's collections at the Muséum d'Histoire Naturelle, Paris. The latter institution contains duplicates from the Bates collection including material from Champion, Höge and Sallé.

Most specimens examined were carefully labelled and, if not, old locality names and political subdivisions are updated following the excellent work of Selander & Vaurie (1962).

Also included are collection records of specimens preserved in:

- Canadian National Collection of Insects, Division Agriculture, Ottawa (CNC).
- Dellacasa Collection, Genoa (Italy) (DCG).
- Instituto de Ecología, Xalapa (Veracruz, Mexico) (IEX).
- Louisiana State University, Insect Collection, Baton Rouge (U.S.A.) (LSU).
- Museo di Storia Naturale e del Territorio, Università di Pisa, Calci (Pisa) (MSNTC).
- Museum für Naturkunde, Berlin (MNB).
- Muséum National d'Histoire Naturelle, Paris (MNHN).
- Natural History Museum, London (NHML).
- United States National Museum of Natural History, Washington, (DC, USA) (USNM).

Each taxon is either redescribed using all character systems, including epipharyngeal and aedeagal features, or the bibliographical references in which the taxon has been redescribed are included.

Bates (1887, 1889) described or recorded the following taxa that are listed in the same systematic order as in his publications. This order is compared directly to the current status as recognized by subsequent authors.

N°	TAXA AS LISTED BY BATES	CURRENT STATUS
1	<i>Aphodius dugesi</i> Bates, 1887	<i>Diapterna dugesi</i> (Bates, 1887)
2	<i>Aphodius sallaei</i> Harold, 1863 (i. s.)	<i>Agrilinus sallaei</i> (Harold, 1863)
3	<i>Aphodius lansbergei</i> Harold, 1874	<i>Agrilinus lansbergei</i> (Harold, 1874)
4	<i>Aphodius indutilis</i> Harold, 1874	<i>Agrilinus indutilis</i> (Harold, 1874)
5	<i>Aphodius aztecus</i> Harold, 1863 (i. s.)	<i>Agrilinus</i> (s. l.) <i>azteca</i> (Harold, 1863)
6	<i>Aphodius vittatus</i> Say, 1825	<i>Planolinus</i> (s. l.) <i>vittatus</i> (Say, 1825)
7	<i>Aphodius oleosus</i> Harold, 1871	<i>Pharaphodius</i> (s. l.) <i>oleosus</i> (Harold, 1871)
8	<i>Aphodius innexus</i> Say, 1835	<i>Liothorax innexus</i> (Say, 1835)
9	<i>Aphodius cuniculus</i> Chevrolat, 1864	<i>Nialaphodius nigrita</i> (Fabricius, 1801)
10	<i>Aphodius lividus</i> (Olivier, 1789)	<i>Labarrus pseudolividus</i> (Balthasar, 1941) (<i>prope</i>)
11	<i>Aphodius</i> sp. ?, Bates, 1887: 86	not traced in Bates' collection
12	<i>Aphodius ftohri</i> Bates, 1887	<i>Pseudagolius coloradensis</i> (Horn, 1870)
13	<i>Aphodius</i> sp. ?, Bates, 1887: 86 <i>Aphodius cruentatus</i> (LeConte, 1878)	<i>Agollinus</i> (s. l.) <i>cruentatus</i> (LeConte, 1878)
14	<i>Aphodius glyptus</i> Bates, 1887	<i>Trichonotuloides glyptus</i> (Bates, 1887)
15	<i>Aphodius latecrenatus</i> Bates, 1887	<i>Trichonotuloides latecrenatus</i> (Bates, 1887)
16	<i>Aphodius euprosopus</i> Bates, 1887	<i>Agrilinus</i> (s. l.) <i>azteca</i> ab. <i>euprosopus</i> (Bates, 1887)
16(A)	<i>Aphodius constricticollis</i> Bates, 1889	<i>Imelda constricticollis</i> (Bates, 1889)
16(B)	<i>Aphodius</i> sp. ?, Bates, 1889: 392	not traced in Bates' collection
17	<i>Aphodius duplex</i> Bates, 1887	<i>Gonaphodiellus opisthius</i> (Bates, 1887)
18	<i>Aphodius panamensis</i> Harold, 1859	<i>Aidophus panamensis</i> (Harold, 1859)
19	<i>Aphodius guatemalensis</i> Bates, 1887	<i>Blackburneus</i> (s. l.) <i>guatemalensis</i> (Bates, 1887)
19.1	<i>Aphodius guatemalensis</i> var. <i>scotinus</i> Bates, 1887	<i>Blackburneus</i> (s. l.) <i>guatemalensis</i> ab. <i>scotinus</i> (Bates, 1887)
19.2	<i>Aphodius guatemalensis</i> var. <i>chiriquinus</i> Bates, 1887	<i>Blackburneus</i> (s. l.) <i>guatemalensis</i> ab. <i>chiriquinus</i> (Bates 1887)
20	<i>Aphodius charmionus</i> Bates, 1887	<i>Blackburneus</i> (s. l.) <i>charmionus</i> (Bates, 1887)
21	<i>Aphodius diminutus</i> Bates, 1887	<i>Blackburneus</i> (s. l.) <i>diminutus</i> (Bates, 1887)
22	<i>Aphodius erythrinus</i> Bates, 1887	<i>Blackburneus</i> (s. l.) <i>erythrinus</i> (Bates, 1887)
23	<i>Aphodius xanthus</i> Bates, 1887	<i>Blackburneus</i> (s. l.) <i>xanthus</i> (Bates, 1887)

N°	TAXA AS LISTED BY BATES	CURRENT STATUS
24	<i>Aphodius bifrons</i> Bates, 1887	<i>Drepanocanthoides larreae</i> (Horn, 1887)
24(A)	<i>Aphodius omiltemius</i> Bates, 1889	<i>Cephalocyclus mexicanus</i> (Harold, 1862)
25	<i>Aphodius fuliginosus</i> Harold, 1863	<i>Cephalocyclus fuliginosus</i> (Harold, 1863)
26	<i>Aphodius hogeii</i> Bates, 1887	<i>Cephalocyclus hogeii</i> (Bates, 1887)
26.1	<i>Aphodius hogeii</i> var. <i>durangoensis</i> Bates, 1887	<i>Cephalocyclus durangoensis</i> (Bates, 1887)
27	<i>Aphodius mexicanus</i> Harold, 1862	<i>Cephalocyclus mexicanus</i> (Harold, 1862)
28	<i>Aphodius gravidus</i> Harold, 1863	<i>Cephalocyclus gravidus</i> (Harold, 1863)
29	<i>Aphodius puncticeps</i> Harold, 1862	<i>Cephalocyclus puncticeps</i> (Harold, 1862)
30	<i>Aphodius villosipes</i> Harold, 1862	<i>Cephalocyclus villosipes</i> (Harold, 1862)
31	<i>Aphodius luridiventris</i> Harold, 1862	<i>Cephalocyclus luridiventris</i> (Harold, 1862)

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1. *Aphodius dugesi* Bates, 1887

Current status: *Diapterna dugesi* (Bates, 1887) comb. nov.

References

Aphodius dugesi Bates, 1887: 83; Blackwelder, 1944: 212.
Aphodius (Diapterna) dugesi; Schmidt A., 1913: 120; Dellacasa G., 1986: 234 (habitus, epipharynx and aedeagus figured); Dellacasa M., 1988: 123.

Type locality: Guanajuato, Mexico.

Type depository: Natural History Museum. London.

Distribution: Mexico

Type material:

1 ♂, **lectotype herein designated** (NHML), bearing the following labels:

- white: handwritten: Guanajuato / printed: Mexico / Salle Coll.
- white, printed: Sp. figured.
- white, handwritten: *Aphodius / Dugesii* / Bates.
- white, printed: B. C. A. Col. II (2). / *Aphodius / Dugesii*, Bates.
- white with red bord, round, printed: Type.
- white with violet bord, round, printed: Lectotype.
- white, handwritten: *Aphodius / dugesi* / Bates (Lectotype, Gordon 1970 *in litteris*).
- red, printed: *Aphodius dugesi* Bates, 1887; Lectotypus, Dellacasa M. des. 2000.

Material examined:

MEXICO: Edo. de México: Real de Arriba, Temascaltepec, 06.07.1933, Hinton H. E. & Usinger R. L. leg., 25 exx. (USNM); Tejupilco, Temascaltepec, VI.1933, Hinton H. E. & Usinger R. L. leg., 2 exx. (USNM); Tequisquiapan, 03.08.1980, Halffter G., Lopez & Zunino M. leg., 2 exx. (DCG); JALISCO: Ajijic, 20.09.1964, Reyes P. leg., 2 exx. (DCG), 11 exx. (USNM); OAXACA: Mitla, 25.07.1985, Zunino M. leg., 2 exx. (DCG).

Distribution from literature:

- MEXICO: Guanajuato, Tupataro (Bates, 1887: 83).

Remarks: The species is probably myrmecophilous. The two specimens preserved in Dellacasa collection were found by Mario Zunino in a nest of *Atta*.

2. *Aphodius sallaei* Harold, 1863 [incorrect spelling]

Current status: *Agrilinus sallaei* (Harold, 1863) comb. nov.

References

Aphodius sallaei Harold, 1863: 331, 336; Blackwelder, 1944: 213; Dellacasa M., Gordon & Dellacasa G., 1998: 159 (habitus, epipharynx and aedeagus figured; lectotype designated).
Aphodius sallaei; Bates, 1887: 83 (incorrect spelling); 1889: 391.
Aphodius (Bodilus) sallaei; Schmidt A., 1913: 166; Dellacasa M., 1988: 194.
Aphodius (Agrilinus) freyi Balthasar, 1941: 164; Dellacasa M., Gordon & Dellacasa G., 2000: 15 (as synonym of *sallaei*).

Type locality: Cordova [= Cordoba], Mexico.

Type depository: Muséum national d'Histoire naturelle, Paris.

Distribution: U.S.A. (Southern coast, from South Carolina and Florida to Brownsville, Texas), Mexico, Guatemala, Nicaragua, Costa Rica, Caribbean Islands.

Material examined:

COSTA RICA: CARTAGO: Cache [= Cachí], Rogers H. leg., 1 ex. (MNHP); PUNTARENAS: Monteverde, 26.05.-03.06.1984, Riley E., Rider D. & LeDoux D. leg., 3 exx. (LSU); SAN JOSÉ: San José, m 1-1200, 1940, Nevermann leg., 1 ex. (DCG).

GUATEMALA: ALTA VERA PAZ: Balheu, Champion C. leg., 1 ex. (MNHP); ESQUINTLA: Zapote, Champion C. leg., 2 exx. (MNHP); GUATEMALA: Aceituno, Champion C. leg., 2 exx. (MNHP); Guatemala city, Champion C. leg., 1 ex. (MNHP); QUEZALTENANGO: Coatepeque, 1300 ft., Champion C. leg., 2 exx. (MNHP).

HONDURAS: ATLANTIDA: Lancetilla bot. gard., 25.03.1994, Ganaway D. R. leg., 3 exx. (LSU); EL PARAÍSO: Montserrat Mt., 01.04.1994, Ganaway D. R. leg., 1 ex. (LSU).

MEXICO: CHIAPAS: 4.5 Km N Ixtapa on Hwy.195, 3000', 24.05.1987, Rider D. A., Riley E. G. & T. J. leg., 1 ex. (LSU); 3 Km S Palenque on Hwy.199, 21-22.05.1987, Riley E. G. & T. J. & Rider D. A. leg., 1 ex. (LSU); Parque Laguna Belgica, 27.05.1987, Rider D. A., Riley E. G. & T. J. leg., 2 exx. (LSU); DURANGO: Cañon de Fernandez, 09.07.1968, Hernandez H. leg., 1 ex. (DCG); HIDALGO: Azteca, 27.05.1979, Zunino M. leg., 1 ex. (DCG); JALISCO: Sierra de Manantlan, m 700, 12.02.1989, Rivera L. leg., 1 ex. (DCG); EDO. DE MÉXICO: Chalma, m 1550, 05.07.1980, Zunino M. leg., 2 exx. (DCG); MORELOS: Xochicalco env., 11.09.1982, Zunino M. leg., 1 ex. (DCG); OAXACA: Oaxaca, Hoege leg., 2 exx. (MNHP); Tehuantepec, Höge leg., 1 ex. (DCG); Temaltepec, carr. Oaxaca-Tehuacan, 05.07.1985, Zunino M. leg., 3 exx. (DCG); QUINTANA ROO: 1 Km N of Coba, 31.05.1987, Rider D. A. & Riley E. G. leg., 1 ex. (LSU); SONORA: La Palmita, m 1475, 31.08.1997, Nogueira G. leg., 1 ex. (IEX); TAMAULIPAS: El Cielito,

Dellacasa et al.: *Aphodiinae Bates in Biología Centrali-Americana*

nr. Encino, 28-30.08.1985, Riley E. G. & T. J. leg., 2 exx. (LSU); VERACRUZ: Alto Lucero, 26.02.1997, Martínez I. & Cruz M. leg., 4 exx. (IEX); Carranza, 30.05.1975, Reyes P. *et al.* leg., 1 ex. (DCG); Mpio. Coscomatepec, 27.04.1998, Alvarado M. *et al.* leg., 6 exx. (DCG); La Mancha, Mpio. Actopan, 11.11.1997, Zunino M. leg., 2 exx. (DCG); Los Tuxtlas, 04.06.1993, Lobo J. leg., 2 exx. (DCG); Palma Sola, 01.04.1973, Reyes P. leg., 2 exx. (DCG); *ibidem*, 30.05.1998, Alvarado M. leg., 13 exx. (DCG); Pipiapan, Mpio. Catemaco, 23.02.1999, Martínez I. *et al.* leg., 2 exx. (DCG); *ibidem*, 26.04.1999, Deloya C. *et al.* leg., 1 ex. (DCG); *ibidem*, 07.12.1990, Capistran F. leg., 3 exx. (IEX); Pipiapan, Parque U. V., Mpio. Catemaco, 10.11.1999, Dellacasa M. leg., 1 ex. (DCG); Playa Azul, Palmera, 30.07.1980, Zunino M. leg., 1 ex. (DCG); Potrero "Las Animas", Xalapa, 12.09.2000, Martínez I. leg., 2 exx. (DCG); Pueblo Nuevo, camino Cuiyachapa, Mpio. Coscomatepec, 08.11.1999, Dellacasa M. leg., 8 exx. (DCG); Quiahuiztlan env., 14.11.1999, Dellacasa M. leg., 88 exx. (DCG); *ibidem*, 14.11.1999, Martínez I. leg., 7 exx. (DCG); Rancho Baraunda, Mpio. Tierra Blanca, Km 49 Tinaja-Tierra Blanca, 09.11.1999, Dellacasa M. leg., 5 exx. (DCG); Rancho El Tajo, Mpio. Actopan, m 5, 11.01.1999, Alvarado M. & Cruz M. leg., 6 exx. (IEX); *ibidem*, 05.04.1999, Alvarado M. & Sosa J. leg., 3 exx. (DCG); *ibidem*, m 15, 07.07.1999, Alvarado M. & Sosa J. leg., 6 exx. (IEX); Rancho El Toche, m 600, Chavarrillo, Mpio. E. Zapata, 23.11.1999, Dellacasa M. leg., 3 exx. (DCG); Rancho Guadalupe, Km 2.5 antigua carretera a Coatepec, m 1400, Xalapa, 07.03.1992, Capistran F. leg., 2 exx. (IEX); Rancho "La Estancia", Palma Sola, 03.07.2000, Pensado T. & Alvarado M. leg., 2 exx. (DCG); Rancho Los Lirios, Mpio. Actopan, 05.04.1999, Alvarado M. & Sosa J. leg., 15 exx. (DCG); *ibidem*, 03.05.1999, Alvarado M. & Cruz M. leg., 5 exx. (IEX); Rancho Virginia, cerca Est. Biol. Los Tuxtlas, 23.02.1999, Martínez I. *et al.* leg., 1 ex. (DCG); San Andrés Tuxtla, 01.03.1997, Cruz M. & Bueno J. leg., 17 exx. (IEX); *ibidem*, Laguna Encantada, 02.03.1997, Cruz M. & Bueno J. leg., 23 exx. (DCG, IEX); YUCATÁN: Temax, Gaumer leg., 1 ex. (MNHNPN).

NICARAGUA: BOACO: Altamira, V.1971, Moore E. leg., 4 exx. (LSU); *ibidem*, XII.1970-I.1971, Moore E. leg., 2 exx. (LSU); *ibidem*, 07-10.11.1972, Moore E. leg., 4 exx. (LSU); MANAGUA: Altamira, IX.1970, Moore E. leg., 1 ex. (LSU); RIO SAN JUAN: Chontales, Janson leg., 7 exx. (MNHNPN); *ibidem*, 2 exx. (MNHNPN); San Carlos, 19.02.2000, Barbero E. & Perati F. leg., 2 exx. (DCG).

U.S.A.: TEXAS: Brownsville, II.1921, Bridwell J. C. leg., 4 exx. (dgc).

VIRGIN ISLANDS: S. Thomas, W. Indies, 2 exx. (MNHNPN).

Distribution from literature:

- COSTA RICA: Volcan de Irazu (Bates, 1887: 83).
- GUATEMALA: GUATEMALA CITY (neighbours), Aceituno, Dueñas, Capetillo, Zapote, Coatepeque, Rio Maria Linda, San Joaquin, Balheu, Purula, San Gerónimo, Cubilguitz, Tamahu, La Tinta (Bates, 1887: 83); Hacienda Cerro Redonto (Balthasar, 1941: 164).
- MEXICO: Puebla, Villa Lerdo, Jalapa, Vera Cruz [= Veracruz], Oaxaca, Tehuantepec (Bates, 1887:83); Mescala in Guerrero, Temax in North Yucatan (Bates, 1889: 391); Cotaxtla, Mazacuatlán, Monterrey (Gibson & Carrillo, 1959: 108).
- NICARAGUA: Greytown, Chontales (Bates, 1887: 83).

Remarks: Except for some slight differences in epipharyngeal features (e.g.: pedia pubescent toward corypha only), the complex of anatomical characters indicates that *Aphodius sallei* and *Aphodius lansbergei* belong to the genus *Agrilinus* as delimited in a paper by Dellacasa G. *et al.* (2001).

The two species can be keyed as follows:

- 1 Elytral interstices convex, striae strongly crenulate; median tubercle of frontal suture, in males, acuminate apically. Shiny; brown-reddish. Length 5-5,5 mm. U.S.A. (South Carolina, Florida and Texas), Mexico, Guatemala, Nicaragua, Costa Rica, Caribbean Islands **sallei**
- 1' Elytral interstices flat, striae feebly crenulate; median tubercle of frontal suture, in males, bifid apically. Strongly shiny; piceous. Length 4,5-5 mm. Mexico **lansbergei**

Also, based on collecting experiences by one of us (Dellacasa M.), we can state that *Agrilinus sallei* is commonly collected in low lying areas whereas *Agrilinus lansbergei* seems to prefer higher altitudes (above 1000 m).

3. *Aphodius lansbergei* Harold, 1874

Current status: *Agrilinus lansbergei* (Harold, 1874) comb. nov.

References

Aphodius lansbergei Harold, 1874: 179; Bates, 1887: 84; Blackwelder, 1944: 212; Dellacasa M., Gordon & Dellacasa G., 1998: 158 (habitus, epipharynx and aedeagus figured; lectotype designated).

Aphodius (Bodilus) lansbergei; Schmidt A., 1913: 166; Dellacasa M., 1988: 150.

Type locality: Mexico.

Type depository: Muséum national d'Histoire naturelle, Paris.

Distribution: Mexico

Material examined:

MEXICO: MICHOACÁN: La Gallina dint., m 1250, N19°19'29.2"-W102°04'43.8", carr. Méx-37 Uruapan-Nueva Italia, 23.07.2001, Dellacasa M. & Martínez I. leg., 27 exx. (DCG, MSNTC); OAXACA: La Cumbre, camino de Zachila a San Miguel Peras, m 2500, 05.08.2000, Martínez I. & Reyes P. leg., 1 ex. (DCG); San Miguel Peras, Km 25 camino à Zachila, m 2600, 05.08.2000, Martínez I. & Reyes P. leg., 3 exx. (DCG); QUERÉTARO: El Chubete dint., m 1350, N21°09'37.3"-W99°32'46.8", cam. de Cascada de Chuveje-San Pedro, 20.07.2001, Dellacasa M. & Martínez I. leg., 5 exx. (MSNTC); Parador Sta. Martha, m 1550, N21°16'09.2"-W99°09'50.4", La Vuelta dint., 19.07.2001, Dellacasa M. & Martínez I. leg., 9 exx. (DCG, MSNTC); Pto. de Potrerillo, m 1100, N21°18'43.3"-W99°03'39.1", El Lobo dint., carr. Méx-120, 19.07.2001, Dellacasa M. leg., 1 ex. (DCG); SAN LUIS POTOSÍ: Xilitla dint., N21°25'30"-W98°59'54", 18.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); VERACRUZ: Palma Sola, 01.04.1973, Reyes P. leg., 2 exx. (DCG).

Distribution from literature:

- MEXICO: Cordova [= Cordoba] (Bates: 1887:84)

4. *Aphodius indutilis* Harold, 1874

Current status: *Agrilinus indutilis* (Harold, 1874) comb. nov.

References

- Aphodius indutilis* Harold, 1874: 178; Bates, 1887: 84; Bates, 1889: 391; Blackwelder, 1944: 212; Dellacasa M., Gordon & Dellacasa G., 1998: 154 (habitus, epipharynx and aedeagus figured; lectotype designated).
Aphodius (Agrilinus) indutilis; Schmidt A., 1913: 164; Dellacasa M., 1988: 143.

Type locality: Mexico.

Type depository: Muséum national d'Histoire naturelle, Paris.

Distribution: Mexico, Guatemala, Costa Rica.

Material examined:

COSTA RICA: CARTAGO: Irazu Vol., m 2400, 18.05.1951, Cartwright O. L. leg., 2 exx. (DCG), 5 exx. (USNM).

GUATEMALA: EL QUICHÉ: Quiche Mts., 2 exx. (MNHP); *ibidem*, 7-9000 ft., Champion C. leg., 1 ex. (MNHP); QUEZALTENANGO: Quezaltenango, 7800 ft., Champion C. leg., 1 ex. (MNHP); SACATEPÉQUEZ: Capetillo, Champion C. leg., 1 ex. (MNHP).

MEXICO: DISTRITO FEDERAL: Mexico city, 2 exx. (MNHP); CHIAPAS: 11 Km NE Sn Cristóbal on Hwy.199, 8000', 28.05.1987, Rider D. A., Riley E. G. & T. J. leg., 1 ex. (LSU); DURANGO: 1 Km del Ejido "La Michilia", m 2100, 27.11.1996, Anduaga S. *et al.* leg., 1 ex. (DCG); Minillas, Res. Biosf. La Michilia, 07.09.2000, Anduaga S. leg., 3 exx. (DCG); GUERRERO: Omilteme, 8000 ft., July, Smith H. H. leg., 1 ex. (MNHP); HIDALGO: Pto. La Estancia, m 1800, N20°46'39.0"-W99°18'38.4", Zimapán dint., El Huizache, 18.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); San José del Oro, m 2100, N20°51'08.7"-W99°14'23.8", Km 145 carr. Ixmiquilpan-Tamazunchale (Méx-85), 18.07.2001, Dellacasa M. & Martínez I. leg., 10 exx. (DCG, MSNTC); Zacualtipan, Höge leg., 2 exx. (MNHP); MICHOACÁN: Maravatio, 23.06.1979, Zunino M. leg., 2 exx. (DCG); Plana PEMEX Diablo de Zirahuén, m 2200, N19°29'21.3"-W101°48'07.0", carr. Méx-14 Patzcuaro-Uruapan, 23.07.2001, Dellacasa M. & Martínez I. leg., 3 exx. (DCG); Uruapan, 28.07.1980, Zunino M. leg., 1 ex. (DCG); Zitacuaro, 25.06.1979, Zunino M. leg., 4 exx. (DCG); OAXACA: Huajuapán de León, 8 mi N, 6500', 23.05.1964, 5 exx. (USNM); Carretera Oaxaca-Tehuacan, Tonaltepec, 05.07.1985, Zunino M. leg., 2 exx. (DCG); San Miguel Peras, Km 25 camino a Zachila, m 2600, 05.08.2000, Martínez I. & Reyes P. leg., 15 exx. (DCG); QUERÉTARO: La Quebrada, m 2300, N21°07'28.1"-W99°38'44.4", carr. Pinal de Amoles-Peña Blanca, 20.07.2001, Dellacasa M. & Martínez I. leg., 3 exx. (MSNTC); SAN LUIS POTOSÍ: Los Gatos, m 2200, N22°02'52.2"-W100°37'48.7", carr. Méx-70 Rio Verde-San Luis Potosí, 21.07.2001, Dellacasa M. & Martínez I. leg., 3 exx. (DCG); VERACRUZ: Camino a Potrero Nuevo, Cuiyachapa, 15.06.1994, Arellano L. & Zunino M. leg., 1 ex. (DCG).

Distribution from literature:

- MEXICO: Mexico City (neighbours), Zacualtipan (Bates, 1887: 84); Amula in Guerrero (Bates, 1889: 391).
- GUATEMALA: Quezaltenango, Quiche Mountains, Capetillo (Bates, 1887: 84).

Remarks: The complex of anatomical characters indicates that this taxon belongs to the genus *Agrilinus* as delimited in a paper by Dellacasa G. *et al.* (2001).

5. *Aphodius aztecus* Harold, 1863 (unjustified emendation)

Current status: *Agrilinus* (*sensu lato*) *azteca* (Harold, 1863) comb. nov.

References

- Aphodius azteca* Harold, 1863: 381; 1789; Dellacasa M., Gordon & Dellacasa G., 1998: 153 (habitus, epipharynx and aedeagus figured; lectotype designated).
Aphodius aztecus; Bates, 1887: 84 (unjustified emendation); Blackwelder, 1944: 212.
Aphodius encaustus Deyrolle *i. l. apud* Schmidt A., 1907: 7 (as synonym of *A. azteca*); Dellacasa M., 1988: 348.
Aphodius (Agrilinus) azteca; Schmidt A., 1913: 164; Dellacasa M., 1988: 94.

Type locality: Mexico.

Type depository: Muséum national d'Histoire naturelle, Paris.

Distribution: Mexico, Guatemala.

Material examined:

MEXICO: EDO. DE MÉXICO: Ixtaccihuatl, Halffter G. leg., 2 exx. (USNM); Salazar, 16.11.1956, Halffter G. & Halffter V. leg., 6 exx. (USNM); VERACRUZ: Camino a Est. Las Lajas, 13.06.1994, Arellano L. & Sanchez R. leg., 3 exx. (DCG); Camino a Potrero Nuevo, Cuiyachapa, 15.11.1994, Arellano L. & Zunino M. leg. 4 exx. (DCG); Cuiyachapa, Mpio. Coscomatepec, 06.02.1999, Alvarado M. leg. 3 exx. (DCG); *ibidem*, 15.06.1999, Cruz M. & Alvarado M. leg., 2 exx. (MSNTC); *ibidem*, 14.10.1998, Cruz M. & Sosa J. leg., 1 ex. (DCG).

Distribution from literature:

- MEXICO: Jacale (Bates, 1887: 84); Chololoyan, Edo. Veracruz (Lobo & Halffter, 2000).

Remarks: Some morphological characters (e.g.: frontal suture, in males, feebly tuberculate) and the aedeagal structure show significant differences if compared with those of *Agrilinus* taxa as delimited in a paper by Dellacasa G. *et al.* (2001). We do not describe a new genus for this species because several North American taxa seem to belong to *azteca* group and must be assessed prior to systematic redefinition at genus-group level.

In Paris Museum (coll. Oberthür) we found also the type of *Aphodius encaustus* Deyrolle, *nomen nudum*, recorded by Schmidt A. (1907) within *Aphodius azteca* synonyms. Of this taxon, which name is obviously unavailable, we herein **designate**:

1 ♂, **lectotype**, bearing the following labels:

- white, handwritten: *A./ encaustus* Dy/ Orizaba.
- red, printed: *Aphodius encaustus* Deyrolle *apud* Schmidt A., 1907; Lectotypus, Dellacasa M. des. 2001.

1 ♀, **paralectotype**, bearing the following labels:

- white, handwritten: *A./ encaustus* Dy/ Orizaba.
- red, printed: *Aphodius encaustus* Deyrolle *apud* Schmidt A., 1907; Paralectotypus, Dellacasa M. des. 2001.

6. *Aphodius vittatus* Say, 1825

Current status: *Planolinus* (sensu lato) *vittatus* (Say, 1825).

References

- Aphodius vittatus* Say, 1825: 191; Bates, 1887: 84; Blackwelder, 1944: 213.
Aphodius (Agrilinus) vittatus; Schmidt A., 1913: 164; Dellacasa M., 1988: 143.
Aphodius (Planolinus) vittatus; Dellacasa G., 1983: 390 (habitus, epipharynx and aedeagus, figured);
Dellacasa M. 1988: 215.
Planolinus vittatus; Dellacasa G., Bordat & Dellacasa M. (2001).

Type locality: Pennsylvania [U.S.A.].

Type depository: unknown to authors; type probably lost.

Distribution: all of Southern Canada and most of the United States (except Florida) and Mexico. From Siberia to Peloponnesus. Probably native in North America.

Material examined:

CANADA: MONTANA: Havre, 10.06.1911, Wickham leg., 1 ex. (DCG); Ranken, St. Louis Co., 07.10.1934, Meiners E. P. leg., 1 ex. (DCG).

MEXICO: DISTRITO FEDERAL: Mexico city, 2 exx. (MNHNP); DURANGO: 1 Km del Ejido "La Michilia", 27.11.1996, Anduaga S. *et al.* leg., 2 exx. (IEX); Minillas, Res. Biosf. La Michilia, m 2300, 13.10.1989, Anduaga S. leg., 8 exx. (DCG, IEX); Rancho El Aleman, Res. Biosf. La Michilia, 02.05.1979, Zunino M. leg., 1 ex. (DCG); GUERRERO: Chilpancingo, Höge leg., 2 exx. (DCG); HIDALGO: San José del Oro, m 2100, N20°51'08.7"-W99°14'23.8", Km 145 carr. Ixmiquilpan-Tamazunchale (Méx-85), 18.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); Tequisquiapan, m 1920, 03.08.1980, Zunino M. leg., 1 ex. (DCG); Zacualtipan, 27.05.1979, Zunino M. leg., 2 exx. (DCG); *ibidem*, Höge leg., 2 exx. (MNHNP); MICHOACÁN: La Estacada, m 2450, N19°24'04.3"-W101°32'59.8", carr. Méx-41 Patzcuaro-Tacámbaro, 25.07.2001, Dellacasa M. & Martínez I. leg., 16 exx. (MSNTC); Los Azules, Laguna Larga, 25.08.1985, Zunino M. leg., 1 ex. (DCG); Maravatío, 20.06.1979, Zunino M. leg., 3 exx. (DCG); Mil Cumbres, m 2400, N19°40'59.5"-W100°53'19.7", carr. Méx-15 Morelia-Cd. Hidalgo, 26.07.2001, Dellacasa M. & Martínez M. leg., 2 exx. (MSNTC); Nueva Italia, 26.09.1982, Zunino M. leg., 1 ex. (DCG); Plana PEMEX Diablo de Zirahuén, m 2200, N19°29'21.3"-W101°48'07.0", carr. Méx-14 Patzcuaro-Uruapan, 23.07.2001, Dellacasa M. & Martínez I. leg., 6 exx. (MSNTC); Puerto El Tigre, 27.07.1980, Zunino M. leg., 1 ex. (DCG); Sta. Clara del Cobre dint., m 2200, N19°24'34.1"-W101°35'15.5", carr. Méx-41 Patzcuaro-Tacámbaro, 25.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); Tancitaro, 27.09.1982, Zunino M. leg., 1 ex. (DCG); PUEBLA: Zaragoza, San José, m 2300, 08.07.1997, Martínez I. & Cruz M. leg., 7 exx. (DCG, IEX); QUERÉTARO: El Madroño, m 1500, El Lobo dint., N21°17'07.9"-W99°08'36.4", carr. Méx-120, 19.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); La Quebrada, m 2300, N21°07'28.1"-W99°38'44.4", carr. Pinal de Amoles-Peña Blanca, 20.07.2001, Dellacasa M. & Martínez I. leg., 2 exx. (MSNTC); SAN LUIS POTOSÍ: Los Gatos, m 2200, N22°02'52.2"-W100°37'48.7", carr. Méx-70 Rio Verde-San Luis Potosí, 21.07.2001, Dellacasa M. & Martínez I. leg., 4 exx. (MSNTC); SONORA: N. Sonora, Morrison leg., 4 exx. (MNHNP); TLAXCALA: Tlaxco, 02.06.1979, Zunino M. leg., 2 exx. (DCG); VERACRUZ: Alto Lucero, 11.02.1997, Martínez I. & Cruz M. leg., 16 exx. (DCG, IEX); Cruz Blanca, 24.02.1993, 2 exx. (DCG); Cordova [= Cordoba], Höge leg., 2 exx. (MNHNP); *ibidem*, Salle leg., 1 ex. (MNHNP); Cuiyachapa, m 2700, Mpio. Coscomatepec, 08.03.1999, Alvarado M. & Cruz M. leg., 5 exx. (DCG); *ibidem*, 12.04.1999, Cruz M. & Alvarado M., 30 exx. (IEX); *ibidem*, 12.05.1998, Cruz M. & Olivarez M. leg., 6

exx. (DCG, IEX); *ibidem*, 15.06.1999, Cruz M. & Alvarado M. leg., 5 exx. (MSNTC); *ibidem*, VI-VII.1998, Alvarado M. *et al.* leg., 1 ex. (DCG); *ibidem*, 16.10.1998, Cruz M. & Alvarado M. leg., 1 ex. (MSNTC); El Triunfo, camino a Ayahualulco, 03.10.2000, Pensado T. leg., 2 exx. (DCG); Ixucan de los Reyes, Los Laureles, 2500 m, 09.03.2000, Martínez I. & Huerta C. leg., 1 ex. (DCG); Jalapa, Hoege leg., 1 ex. (MNHNP); La Cantera, m 2360, N19°38'45.6"-W97°10'19.8", cam. a Las Minas, 07.07.2001, Dellacasa M. & Martínez I. leg., 4 exx. (DCG); La Normandia, carr. Méx-140 -Perote, 07.07.2001, Dellacasa M. & Martínez I. leg., 17 exx. (DCG, MSNTC); Rancho Los Salazares, m 2400, N19°39'30.7"-W97°05'64.0", Las Vigas dint., 02.07.2001, Dellacasa M. leg., 7 exx. (MSNTC); *ibidem*, 14.04.1998, Cruz M. *et al.* leg., 25 exx. (DCG, IEX); Oxtlapa, m 2100, Mpio. Xico, 18.11.1999, Dellacasa M. leg., 8 exx. (DCG); 2 Km desp. Oxtlapa, m 2400, Mpio. Xico, 18.11.1999, Dellacasa M. leg., 14 exx. (DCG); San José, Paso Nuevo, m 2300, Mpio. Xico, 09.03.2000, Martínez I. & Huerta C. leg., 75 exx. (DCG); San José de Aguazuelas, Cofre de Perote, m 3000, 18.10.1993, Lobo J. M. leg., 2 exx. (DCG); Tonalaco, m 2350, Mpio. Xico, 09.03.2000, Martínez I. & Huerta C. leg., 11 exx. (DCG); Vera Cruz [= Veracruz], Hoege leg., 12 exx. (MNHNP).

U.S.A.: ARIZONA: Continental, Pima Co., VII.1981, Lenczy C. leg., 1 ex. (DCG); Globe, 29.08.1926, Duncan D. K. leg., 1 ex. (DCG); Green Valley, Pima Co., V.1975, Lenczy H. leg., 6 exx. (DCG); *ibidem*, VII.1981, Lenczy C. leg., 5 exx. (DCG); CALIFORNIA: Hot Spring, Tolare Co., 03.07.1925, Leach E. R. leg., 1 ex. (DCG); Pismo, 13.02.1979, Fery H. leg., 1 ex. (DCG); NEW JERSEY: Summit, IV.1914, 1 ex. (DCG); *ibidem*, V.1910, Grossbeck J. A. leg., 1 ex. (DCG); SOUTH CAROLINA: Clemson College, 13.04.1931, Cartwright O. L. leg., 1 ex. (DCG); Richland, 26.03.1931, Cartwright O. L. leg., 1 ex. (DCG).

Distribution from literature:

– MEXICO: Northern Sonora, Guanajuato, Cordova [= Cordoba], Chihuahua City, Cuernavaca, Zacualtipan, Vera Cruz [= Veracruz] (Bates, 1887: 84); 8 Km Ote. de Pachuca (Gibson & Carrillo, 1959: 108); Edo. Veracruz: Chololoyan, Ixhuacan (Lobo & Halffter, 2000).

Remarks: The genus *Planolinus* (type species: *Aphodius fasciatus* (Olivier, 1789) = *Aphodius uliginosus* Hardy, 1847) is not presently monophyletic because there are significant differences in aedeagal and epipharyngeal structures of species (*uliginosus* Hardy, 1847; *borealis* Gyllenhal, 1827; *vittatus* Say, 1825) currently considered to be members.

7. *Aphodius oleosus* Harold, 1871

Current status: *Pharaphodius* (sensu lato) *oleosus* (Harold, 1871) comb. nov.

References

Aphodius oleosus Harold, 1871a: 260; Bates, 1887: 85; Blackwelder, 1944: 213; Dellacasa M., Gordon & Dellacasa G. 1998: 157 (habitus, epipharynx and aedeagus figured; lectotype designated).
Aphodius (*Pharaphodius*) *oleosus*; Schmidt A., 1913: 123; Dellacasa M., 1988: 172.

Type locality: Mexico.

Type depository: Muséum national d'Histoire naturelle, Paris.

Distribution: Mexico.

Material examined:

MEXICO: DURANGO: Minillas, Res. Biosf. La Michilia, 24.05.2001, Huerta C. & Anduaga S. leg., 6 exx. (IEX); *ibidem*, 11/12.06.1997, Huerta C. & Anduaga S. leg., 9 exx. (IEX); *ibidem*, 08.07.1994, Anduaga S. leg., 17 exx. (IEX); *ibidem*, 11/13.07.1996, Anduaga S. *et al.* leg., 3 exx. (IEX); *ibidem*, VII-X.1995, Murillo E. leg., 66 exx. (DCG, IEX); *ibidem*, 07.09.2000, Anduaga S. leg., 3 exx. (DCG); *ibidem*, 09/14.10.1989, Anduaga S. leg., 1 ex. (IEX); Piedra Herrada, Rva. Biosfera La Michilia, 14.08.1989, Anduaga S. leg., 1 ex. (IEX); Puerto El Toro, Rva. Biosfera La Michilia, 23.05.2001, Huerta C. & Anduaga S. leg., 12 exx. (DCG, IEX, MSNTC); Rva. Biosfera La Michilia, 23/25.05.2000, Huerta C. & Anduaga S. leg., 20 exx. (IEX); EDO. DE MÉXICO: Rancheria San Antonio, m 2250, N19°19'11.9"-W100°05'54.9", carr. Valle de Bravo, 27.07.2001, Dellacasa M. & Martínez I. leg., 2 exx. (MSNTC); Zacantlillo, 18.08.1980, Zunino M. leg., 1 ex. (DCG); MICHOACÁN: El Manguito, 28.09.1982, Zunino M. leg., 3 exx. (DCG); Los Azufres, m 2250, 17.07.1980, Zunino M. leg., 9 exx. (DCG); Los Azules, Laguna Larga, 25.08.1985, Zunino M. leg., 1 ex. (DCG); Maravatío, 07.07.1985, Zunino M. leg., 2 exx. (DCG); Mil Cumbres, m 2000, N19°39'17.2"-W100°59'38.8", carr. Méx-15 Morelia-Cd. Hidalgo, 26.07.2001, Dellacasa M. & Martínez I. leg., 14 exx. (DCG, MSNTC); Alrededores de Pueblo Viejo, m 1200, 01.08.1980, Zunino M. leg., 2 exx. (DCG); Plana PEMEX Diablo de Zirahuén, m 2200, N19°29'21.3"-W101°48'07.0", carr. Méx-14 Patzcuaro-Uruapan, 23.07.2001, Dellacasa M. & Martínez I. leg., 21 exx. (DCG, MSNTC); Puerto El Tigre, 22.06.1979, Zunino M. leg., 12 exx. (DCG); *ibidem*, 27.07.1980, Zunino M. leg., 10 exx. (DCG); San Juan Nuevo, 25.09.1982, Zunino M. leg., 2 exx. (DCG); San Pedro Jacuaré, 26.08.1985, Zunino M. leg., 3 exx. (DCG); Sta. Clara del Cobre dint., m 2200, N19°24'34.1"-W101°35'15.5", carr. Méx-41 Patzcuaro-Tacámbaro, 25.07.2001, Dellacasa M. & Martínez I. leg., 42 exx. (DCG, MSNTC); Santa Fe dint., m 2000, N19°41'57.0"-W101°35'47.7", carr. Méx-15 Quiroga-Zacapu, 24.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); Tuxpan, 24.08.1985, Zunino M. leg., 1 ex. (DCG); Tzintzuntán dint., m 1950, N19°34'53.5"-W101°34'37.4", carr. Patzcuaro-Quiroga, 24.07.2001, Dellacasa M. & Martínez I. leg., 17 exx. (DCG, MSNTC); MORELOS: Laguna El Rodeo, 15.09.1985, Zunino M. leg., 1 ex. (DCG).

Distribution from literature:

- MEXICO: (Bates, 1887: 85).

Remarks: This species is not a member of *Pharaphodius* (type species: *Aphodius marginellus* Fabricius, 1781) as delimited in a paper by Dellacasa G. *et al.*(2001). We refrain from describing a new genus because of the uncertain systematic position of many taxa at present considered to be in *Pharaphodius*.

8. *Aphodius innexus* Say, 1835

Current status: *Liothorax innexus* (Say, 1835) comb. nov.

References

Aphodius innexus Say, 1835: 177; Bates, 1887: 85; Blackwelder, 1944: 212; Dellacasa M., Gordon & Dellacasa G., 1998: 156 (habitus, epipharynx and aedeagus figured).
Aphodius flavocinctus Harold, 1860: 614; 1871: 270 (as synonym of *innexus*).
Aphodius (Nialus) innexus; Schmidt A., 1913: 168; Dellacasa M., 1988: 144.

Type locality: Mexico.

Type depository: unknown to authors; type probably lost.

Distribution: Mexico, Virgin Islands.

Material examined:

MEXICO: DISTRITO FEDERAL: Distrito Federal, 15.09.1970, Lopez J. leg., 1 ex. (DCG); Mexico city, 6 exx. (MNHNP); AGUASCALIENTES: Aguascalientes, Höge leg., 3 exx. (MNHNP); GUANAJUATO: Guanajato [= Guanajuato], Salle leg., 1 ex. (MNHNP); GUERRERO: Chilpancingo, 1 ex. (DCG); HIDALGO: Pachuca, Höge leg., 1 ex. (MNHNP); JALISCO: Zapotlán, Höge leg., 1 ex. (MNHNP); EDO. DE MÉXICO: Lago Zumpango, nr. San Juan Zitlaltepec, ca. 7500 ft., 28.12.1965, Ball G. E. & Whitehead D. R. leg., 2 exx. (DCG); VERACRUZ: El Plano, San José Aguazuelas, El Triunfo-Xico, 06.11.2000, Martínez I. & Pensado T. leg., 16 exx. (DCG, IEX); Los Salazares, Las Vigas dint., 18.07.2000, Santiago Q. *et al.* leg., 1 ex. (MSNTC).

VIRGIN ISLANDS: S. Thomas, W. Indies, 1 ex. (MNHNP).

Distribution from literature:

– MEXICO: Alvarez Mountains, Guanajuato, Puebla, Oaxaca, Mexico City, Aguas Calientes [= Aguascalientes], San Andres Chalchicomula, Tula (Bates 1887: 85).

Remarks: Blackwelder (1944) recorded this species from U.S.A. but all specimens from this country, examined by one of us (Gordon) were misidentified. Along with several North American taxa, the complex of epipharyngeal and aedeagal features indicates that this taxon belongs to the genus *Liothorax* (type species: *Aphodius plagiatus* Linné, 1767) as delimited in a paper of Dellacasa G. *et al.* (2001).

9. *Aphodius cuniculus* Chevrolat, 1864

Current status: *Nialaphodius nigrita* (Fabricius, 1801).

References

- Aphodius nigrita* Fabricius 1801: 73; Landin, 1956: 215 (lectotype designation).
Aphodius nigritus Scott, 1912: 223 (incorrect spelling).
Aphodius cuniculus Chevrolat 1864: 411; Bates, 1887: 85; Blackwelder, 1944: 212; Dellacasa M., 1988: 117; Bordat, 1990: 62 (as synonym of *nigrita* and neotype designation).
Aphodius paivanus Wollaston, 1867: 90; Dellacasa M., 1988: 174; Bordat, 1990: 62 (as synonym of *nigrita*, lectotype designated).
Aphodius vestiarius Horn, 1870: 121; Dellacasa M., 1988: 214; Bordat, 1990: 62 (as synonym of *nigrita*).
Aphodius expertus Harold, 1871b: 19; Dellacasa M., 1988: 127; Bordat, 1990: 62 (as synonym of *nigrita*).
Aphodius granarius var. *guadeloupensis* Fleutiaux & Sallé, 1889: 396; Dellacasa M., 1988: 136; Bordat, 1990: 62 (as synonym of *nigrita*).
? *Aphodius tuberifrons* Fairmaire, 1903: 187 (homonym of *tuberifrons* Fairmaire, 1889); Dellacasa M., 1988: 211; Bordat, 1990: 62 (as doubtful synonym of *nigrita*).
? *Aphodius binominatus* Schmidt A., 1907: 202 (*nomen novum* for *tuberifrons* Fairmaire, 1903); Dellacasa M., 1988: 98; Bordat, 1990: 62 (as doubtful synonym of *nigrita*).
Aphodius (Nialus) nigrita; Schmidt A., 1913: 128.
Aphodius (Nialaphodius) nigrita; Kolbe H., 1908: 128; Dellacasa M., 1988: 168; Bordat, 1990: 61.
Nialaphodius nigrita; Dellacasa G., Bordat & Dellacasa M. (2001) (habitus, epipharynx and aedeagus figured).

Type locality of *Aphodius cuniculus*: Havana [Cuba].

Type depository of *Aphodius cuniculus*: Muséum national d'Histoire naturelle. Paris.

Dellacasa et al.: Aphodiinae Bates in Biologia Centrali-Americana

Type locality of *Aphodius nigrita*: Isle de France [Mauritius].

Type depository of *Aphodius nigrita*: Zoologisk Museum. Copenhagen.

Distribution: Southern coastal U.S.A. (from South Carolina to Florida, West to Texas), Central America and Caribbean Islands, South America, Central and Southern Africa (North to Egypt ?), Cape Verde Islands, Madagascar, Mascarene, Seychelles.

Material examined:

BELIZE: ORANGE WALK: Rio Bravo Conserv. Area, La Milpa Field Station, 17°50'34"N-89°02'53"W, 16.05.1997, Moseley V. leg., 1 ex. (LSU).

BRAZIL: MATO GROSSO DO SUL: Faz. UNESP, Selviria, 25.08.1991, Rodriguez S. R. leg., 2 exx. (DCG).

CHILE: VALPARAÍSO: Contrada El Melón, Valparaíso, 26.11.1985, Peña L. leg., 4 exx. (DCG).

ECUADOR: COTOPAXI: Cola, XI.1981, Onore G. leg., 1 ex. (DCG).

GRENADINES: Isola Canouan, 28.02.1985, Zo L. leg., 23 exx. (DCG).

HONDURAS: Casas Viejas, 20.05.1966, Matta J. M. leg., 2 exx. (DCG).

MEXICO: CHIAPAS: 3 Km S Palenque on Hwy.199, 21-22.05.1987, Riley E. G. & T. J. & Rider D. A. leg., 3 exx. (LSU); 10 Km S Palenque on Hwy.199, San Manuel Rd., 30.05.1987, Rider D. A. & Riley E. G. leg., 1 ex. (LSU); DURANGO: Laboratorio del Desierto, m 1500, Res. Mapimi, 13.09.1993, Lobo J. leg., 5 exx. (DCG); OAXACA: San José, Chiltepec, m 120, 03.11.1980, Quintero G. leg., 1 ex. (DCG); QUERÉTARO: Pto. de Potrerillo, m 1100, N21°18'43.3-W99°03'39.1", El Lobo dint., carr. Méx-120, 19.07.2001, Dellacasa M. leg., 2 exx. (MSNTC); SAN LUIS POTOSÍ: Xilitla dint., N21°25'30"-W98°59'54", 18/19.07.2001, Dellacasa M. & Martínez I. leg., 9 exx. (MSNTC); VERACRUZ: Alto Lucero, 11.02.1997, Martínez I. & Cruz M. leg., 14 exx. (DCG, IEX); Cordova, Höge leg., 1 ex. (MNHNP); La Estancia, 06.06.2000, Cruz M. leg., 6 exx. (MSNTC); Los Tuxtlas, 04.06.1993, Lobo J. leg., 1 ex. (DCG); Quiahuitlan, Mpio. Actopan, 13.06.1997, Martínez I. & Cruz M. leg., 2 exx. (DCG); Quiahuitlan, 14.11.1999, Dellacasa M. leg., 10 exx. (DCG); *ibidem*, 14.11.1999, Martínez I. leg., 1 ex. (DCG); Palma Sola, 30.05.1998, Alvarado M. leg., 5 exx. (DCG); Rancho Baraunda, Mpio. Tierra Blanca, 09.11.1999, Dellacasa M. leg., 1 ex. (DCG); Rancho El Tajo, Mpio. Actopan, 05.04.1999, Alvarado M. *et al.* leg., 30 exx. (DCG); *ibidem*, m 15, 07.06.1999, Cruz M. leg., 5 exx. (IEX); *ibidem*, 21.09.1998, Martínez I. leg., 3 exx. (IEX); Rancho "La Estancia", Palma Sola, 03.07.2000, Pensado T. & Alvarado M. leg., 12 exx. (DCG); Rancho Los Lirios, Mpio. Actopan, 05.04.1999, Alvarado M. & Sosa J. leg., 68 exx. (DCG); *ibidem*, m 15, 03.05.1999, Cruz M. & Alvarado M. leg., 25 exx. (IEX); *ibidem*, 07.06.1999, Cruz M. & Alvarado M. leg., 20 exx. (IEX); Rancho Virginia, cerca Est. Biol. Los Tuxtlas, 23.02.1999, Martínez I. *et al.* leg., 1 ex. (DCG); Km 14,5 Xico-Oxtlapa, Mpio. Xico, m 2050, 18.11.1999, Dellacasa M. leg., 1 ex. (DCG); Vera Cruz [= Veracruz], 1 ex. (MNHNP).

PANAMA: EL CHIRIQUÍ: Las Lajas (2 Km N) at Río San Felix, 28.05.1983, Spangler P. J. *et al.* leg., 1 ex. (DCG); V. de Chiriquí, 25-4000 ft., Champion C. leg., 1 ex. (MNHNP).

PARAGUAY: BOQUERÓN: Lama Plata, XI.1992, Peña L. E. leg., 1 ex. (DCG).

PERU: LORETO: Pucalpa, 23.06.1974, Bordon C. leg., 3 exx. (DCG).

PUERTO RICO: Ensenada, 05.01.1937, Ramos J. A. leg., 1 ex. (DCG).

U.S.A.: FLORIDA: Miami, 19.09.1933, Young F. N. leg., 2 exx. (DCG).

VENEZUELA: ARAGUA: Cagua, 29.10.1960, Cermelli leg., 1 ex. (DCG); CARACAS: Finca Roquela, Junquito, 01.02.1959, Bordon C. leg., 5 exx. (DCG); GUARICO: Galera de Morcoy, Ortiz, m 300, 16.10.1980, Zunino M. leg., 13 exx. (DCG); MERIDA: Merida, m 1850, 02.10.1980, Zunino M. leg., 4 exx. (DCG).

Distribution from literature:

- GUATEMALA: Zapote (Bates, 1887: 85).
- MEXICO: Cordova [= Cordoba], Vera Cruz [= Veracruz] (Bates, 1887: 85); Edo. Durango, Mapimí Biosphere Reserve: Laboratorio del Desierto, Playa, El Tapado, Mohovano (Lobo, 1996: 344).
- NICARAGUA: Greytown (Bates, 1887: 85).
- CUBA: Cuba (Bates, 1887: 85).
- SANTO DOMINGO: Santo Domingo (Bates, 1887: 85).

10. *Aphodius lividus* (Olivier, 1789)

Current status: *Labarrus lividus* (Olivier, 1789).

References

- Scarabaeus lividus* Olivier, 1789: 86.
Aphodius lividus; Creutzer, 1799: 44.
Aphodius (Labarrus) lividus; Mulsant & Rey, 1870: 516.
Aphodius (Nialus) lividus; Reitter, 1892: 202.
Aphodius (Labarrus) lividus; Dellacasa G., 1983: 270 (habitus, epipharynx and aedeagus figured); Bordat, 1990: 32 (neotype designation).
Labarrus lividus; Ádám, 1994: 14.

Type locality: Vincennes, environs de Paris [France].

Type depository: Muséum national d'Histoire naturelle. Paris.

Distribution: Europe, Palearctic Asia, Northern and Western Africa, Madagascar, imported in Northern and Southern America.

Distribution from literature:

- MEXICO: Cordova [= Cordoba], Vera Cruz [= Veracruz] (Bates, 1887: 85); Apodaca, Chapingo, Cotaxtla, La Granja, Mesa de San Diego, Monterrey, 8 Km Ote. de Pachuca, 8 Km Pte. de Tulancingo, Tecamachalco, Valle del Yaqui (Gibson & Carrillo, 1959: 108); Chiapas, Boca del Chajul (Morón *et al.*, 1985: 99); Durango, Mapimí Biosphere Reserve: Laboratorio del Desierto, Cerro Amarillo, El Tapado, La Becerra, La Palangana (Lobo, 1996: 344); Jalisco, Region de Chamela, José Ma. Morelos (Morón *et al.*, 1988: 320); Morelos, Distr. Jojutla, Acamilpa (Deloya & Morón, 1994: 30); Morelos, Cuernava (Deloya *et al.*, 1993: 22); Nayarit, Region de Tepic, La Cantera (Morón *et al.*, 1998: 87); Puebla, Sierra del Tentzo, Mpio. Tzicatlacoyan, La Cantera, 8 Km camino El Tepenene a San Nicolás Huajuapán (Morón *et al.*, 2000: 88).

Dellacasa et al.: Aphodiinae Bates in Biologia Centrali-Americana

- GUATEMALA: Zapote (Bates, 1887: 85).
- NICARAGUA: Greytown (Bates, 1887: 85).
- CUBA: Cuba (Bates, 1887: 85).
- SANTO DOMINGO: Santo Domingo (Bates, 1887: 85).

Remarks: All specimens examined from Mexico and from the other Western Hemisphere countries were *Labarrus pseudolividus* (Balthasar, 1941) with the exception of one male specimen from Panama, David, Champion leg. (ex Oberthür Collection in MNHNP). This means that *Labarrus lividus* either was always misidentified or that it is no longer present in this area. It is possible that some of Balthasar's and Petrovitz's species are actually junior synonyms of those species previously considered as synonyms of *L. lividus*. Only the study of the types of the numerous synonyms of latter species can settle the nomenclature of the taxa involved.

The American species of *Labarrus* can be keyed as follows:

- 1 Hind tibiae with superior apical spur flattened and slightly dilatated at midpoint, distinctly longer than first tarsal segment; males with median tubercle of frontal suture conical and with inferior apical spur of middle tibiae obliquely truncate and feebly broadened apically (Fig. 19). Aedeagus figs. 21-22. Length 3-4,5 mm. Europe, Palearctic Asia, North and West Africa, Madagascar; imported in North, Central and South America ***lividus***
- 1' Hind tibiae with superior apical spur conically acuminate from base to apex (Fig. 20) .
- 2**
- 2 Metatarsal segments short, subtriangularly widened; basal segment as long as following two combined; clypeus distinctly sinuate at middle; epistome coarsely punctured; elytral striae deep, interstices slightly convex and distinctly punctured; males with median tubercle of frontal suture posteriorly incised. Usual size relatively smaller: length 3-4 mm. Aedeagus figs. 25-26. Brazil, Paraguay, Argentina ***parnaguaensis***
- 2' Metatarsal segments normally elongate, subcylindrical; basal segment longer than following two combined; clypeus faintly sinuate at middle; epistome finely punctured; elytral striae fine; interstices flat, rather indistinctly punctured; males with median tubercle of frontal suture conical. Usual size relatively larger: length 4-5 mm. Aedeagus figs. 23-24. North, Central and South America, Australia, Oceania, Central and Southern Africa ***pseudolividus***

Following is information on the taxon occurring in the Western Hemisphere:

Labarrus pseudolividus (Balthasar, 1941) comb. nov.

References

- Aphodius (Nialus) pseudolividus* Balthasar, 1941: 148.
Aphodius (Labarrus) pseudolividus; Dellacasa M., 1988: 242.

Type locality: Buenos Aires [Argentina].

Type depository: Balthasar collection, National Museum. Prague.

Distribution: North, Central and South America, Australia, Oceania, Central and Southern Africa.

Material examined:

ARGENTINA: BUENOS AIRES: Buenos Aires, XI.1978, Peña L. E. leg., 2 exx. (DCG); CATAMARCA: Belém, Punta Balasto, m 2100, 24.01.1995, Peña L. E. leg., 8 exx. (DCG); *ibidem*, 12.02.1993, Peña L. E. leg., 150 exx. (DCG); Hualfin, 10.02.1993, Peña L. E. leg., 3 exx. (DCG); Los Nacimientos, 28.11.1983, Peña L. E. leg., 1 ex. (DCG); CORDOBA: Balnearia, 25.02.2000, Ugarte-Peña A. leg., 34 exx. (DCG); Noño, 15.01.1983, Peña L. E. leg., 2 exx. (DCG); ENTRE RIOS: Colon, Liebig, 06.01.1987, Martínez A. leg., 12 exx. (DCG); *ibidem*, 15.02.1988, Peña L. E. leg., 1 ex. (DCG); *ibidem*, 23.02.1988, Peña L. E. leg., 88 exx. (DCG); *ibidem*, 13.03.1988, Peña L. E. leg., 19 exx. (DCG); *ibidem*, 15.03.1989, Peña L. E. leg., 4 exx. (DCG); Liebig, 20.12.1986, Martínez A. leg., 3 exx. (DCG); Pronunciamento, IV.1987, Martínez A. leg., 14 exx. (DCG); Río Gualaguayclu, 20.12.1986, Martínez A. leg., 3 exx. (DCG); LA PAMPA: Puelen, 09.11.1987, Peña L. E. leg., 2 exx. (DCG); LA RIOJA: Chamcal, 19.02.1989, Zunino, Barbero & Luzzatto leg., 4 exx. (DCG); MENDOZA: Mendoza, 09.11.1987, Peña L. E. leg., 1 ex. (DCG); Punta de Agua, 10.11.1987, Peña L. E. leg., 2 exx. (DCG); Río Mendoza, 40 Km N de San Rafael, m 1600, 06.12.1983, Peña L. E. leg., 1 ex. (DCG); MISIONES: Posedas, 16.10.1991, Peña L. E. leg., 2 exx. (DCG); RIO NEGRO: Piedras Coloradas, II.1993, Peña L. E. leg., 126 exx. (DCG); SALTA: Las Curtiembres, m 1200, II.1993, Peña L. E. leg., 1 ex. (DCG); Las Totoras, Anta, II.1993, Peña L. E. leg., 5 exx. (DCG); Pocitos, 15.11.1986, Martínez A. leg., 1 ex. (DCG); Rosario de Lerma, m 1300, 27.01.1984, Bordón C. leg., 6 exx. (DCG); Tartagal, X.1991, Peña L. E. leg., 2 exx. (DCG); SANTIAGO DEL ESTERO: San José del Boquerón, 24.10.1990, Peña L. E. leg., 16 exx. (DCG); El Pinto, Santiago del Estero, I.1978, Martínez A. leg., 2 exx. (DCG); Urutau, II.1991, 1 ex. (DCG); TUCUMÁN: El Cadillo, 06/08.11.1992, Peña L. E. leg., 6 exx. (DCG); El Tala, 14.02.1970, Peña L. E. leg., 14 exx. (DCG); Santa María, 25.12.1992, Peña L. E. leg., 2 exx. (DCG); Tukumán, Mancini C. leg., 1 ex. (DCG).

BOLIVIA: CHUQUISACA: Monteagudo, m 1200, II.1984, Peña L. E. leg., 2 exx. (DCG); *ibidem*, m 1300-1600, XII.1984, Peña L. E. leg., 2 exx. (DCG); FLORIDA: Pampa Grande, 12/15.12.1987, Tognon G. leg., 4 exx. (DCG); LA PAZ: Apolo, 15.08.1989, Peña L. E. leg., 4 exx. (DCG); Inquisivi, XII.1984, Peña L. E. leg., 1 ex. (DCG); SANTA CRUZ: Florida, Mataral, XII.1984, Peña L. E. leg., 4 exx. (DCG).

BRAZIL: MATO GROSSO: Corumba, 2 exx. (DCG); MATO GROSSO DO SUL: Fazenda UNESP, Selviria, 16.03.1991, Rodríguez S. R. leg., 2 exx. (DCG); MINAS GERAIS: Ouro Preto, SW Pto. Velho, Rondonia, 22.07.1988, Salinas P. leg., 6 exx. (DCG).

CHILE: ATACAMA: Carrizalillo, Forel, 03.11.1982, Peña L. E. leg., 14 exx. (DCG); El Transito, 25.10.1980, 28 exx. (DCG); Bío-Bío: Ralco, 20/21.11.1994, Peña L. E. leg., 1 ex. (DCG); COQUIMBO: Contrada Cavilolen, Los Vilos, 05.02.1986, Peña L. E. leg., 2 exx. (DCG); El Naranjo, Caimanes, 07.11.1986, Peña L. E. leg., 313 exx. (DCG); Río Choapa, 14.11.1987, Peña L. E. leg., 1 ex. (DCG); Salamanca, 06.02.1986, Peña L. E. leg., 5 exx. (DCG); Vicuña, 23.09.1987, Peña L. E. leg., 4 exx. (DCG); Vicuña, Elqui, 16/18.10.1991, Peña L. E. leg., 5 exx. (DCG); ISLA DE PASCUA: Isola di Pasqua, VII.1976, Gourves leg., 1 ex. (DCG); LOS LAGOS: Santo Domingo, Valdivia, 22.12.1985, Krahmer E. leg., 3 exx. (DCG); MAULE: Digua, Parral, 24.01.1993, Peña L. E. leg., 3 exx. (DCG); Maicho, Parral, 08.01.1988, Peña L. E. leg., 22 exx. (DCG); El Castillo, Maicho, Parral, m 750, 09.01.1988, Peña L. E. leg., 4 exx. (DCG); Tonlemu, Talca, XII.1984, Peña L. E. leg., 25 exx. (DCG); SANTIAGO: Quilicura, 20.09.1979, Peña L. E. leg., 1 ex. (DCG); Río Colorado, XI.1986, Peña L. E. leg., 8 exx. (DCG); TURAPACÁ: Arica, 30/31.01.1992, Peña L. E. leg., 28 exx. (DCG); *ibidem*, II.1977, Peña L. E. leg., 29 exx. (DCG); Azapa, 07.06.1986, Peña L. E. leg., 1 ex. (DCG); VALPARAÍSO: Contrada El Melon, Valparaíso, 28.11.1985, Peña L. E. leg., 206 exx. (DCG); Limache, III.1982, Tosti-Croce E. leg., 14 exx. (DCG); Talanquen, Santa La Ligua, 08.11.1986, Peña L. E. leg., 10 exx. (DCG).

Dellacasa et al.: Aphodiinae Bates in Biología Centrali-Americana

COSTA RICA: GUANACASTE: La Pacifica nr. Cañas, 22-26.05.1984, Riley E., Rider D. & LeDoux D. leg., 17 exx. (LSU); Las Cañas, 13.07.1965, Spangler P. J. leg., 2 exx. (DCG).

ECUADOR: COTOPAXI: Ambato, VI.1981, Onore G. leg., 4 exx. (DCG); Cola, XI.1981, Onore G. leg., 2 exx. (DCG); Las Pampas, VIII.1982, Onore G. leg., 2 exx. (DCG); *ibidem*, VI.1981, Onore G. leg., 9 exx. (DCG); Latacunga, XII.1981, Onore G. leg., 13 exx. (DCG); Macas, X.1981, Onore G. leg., 10 exx. (DCG); Tilipulo, VI.1981, Onore G. leg., 16 exx. (DCG); *ibidem*, VII.1981, Onore G. leg., 90 exx. (DCG).

GUADELOUPE: St. Francois, 24.08.1984, Johnson S. leg., 2 exx. (LSU).

GUATEMALA: SACATEPÉQUEZ: Duenas, Champion C. leg., 1 ex. (MNHNP).

MEXICO: DISTRITO FEDERAL: Cd. Universitaria, 29.06.1971, Morón M. A. leg., 1 ex. (DCG); BAJA CALIFORNIA: Llano Colorado, m 1100, Mpio. Ensenada, 07.05.1968, 8 exx. (DCG); CHIAPAS: 4.5 Km N Ixtapa on Hwy.195, 3000', 24.05.1987, Rider D. A., Riley E. G. & T. J. leg., 1 ex. (LSU); 3 Km S Palenque on Hwy.199, 21-22.05.1987, Riley E. G. & T.J. & Rider D. A. leg., 1 ex. (LSU); Boca del Chajul, m 110, 28.04.1984, Fragoso & Villalobos leg., 1 ex. (IEX); *ibidem*, 30.04.1984, Fragoso & Villalobos leg., 2 exx. (IEX); *ibidem*, 02.05.1984, Fragoso & Villalobos leg., 2 exx. (IEX); CHIHUAHUA: Cd. Delicias, 20.06.1972, 2 exx. (DCG); Lazaro Cardenas, Mpio. Cd. Meoqui, 08.08.1972, 2 exx. (DCG); COAHUILA: Saltillo, 07.08.1963, Spangler P. J. leg., 2 exx. (DCG); DURANGO: 1Km del Ejido, m 2100, La Michilia, 27.11.1996, Anduaga S. leg., 4 exx. (DCG, IEX); Minillas, Rva. Biosfera La Michilia, 01/08.07.1994, Anduaga S. leg., 2 exx. (IEX); Laboratorio del Desierto, m 1500, Res. Mapimi, 22.09.1993, Lobo J. M. leg., 4 exx. (DCG); GUANAJUATO: Yuriria dint., m 1700, N20°11'44.5"-W101°09'03.5", cruce carr. Méx-51/Méx-43, 22.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); Tupataro, Höge leg., 1 ex. (MNHNP); HIDALGO: Molango, Cañada Otongo, m 650, 10.05.1980, Morón M. leg., 20 exx. (IEX); Pto. La Estancia, m 1800, N20°46'39.0"-W99°18'38.4", Zimapán dint., El Huizache, 18.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); San José del Oro, m 2100, N20°51'08.7"-W99°14'23.8", Km 145 carr. Ixmiquilpan-Tamazunchale (Méx-85), 18.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); EDO. DE MÉXICO: Chalma, m 1550, Mexico C., 05.07.1980, Zunino M. leg., 25 exx. (DCG); Malinalco, 30.04.1979, Zunino M. leg., 27 exx. (DCG); Tonatico, 01.09.1969, Barrera A. leg., 1 ex. (DCG); *ibidem*, 03.09.1982, Zunino M. leg., 1 ex. (DCG); MICHOACÁN: Aguililla, Michoacán, 27.09.1982, Zunino M. leg., 8 exx. (DCG); entrada a Cuitzeo, m 1720, N19°58'27.9"-W101°08'23.6", carr. Méx-43, 22.07.2001, Dellacasa M. leg., 1 ex. (MSNTC); La Gallina dint., m 1250, N19°19'29.2"-W102°04'43.8", carr. Méx-37 Uruapan-Nueva Italia, 23.07.2001, Dellacasa M. & Martínez I. leg., 2 exx. (MSNTC); Maravatío, 15.07.1985, Zunino M. leg., 1 ex. (DCG); San Juan Nuevo, Michoacan, 25.09.1982, Zunino M. leg., 1 ex. (DCG); Mil Cumbres, m 2000, N19°39'17.2"-W100°59'38.8", carr. Méx-15 Morelia-Cd. Hidalgo, 26.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); MORELOS: Entrada a Yauatepec, 21.11.1999, Dellacasa M. leg., 27 exx. (DCG); Jojutla, Cerro del Higuierón, m 1550, 28.08.1982, Deloya C. leg., 7 exx. (IEX); Las Estacas, Betancourt, 27.05.1979, Zunino M. leg., 2 exx. (DCG); Ponte Amayuca, Carr. Cuautla-Amayuca, 22.11.1999, Dellacasa M. leg., 5 exx. (DCG); Tlaltizapan, Acamilpa, 09.04.1983, Deloya C. leg., 4 exx. (IEX); *ibidem*, 22.08.1982, Deloya C. leg., 1 ex. (IEX); *ibidem*, 15.10.1981, Deloya C. leg., 7 exx. (IEX); *ibidem*, 31.10.1982, Deloya C. leg., 2 exx. (IEX); Tlaquiltenango, El Astillero, 05.02.1982, Deloya C. leg., 8 exx. (IEX); *ibidem*, 23.12.1982, Deloya C. & Garcia I. leg., 6 exx. (IEX); Xochicalco env., 11.09.1982, Zunino M. leg., 1 ex. (DCG); NAYARIT: Tepic, 11.07.1995, Ramirez A. leg., 12 exx. (IEX); Pochotitán, m 950, 15.07.1995, Ramirez A. leg., 3 exx. (IEX); OAXACA: Oaxaca, 5100 ft., 22.05.1964, Willahan L. A. leg., 1 ex. (DCG); San Miguel Peras, Km 25 camino a Zachila, m 2600, 05.08.2000, Martínez I. & Reyes P. leg., 1 ex. (DCG); PUEBLA: Atlixco, Rcho. La Joya, 12.06.1997, Martínez I. leg., 1 ex. (IEX); San Martín Tex., 28.06.1997, Cacelin leg., 2 exx. (IEX); Tehuacan, m 1600, 23.08.1980, Zunino M. leg., 1 ex. (DCG); Tlatlauquitepec, m 2200, 07.07.1997, Martínez I. & Cruz M. leg., 1 ex. (IEX); *ibidem*, m 2300,

07.07.1997, Martínez I. leg., 8 exx. (DCG); QUERÉTARO: El Chubete dint., m 1350, N21°09'37.3"-W99°32'46.8", cam. de Cascada de Chuveje-San Pedro, 20.07.2001, Dellacasa M. & Martínez I. leg., 4 exx. (MSNTC); El Madroño, m 1500, El Lobo dint., N21°17'07.9"-W99°08'36.4", carr. Méx-120, 19.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); La Marana, m 500, N21°25'04.9"-W99°36'18.2", Corca dint., carr. Méx-69, 21.07.2001, Dellacasa M. & Martínez I. leg., 140 exx. (DCG, MSNTC); La Quebrada, m 2300, N21°07'28.1"-W99°38'44.4", carr. Pinal de Amoles-Peña Blanca, 20.07.2001, Dellacasa M. & Martínez I. leg., 4 exx. (MSNTC); Parador Sta. Martha, m 1550, N21°16'09.2"-W99°09'50.4", La Vuelta dint., 19.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); SAN LUIS POTOSÍ: Laguna de la Media Luna, m 900, N21°51'49.0"-W100°01'42.7", Rio Verde, 21.07.2001, Dellacasa M. & Martínez I. leg., 7 exx. (MSNTC); SONORA: La Palmita, m 1475, 31.08.1997, Nogueira G. leg., 2 exx. (IEX); N. Sonora, Morrison leg., 2 exx. (MNHNP); TABASCO: Puerto Ceiba, 06.06.1979, Zunino M. leg., 25 exx. (DCG); TAMAULIPAS: El Cielito, nr. Encino, 28-30.08.1985, Riley E. G. & T. J. leg., 1 ex. (LSU); TLAXCALA: Tlaxco, 02.06.1979, Zunino M. leg., 1 ex. (DCG); VERACRUZ: Alto Lucero, 11.02.1997, Martínez I. & Cruz M. leg., 9 exx. (DCG, IEX); *ibidem*, 26.02.1997, Martínez I. & Cruz M. leg., 12 exx. (IEX); Club Hípico, "Las Animas", Xalapa, 18.07.2000, Pensado T. leg., 5 exx. (DCG); Cuiyachapa, Mpio. Coscomatepec, 06.02.1999, Alvarado M. leg., 1 ex. (DCG); El Fresno, camino a San José, Tlacolulan, m 1800, 12.09.2000, Martínez I. leg., 2 exx. (DCG); Ixuachan de los Reyes, Los Laureles, 2500 m, 09.03.2000, Martínez I. leg., 1 ex. (DCG); La Estancia, 06.06.2000, Cruz M. leg., 2 exx. (MSNTC); Orizaba, 02.06.1979, Zunino M. leg., 1 ex. (DCG); Ouapan, Parada los Pinos, 14.06.1999, Martínez I. & Cruz M. leg., 3 exx. (IEX); Oxtlapa, m 2100, Mpio. Xico, 18.11.1999, Dellacasa M. leg., 1 ex. (DCG); Palma Sola, 01.04.1973, Reyes P. leg., 1 ex. (DCG); *ibidem*, 30.05.1998, Alvarado M. leg., 1 ex. (DCG); Parada de los Pinos, Huatusco env., 08.11.1999, Dellacasa M. leg., 3 exx. (DCG); Pipiapan, Mpio. Catemaco, 23.02.1999, Martínez I. *et al.* leg., 1 ex. (DCG); *ibidem*, 26/29.11.1989, Capistran F. leg., 3 exx. (IEX); Plan de Hidalgo, Papantla, 05.06.1999, Sanchez R. leg., 28 exx. (IEX); Potrero "Las Animas", Xalapa, 12.09.2000, Martínez I. leg., 55 exx. (DCG); Quiahuiztlán env., Mpio. Actopan, 13.06.1997, Martínez I. leg., 26 exx. (DCG, IEX); *ibidem*, 14.11.1999, Martínez I. leg., 14 exx. (DCG); *ibidem*, 14.11.1999, Dellacasa M. leg., 43 exx. (DCG); Rancho Baraunda, Mpio. Tierra Blanca, Km 46 carr. Tinaja-Tierra Blanca, 09.11.1999, Dellacasa M. leg., 14 exx. (DCG); Rancho El Tajo, Mpio. Actopan, 05.04.1999, Alvarado M. & Sosa J. leg., 54 exx. (DCG); *ibidem*, m 15, 07.06.1999, Alvarado M. & Cruz M. leg., 4 exx. (IEX); *ibidem*, 21.09.1998, Martínez I. leg., 2 exx. (IEX); Rancho "La Estancia", Palma Sola, 03.07.2000, Pensado T. & Alvarado M. leg., 4 exx. (DCG); Rancho Los Lirios, Mpio. Actopan, 05.04.1999, Alvarado M. & Sosa J. leg., 12 exx. (DCG); *ibidem*, m 15, 03.05.1999, Alvarado M. & Cruz M. leg., 14 exx. (IEX); *ibidem*, 07.07.1999, Cruz M. & Alvarado M. leg., 4 exx. (IEX); *ibidem*, 05.10.1998, Martínez I. & Alvarado M. leg., 9 exx. (IEX); Tembladeras, B.P., 19°30'55"N-97°06'55"W, 01/18.06.2000, Montes de Oca E. & Santiago Q. leg., 1 ex. (IEX); Tuxpan, 12.09.1982, Zunino M. leg., 1 ex. (DCG); Villa Rica, m 15, Mpio. Alto Lucero, 07.07.1999, Cruz M. leg., 20 exx. (DCG); YUCATÁN: Chichén Itzá, 18-19.05.1987, Rider D. A., Riley E. G. & T. J. leg., 2 exx. (LSU).

PANAMA: CHIRIQUÍ: Boquete, 16/17.07.1967, Flint O. S. Jr. leg., 1 ex. (DCG).

PARAGUAY: ALTO PARANÁ: SE Naranjal, 24.08.1988, Peña L. E. leg., 2 exx. (DCG); BOQUERÓN: Lama Plata, XI.1992, Peña L. E. leg., 32 exx. (DCG); CENTRAL: Asunción, 17.08.1988, Peña L. E. leg., 1 ex. (DCG); *ibidem*, XI-XII.1990, Peña L. E. leg., 1 ex. (DCG); Asunción, Oo Moricao, II.1991, Peña L. E. leg., 6 exx. (DCG); CONCEPCIÓN: Rio Apa, Recife, 16.03.1999, Drechsel leg., 32 exx. (DCG); PARAGUARÍ: Acahay, 27.10.1992, Peña L. E. leg., 1 ex. (DCG); Carapeguá, 23.10.1991, Peña L. E. leg., 10 exx. (DCG); SAN PEDRO: Cororó, 08/23.02.1983, Peña L. E. leg., 284 exx. (DCG); *ibidem*, 22.03.1991, Peña L. E. leg., 10 exx. (DCG); *ibidem*, 30.11.1998, Ugarte-Peña A. leg., 15 exx. (DCG).

PERU: AREQUIPA: Paracas, 30.01.1983, Dellacasa G. leg., 47 exx. (DCG); TACNA: Las Yaras, 08.12.1983, Peña L. E. leg., 130 exx. (DCG).

Dellacasa et al.: *Aphodiinae Bates in Biologia Centrali-Americana*

PUERTO RICO: Ricón, 21-22.07.1984, Pashley D. & D. leg., 1 ex. (LSU).

URUGUAY: ROCHA: Potrero del Sauce Caido, 10.10.1997, Martínez I. leg., 9 exx. (DCG); *ibidem*, 18.10.1997, Martínez I. & Morelli E. leg., 26 exx. (IEX).

U.S.A.: ARIZONA: Continental, Pima Co., VI.1976, Lenczy leg., 8 exx. (DCG); *ibidem*, VII.1981, Lenczy leg., 7 exx. (DCG); Rio Rico, Santa Cruz Co., VII.1982, Lenczy leg., 6 exx. (DCG); CALIFORNIA: Lake Cuyamaca, San Diego, 29.08.1984, Metzger M. leg., 8 exx. (DCG); Riverside, 22.07.1998, Metzger M. leg., 71 exx. (DCG); FLORIDA: Gainesville, 07.07.1927, Rogers J. S. leg., 1 ex. (DCG); Pensacola, 15.06.1948, Rosasco leg., 1 ex. (DCG); HAWAII: Oahu, T.H., Kuliouou Valley, 26.01.1945, Field W. D. leg., 1 ex. (DCG); LOUISIANA: Gueydan, 15/16.06.1925, Kalmbach E. leg., 3 exx. (DCG); NORTH CAROLINA: Carthage, 19.07.1928, Sim R. J. & M. B. leg., 1 ex. (DCG); SOUTH CAROLINA: Beaufort, VIII.1904, 3 exx. (DCG).

VENEZUELA: MÉRIDA: Mérida, 02.10.1980, Zunino M. leg., 4 exx. (DCG).

Distribution from literature:

– BOLIVIA: Santa Cruz, CIAT Field Station at Saavedra, 70 Km NE Santa Cruz, 17°14'S-63°10'W, 320 m (Kirk, 1992: 50).

11. *Aphodius* -----? (Bates, 1887: 86)

Current status: not traced in Bates collection.

Remarks: Concerning this taxon from Cordova [= Cordoba] (Mexico), Bates (1887: 85) reported: "A single, immature, example of a very small species allied to *A. cuniculus*, but evidently distinct."

12. *Aphodius flohri* Bates, 1887

Current status: *Pseudagolius coloradensis* (Horn, 1870)

References

Aphodius coloradensis Horn, 1870: 130.

Aphodius flohri Bates, 1887: 86; Schmidt A., 1913: 150 (as synonym of *coloradensis*); Dellacasa M., 1988: 130.

Aphodius (Pseudagolius) coloradensis; Schmidt A., 1913: 150; Dellacasa G., 1983: 404 (habitus, epipharynx and aedeagus figured).

Pseudagolius coloradensis; Dellacasa G., Bordat & Dellacasa M. (2001).

Type locality of *Aphodius flohri*: Durango city; Mexico.

Type depository of *Aphodius flohri*: Natural History Museum. London.

Type locality of *Aphodius coloradensis*: Colorado [U.S.A.].

Type depository of *Aphodius coloradensis*: Museum of Comparative Zoology. Harvard University, Cambridge, MA (U.S.A.).

Distribution: Canada; Western U.S.A. (from Colorado to New Mexico); Mexico.

Type material:

1 ♂, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Durango city / Mexico / Höge.
- white, handwritten: *Flohri* / Bates.
- white, printed: B. C. A. Col. II (2) / *Aphodius* / *Flohri*, Bates.
- white with red border, round, printed: Type.
- white with violet border, round, printed: Lectotype.
- white, handwritten: *Aphodius flohri* Bates, Gordon 1970 (Lectotype, *in litteris*).
- red, printed: *Aphodius flohri* Bates, 1887, Lectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, handwritten: Mexico/ city.
- white, handwritten: *Aphodius* / *Flohri* / Bates.
- red, printed: *Aphodius flohri* Bates, 1887, Paralectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, handwritten: Mexico.
- red, printed: *Aphodius flohri* Bates, 1887, Paralectotypus, Dellacasa M. des. 2000.

1 ♀, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, handwritten: Mexico / city.
- red, printed: *Aphodius flohri* Bates, 1887, Paralectotypus, Dellacasa M. des. 2000.

2 ♀♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, printed: Durango city / Mexico / Höge.
- red, printed: *Aphodius flohri* Bates, 1887, Paralectotypus, Dellacasa M. des. 2000.

1 ♀, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Ciudad, Mex. / 8100 ft. / Forrer.
- red, printed: *Aphodius flohri* Bates, 1887, Paralectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Oaxaca.
- white, printed: Mexico/ Salle coll.
- red, printed: *Aphodius flohri* Bates, 1887, Paralectotypus, Dellacasa M. des. 2000.

1 ♂, 1 ♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, printed: Durango city, / Mexico/ Höge.
- red, printed: *Aphodius flohri* Bates, 1887, Paralectotypus, Dellacasa M. des. 2000.

1 ♂, 2 ♀♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, handwritten: Mexico/ city.
- red, printed: *Aphodius flohri* Bates, 1887, Paralectotypus, Dellacasa M. des. 2000.

Material examined:

CANADA: MONTANA: Helena, IV.1900, 1 ex. (DCG); WYOMING: Yel. Cañon Nat. Park., 26.07.1893, 1 ex. (DCG).

MEXICO: DURANGO: Minillas, Res. Biosf. La Michilia, 11/12.06.1997, Huerta C. & Anduaga S. leg., 3 exx. (IEX); *ibidem*, VII-X.1995, Murillo E. leg., 15 exx. (IEX); *ibidem*, 20.07.1989, Anduaga S. leg., 17 exx. (IEX); *ibidem*, 07.09.2000, Anduaga S. leg., 42 exx. (DCG); *ibidem*, 09/14.10.1989, Anduaga S. leg., 6 exx. (DCG); Reserva Biosfera La Michilia, 23/25.05.2000, Huerta C. & Anduaga S. leg., 3 exx. (IEX); HIDALGO: Km 99 carr. Ixmiquilpan-Tamazunchale (Méx-85), m 1600, N20°35'47.8-W99°20'15.5", 18.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); Tequisquiapan, m 1920, 03.08.1980, Zunino M. leg., 5 exx. (DCG); Tula, 18.09.1982, Zunino M. leg., 5 exx. (DCG); MICHOACÁN: Maravatio, 26.07.1980, Zunino M. leg., 35 exx. (DCG); Puerto El Tigre, 27.07.1980, Zunino M. leg., 1 ex. (DCG); Uruapan, 28.08.1980, Zunino M. leg., 1 ex. (DCG); OAXACA: Oaxaca, 23.08.1985, Zunino M. leg., 1 ex. (DCG); QUERÉTARO: 2,5 Km al E de Ladereuta, 24.05.1972, Lachica J. & F. leg., 1 ex. (DCG); TLAXCALA: Tlaxco, 02.06.1979, Zunino M. leg., 1 ex. (DCG).

U.S.A.: ARIZONA: 5 mi. W Portal, 01.07.1956, Cartwright O. L. leg., 8 exx. (DCG); Rio Rico, Sta. Cruz Co., VII.1981, Lenczy C. leg., 15 exx. (DCG); *ibidem*, VII.1982, Lenczy C. leg., 8 exx. (DCG).

Distribution from literature:

- MEXICO: Mexico city (neighbours), Guanajuato, Oaxaca, Durango city, Refugio [all sub *Aphodius flohrri*] (Bates, 1887: 86); Chapingo, 8 Km Ote. de Pachuca [sub *Aphodius flohrri*], Tecamachalco (Gibson & Carrillo, 1959: 108).

Remarks: As noted by Bates (1887: 86), the study of both *coloradensis* and *flohrri* types seems to confirm the above synonymy but some slight differences in habitus and aedeagal features indicate that subspecific entities may exist. To settle the question it is obviously necessary to examine large series of specimens from many localities throughout the distributional range.

13. *Aphodius* -----? (Bates, 1887: 86)

— *Aphodius cruentatus* LeConte, 1878

Current status: *Agoliinus* (*sensu lato*) *cruentatus* (LeConte, 1878) comb. nov. (Figs. 1, 11-13).

References

Aphodius -----?; Bates, 1887: 86.
Aphodius cruentatus LeConte, 1878: 456; Horn, 1887: 52; Bates, 1889: 391; Blackwelder, 1944: 212
Aphodius (*Pseudagolius*) *cruentatus*; Schmidt A., 1913: 151; Dellacasa M., 1988: 117.

Type locality: Northern New Mexico [U.S.A.].

Type depository: Museum of Comparative Zoology. Harvard University, Cambridge, MA (U.S.A.).

Redescription: length 5,5-8 mm, oblong, moderately convex, shiny, nearly glabrous. Piceous, elytra more or less dark brown-reddish, legs dark brown, antennal club blackish. Head with epistome moderately convex, rather sparsely and coarsely punctured, punctation almost irregular and denser distally; clypeus distinctly sinuate at middle, rounded at sides, thinly bordered, border glabrous and upturned; genae obtusely rounded, elongately ciliate, more protruding than eyes; frontal suture trituberculate; front relatively more sparsely punctured. Pronotum transverse, moderately convex, doubly and rather sparsely punctured, punctation slightly coarser toward anterior angles; sides feebly arcuate anteriorly, subparallel toward base, thickly bordered, border elongately and sparsely ciliate; hind angles obtusely rounded; base slightly bisinuate, distinctly bordered. Scutellum small, triangular, coarsely and regularly punctured on basal half. Elytra oval elongate, with epipleural carina subdentiform at shoulder; striae rather deep, finely punctured, feebly crenulate; interstices slightly convex, superficially microreticulate, biserially punctured near striae, shortly and sparsely pubescent on preapical declivity. Fore tibiae proximally feebly serrulate at outer margin, upper side smooth. Hind tibiae apically fimbriate with rather elongate stout spinules alternately unequal; superior apical spur shorter than first tarsal segment; latter as long as following three combined. Male: tubercle of frontal suture relatively stronger; pronotum broader, less convex and less densely punctured on disc; fore tibiae apical spur stout and moderately curved downward; inferior apical spur of middle tibiae strongly shortened, obliquely truncate apically; metasternal plate concave, sparsely and regularly punctured. Female: tubercles of frontal suture relatively weaker; pronotum narrowed frontward, more convex and more densely punctured on disc; fore tibiae apical spur slender and nearly straight; inferior apical spur of middle tibiae normally elongate and obtusely rounded apically, metasternal plate nearly flat, sparsely and irregularly punctured.

Distribution: U.S.A. (Arizona, Colorado, New Mexico, Utah); Mexico (Northern Sonora).

Material examined:

MEXICO: SONORA: N. Sonora, Morrison leg., 1 ex. (det. Horn) (MNHN).

U.S.A.: ARIZONA: S. W. R. St. Portal, 09.07.1961, Benesh B. leg., 2 exx. (DCG); NEW MEXICO: James Canyon, 05.08.1976, Warran-Knaus leg., 1 ex. (DCG).

Distribution from literature:

- MEXICO: Durango, Biosphere Reserve "La Michilia" (Morón & Deloya, 1991: 259); Northern Sonora (Bates, 1887: 86).
- U.S.A.: New Mexico, Arizona (Bates, 1889: 391).

Remarks: The genus-group *Agoliinus*, as delimited in the paper by Dellacasa G. *et al.* (2001), contains taxa with hind tibiae apically fimbriate with short and equal spinules. *Aphodius cruentatus* has hind tibiae apically fimbriate with rather elongate and alternately unequal spinules, but most of morphological as well as aedeagal and epipharyngeal characters indicate that this taxon may be assigned, at least at present, to *Agoliinus*.

14. *Aphodius glyptus* Bates, 1887

Current status: *Trichonotuloides glyptus* (Bates, 1887) comb nov. (Figs. 4, 8-10).

References

Aphodius glyptus Bates, 1887: 86; Blackwelder, 1944: 212.
Aphodius (Amidorus) glyptus; Schmidt A., 1913: 149; Dellacasa M., 1988: 135.

Type locality: "Ciudad in Durango" [Durango, Mexico].

Type depository: Natural History Museum. London.

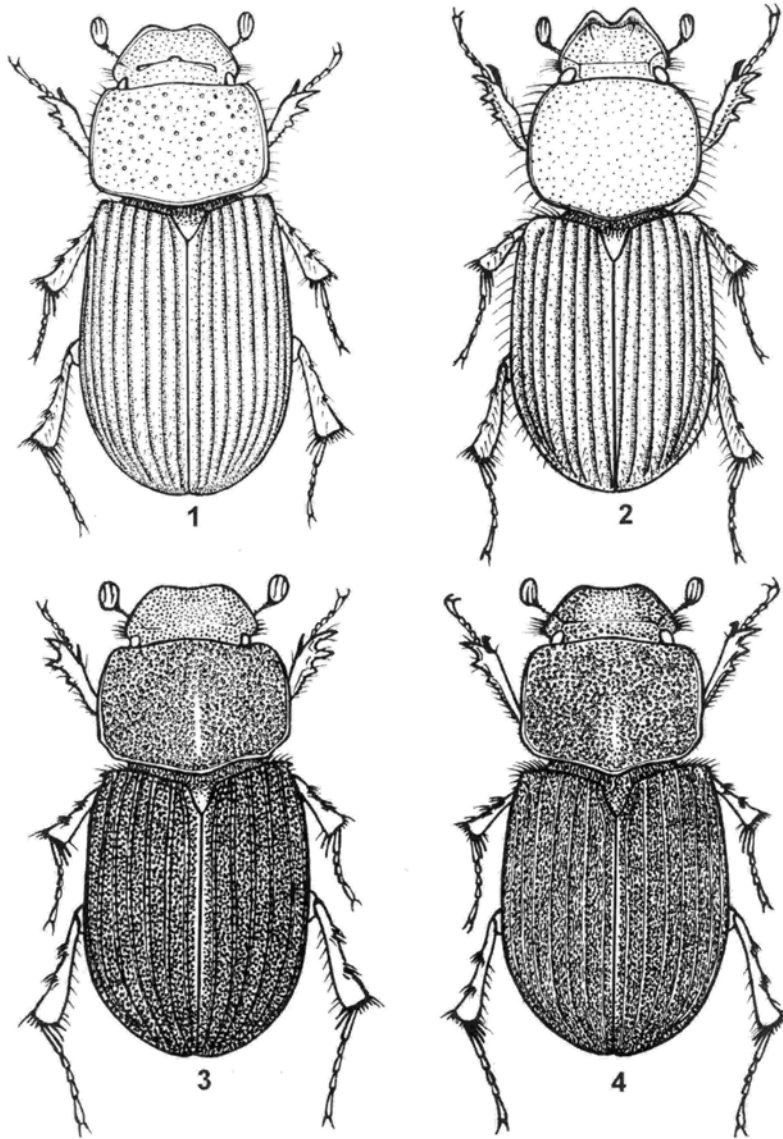
Redescription: length 4,5-5 mm; oval-elongate, moderately convex, subopaque; upperside quite shortly and densely silver-grey pubescent. Blackish, head, pronotum and elytra with margins shadely reddish. Head with epistome convex at centre, coarsely and densely punctured, punctures sparser on disc, denser on sides; clypeus feebly sinuate at middle, obtusely angulate at each side, bordered, border near imperceptibly bristled laterally; genae obtuse, rather shortly ciliate, distinctly more protruding than eyes; frontal suture nearly obsolete at middle, moderately raised laterally; front coarsely and rather densely punctured. Pronotum transverse, moderately convex, strongly and densely punctured, punctures subconfluent on sides; sides with border cerciniform and minutely bristled, slightly inwardly sinuate before hind angles; latter subtruncate; base bisinuate and distinctly bordered. Scutellum triangular with curved sides, coarsely and confusedly punctured. Elytra oval, moderately convex, not denticulate at shoulder; epipleural carina particularly distinct on humeral callus and minutely bristled; striae wide, shiny, superficially punctured and subcrenulate; interstices flat with punctation vermiculate. Fore tibiae distally tridentate and proximally serrulate at outer margin; upperside smooth. Middle and hind tibiae with strong transverse carinae on outer face; fimbriate with short and equal apical spinules. Superior apical spur of hind tibiae shorter than first tarsal segment; latter as long as following three combined. Male: pronotum relatively more transverse; fore tibiae apical spur strong, stout and apically hooked. Female: pronotum relatively narrower frontward; fore tibiae apical spur slender and regularly acuminate apically.

Distribution: Mexico.

Type material:

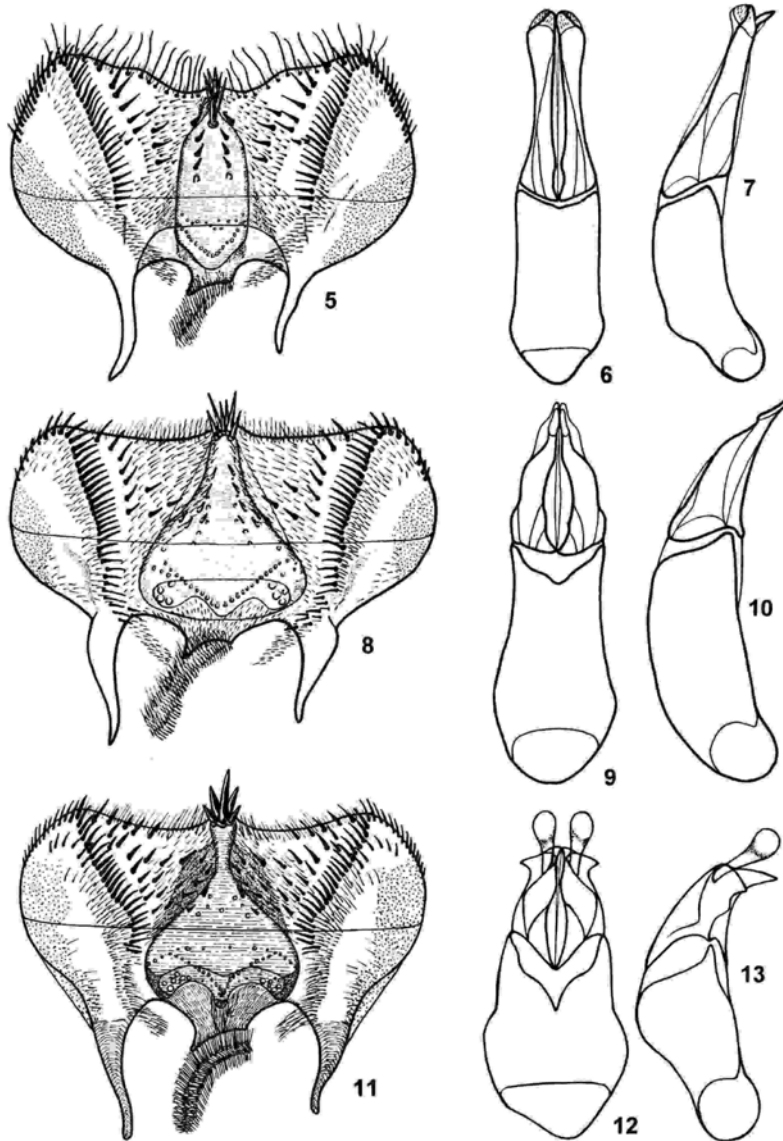
1 ♀, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Ciudad Mex., / 8100 ft. / Forrer.
- white, printed: Sp. figured.
- white, printed: B. C. A. Col. II (2) / *Aphodius*.
- white, handwritten: *Aphodius / glyptus* / Bates.
- white with red border, round, printed: Type.
- white with violet border, round, printed: Lectotype.
- white handwritten: *Aphodius / glyptus* / Bates (Lectotype, Gordon 1970 *in litteris*).
- red, printed: *Aphodius glyptus* Bates, 1887; Lectotypus, Dellacasa M. des. 2000.



Figures 1-4

Habitus of: 1. *Agoliinus (sensu lato) cruentatus* (LeConte, 1878) (male, length 6,5 mm); 2. *Drepananthoides larreae* (Horn, 1887) (male, length 5 mm); 3. *Trichonotuloides latecrenatus* (Bates, 1887) (male, length 4 mm); 4. *Trichonotuloides glyptus* (Bates, 1887) (male, length 5 mm).



Figures 5-13

Epipharynx and aedeagus (dorsal and lateral view) of: 5-7. *Drepanocanthoides larreae* (Horn, 1887) (San Pedro, Coahuila, Mexico); 8-10. *Trichonotuloides glyptus* (Bates, 1887) (Toluca, Edo. de México, Mexico); 11-13. *Agoliinus* (sensu lato) *cruentatus* (LeConte, 1878) (Portal, Arizona, U.S.A.).

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Ciudad Mex., / 8100 ft. / Forrer.
- white, handwritten: *Aphodius / glyptus* / Bates.
- red, printed: *Aphodius glyptus* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Ciudad Mex., / 8100 ft. / Forrer.
- red, printed: *Aphodius glyptus* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

Material examined:

MEXICO: COLIMA: Sierra de Manantlan, Colima, 13.07.1989, Rivera L. leg., 1 ex. (DCG); HIDALGO: Jacale [= Jacala], Salle leg., 1 ex. (MNHNP); EDO. DE MÉXICO: Río Frío, 22.08.1980, Zunino M. leg., 1 ex. (DCG); Salazar, 08.09.1968, Cabrera M. leg., 1 ex. (DCG); Toluca, 16.07.1933, Hinton H. E. & Usinger R. L. leg., 1 ex. (DCG), 23 exx. (USNM); Valle d. Silencio, m 3000, México C. env., 23.08.1980, 1 ex. (DCG); OAXACA: Microwave Sta., 14 Km N Jct. to Tlaxiaco from PanAm Hwy, 01.08.1974, Whitehead leg., 2 exx. (USNM); VERACRUZ: Km 11 cam.-Cofre de Perote, 16.08.1996, Halffter G. *et al.* leg., 1 ex. (DCG); El Triunfo, camino a Ayahualulco, 03.10.2000, Pensado T. leg., 6 exx. (DCG); San José Aguazuelas, de El Triunfo a Xico, 03.10.2000, Martínez I. leg., 7 exx. (DCG); San José Aguazuelas, Cam.-Los Altos, 23.08.1995, Halffter G. *et al.* leg., 1 ex. (DCG); Tembladeras, B.P., 19°30'55"N-97°06'55"W, 01/18.06.2001, Montes de Oca E. & Santiago Q. leg., 5 exx. (EX).

Distribution from the literature:

- MEXICO: Ciudad in Durango (Bates, 1887: 86); El Conejo, Veracruz (Lobo & Halffter, 2000).

Remarks: Morphological, epipharyngeal and aedeagal features indicate that this taxon belongs to the genus *Trichonotuloides*; see remarks under *Aphodius latecrenatus* for key to taxa.

15. *Aphodius latecrenatus* Bates, 1887

Current status: *Trichonotuloides latecrenatus* (Bates, 1887) comb nov. (Fig. 3).

References

- Aphodius latecrenatus* Bates, 1887: 86; Blackwelder, 1944: 212.
Aphodius (Amidorus) latecrenatus; Schmidt A., 1913: 149; Dellacasa M., 1988: 150.
Aphodius (Trichonotuloides) fossulatipennis Balthasar, 1945: 44; Dellacasa M., 1988: 258; Dellacasa G., Bordat & Dellacasa M. (2001) (habitus, aedeagus and epipharynx figured; lectotype designated) (new synonymy).

Type locality of *Aphodius latecrenatus*: Totonicapam [Totonicapán], Guatemala.

Type depository of *Aphodius latecrenatus*: Natural History Museum. London.

Type locality of *Aphodius fossulatipennis*: Guatemala.

Type depository of *Aphodius fossulatipennis*: Balthasar Collection, Národní Muzeum. Prague.

Redescription: length about 4 mm, oblong-oval, moderately convex, subshiny; head glabrous, sides of pronotum and elytral interstices shortly pubescent. Dark brownish; clypeal margin, fore angle of pronotum and elytral apex ferruginous; antennal club piceous; legs brown-reddish; inferior side brownish. Head rather large; epistome slightly gibbous at centre, somewhat depressed toward clypeal margin, distinctly and regularly punctured, punctation sparser on median gibbosity; clypeus feebly sinuate at middle, rounded at sides; genae obtusely rounded, shortly ciliate, distinctly more protruding than eyes; frontal suture somewhat raised, not at all tuberculate; front regularly and coarsely punctured, punctation coarser than on epistome. Pronotum transverse, feebly convex, doubly, rather regularly and very densely and coarsely punctured; large punctures, three to four times larger than small punctures, distinctly cariose and on sides shortly piligerous, near base with a belt of larger contiguous and coarser punctures; sides nearly straight, thickly bordered, border glabrous, subsinuate before hind angles; latter obliquely truncate and inwardly sinuate; base feebly bisinuate, distinctly bordered. Scutellum basally and laterally coarsely punctured, toward apex subcarinate and smooth. Elytra oval-elongate, with small but distinct humeral denticle, broadly and deeply striate; striae strongly crenulate on disc, toward apex canaliculate and indistinctly punctured; interstices convex, densely, coarsely and rather irregularly punctured, toward apex punctures more superficial and somewhat confusedly confluent, quite densely and shortly pubescent. Fore tibiae apical spur slender and acuminate apically in both sexes. Hind tibiae superior apical spur distinctly shorter than first tarsal segment; latter as long as following three combined. Male: pronotum transverse, relatively less convex and not narrowed frontward; metasternal plate spoon-shaped, punctured and shortly pubescent distally. Female: pronotum narrowed frontward and relatively more convex; metasternal plate nearly flat, relatively more sparsely punctured.

Distribution: the species is known from type locality only with no more detailed locality label.

Type material:

1 ♀, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Tonicapam, 85 - 10,500 ft. / Champion.
- white, printed: Spec. figured.
- white, handwritten: *Aphod. / latecrenatus* / Bates.
- white, printed: B. C. A. Col.II (2) / *Aphodius*.
- white, with red border, round, printed: Type.
- white, with violet border, round, printed: Lectotype.
- white, handwritten: *Aphodius latecrenatus*, Bates (Lectotype, Gordon 1970, *in litteris*).
- red, printed: *Aphodius latecrenatus* Bates, 1887, Lectotypus, Dellacasa M. des. 2000.

1 ♀, **paralectotype herein designated** (NHML), bearing the following labels:

- white, printed: Tonicapam / 85 – 10,500 ft. / Champion.
- white, with blue border, round, printed: Paralectotype.
- red, printed: *Aphodius latecrenatus* Bates, 1887, Paralectotypus, Dellacasa M. des. 2000.

- 1 ♂, **paralectotype herein designated** (CNC), bearing the following labels:
- white, printed: Totonicapan / 85 – 10,500 ft. / Champion.
- white, handwritten: *latecrenatus* / Bates.
- yellow, printed: COTYPE/CNCNo 808/*Aph. latecrenatus* Bates (handwritten),
Paralectotype, Gordon R., 2001.
- 1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:
- white, printed: Totonicapan / 85 – 10,500 ft. / Champion.
- white, handwritten: *latecrenatus* / Bates.
- red, printed: *Aphodius latecrenatus* Bates, 1887, Paralectotypus, Dellacasa M. des.
2000.
- 1 ♀, **paralectotype herein designated** (MNHNP), bearing the following labels:
- white, printed: Totonicapan / 85 – 10,500 ft. / Champion.
- red, printed: *Aphodius latecrenatus* Bates, 1887, Paralectotypus, Dellacasa M. des.
2000.

Distribution from literature:

- GUATEMALA: Totonicapan (Bates, 1887: 86).

Remarks: Comparison of the types of *latecrenatus* and *fossulatipennis* indicates without doubt their synonymy.

By follows we supply the key for the two taxa belonging at present to the genus *Trichonotuloides*:

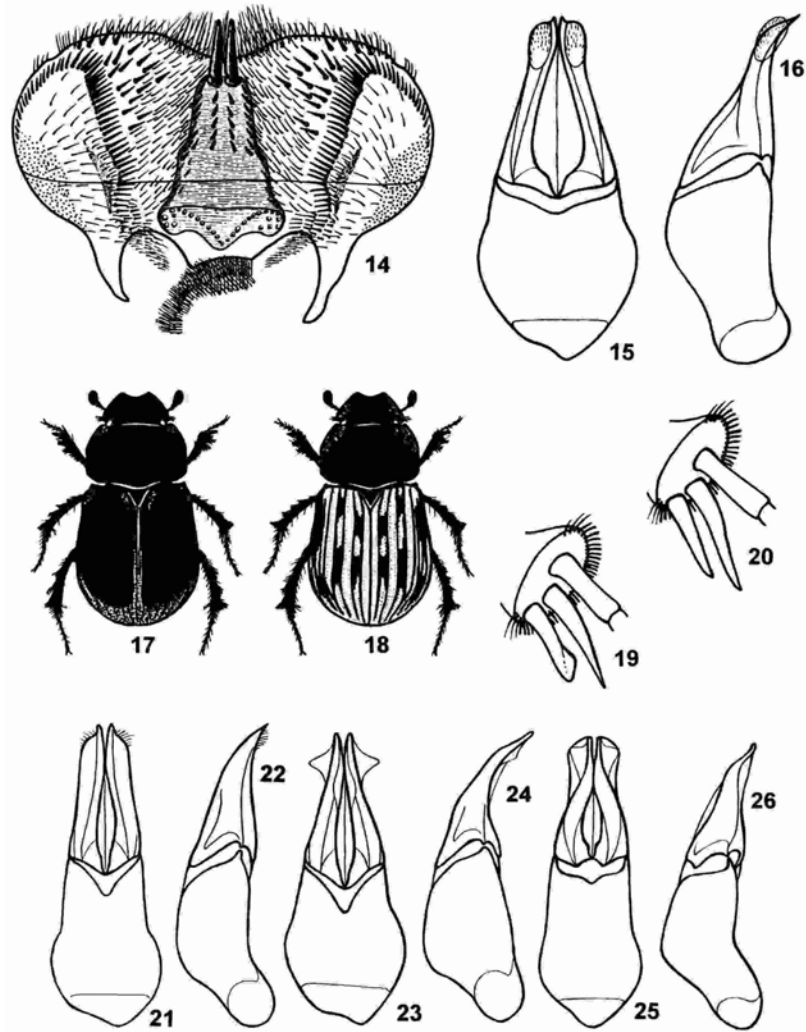
- 1 Elytral striae deeply crenato-punctate, as wide as interstices; latter distinctly, coarsely punctured; hind angles of pronotum obliquely truncate, truncation somewhat inwardly sinuate; front tibiae with apical spur acuminate in both sexes. Dark brownish; clypeal margin, front angles of pronotum and elytral apex ferruginous. Length 5 mm. Guatemala (Tonicapán) ***latecrenatus***
- 1' Elytral striae rather superficially punctured, subcrenulate, narrower than interstices; latter with confused vermiculate punctation; hind angles of pronotum subtruncate; apical spur of front tibiae, in males, hooked apically. Blackish; head, pronotum and elytral margins faintly reddish. Length 4,5-5 mm. Mexico (Colima, Hidalgo, México, Veracruz). ***glyptus***

16. *Aphodius euprosopus* Bates, 1887

Current status: *Agrilinus* (sensu lato) *azteca* ab. *euprosopus* Bates, 1887 stat. nov. & comb. nov.

References

- Aphodius euprosopus* Bates, 1887: 87; Blackwelder, 1944: 212
Aphodius (Volinus) euprosopus; Schmidt A., 1913: 142; Dellacasa M., 1988: 126



Figures 14-26

14-16. Epipharynx and aedeagus (dorsal and lateral view) of *Imelda constricticollis* (Bates, 1889) (Omiteme, Guerrero, Mexico); 17. Habitus of *Agrilinus (sensu lato) azteca* (Harold, 1863) (male, length 5 mm); 18. Habitus of *Agrilinus (sensu lato) azteca ab. euprosopus* (Bates, 1887) (male, length 5 mm); 19. Apex of male right mesotibia (ventral view) of *Labarrus lividus* (Olivier, 1789); 20. Apex of male right mesotibia (ventral view) of *Labarrus pseudolividus* (Balthasar, 1941); 21-26. Aedeagus (dorsal and lateral view) of: 21-22. *Labarrus lividus* (Olivier, 1789) (Santa Maria di Ricadi, Calabria, Italy); 23-24. *Labarrus pseudolividus* (Balthasar, 1941) (Buenos Aires, Argentina); 25-26. *Labarrus parnaguaensis* (Petrovitz, 1961) (Recife, Concepción, Paraguay).

Type locality: Tonicapam [= Tonicapán], Guatemala.

Type depository: Natural History Museum. London.

Redescription: distinguished from typical form (Fig. 17) by elytra yellowish with several elongate blackish spots (fig, 18).

Distribution: Mexico, Guatemala.

Type material:

1 ♂, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Quiche Mts. / 7-9000 ft. / Champion.
- white, printed: Sp. figured.
- white handwritten: *euprosopus* / Bates.
- white, printed: B. C. A. Col. II (2) / Aphodius.
- white with red border, round, printed: Type.
- white with violet border, round, printed; Lectotype.
- white handwritten: *Aphodius* / *euprosopus* / Bates (Lectotype, Gordon 1970 *in litteris*).
- red, printed: *Aphodius euprosopus* Bates, 1887; *Lectotypus*, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, handwritten: Totoni- / capam / Guat.
- white, handwritten: *Aphodius* / *euprosopus* / Bates.
- red, printed: *Aphodius euprosopus* Bates, 1887; *Paralectotypus*, Dellacasa M. des. 2000

1 ♀, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, handwritten: Quiche/ Mts./ Guatem
- red, printed: *Aphodius euprosopus* Bates, 1887; *Paralectotypus*, Dellacasa M. des. 2000

Material examined:

GUATEMALA: SAN MARCOS: 11.5 Km NW San Marcos, 3000 mts., 24-25.05.1973, Erwin & Hevel (Central American Expedition) leg., 1 ex. (USNM).

MEXICO: EDO. DE MÉXICO: Río Frío, 06.05.1962, Reyes P. & Olguín M. leg., 1 ex. (DCG); OAXACA: Km 190 camino de Oaxaca a Tuxtepec, m 2470, 07.08.2000, Martínez I. leg., 4 exx. (DCG); VERACRUZ: Cruz Blanca, 24.02.1993, 2 exx. (DCG); Cuiyachapa, Mpio. Coscomatepec, 06.02.1999, Alvarado M. leg., 6 exx. (DCG); *ibidem*, 08.11.1999, Alvarado M. & Cruz M. leg., 3 exx. (DCG).

Distribution from literature:

- GUATEMALA: Tonicapam [= Tonicapán], Quiche Mountains (Bates, 1887: 87).

Remarks: Examination of type material indicates that *Aphodius euprosopus* is a simple colour variation of *Agrilinus azteca*.

* * * * *

For the taxon listed by Bates (1889) as "16 (A). *Aphodius constricticollis*" we herein create the new genus:

Genus **IMELDA** nov.

Species mediae, elongato-oblongae, parum convexae, glabrae, politae. Obscure piceae. Capite epistoma parum convexo; clypeo antice subtruncato, lateribus late rotundato; genis parum prominulis; oculis satis latis; sutura frontali mutica. Pronoto modice convexo, subquadrato, disco laevissimo, lateribus et dupliciter et crebre punctato; lateribus post median paullo constricto apudque subrectos angulos posticos iterum paullulum dilatato; basi marginata. Scutello parvo, triangulariter elongato. Elytris ovalibus, humeribus valde denticulatis; striis subtilis, subcrenulatis; interstitiis planiusculis fere impunctatis. Metatibiis setis apicalibus longitudine alterne inaequalibus.

Type species: *Aphodius constricticollis* Bates, 1889.

Description: medium size species (length 7-8 mm), oblong-elongate, feebly convex, glabrous, strongly shiny. Dark piceous. Head with epistome feebly convex, nearly impunctate; clypeus anteriorly subtruncate, widely rounded at sides, thinly bordered, border glabrous; genae feebly more protruding than eyes; latter rather large; frontal suture not tuberculate at all. Pronotum moderately convex, subquadrate, smooth on disc, doubly coarsely punctured on sides; latter thickly bordered, somewhat angustate before posterior right angles somewhat protruding outwardly; base distinctly bordered. Scutellum small, triangularly elongate. Elytra oval-elongate, feebly convex, strongly denticulate at shoulder; striae fine, subcrenulate; interstices flat, nearly impunctate. Pygidium glabrous, irregularly punctured, on apical margin with four elongate setae. Fore tibiae distally tridentate and proximally serrulate at outer margin; upperside densely and rather coarsely punctured. Middle and hind tibiae with feeble transverse carinae on outer face; apically fimbriate with near regularly alternate unequal spinules. Sexual dimorphism shown in males by fore tibiae apical spur stouter and obtusely rounded apically, by metasternal plate concave and relatively more densely punctured. Epipharynx broadly transverse, distinctly sinuate at middle of irregularly setigerous anterior margin and subsinuate at widely rounded sides; epitorma pyramid-shaped with two longitudinal rows of short spines; corypha with two very strong apical spines moderately protruding beyond front margin; pedia densely pubescent, with several spinules rather irregularly arranged antero-laterally; chaetopariae moderately elongate and almost dense.

Distribution: Mexico.

Derivatio nominis: named in honour of Dr. Imelda Martínez, biology researcher at Instituto de Ecología in Xalapa (Veracruz). The taxon name is feminine.

Remarks: The new genus belongs to the groups of taxa characterized by: scutellum small, triangular; hind tibiae apically fimbriate with alternately unequal spinules; pronotum bordered at base.

The most evident characteristics are the lateral margins of the pronotum inwardly sinuate before hind angles, and the elytral humeri strongly denticulate. These distinctive characters are not simultaneously present in other genus-group taxa showing the same basic characters.

* * * * *

16 (A). *Aphodius constricticollis* Bates, 1889

Current status: *Imelda constricticollis* (Bates, 1889) comb nov. (Figs. 14-16, 27).

References

Aphodius constricticollis Bates, 1889: 392; Schmidt A., 1913: 171 (subgenere incerto); Blackwelder, 1944: 212.

Aphodius (Platyderides) constricticollis; Dellacasa M., 1988: 114.

Type locality: "Omiteme in Guerrero" [Omitemi, Guerrero, Mexico].

Type depository: Natural History Museum. London.

Redescription: length 7-8 mm, oblong-elongate, moderately convex, strongly shiny, glabrous. Dark piceous; clypeal margin and front margin of pronotum as well as legs brown-reddish more or less dark; antennal club testaceous. Head with epistome faintly convex, minutely reticulate, imperceptibly punctulate on disc, punctation a bit more distinct distally; clypeus subtruncate anteriorly, broadly rounded at sides; genae obtusely rounded, not ciliate, feebly more protruding than eyes; frontal suture very finely impressed, not tuberculate at all; front near imperceptibly sparsely punctured. Pronotum subquadrate, moderately convex, smooth on disc, coarsely, doubly and irregularly punctured on sides; latter subparallel, distinctly inward sinuate before hind angles, thickly bordered, border glabrous; hind angles straight and slightly widened outward; base bisinuate, distinctly bordered. Scutellum small, triangularly elongate, very finely and sparsely punctured. Elytra oval-elongate, feebly convex, strongly denticulate at shoulder, finely striate; striae very superficially punctured, subcrenulate; interstices flat, strongly shiny, near imperceptibly punctulate. Superior apical spur of hind tibiae shorter than first tarsal segment, latter longer than following three combined. Male: fore tibiae apical spur relatively stouter and obtusely rounded apically; metasternal plate concave and more densely punctured. Female: fore tibiae apical spur relatively slender and apically acuminate; metasternal plate nearly flat, sparsely punctured.

Distribution: the species is known from type locality only.

Type material:

1 ♂, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Omiteme / Guerrero / 8000 ft. / July. H. H. Smith.
- white, printed: Sp. figured.
- white, handwritten: *Aphodius / constricticollis* / Bates.
- white, printed: B. C. A. Col. II (2) / *Aphodius*.

Dellacasa et al.: Aphodiinae Bates in Biologia Centrali-Americana

- white with red border, round, printed: Type.
- white with violet border, round, printed: Lectotype.
- white handwritten: *Aphodius / constricticollis / Bates* (Lectotype Gordon, 1971, *in litteris*).
- red, printed: *Aphodius constricticollis* Bates, 1889; Lectotypus, Dellacasa M. des. 2000.

1 ♀, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Omilteme / Guerrero / 8000 ft. / July. H. H. Smith.
- white, handwritten: *Aphodius / constricticollis / Bates*.
- red, printed: *Aphodius constricticollis* Bates, 1889; Paralectotypus, Dellacasa M. des. 2000.

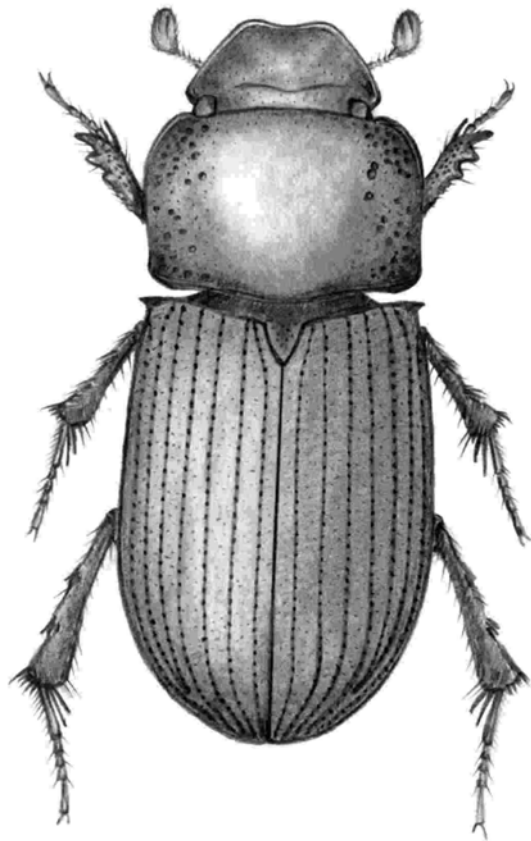


Figure 27

Habitus of *Imelda constricticollis* (Bates, 1887) (lectotype male, length 8 mm, Omiltemi, Guerrero, Mexico).

Material examined:

MEXICO: GUERRERO: Omiltemi, 26.07.1965, Halffter G. leg., 1 ex. (DCG); *ibidem*, 7300', 14-15.07.1966, Ball-Whitehead leg., 1 ex. (USNM).

Distribution from literature:

- MEXICO: Omilteme in Guerrero (Bates, 1889: 392).

16 (B). *Aphodius* -----? (Bates, 1889: 392)

Current status: not traced in Bates collection.

Remarks: Concerning this taxon from Omilteme in Guerrero (Mexico), Bates (1889: 392) reported: "A single specimen, discoloured; extremely near *A. euprosopus*".

17. *Aphodius duplex* Bates, 1887 (homonym)

— ***Aphodius opisthius* Bates, 1887 (replacement name)**

Current status: *Gonaphodiellus opisthius* (Bates, 1887) comb. nov. (Figs. 32-34, 42).

References

Aphodius duplex Bates, 1887: 87 (nec *Aphodius duplex* LeConte, 1878).

Aphodius opisthius Bates, 1887: 92 (*nomen novum*); Bates, 1889: 392; Blackwelder, 1944: 213.

Aphodius (Trichaphodius) opisthinus; Schmidt A. 1913: 136 (incorrect spelling); Schmidt A. 1922, 132.

Aphodius (Trichaphodius) opisthius; Dellacasa M., 1988: 173.

Type locality: Cerro de Plumas [=Cerro de Palmas, Veracruz, Mexico].

Type depository: Natural History Museum. London.

Redescription: length 4-5 mm; oval-elongate, moderately convex, subshiny; nearly glabrous, elytra laterally and subapically shortly pubescent. Brown-yellowish; head anteriorly and pronotum disc brownish; elytra with juxtasutural interstice, base of fifth stria and preapical declivity brownish, latter including an oblique oval yellowish spot. Head with epistome somewhat convex, superficially microreticulate, regularly and distinctly punctured, punctation denser and coarser laterally; clypeus slightly sinuate at middle, rounded at sides, bordered, border shortly bristled; genae rounded, shortly ciliate, feebly more protruding than eyes; latter rather large; frontal suture not tuberculate at all; front regularly and rather coarsely punctured. Pronotum transverse, moderately convex, distinctly, regularly and rather densely punctured; sides inwardly slightly sinuate before hind angles, thinly bordered, border glabrous; hind angles obliquely truncate; base bisinuate, not bordered. Scutellum triangular with curved sides; coarsely but rather sparsely punctured. Elytra oval-elongate, moderately convex, denticulate at shoulder, finely striate; striae distinctly crenulate; interstices nearly flat, superficially microreticulate, finely and irregularly punctured. Fore tibiae distally tridentate and proximally serrulate at outer margin; upperside coarsely but sparsely punctured. Hind tibiae slender and strongly

elongate. Middle and hind tibiae with feeble transverse carinae on outer face; fimbriate with elongate and irregularly unequal apical spinules. Superior apical spur of hind tibiae shorter than first tarsal segment; latter slightly longer than following three combined. Male: fore tibiae apical spur abruptly downward curved; pronotum relatively more transverse and less convex; metasternal plate distinctly concave. Female: fore tibiae apical spur nearly straight; pronotum relatively narrower frontward and more convex; metasternal plate nearly flat.

Distribution: Mexico, Guatemala, Costa Rica.

Type material:

1 ♂, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Irazu,/ 6-7000 ft./ H. Rogers.
- white, printed: Sp. figured.
- white, handwritten: *Aphodius/ duplex*/ Bates.
- white, printed: B. C. A., Col., II (2)./ *Aphodius/ opisthius*, Bates.
- white with red border, round, printed: Type.
- white with violet border, round, printed: Lecto-/ type.
- white with red printing: Lectotype/ [handwritten black:] *Aphodius/ opisthius*/ [printed red:] Gordon, 1970.
- red, printed: *Aphodius opisthius* Bates, 1887; Lectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Cerro de Plumas,/ Mexico/ Hoege.
- white, handwritten: *Opisthius/ duplex (olim)*/ Bates.
- red, printed: *Aphodius opisthius* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

4 ♂♂, 8 ♀♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, printed: Cerro de Plumas,/ Mexico/ Hoege.
- red, printed: *Aphodius opisthius* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♂, 1 ♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, printed: Irazu,/ 6-7000 ft./ Rogers H.
- red, printed: *Aphodius opisthius* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♂, 1 ♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, printed: Jalapa,/ Mexico/ Hoege.
- red, printed: *Aphodius opisthius* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, handwritten: Mexico/ city.
- red, printed: *Aphodius opisthius* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

2 ♀♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, printed: Zacualtipan,/ Hidalgo/ Höge.
- red, printed: *Aphodius opisthius* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

- 1 ♂, **paralectotype herein designated** (USNM), bearing the following labels:
- white, printed: Cerro de Plumas,/ Mexico/ Hoega.
- red, printed: U.S.N.M. Paratype No. 49712; Paralectotype, R. Gordon 2001.
- 1 ♂, **paralectotype herein designated** (USNM), bearing the following labels:
- white, printed: Cerro de Plumas,/ Mexico/ Hoega.
- red, printed: U.S.N.M. Paratype No. 49712.
- white, handwritten: *Aphodius/ duplex*/ Bates; Paralectotype, R. Gordon 2001.
- 1 ♂, **paralectotype herein designated** (USNM), bearing the following labels:
- white, printed: Irazu,/ 6-7000 ft./ Rogers H.
- red, printed: U.S.N.M. Paratype No. 49712; Paralectotype, R. Gordon 2001.
- 1 ♂, **paralectotype herein designated** (CNC), bearing the following labels:
- white, printed: Irazu, '6-7000 ft./ Rogers H.
- white, printed: B. C. A., Col., II (2)./ *Aphodius opisthius*, Bates.
- yellow, printed: COTYPE/CNCo. 8083/ *Aph. duplex* Bates = *opisthius*:/ Paralectotype, R. Gordon 2001.

Material examined:

GUATEMALA: ESQUINTLA: Zapote, Champion C. leg., 1 ex. (MNHP).

MEXICO: COLIMA: Sierra de Manantlan, m 2300, 13.06.1989, Rivera L. leg., 3 exx. (DCG); DURANGO: Minillas, Res. Biosf. La Michilia, 01/08.07.1994, Anduaga S. leg., 5 exx. (DCG, IEX); *ibidem*, 09/14.08.1989, Anduaga S. leg., 1 ex. (IEX); *ibidem*, 13.10.1989, Anduaga S. leg., 1 ex. (IEX); Piedra Herrada, Rva. Biosfera La Michilia, 21/24.07.1989, Anduaga S. leg., 4 exx. (IEX); Rancho El Aleman, Res. Biosf. La Michilia, 02.06.1979, Zunino M. leg., 3 exx. (DCG); Reserva Biosfera La Michilia, 15.10.1989, Anduaga S. leg., 2 exx. (IEX); GUERRERO: Omilteme, 8000 ft., July, Smith H. H. leg., 1 ex. (MNHP); HIDALGO: Xochicoatlan, Molango, 03.06.1979, Zunino M. leg., 1 ex. (DCG); Zacualtipan, 27.05.1979, Zunino M. leg., 37 exx. (DCG); EDO. DE MÉXICO: Bocanacheve, 19.05.1979, Zunino M. leg., 19 exx. (DCG); Chalma, m 1550, 05.08.1980, Zunino M. leg., 4 exx. (DCG); Rancheria San Antonio, m 2250, N19°19'11.9"-W100°05'54.9", carr. -Valle de Bravo, 27.07.2001, Dellacasa M. & Martínez I. leg., 66 exx. (DCG, MSNTC); Real de Arriba, Temascaltepec, 06.07.1933, Hinton H. E. & Usinger R. L. leg., 1 ex. (DCG), 21 exx. (USNM); San Pedro Nexapa, m 2680, 20.11.1999, Dellacasa M. leg., 9 exx. (DCG); Temascaltepec, carr. Valle de Bravo, 04.06.1979, Zunino M. leg., 4 exx. (DCG); arriba de Valle de Bravo, Km 134, m 2300, 02.06.1957, Halffter G. & V., 1 ex. (DCG); MICHOACÁN: La Estacada, m 2450, N19°24'04.3"-W101°32'59.8", carr. Méx-41 Patzcuaro-Tacámbaro, 25.07.2001, Dellacasa M. & Martínez I. leg., 177 exx. (DCG, MSNTC); La Gallina dint., m 1250, N19°19'29.2"-W102°04'43.8", carr. Méx-37 Uruapan-Nueva Italia, 23.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); La Piedad, c. grande, m 2200, 01.07.1997, Noguiera G. leg., 5 exx. (IEX); Los Azules, Laguna Larga, 25.08.1985, Zunino M. leg., 1 ex. (DCG); Macho de Agua, Zitacuaro, 23.06.1979, Zunino M. leg., 2 exx. (DCG); Maravatio, 23.06.1979, Zunino M. leg., 18 exx. (DCG); *ibidem*, 25.06.1979, Zunino M. leg., 2 exx. (DCG); Mil Cumbres, m 2000, N19°39'17.2"-W100°59'38.8", carr. Méx-15 Morelia-Cd. Hidalgo, 26.07.2001, Dellacasa M. & Martínez I. leg., 10 exx. (DCG, MSNTC); Plana PEMEX Diablo de Zirahuén, m 2200, N19°29'21.3"-W101°48'07.0", carr. Méx-14 Patzcuaro-Uruapan, 23.07.2001, Dellacasa M. & Martínez I. leg., 21 exx. (DCG, MSNTC); Puerto El Tigre, 22.06.1979, Zunino M. leg., 4 exx. (DCG); San Juan Nuevo, 25.09.1982, Zunino M. leg., 1 ex. (DCG); Sta. Clara del Cobre env., m 2200,

Dellacasa et al.: *Aphodiinae Bates in Biologia Centrali-Americana*

N19°24'34.1"-W101°35'15.5", carr. Méx-41 Patzcuaro-Tacámbaro, 25.07.2001, Dellacasa M. & Martínez I. leg., 21 exx. (DCG, MSNTC); Santa Fe env., m 2000, N19°41'57.0"-W101°35'47.7", carr. Méx-15 Quiroga-Zacapu, 24.07.2001, Dellacasa M. & Martínez I. leg., 7 exx. (MSNTC); Uruapan, 28.07.1980, Zunino M. leg., 1 ex. (DCG); Zitacuaro, 25.06.1979, Zunino M. leg., 23 exx. (DCG); MORELOS: Laguna El Rodeo, 15.09.1982, Zunino M. leg., 6 exx. (DCG); Tepoztlan, 13.06.1970, Halffter G. *et al.* leg., 1 ex. (DCG); OAXACA: C. Papalo, m 2085, 09/10.07.1997, Nogueira G. leg., 4 exx. (IEX); San Miguel Sta. Flor, m 2260, 30.06.1998, Nogueira G. leg., 1 ex. (IEX); Zacatepec, Km 3 Juquila-San Marcos, 24.05.1994, Arce R. leg., 3 exx. (IEX); PUEBLA: San Martín Tex., 28.06.1997, Cachelin leg., 1 ex. (IEX); Tlatlauquitepec, m 2300, 07.07.1997, Martínez I. & Cruz M. leg., 10 exx. (DCG, IEX); *ibidem*, Rancho Santa Elena, 08.07.1997, Martínez I. & Cruz M. leg., 15 exx. (IEX); Zaragoza, San José, m 2300, 08.07.1997, Martínez I. & Cruz M. leg., 1 ex. (IEX); QUERÉTARO: El Chubete dint., m 1350, N21°09'37.3"-W99°32'46.8", cam. de Cascada de Chuveje-San Pedro, 20.07.2001, Dellacasa M. & Martínez I. leg., 16 exx. (MSNTC); La Quebrada, m 2300, N21°07'28.1"-W99°38'44.4", carr. Pinal de Amoles-Peña Blanca, 20.07.2001, Dellacasa M. & Martínez I. leg., 136 exx. (DCG, MSNTC); SINALOA: Loberas, m 1900, 28.08.1997, Nogueira G. leg., 1 ex. (IEX); TLAXCALA: Tlaxco, 02.06.1979, Zunino M. leg., 16 exx. (DCG); VERACRUZ: Cuiyachapa, m 2700, Mpio. Coscomatepec, 18.01.1999, Cruz M. & Alvarado M. leg., 1 ex. (MSNTC); *ibidem*, 06.02.1999, Alvarado M. leg., 1 ex. (DCG); *ibidem*, 27.04.1998, Alvarado M. leg., 6 exx. (DCG); *ibidem*, 12.05.1998, Cruz M. & Olivarez M. leg., 2 exx. (DCG); *ibidem*, 27.05.1998, Martínez I. & Alvarado M. leg., 4 exx. (IEX); *ibidem*, 13.06.1995, Martínez I. *et al.*, 9 exx. (IEX); *ibidem*, 14.06.1999, Alvarado M. *et al.* leg., 184 exx. (DCG, MSNTC); *ibidem*, m 2700, 18.06.1997, Martínez I. & Cruz M. leg., 23 exx. (IEX); *ibidem*, 20.06.2000, Cabrero F. *et al.* leg., 76 exx. (DCG); *ibidem*, 28.06.1999, Cruz M. & Alvarado M. leg., 6 ex. (MSNTC); *ibidem*, VI-VII.1998, Sosa J. *et al.* leg., 5 exx. (DCG); *ibidem*, 04.07.2000, Passerat J. & Cruz M. leg., 22 exx. (DCG); *ibidem*, 13.07.1998, Cruz M. *et al.* leg., 9 exx. (DCG); *ibidem*, 08.12.1998, Alvarado M. & Sosa J. leg., 14 exx. (IEX); El Fresno, camino a San José, Tlacolulan, m 1800, 12.09.2000, Martínez I. leg., 92 exx. (DCG); La Cantera, m 2360, N19°38'45.6"-W97°10'19.8", cam. a Las Minas, 07.07.2001, Dellacasa M. & Martínez I. leg., 1 exx. (MSNTC); La Joya, Rt. 140, Km 307, 21.07.1965, Flint & Ortiz leg., 7 exx. (USNM); La Normandia, carr. Méx-140 -Perote, 07.07.2001, Dellacasa M. & Martínez I. leg., 16 exx. (DCG, MSNTC); Rancho Los Salazares, m 2400, N19°39'30.7"-W97°05'64.0", Las Vigas dint., 02.07.2001, Dellacasa M. leg., 26 exx. (DCG, MSNTC); *ibidem*, 04.07.2000, Santiago Q. & Suarez T. leg., 52 exx. (MSNTC); *ibidem*, 18.07.2000, Santiago Q. *et al.* leg., 18 exx. (MSNTC); *ibidem*, 03.10.2000, Martínez I. leg., 35 exx. (DCG); 2 Km desp. Oxtlapa, m 2400, Mpio. Xico, 18.11.1999, Dellacasa M. leg., 2 exx. (DCG); Tequila, 07.08.1967, Reddell J. leg., 10 exx. (USNM); Tetelcingo, m 2200, 13.06.1995, Martínez I. *et al.* leg., 4 exx. (IEX); *ibidem*, 15.06.1998, Huerta C. *et al.* leg., 50 exx. (DCG); Texmola, 15.06.1979, Zunino M. leg., 1 ex. (DCG); Km 14,5 Xico-Oxtlapa, Mpio. Xico, m 2050, 18.11.1999, Dellacasa M. leg., 1 ex. (DCG).

Distribution from literature:

- MEXICO: Jacale, Jaquila, Cerro de Plumas, Mexico city, Zacualtipan, Jalapa, Huitzilac, Chilpancingo (Bates, 1887: 87); Durango, Biosphere Reserve "La Michilia" (Morón & Deloya, 1991: 260); Morelos, Cuernavaca (Deloya *et al.*, 1993: 22); Veracruz: Acajete, Cruz Blanca, San José de Aguazuelas, Chololoyan, Ixhuacan (Lobo & Halffter, 2000: 118).
- COSTA RICA: Volcan de Irazu (Bates, 1887: 87).

Remarks: Characters of this taxon indicate that it belongs to the genus *Gonaphodiellus* as delimited in a paper by Dellacasa G. *et al.* (2001).

18. *Aphodius panamensis* Harold, 1859

Current status: *Aidophus panamensis* (Harold, 1859) comb. nov. [DIDACTYLINI].

References

Aphodius panamensis Harold, 1859: 20; Bates, 1887: 88.
Didactylia panamensis; Schmidt A., 1911: 38; Blackwelder, 1944: 213; Dellacasa M., 1988: 176.
Aidophus panamensis; Dellacasa G., Bordat & Dellacasa M. (2001).

Type locality: Panama.

Type depository: Muséum National d'Histoire naturelle. Paris.

Distribution: Panama.

Material examined:

PANAMA: CHIRIQUÍ: Bugaba, Champion leg., 3 exx. (MNHP); David, 4 exx. (DCG); David, Champion leg., 18 exx. (MNHP), 4 exx. (MNB); PANAMA: Corozal, CZ, 26.04.1911, Busk A. leg., 24 exx. (DCG).

Distribution from literature:

- PANAMA: Bugaba (Bates, 1887: 88).

Remarks: A complete systematic redefinition of this taxon as well as all others belonging to the genus *Aidophus* will be done in a publication by Stebnicka *et al.*, now in preparation.

19. *Aphodius guatemalensis* Bates, 1887

Current status: *Blackburneus* (sensu lato) *guatemalensis* (Bates, 1887) comb. nov. (Figs. 28, 45-47).

References

Aphodius guatemalensis Bates, 1887: 88; Blackwelder, 1944: 212.
Aphodius (*Emadiellus*) *guatemalensis*; Schmidt A., 1913: 138; Dellacasa M., 1988: 137.

Type locality: Quezaltenango, Guatemala.

Type depository: Natural History Museum. London.

Redescription: length 3-3,5 mm; oblong, moderately convex, shiny, glabrous. Piceous; head shadely reddish at each side, pronotum shadely reddish at front margin, elytra brownish, at base with several yellowish strips more or less elongate, shadely reddish on humeral callus and with a preapical small yellowish spot; antennal club brownish; legs reddish. Head with epistome feebly convex, superficially microreticulate, regularly, rather coarsely and densely punctured, punctation denser and coarser laterally; clypeus subsinuate at middle, rounded at sides, quite thinly bordered, border anteriorly faintly upturned and quite very shortly bristled; genae rounded, shortly ciliate, no more protruding than eyes; frontal suture somewhat raised; front regularly and coarsely punctured.

Pronotum transverse, moderately convex, faintly microreticulate, rather sparsely and somewhat irregularly punctured, punctation denser and coarser on sides; latter subparallel, thinly bordered, border glabrous; hind angles obtuse; base feebly bisinuate, not bordered. Scutellum triangularly elongate, superficially microreticulate, with trace of lateral grooves, sparsely and superficially punctured. Elytra oval, moderately convex, not denticulate at shoulder, finely striate; striae distinctly punctured and subcrenulate; interstices quite flat, superficially microreticulate, sparsely and irregularly punctured. Fore tibiae distally tridentate and proximally serrulate at outer margin; upperside distinctly punctured. Middle and hind tibiae with feeble transverse carinae on outer face; fimbriate with irregularly unequal apical spinules. Superior apical spur of hind tibiae distinctly shorter than first tarsal segment; latter longer than following three combined. Male: metasternal plate distinctly concave. Female: metasternal plate nearly flat.

Distribution: Mexico, Guatemala, El Salvador, Costa Rica, Panama.

Type material:

1 ♀, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Quezaltenango, / 7800 ft. / Champion.
- white, printed: Sp. figured.
- white, handwritten: guatemalensis / Bates.
- white, printed: B. C. A. Col. II (2) / *Aphodius* / *guatemalensis*, Bates.
- white with red border, round, printed: Type.
- white with violet border, round, printed: Lectotype.
- white, handwritten: *Aphodius guatemalensis* Bates, Gordon 1970 (Lectotype des., *in litteris*).
- red, printed: *Aphodius guatemalensis* Bates, 1887; Lectotypus, Dellacasa M. des. 2000.

1 ♀, **paralectotype herein designated** (NHML), bearing the following labels:

- white, printed: Quezaltenango / 7800 ft. / Champion.
- white with blue border, round, printed: Paralectotype.
- red, printed: *Aphodius guatemalensis* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♂, 2 ♀♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, printed: Quiche Mts./ 7-9000 ft./ Champion.
- red, printed: *Aphodius guatemalensis* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♀, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Duenas,/ Guatemala/ C. Champion.
- red, printed: *Aphodius guatemalensis* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♂, 1 ♀, **paralectotypes herein designated** (CNC), bearing the following labels:

- white, printed: S. Geronimo,/ Guatemala/ Champion.
- white, printed: B.C.A., Col., II (2)./ *Aphodius guatemalensis*, Bates.

- yellow, printed: COTYPE/CNCNo 8084/ *A. guatemalensis* (handwritten);/ Paralectotype, R. Gordon 2001.

Material examined:

COSTA RICA: CARTAGO: Irazu, 6-7000 ft., Rogers H. leg., 1 ex. (MNHNP).

EL SALVADOR: SONSONATE: Cerro Verde, 18.06.1958, Bottimer L. J. leg., 3 exx. (DCG).

GUATEMALA: ESQUINTLA: Zapote, Champion C. leg., 2 exx. (MNHNP); QUEZALTENANGO: Ostuncalco, 7500 ft., Champion C. leg., 1 ex. (MNHNP); SACATEPÉQUEZ: Capetillo, Champion C. leg., 2 exx. (MNHNP).

MEXICO: COLIMA: Colima, Mpio. Minatitlán, Sierra Manantlan, m 2300, 13.07.1989, Rivera L. leg., 1 ex. (DCG); DURANGO: Res. Biosf. La Michilia, m 2300, 13.09.1989, Anduaga S. leg., 4 exx. (DCG); EDO. DE MÉXICO: Real de Arriba, Temascaltepec, 06.07.1933, Hinton H. E. & Usinger R. L. leg., 2 exx. (DCG), 20 exx. (USNM); MICHOACÁN: La Estacada, m 2450, N19°24'04.3"-W101°32'59.8", carr. Méx-41 Patzcuaro-Tacámbaro, 25.07.2001, Dellacasa M. & Martínez I. leg., 22 exx. (DCG, MSNTC); La Gallina dint., m 1250, N19°19'29.2"-W102°04'43.8", carr. Méx-37 Uruapan-Nueva Italia, 23.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); Nueva Italia, 26.09.1982, Zunino M. leg., 1 ex. (DCG); Plana PEMEX Diablo de Zirahuén, m 2200, N19°29'21.3"-W101°48'07.0", carr. Méx-14 Patzcuaro-Uruapan, 23.07.2001, Dellacasa M. & Martínez I. leg., 7 exx. (DCG, MSNTC); Puerto El Tigre, 22.06.1979, Zunino M. leg., 6 exx. (DCG); Sta. Clara del Cobre dint., m 2200, N19°24'34.1"-W101°35'15.5", carr. Méx-41 Patzcuaro-Tacámbaro, 25.07.2001, Dellacasa M. & Martínez I. leg., 5 exx. (MSNTC); Santa Fe dint., m 2000, N19°41'57.0"-W101°35'47.7", carr. Méx-15 Quiroga-Zacapu, 24.07.2001, Dellacasa M. & Martínez I. leg., 3 exx. (MSNTC); Taucitaro, 27.09.1982, Zunino M. leg., 12 exx. (DCG); Tzintzuntán dint., m 1950, N19°34'53.5"-W101°34'37.4", carr. Patzcuaro-Quiroga, 24.07.2001, Dellacasa M. & Martínez I. leg., 12 exx. (DCG, MSNTC); OAXACA: Juquila, Hoege leg., 2 exx. (MNHNP); QUERÉTARO: El Chubete dint., m 1350, N21°09'37.3"-W99°32'46.8", cam. de Cascada de Chuveje-San Pedro, 20.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); El Madroño, m 1500, El Lobo dint., N21°17'07.9"-W99°08'36.4", carr. Méx-120, 19.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); Parador Sta. Martha, m 1550, N21°16'09.2"-W99°09'50.4", La Vuelta dint., 19.07.2001, Dellacasa M. & Martínez I. leg., 2 exx. (MSNTC); SAN LUIS POTOSÍ: Los Gatos, m 2200, N22°02'52.2"-W100°37'48.7", carr. Méx-70 Rio Verde-San Luis Potosí, 21.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC).

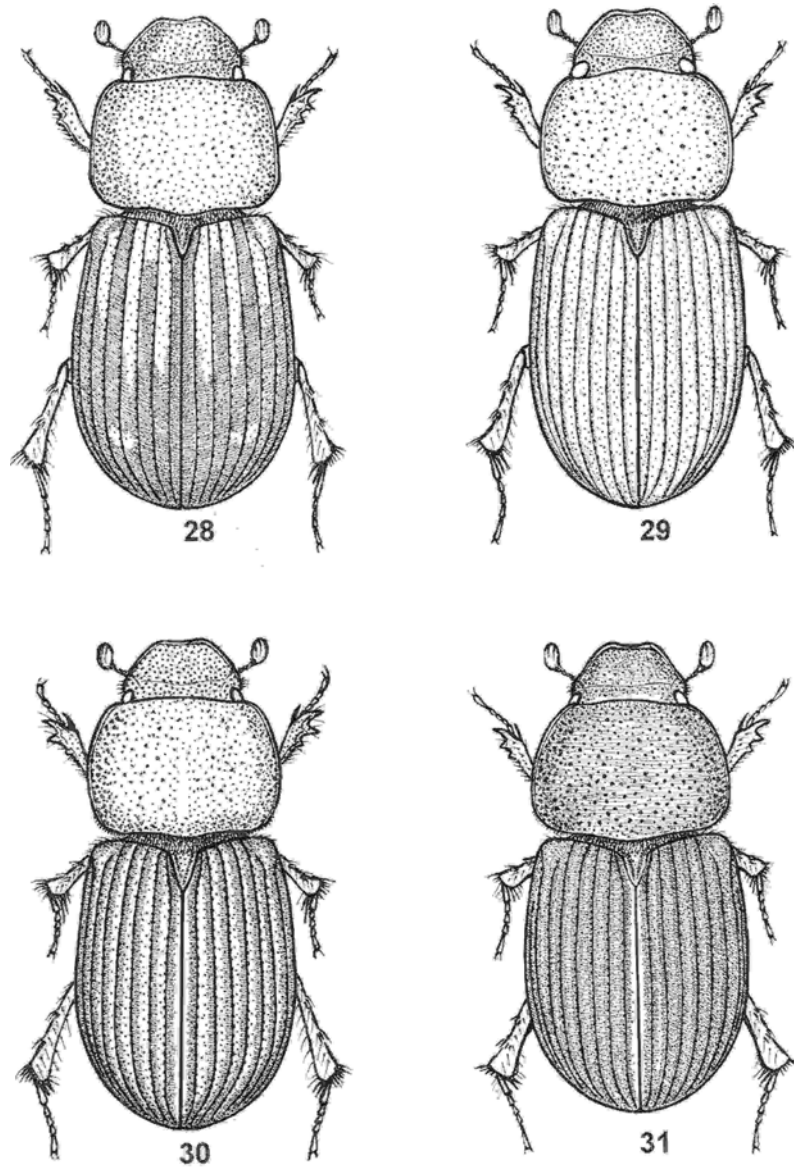
PANAMA: QUIRIQUÍ: V. de Chiriquí, 4000-6000 ft., Champion C. leg., 1 ex. (MNHNP).

Distribution from literature:

- GUATEMALA: Quiche Mountains, Quezaltenango, Dueñas, San Gerónimo, San Joaquin, Balheu (Bates, 1887:88).

Remarks: The Central American species of *Blackburneus* (sensu lato)⁽¹⁾ described by Bates can be keyed as follows:

¹⁾ The Central American species herein illustrated are placed into the genus *Blackburneus*, sensu lato. However, the aedeagus of these species has elongate and apically pubescent paramera whereas in the type species of the genus (*Blackburneus furcatus* Schmidt A., 1909) they are rather short and apically glabrous. The epipharynx of the type species has the same structures as do the Central American species.



Figures 28-31

Habitus of: 28. *Blackburneus* (sensu lato) *guatemalensis* (Bates, 1887) (male, length 3 mm); 29. *Blackburneus* (sensu lato) *xanthus* (Bates, 1887) (male, length 3 mm); 30. *Blackburneus* (sensu lato) *diminutus* (Bates, 1887) (male, length 3 mm); 31. *Blackburneus* (sensu lato) *erythrinus* (Bates, 1887) (male, length 3 mm).

- 1 Genae obtuse, feebly but distinctly more protruding than eyes; pronotum rather finely and regularly punctured; elytral interstices feebly convex, sparsely, irregularly and finely punctured; epipleural carina distinctly raised at shoulder. Piceous, head and pronotum margins testaceous; elytra yellowish with juxtasutural interstices and sides more or less widely piceous, usually also apical third piceous with a yellowish spot on preapical declivity; shiny. Length 3-3,5 mm. Mexico **charmionus**
- 1' Genae rounded, no more protruding than eyes; epipleural carina nearly faint at shoulder **2**
- 2 Elytral interstices flat **3**
- 2' Elytral interstices moderately but distinctly convex **4**
- 3 Pronotal punctation somewhat irregular and rather sparse; hind angles of pronotum widely rounded; elytral interstices sparsely and irregularly punctured. Piceous; head and pronotum margins reddish; elytra brownish, with several yellowish basal stripes, or testaceous or blackish; more or less shiny. Length 3-3,5 mm. Guatemala, Mexico **guatemalensis**
- 3' Pronotal punctation double and very sparse; hind angles of pronotum obtusely rounded; elytral interstices smooth at middle, very finely and sparsely punctured at sides. Testaceous, elytral suture darkened; strongly shiny. Length 3 mm. Panama **xanthus**
- 4 Upper side strongly microreticulate, thus dull; pronotum coarsely, densely and irregularly punctured; elytral interstices very finely and sparsely punctured; shape stout and strongly convex. Chestnut brown, pronotum disc and elytral suture darker. Length 3 mm. Panama **erythrinus**
- 4' Upper side superficially microreticulate, thus rather shiny; pronotum finely, rather densely, coarsely and near regularly punctured; elytral interstices distinctly, coarsely and rather sparsely punctured; shape elongate, moderately convex. Brownish, head and pronotum margins reddish. Length 2,5-3,5 mm. Guatemala **diminutus**

19.1. *Aphodius guatemalensis* var. *scotinus* Bates, 1887

Current status: *Blackburneus* (sensu lato) *guatemalensis* ab. *scotinus* (Bates, 1887) comb. nov.

References

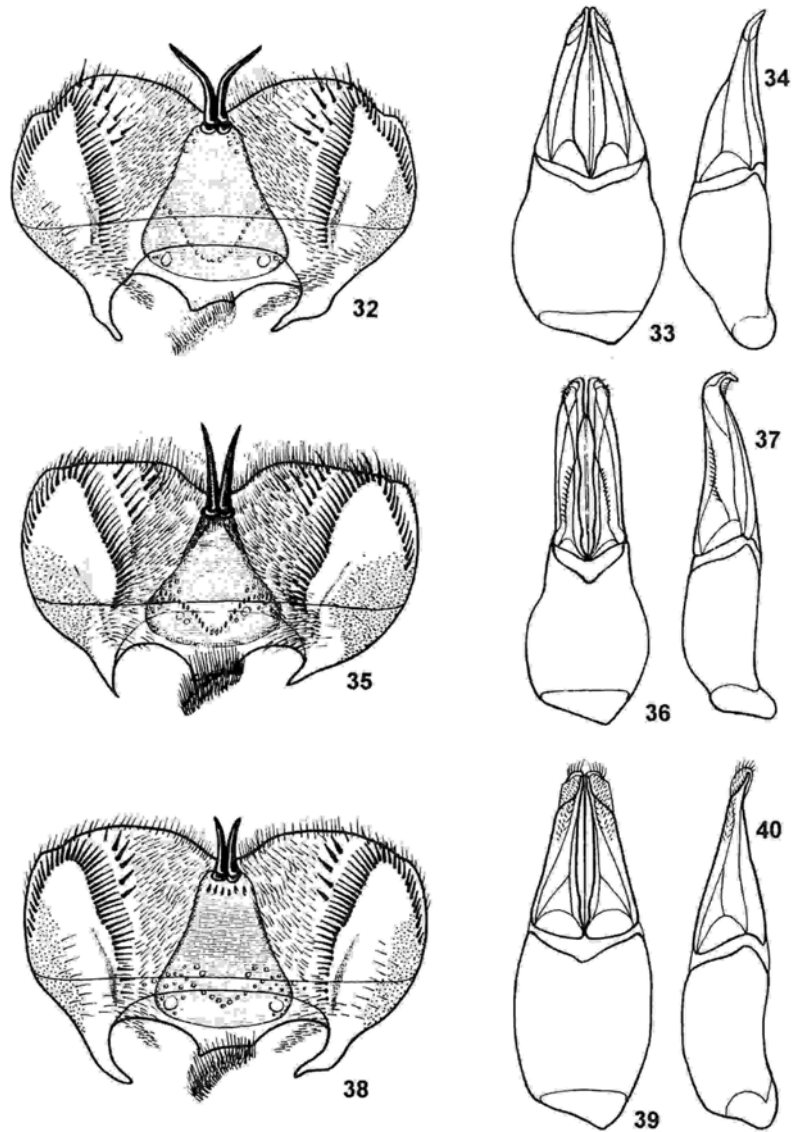
- Aphodius guatemalensis* var. *scotinus* Bates, 1887: 89; Blackwelder, 1944: 212.
Aphodius (*Emadiellus*) *guatemalensis* var. *scotinus*; Schmidt A., 1913: 138.
Aphodius (*Emadiellus*) *guatemalensis* ab. *scotinus*; Dellacasa M., 1988: 195 (stat. nov.).

Type locality: Sayula, Jalisco [Mexico].

Type depository: Natural History Museum. London.

Redescription: blackish; front angles of pronotum and elytral humeral callus testaceous.

Distribution: Mexico.



Figures 32-40

Epipharynx and aedeagus (dorsal and lateral view) of: 32-34. *Gonaphodiellus opisthius* (Bates, 1887) (Cerro de Plumas [Cerro de Palmas], Veracruz, Mexico); 35-37. *Blackburneus* (sensu lato) *diminutus* (Bates, 1887) (Dueñas, Sacatepéquez, Guatemala); 38-40. *Blackburneus* (sensu lato) *charmionus* (Bates, 1887) (Cuiyachapa, Mpio. Coscomatepec, Veracruz, Mexico).

Type material:

1 ♀, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Sayula / Jalisco / Höge.
- white, handwritten: scotinus / Bates.
- white printed: B. C. A. Col. II (2) / *Aphodius guatemalensis*, Bates.
- white with violet border, round, printed: Lectotype.
- white handwritten: *Aphodius guatemalensis* var. *scotinus* Bates (Lectotypus Gordon 1971, *in litteris*).
- red printed: *Aphodius guatemalensis* var. *scotinus* Bates, 1887; Lectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Jalapa, / Mexico / Hoega.
- white, handwritten: scotinus / Bates.
- red, printed: *Aphodius guatemalensis* var. *scotinus* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

Material examined:

MEXICO: DISTRITO FEDERAL: Mex. D. F., 11.07.1933, Hinton H. E. & Usinger R. L. leg., 3 exx. (DCG); DURANGO: Durango, VIII, Wickham leg., 2 exx. (USNM); 1 Km del Ejido, Res. Biosf. La Michilia, m 2100, 27.11.1996, Anduaga S. *et al.* leg., 4 exx. (DCG); Minillas, Res. Biosf. La Michilia, 01/08.07.1994, Anduaga S. leg., 1 ex. (DCG); *ibidem*, 07.09.2000, Anduaga S. leg., 1 ex. (DCG); *ibidem*, 13.10.1989, Anduaga S. leg., 4 exx. (DCG); Rancho El Aleman, Res. Biosf. La Michilia, 02.06.1989, Zunino M. leg., 2 exx. (DCG); HIDALGO: Zacualtipan, Höge leg., 1 ex. (MNHNP); EDO. DE MÉXICO: Chalma, 16.06.1979, Zunino M. leg., 1 ex. (DCG); Real de Arriba, Temascaltepec, 06.07.1933, Hinton H. E. & Usinger R. L. leg., 8 exx. (USNM); Tejupilco, Temascaltepec, VI.1933, Hinton H. E. & Usinger R. L. leg., 1 ex. (DCG); MICHOACÁN: Aguililla, 29.09.1982, Zunino M. leg., 1 ex. (DCG); Maravatío, 15.07.1985, Zunino M. leg., 2 exx. (DCG); San Juan Nuevo, 25.09.1982, Zunino M. leg., 4 exx. (DCG); Tingambato, 23.07.0985, Zunino M. leg., 2 exx. (DCG); Uruapan, 28.07.1980, Zunino M. leg., 1 ex. (DCG); Zitácuaro, 25.06.1979, Zunino M. leg., 6 exx. (DCG); OAXACA: Carr. Oaxaca-Tehuacan, Tonaltepec, 05.07.1985, Zunino M. leg., 16 exx. (DCG); Mt. Albán, 20.08.1989, Fresneda leg., 1 ex. (DCG); VERACRUZ: El Fresno, camino a San José, Tlacolulan, m 1800, 12.09.2000, Martínez I. leg., 2 exx (DCG); Orizaba, S.[mith] H. H. leg., 1 ex (MNHNP), Parada de los Pinos, Huatusco env., 08.11.1999, Dellacasa M. leg., 3 exx. (DCG); Potrero "Las Animas", Xalapa, 12.09.2000, Martínez I. leg., 6 exx. (DCG).

Distribution from literature:

- MEXICO: Cordova [= Cordoba], Jalapa, Sayula, Tacambaro, Juquila (Bates, 1887: 89).

Remarks: Most of the Mexican specimens examined appear less shiny than typical *guatemalensis* owing to stronger microreticulation. It is possible that Mexican populations represent a subspecies instead of only a colour variation. Obviously it is necessary to examine large series from different localities to ascertain the taxonomical level and distributional limits of the taxon.

19.2. *Aphodius guatemalensis* var. *chiriquinus* Bates, 1887

Current status: *Blackburneus* (sensu lato) *guatemalensis* ab. *chiriquinus* (Bates, 1887) comb. nov.

References

- Aphodius guatemalensis* var. *chiriquinus* Bates, 1887: 89; Blackwelder, 1944: 212.
Aphodius (*Emadiellus*) *guatemalensis* var. *chiriquinus*; Schmidt A., 1913: 138.
Aphodius (*Emadiellus*) *guatemalensis* ab. *chiriquinus*; Dellacasa M., 1988: 108 (stat. nov.).

Type locality: Volcan de Chiriqui, Panama.

Type depository: Natural History Museum. London.

Redescription: testaceous; disc of pronotum, sides and apex of elytra brownish.

Distribution: Mexico, Costa Rica, Panama.

Type material:

1 ♀, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: V. de Chiriqui / below 4,000 ft. / Champion.
- white, handwritten: *Aphod.* / *Chiriquinus* / Bates.
- white, printed: B. C. A. Col. II (2). / *Aphodius* / *guatemalensis*, Bates.
- white with red border, round, printed: Type.
- white with violet border, round, printed: Lectotype.
- white handwritten: *Aphodius guatemalensis* var. *chiriquinus* Bates (Lectotypus Gordon 1971, *in litteris*).
- red, printed: *Aphodius guatemalensis* var. *chiriquinus* Bates, 1887; Lectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: V. de Chiriqui / below 4,000 ft. / Champion.
- white, handwritten: *Aphod.* / *Chiriquinus* / Bates.
- red, printed: *Aphodius guatemalensis* var. *chiriquinus* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♀, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: V. de Chiriqui / below 4,000 ft. / Champion.
- red, printed: *Aphodius guatemalensis* var. *chiriquinus* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

Material examined:

COSTA RICA: CARTAGO: Irazu, 6-7000 ft., Roger H. leg. 1 ex. (MNHNP); GUANACASTE: La Pacifica nr. Cañas, 22-26.05.1987, Riley E., Rider D. & LeDoux D. leg., 1 ex. (LSU).

MEXICO: GUANAJUATO: Guanajuato, Salle leg., 1 ex. (MNHNP).

PANAMA: CHIRIQUÍ: Boquete, 1200 m, 29.05.1938, Spangler P. J. leg., 1 ex. (USNM); Hartmann's finca, St. Clara, 15-18.06.1985, Riley E. & Rider D. leg., 11 exx. (LSU); *ibidem*, 18.06.1985, Riley E. & Rider D. leg., 1 ex. (LSU); 6 mi E Volcán, 09.12.1952, 3 exx. (USNM)

Distribution from literature:

- PANAMA: Volcan de Chiriqui (Bates, 1887: 89).

Remarks: This taxon a simple colour variation of *guatemalensis*.

20. *Aphodius charmionus* Bates, 1887

Current status: *Blackburneus* (sensu lato) *charmionus* (Bates, 1887) comb. nov. (Figs. 38-41).

References

Aphodius charmionus Bates, 1887: 89; Blackwelder, 1944: 212.
Aphodius (Volinus) charmionus; Schmidt A., 1913: 142.
Aphodius (Chilothorax) charmionus; Dellacasa M., 1988: 108.

Type locality: Jalapa, Mexico [Veracruz].

Type depository: Natural History Museum. London.

Redescription: length 3-3,5 mm; oblong, moderately convex, shiny, glabrous. Piceous; head anteriorly, pronotum at sides, testaceous; elytra yellowish with juxtasutural interstices and sides more or less widely piceous; usually also elytral apical third piceous with a yellowish spot, more or less extended, on preapical declivity. Head with epistome feebly gibbous, coarsely, regularly and rather densely punctured; clypeus subsinuate at middle, widely rounded at sides, quite distinctly bordered, border near imperceptibly bristled; genae obtusely rounded, shortly ciliate, feebly but distinctly more protruding than eyes; latter normal sized; frontal suture extremely fine, not tuberculate at all; front coarsely, regularly and densely punctured. Pronotum transverse, convex, rather finely and subregularly punctured, punctation coarser and denser laterally; sides thinly bordered, border glabrous; hind angles obtusely rounded; base not bordered. Scutellum small, triangularly elongate, with curved sides, superficially and finely punctured near base and with trace of longitudinal groove at each side. Elytra oval-elongate, regularly convex and with epipleural carina distinctly raised at shoulder, finely striate; striae distinctly crenulate; interstices feebly convex, sparsely, irregularly, and finely punctured, apically distinctly microreticulate. Fore tibiae distally tridentate and proximally serrulate at outer margin; upperside coarsely, rather sparsely and irregularly punctured. Middle and hind tibiae with distinct transverse carinae on outer face; fimbriate with rather short and progressively unequal apical spinules. Superior apical spur of hind tibiae distinctly shorter than first tarsal segment; latter as long as following three combined. Male: pronotum relatively more transverse; metasternal plate distinctly grooved. Female: pronotum relatively narrower frontward; metasternal plate nearly flat.

Distribution: Mexico, El Salvador, Costa Rica.

Type material:

1 ♂, **lectotype herein designated** (NHML), bearing the following labels:

- white printed: Jalapa,/ Mexico/ Hoege.
- white, printed: Sp. figured.
- white, handwritten: *Aphod./ charmionus/ Bates*.
- white, printed: B. C. A., Col., II (2)./ *Aphodius*.
- white with red border, round, printed: Type.
- white with violet border, round, printed: Lecto-/ type.
- white, with red printing: Lectotype/ [handwritten black:] *Aphodius/ charmionus/ Bates/* [printed red:] Gordon, 1970.
- red, printed: *Aphodius charmionus* Bates, 1887; Lectotypus, Dellacasa M. des. 2000.

1 ♀, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Jalapa,/ Mexico/ Hoege.
- white, handwritten: *charmionus/ Bates*.
- red, printed: *Aphodius charmionus* Bates.1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♂, 3 ♀♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, printed: Jalapa,/ Mexico/ Hoege.
- red, printed: *Aphodius charmionus* Bates 1887; Paralectotypus, Dellacasa M. des. 2000.

Material examined:

COSTA RICA: CARTAGO: Irazú Vol., 2400 m, 18.05.1951, Cartwright O. L. leg., 3 exx. (USNM).

EL SALVADOR: Cerro Verde, 18.06.1958, Bottimer L. J. leg., 13 exx. (USNM).

MEXICO: VERACRUZ: Camino a Potrero Nuevo, m 2700, Cuiyachapa, 15.11.1994, Arellano L. & Zunino M. leg., 1 ex. (DCG); Carr. Actopan-Veracruz, Desv. Otates, El Zeltlal, m 480, 24.09.1994, Arellano L. leg., 1 ex. (DCG); Cuiyachapa, m 2700, Mpio. Coscomatepec, 05.02.1996, Alvarado M. leg., 1 ex. (DCG); *ibidem*, 06.02.1999, Alvarado M. leg., 1 ex. (DCG); *ibidem*, 08.03.1999, Alvarado M. & Cruz M. leg., 1 ex. (DCG); *ibidem*, 11.05.1999, Cruz M. leg., 1 ex. (MSNTC); *ibidem*, 14.06.1999, Alvarado M. *et al.* leg., 58 exx. (DCG, MSNTC); *ibidem*, 20.06.2000, Cabrero F. & Passerat J. leg., 1 ex. (DCG); *ibidem*, 13.07.1998, Cruz M. leg., 8 exx. (DCG, MSNTC); *ibidem*, VI-VII.1998, Sosa J. S. *et al.* leg., 44 exx. (DCG); *ibidem*, VII-VIII.1999, Sosa J. S. leg., 45 exx. (DCG); *ibidem*, 04.09.2000, Alvarado M. leg., 1 ex. (DCG); *ibidem*, 14.10.1998, Cruz M. & Sosa J. leg., 6 exx. (MSNTC); *ibidem*, 08.12.1998, Alvarado M. & Sosa J. leg., 1 ex. (MSNTC); Oxtlapa, m 2100, Mpio. Xico, 18.11.1999, Dellacasa M. leg., 5 exx. (DCG); 2 Km desp. Oxtlapa, m 2400, Mpio. Xico, 18.11.1999, Dellacasa M. leg., 2 exx. (DCG); San José Paso Nuevo, m 2300, Mpio. Xico, 09.03.2000, Martínez I. & Huerta C. leg., 1 ex. (DCG); Km 14,5 Xico-Oxtlapa, m 2050, Mpio. Xico, 18.11.1999, Dellacasa M. leg., 5 exx. (DCG, IEX).

Distribution from literature:

- MEXICO: Jalapa (Bates, 1887: 89).

21. *Aphodius diminutus* Bates, 1887.

Current status: *Blackburneus* (sensu lato) *diminutus* (Bates, 1887) comb. nov. (Figs. 30, 35-37).

References

Aphodius diminutus Bates, 1887: 89; Blackwelder, 1944: 212.
Aphodius (Blackburneus) diminutus; Schmidt A., 1913: 137; Dellacasa M., 1988: 121.

Type locality: Dueñas, Guatemala.

Type depository: Natural History Museum. London.

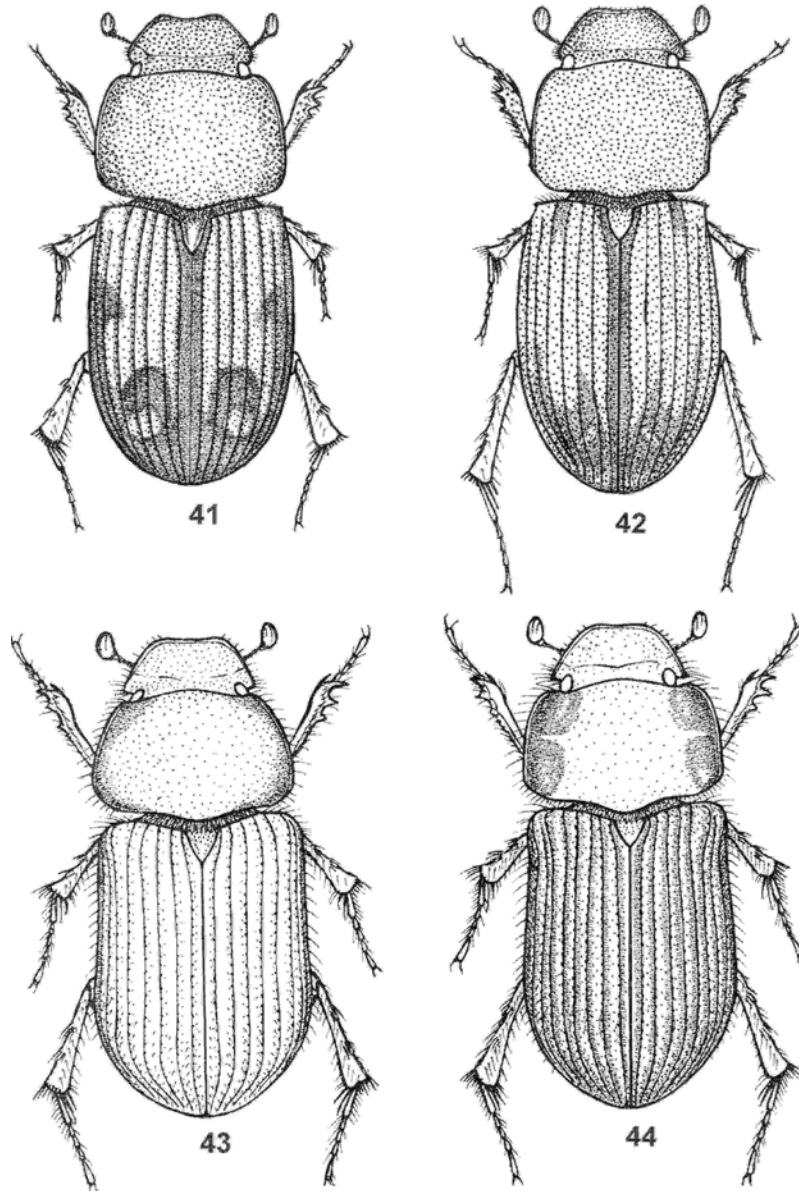
Redescription: length 2,5-3,5 mm; oblong, moderately convex, rather shiny, glabrous. Brownish; head anteriorly, and pronotum sides, reddish; elytra shadely reddish toward base. Head with epistome feebly convex, superficially microreticulate, coarsely, densely and regularly punctured; clypeus faintly sinuate at middle, rounded at sides, thinly bordered, border near imperceptibly bristled; genae rounded, very shortly ciliate, no more protruding than eyes; latter normal sized; frontal suture distinct, not tuberculate at all; front coarsely, rather densely and regularly punctured. Pronotum transverse, convex, distinctly, densely and somewhat irregularly punctured; punctation coarser and denser laterally and basally, lacking along a longitudinal areola on disc; sides thinly bordered, border glabrous; hind angles obtusely rounded, with extremely short bristles; base not bordered. Scutellum small, triangularly very elongate, with curved sides, sparsely punctured and grooved laterally. Elytra oval-elongate, regularly convex, not denticulate at shoulder, finely but deeply striate; striae feebly crenulate; interstices moderately convex, apically superficially microreticulate, distinctly and sparsely punctured. Fore tibiae distally tridentate and proximally serrulate at outer margin; upperside coarsely and irregularly punctured. Middle and hind tibiae with rather feeble transverse carinae on outer face; fimbriate with rather short and progressively unequal apical spinules. Superior apical spur of hind tibiae stout, nearly as long as inferior one, distinctly shorter than first tarsal segment; latter longer than following two combined. Male: pronotum relatively more transverse; metasternal plate distinctly grooved. Female: pronotum relatively narrower anteriorly; metasternal plate nearly flat.

Distribution: Guatemala, El Salvador.

Type material:

1 ♂, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Dueñas,/ Guatemala/ C. Champion.
- white, handwritten: *Aphod./ diminutus/ Bates.*
- white, printed: B. C. A., Col., II (2)./ *Aphodius.*
- white with red border, round, printed: Type.
- white with violet border, round, printed: Lecto-/ type.
- white, with red printing: Lectotype/ [handritten black:] *Aphodius/ diminutus/ Bates/* [printed red:] Gordon, 1970.
- red, printed: *Aphodius diminutus* Bates, 1887; Lectotypus, Dellacasa M. des. 2000.



Figures 41-44

Habitus of: 41. *Blackburneus* (sensu lato) *charmionus* (Bates, 1887) (male, length 3 mm); 42. *Gonaphodiellus opisthius* (Bates, 1887) (male, length 5 mm); 43. *Cephalocyclus durangoensis* (Bates, 1887) (male, length 7 mm); 44. *Cephalocyclus hogei* (Bates, 1887) (male, length 5 mm).

- 1 ♀, **paralectotype herein designated** (NHML), bearing the following labels:
- white, printed: Dueñas,/ Guatemala/ C. Champion.
- white, handwritten: *Aphod./ diminutus/* Bates.
- white, printed: B. C. A., Col., II (2)./ *Aphodius*.
- white with blue border, round, printed: Para-/ lecto-/type.
- red, printed: *Aphodius diminutus* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.
- 1 ♂, 1 ♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:
- white, printed: Dueñas,/ Guatemala/ C. Champion.
- white, handwritten: *Aphod./ diminutus/* Bates.
- red, printed: *Aphodius diminutus* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.
- 1 ♀, **paralectotype herein designated** (MNHNP), bearing the following labels:
- white, printed: S. Gerónimo,/ Guatemala/ Champion.
- red, printed: *Aphodius diminutus* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

Material examined:

EL SALVADOR: Cerro Verde, 18.06.1958, Cartwright O. L. leg., 3 exx. (USNM); SAN MIGUEL: Lake Olomega, 19.08.1925, Stirton R. A. leg., 1 ex. (USNM).

GUATEMALA: ESCUINTLA: [E] Zapote, VI-VII.1932, Hinton H. E. & Usinger R. L. leg., 2 exx. (DCG).

Distribution from literature:

- GUATEMALA: El Tumbador, Dueñas, San Gerónimo, Chiacam (Bates, 1887: 89).

22. *Aphodius erythrinus* Bates, 1887

Current status: *Blackburneus* (*sensu lato*) *erythrinus* (Bates, 1887) comb. nov. (Figs. 31, 51-53).

References

Aphodius erythrinus Bates, 1887: 89; Blackwelder, 1944: 212.

Aphodius (*Blackburneus*) *erythrinus*; Schmidt A., 1913: 138; Dellacasa M., 1988: 125.

Type locality: Volcan de Chiriqui, Panama.

Type depository: Natural History Museum. London.

Redescription: length 3 mm; shortly oval, strongly convex, rather dull, glabrous. Chestnut-brown; pronotum disc, scutellum and elytral suture darker. Head with epistome nearly flat, densely microreticulate, finely and sparsely punctured; clypeus subsinuate at middle, obtusely rounded at sides, quite thinly bordered, border glabrous and faintly upturned anteriorly; genae rounded, very shortly ciliate, no more protruding than eyes; frontal suture finely impressed; front desely microreticulate, finely and sparsely punctured. Pronotum transverse, convex, densely microreticulate, rather coarsely and irregularly punctured; sides rounded, thinly bordered, border glabrous; hind angles obtusely rounded; base feebly bisinuate, not bordered. Scutellum triangularly elongate, microreticulate, with trace of

Dellacasa et al.: Aphodiinae Bates in Biologia Centrali-Americana

lateral grooves, sparsely punctured. Elytra shortly oval, convex, distinctly striate; striae superficially punctured, not crenulate; interstices moderately convex, strongly microreticulate, very finely and sparsely punctured. Fore tibiae distally tridentate and proximally serrulate at outer margin; upperside with a longitudinal row of setigerous punctures. Middle and hind tibiae with feeble transverse carinae on outer face; fimbriate with rather elongate and irregularly unequal apical spinules. Superior apical spur of hind tibiae as long as inferior one and shorter than first tarsal segment; latter longer than following two combined. Male: pronotum relatively more transverse; metasternal plate distinctly grooved. Female: pronotum relatively feebly narrower anteriorly; metasternal plate nearly flat.

Distribution: Panama.

Type material:

1 ♂, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: V. de Chiriqui./ 3-4000 ft./ Champion.
- white, printed: B. C. A., Col., II (2)./ *Aphodius*.
- white, handwritten: *Aphod./ erythrinus/ Bates*.
- white with red border, round, printed: Type.
- white with violet border, round, printed: Lecto-/ type.
- white, with red printing: Lectotype/ [handwritten black:] *Aphodius/ erythrinus/ Bates/* [printed red:] Gordon, 1970.
- red, printed: *Aphodius erythrinus* Bates, 1887; Lectotypus, Dellacasa M. des. 2000.

Material examined:

PANAMA: Potrevillas, II.1934, 2 exx. (USNM); QUIRIQUI: Bugaba, Champion C. leg., 1 ex. (MNHP).

Distribution from literature:

- PANAMA: Volcan de Chiriqui (Bates, 1887: 90).

23. *Aphodius xanthus* Bates, 1887

Current status: *Blackburneus* (*sensu lato*) *xanthus* (Bates, 1887) comb. nov. (Figs. 29, 48-50).

References

Aphodius xanthus Bates, 1887: 90; Blackwelder, 1944: 212.
Aphodius (Blackburneus) xanthus; Schmidt A., 1913: 138; Dellacasa M., 1988: 216.

Type locality: Bugaba, Panama.

Type depository: Natural History Museum. London.

Redescription: length 3 mm; oblong, convex, shiny, glabrous. Testaceous, elytral suture darkened. Head with epistome convex, superficially microreticulate, finely and somewhat irregularly punctured; clypeus feebly sinuate at middle, obtusely rounded at sides, very thinly bordered, border glabrous, slightly upturned anteriorly; genae rounded, shortly and

sparsely ciliate, no more protruding than eyes; latter rather large; frontal suture distinctly impressed; front irregularly and sparsely punctured. Pronotum transverse, convex, doubly and sparsely punctured, nearly parallel-sided; latter very thinly bordered, border glabrous; hind angles obtusely rounded; base feebly bisinuate, not bordered. Scutellum triangularly elongate, faintly microreticulate, sparsely punctured. Elytra oval-elongate; finely striate; striae distinctly punctured, subcrenulate; interstices quite flat, laterally superficially microreticulate, smooth at middle, very finely and sparsely punctured. Fore tibiae distally tridentate and proximally serrulate at outer margin; upperside sparsely punctured. Middle and hind tibiae with rather strong transverse carinae on outer face; fimbriate with elongate and irregularly unequal apical spinules. Superior apical spur of hind tibiae slightly shorter than first tarsal segment; latter nearly as long as following three combined. Male: metasternal plate distinctly grooved. Female: metasternal plate nearly flat.

Distribution: Panama.

Type material:

1 ♂, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Bugaba,/ 800-1,500 ft./ Champion.
- white, printed: Sp. figured.
- white, printed: B. C. A., Col., II (2)./ *Aphodius*.
- white, handwritten: *Aphod./ xanthus/* Bates.
- white with red border, round, printed: Type.
- white with violet border, round, printed: Lecto-/ type.
- white, with red printing: Lectotype/ [handwritten black:] *Aphodius/ xanthus/* Bates;/ [printed red:] Gordon, 1970.
- red, printed: *Aphodius xanthus* Bates, 1887; Lectotypus, Dellacasa M. des. 2000.

1 ♀, **paralectotype herein designated** (NHML), bearing the following labels:

- white, printed: Bugaba,/ 800-1,500 ft./ Champion.
- white, printed: B. C. A., Col., II (2)./ *Aphodius*.
- white, handwritten: *Aphod./ xanthus/* Bates.
- red, printed: *Aphodius xanthus* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♀, **paralectotype herein designated** (MNHNP), bearing the following label:

- white, printed: Bugaba,/ Panama/ Champion.
- red, printed: *Aphodius xanthus* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

4 ♂♂, 2 ♀♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, printed: V. de Chiriqui./ 2-3000 ft./ Champion.
- red, printed: *Aphodius xanthus* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: V. de Chiriqui./ 25-4000 ft./ Champion.
- red, printed: *Aphodius xanthus* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

Material examined:

PANAMA: CHIRIQUI: Dolega, 25.06.1964, Broce A. leg., 2 exx. (DCG); Dolequita, 25.07.1964, Broce A. leg., 4 exx. (DCG); 145 exx. (USNM); Elvira Farm, 15.07.1964, Broce A. leg., 1 ex. (DCG).

Distribution from literature:

- PANAMA: Volcan de Chiriqui, Bugaba (Bates, 1887: 90).

24. *Aphodius bifrons* Bates, 1887

Current status: *Drepanocanthoides larreae* (Horn, 1887) comb. nov. (Figs. 2, 5-7).

References

Aphodius larreae Horn, 1887: 41.

Aphodius bifrons Bates, 1887: 90; Bates, 1889: 392 (as synonym of *larreae*); Blackwelder, 1944: 212; Dellacasa M., 1988: 97.

Aphodius (Erytus) larreae; Schmidt A., 1913: 127; Schmidt A., 1922: 81; Blackwelder, 1944: 212; Dellacasa M., 1988: 150.

Type locality of *Aphodius bifrons*: Villa Lerdo, Durango [Mexico].

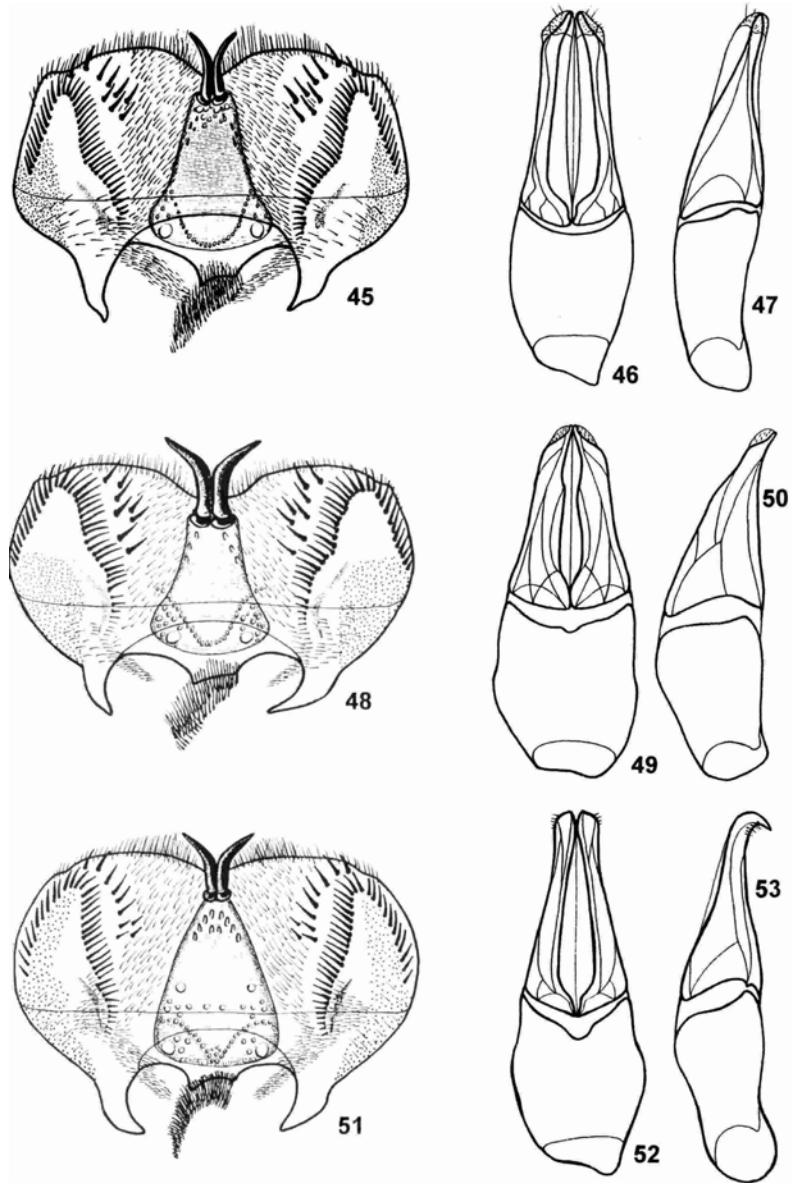
Type depository of *Aphodius bifrons*: Natural History Museum. London.

Type locality of *Aphodius larreae*: Tex.[as], U.S.A.

Type depository of *Aphodius larreae*: Museum of Comparative Zoology. Harvard University, Cambridge. MA (U.S.A.).

Redescription: length 4-5 mm; oblong, moderately convex, alutaceous, glabrous except elytra laterally and apically pubescent. 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 regularly punctured throughout, punctation laterally coarser, median subclypeal depression impunctate; clypeus deeply sinuate at middle and strongly lobate at each side, lobes upturned, sides arcuate, thickly bordered; genae obtusely rounded, elongately ciliate, no more protruding than eyes; latter rather large; frontal suture distinct, not tuberculate at all; front distinctly and sparsely punctured. Pronotum transverse, moderately convex, finely regularly and distinctly punctured, punctation coarser and denser on sides; latter arcuate, thinly bordered, border elongately and sparsely ciliate; hind angles rounded; base feebly bisinuate, very finely bordered. Scutellum curved at sides, flat, distinctly punctured basally, punctures shortly setigerous. Elytra finely striate, striae rather fine, superficially but distinctly punctured, crenulate; interstices slightly convex, finely microreticulate, irregularly but distinctly punctured; epipleura fimbriate with long pale hairs. Superior apical spur of hind tibiae shorter than first tarsal segment; latter longer than following two combined. Male: clypeus relatively more deeply and narrowly sinuate at middle; fore tibiae somewhat sinuate at inner margin and with apical spur cultriform. Female: clypeus relatively less deeply and more broadly sinuate at middle; fore tibiae straight at inner margin and with apical spur slender, arcuate and apically acuminate.

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



Figures 45-53

Epipharynx and aedeagus (dorsal and lateral view) of: 45-47. *Blackburneius* (sensu lato) *guatemalensis* (Bates, 1887) (Ostuncalco, Quezaltenango, Guatemala); 48-50. *Blackburneius* (sensu lato) *xanthus* (Bates, 1887) (V. de Chiriquí, Panama); 51-53. *Blackburneius* (sensu lato) *erythrinus* (Bates, 1887) (Bugaba, Panama).

Type material:

1 ♂, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Villa Lerdo,/ Durango/ Höge.
- white, printed: Sp. figured.
- white, handwritten: *Aphodius/ bifrons/* Bates.
- white, printed: B. C. A., Col., II (2)./ *Aphodius/* [handwritten:] *larreae*, Horn.
- white with red border, round, printed: Type.
- white with violet border, round, printed: Lecto-/ type.
- white, with red printing: Lectotype/ [handwritten black:] *Aphodius/ bifrons/* Bates;/ [printed red:] Gordon, 1970.
- red, printed: *Aphodius bifrons* Bates, 1887; Lectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: San Pedro,/ Coahuila/ Dr. Palmer.
- white, handwritten: *Aphodius/ bifrons/* ♂ Bates.
- red, printed: *Aphodius bifrons* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♀, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Villa Lerdo,/ Durango/ H. Höge.
- white, handwritten: *Aphodius/ Larreae/* Horn.
- red, printed: *Aphodius bifrons* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (CNC), bearing the following labels:

- white, printed: Villa Lerdo,/ Durango/ H. Höge.
- white, printed: B. C. A., Col., II (2)./ *Aphodius larreae*, Horn (handwritten).
- yellow, printed: COTYPE/CNCNo 8085/ *Aph. bifrons* Bates (handwritten); Paralectotype, R. Gordon 2001.

Material examined:

MEXICO: CHIHUAHUA: Cd. Juarez, Wickham leg., 1 ex. (DCG), 5 exx. (USNM); COAHUILA: Boquillas del Carmen, 1850 ft., 23.05.1959, Howden H. F. & Becker E. C. leg., 3 exx. (DCG); Torreón, 28.05.1937, Cartwright O. L. leg., 1 ex. (DCG), 5 exx. (USNM).

U.S.A.: ARIZONA: Florence, VIII.1903, Biederman leg. 1 ex. (DCG); Phoenix, Robinson M. leg., 1 ex. (DCG).

Distribution from literature:

- MEXICO: San Pedro in Coahuila, Villa Lerdo in Durango (Bates, 1887: 90).

Remarks: Bates (1887) described *Aphodius bifrons* from San Pedro in Coahuila and from Villa Lerdo in Durango. Based on Horn's advice, he later (1899) he synonymized this taxon with *Aphodius larreae* Horn, 1887. Though most specimens examined were collected at light, Horn reported in his original description that *larreae* was "taken [...] on the flowers of *Larrea mexicana*". Aedeagal, epipharyngeal and other morphological characters place this species in the genus *Drepanocanthoides* (type species: *Aphodius walshii* Horn, 1870) as delimited in a paper by Dellacasa G. *et al.* (2001).

The two taxa can be keyed as follows:

- 1 Testaceous, pronotal disc and juxtasutural interstice of elytra reddish-brown; clypeus deeply sinuate at middle; males with clypeus strongly lobate at sides of median sinuosity, protibiae slightly angulate at basal third and subsinuate at inner margin before insertion of the apical spur, latter relatively slender, laterally somewhat compressed, slightly incurvate downward and simply curved apically. Length 4-5 mm. Mexico (Chihuahua, Coahuila, Durango), U.S.A. (Arizona, New Mexico, Texas) **larreae**
- 1' Head and pronotum brownish, latter broadly yellowish on sides, elytra yellowish with a cloudy discal spot brownish; clypeus feebly sinuate at middle, widely rounded at sides in both sexes, males with fore tibiae distally strongly angulately widened at inner margin, the apical spur relatively stouter, flat, spatulate and somewhat inwardly hooked apically. Length 5-6 mm. Canada (Alberta), U.S.A. (Colorado, North Dakota, South Dakota, Kansas, Nebraska) **walshi**

24 (A). *Aphodius omiltemius* Bates, 1889

Current status: = *Cephalocyclus mexicanus* (Harold, 1862) **new synonymy**

References

- Aphodius omiltemius* Bates, 1889: 392; Blackwelder, 1944: 213, Schmidt A., 1913: 172 (*Subgenere incerto*).
Aphodius (Platyderides) omiltemius; Dellacasa M., 1988: 172.

Type locality: Omilteme in Guerrero, Mexico.

Type depository: Natural History Museum. London.

Type material:

1 ♀, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Omilteme,/ Guerrero/ 8000 ft./ July. H.H. Smith.
- white, handwritten: *Aphodius/ omiltemius/ Bates*.
- white, printed: B. C. A., Col., II (2)./ *Aphodius*.
- white with red border, round, printed: Type.
- white with violet border, round, printed: Lecto-/ type.
- white, with red printing: Lectotype/ [handritten black:] *Aphodius/ omiltemius/ Bates/* [printed red:] Gordon, 1971.
- red, printed: *Aphodius omiltemius* Bates, 1889; Lectotypus, Dellacasa M. des. 2000.

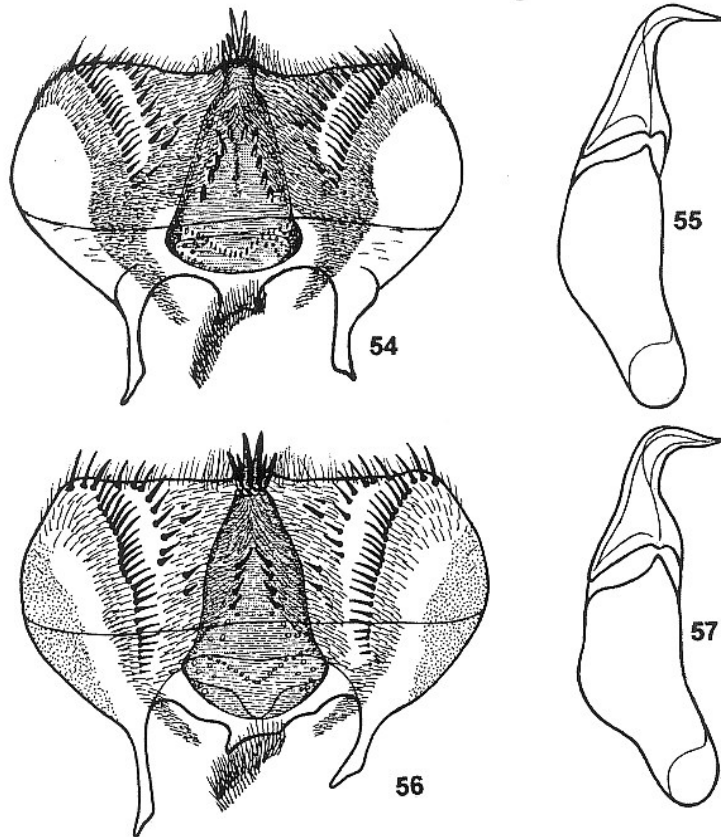
1 ♀, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Omilteme,/ Guerrero/ 8000 ft./ July. H.H. Smith.
- white, handwritten: *Aphodius/ omiltemius/ Bates*.
- red, printed: *Aphodius omiltemius* Bates, 1889; Paralectotypus, Dellacasa M. des. 2000

Distribution from literature:

- MEXICO: Omilteme in Guerrero (Bates, 1889: 392).

Remarks: Comparison of type specimens of both *mexicanus* and *omiltemius* revealed no significant differences, therefore they are considered to be synonymous.



Figures 54-57

Epipharynx and aedeagus (lateral view) of: 54-55. *Cephalocyclus durangoensis* (Bates, 1887) (Refugio in Durango, Durango, Mexico); 56-57. *Cephalocyclus hogei* (Bates, 1887) (Real de Arriba, Edo. de México, Mexico).

25. *Aphodius fuliginosus* Harold, 1863

Current status: *Cephalocyclus fuliginosus* (Harold, 1863).

References

- Aphodius fuliginosus* Harold, 1863: 333; Bates, 1887: 90; Blackwelder, 1944: 212.
Aphodius (Platyderus) fuliginosus; Schmidt A., 1913: 123.
Aphodius (Platyderides) fuliginosus; Schmidt A., 1922: 47; Dellacasa M., 1988: 132.
Cephalocyclus fuliginosus; Dellacasa M., Gordon & Dellacasa G., 1998: 159 (new combination; habitus, epipharynx and aedeagus figured; lectotype designated).

Distribution: Mexico.

Material examined:

MEXICO: DISTRITO FEDERAL: Cd. Universitaria, 29.06.1971, Morón M. A. leg., 2 exx. (DCG); Mexico city, 7 exx. (MNHNP); DURANGO: Mesa Larga, Rva. Biosfera La Michilia, 18.06.1986, Pichard & Villalobos leg., 18 exx. (IEX); Minillas, Res. Biosf. La Michilia, VII-X.1995, Murillo E. leg., 83 exx. (IEX); *ibidem*, 08.08.1994, Anduaga S. leg., 9 exx. (DCG); Piedra Herrada, Res. Biosf. La Michilia, 13/24.07.1989, Anduaga S. leg., 68 exx. (IEX); *ibidem*, 08.08.1994, Anduaga S. leg., 9 exx. (DCG); *ibidem*, Súchil, m 2400, 23/25.06.1979, 41 exx. (IEX); *ibidem*, 16.08.1979, 1 ex. (IEX); Rancho El Aleman, Res. Biosf. La Michilia, 02.06.1979, Zunino M. leg., 4 exx. (DCG); *ibidem*, 03.07.1979, Zunino M. leg., 63 exx. (DCG); *ibidem*, 06.07.1979, Zunino M. leg., 4 exx. (DCG); Rancho de la Peña, Res. Biosf. La Michilia, 03.07.1979, Zunino M. leg., 23 exx. (DCG); *ibidem*, 06.07.1979, Zunino M. leg., 29 exx. (DCG); Reserva Biosfera La Michilia, m 2400, 07.07.1986, Terron R. leg., 244 exx. (IEX); *ibidem*, 04/07.08.1986, Terron L. leg., 334 exx. (IEX); Refugio, Höge leg., 3 exx. (MNHNP); EDO. DE MÉXICO: Temascaltepec, carr. Valle de Bravo, 04.06.1979, Zunino M. leg., 1 ex. (DCG); Macho de Agua, Zitacuaro, 23.06.1979, Zunino M. leg., 1 ex. (DCG); MICHOACÁN: Maravatío, 20.06.1979, Zunino M. leg., 7 exx. (DCG); OAXACA: Oaxaca, Hoege leg., 4 exx. (MNHNP); PUEBLA: San Martín Tex., 28.06.1997, Cacelin leg., 73 exx. (IEX); TLAXCALA: Tlaxco, 02.06.1979, Zunino M. leg., 3 exx. (DCG).

Distribution from literature:

– MEXICO: Guanajuato, Puebla, Oaxaca, Refugio in Durango (Bates, 1887: 90); Chapingo (Gibson & Carrillo, 1959: 108); Durango, Biosphere Reserve “La Michilia” (Morón & Deloya, 1991: 260); Morelos, Cuernava (Deloya *et al.*, 1993: 22).

26. *Aphodius hogei* Bates, 1887

Current status: *Cephalocyclus hogei* (Bates, 1887) comb. nov. (Figs. 44, 56-57).

References

Aphodius hogei Bates, 1887: 90; Blackwelder, 1944: 212.
Aphodius (Platyderus) hogei; Schmidt A., 1913: 123.
Aphodius (Platyderides) hogei; Schmidt A., 1922: 49; Dellacasa M., 1988: 140.
Cephalocyclus hogei; Dellacasa M., Gordon & Dellacasa G., 1998: 142.

Type locality: Las Vigas, Mexico.

Type depository: Natural History Museum. London.

Redescription: length 5-6 mm; oblong, moderately convex, nearly glabrous; head and pronotum rather shiny, elytra almost dull. Piceous, elytra brownish. Head with epistome faintly convex, microreticulate, sparsely, finely and somewhat irregularly punctured; clypeus subtruncate anteriorly, widely rounded at sides, quite thickly bordered, border rather elongately bristled laterally; genae acute, posteriorly truncate, elongately ciliate, strongly more protruding than eyes; frontal suture finely impressed; front sparsely and superficially punctured. Pronotum widely transverse, feebly convex, distinctly flattened on sides, minutely reticulate, finely, superficially and sparsely punctured; sides thickly bordered, border elongately ciliate; hind angles obtusely truncate; base bisinuate, not bordered. Scutellum triangularly elongate, strongly microreticulate, sparsely punctured. Elytra elongate, feebly widened toward apex and with short sparse hairs on preapical declivity, deeply striate; striae rather superficially punctured, subcrenulate; interstices moderately convex, strongly microreticulate, sparsely punctured; epipleura distinct and

elongately ciliate. Fore tibiae distally tridentate and proximally serrulate at outer margin; upperside smooth. Middle and hind tibiae with feeble transverse carinae on outer face; fimbriate with elongate and irregularly unequal apical spinules. Superior apical spur of hind tibiae as long as first tarsal segment; latter as long as following three combined. Male: head relatively more large and transverse; genae sharply angulate; pronotum relatively more transverse; fore tibiae more slender and elongate with the apical spur stout and abruptly bent downward. Female: head relatively smaller and less transverse; genae less angulate and relatively less protruding; pronotum narrower anteriorly; fore tibiae shorter and stouter with apical spur slender, elongate and straight.

Distribution: Mexico, Guatemala.

Type material:

1 ♂, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Las Vigas,/ Mexico/ Hoega.
- white, printed: B. C. A., Col., II (2)./ *Aphodius/ Hogeii*, Bates.
- white, handwritten: Högei/ ♂
- white with red border, round, printed: Type.
- white with violet border, round, printed: Lecto-/ type.
- white, with red printing: Lectotype/ [handwritten black:] *Aphodius/ hogeii* Bates;/ [printed red:] Gordon, 1970.
- red, printed: *Aphodius hogeii* Bates, 1887; Lectotypus, Dellacasa M. des. 2000.

7 ♂♂, 10 ♀♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, printed: Las Vigas,/ Mexico/ Hoega.
- red, printed: *Aphodius hogeii* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

2 ♂♂, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, printed: Las Vigas,/ Mexico/ Hoega.
- white, handwritten: Högei/ ♂
- red, printed: *Aphodius hogeii* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000

1 ♀, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Las Vigas,/ Mexico/ Hoega.
- white, handwritten: Högei/ ♀
- red, printed: *Aphodius hogeii* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Huitzilac./ Morelos/ Höge.
- red, printed: *Aphodius hogeii* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000

1 ♀, **paralectotype herein designated** (USNM), bearing the following labels:

- white, printed: Las Vigas,/ Mexico/ Höge.
- red, printed: U.S.N.M. Paratype No. 49714; Paralectotype, R. Gordon 2001.

1 ♂, **paralectotype herein designated** (CNC), bearing the following labels:

- white, printed: Las Vigas,/ Mexico/ Höge.

- white, printed: B. C. A., Col., II (2)./ *Aphodius/hogei*, Bates.
- yellow, printed: COTYPE/CNCNo. 8086/ *Aph. hogei* Bates (handwritten); Paralectotype, R. Gordon 2001.

Material examined:

GUATEMALA: SAN MARCOS: 27.0 Km NW San Marcos, 2900 meters, 26.05.1973, Erwin & Hevel (Central American Expedition) leg., 20 exx. (USNM).

MEXICO: EDO. DE MÉXICO: El Guarda, m 2800, 27.07.1969, 1 ex. (DCG); La Marquesa, 20.06.1979, Zunino M. leg., 56 exx. (DCG); Rancheria San Antonio, m 2250, N19°19'11.9"-W100°05'54.9", carr. - Valle de Bravo, 27.07.2001, Dellacasa M. & Martínez I. leg., 22 exx. (DCG, MSNTC); Real de Arriba, Temascaltepec, VII.1933, Hinton H. E. & Usinger R. L. leg., 4 exx. (DCG); *ibidem*, 6.VII. 1933, Hinton H. E. & Usinger R. L. leg., 33 exx. (USNM); Valle del Silencio, VI.1980, Zunino M. leg., 1 ex. (DCG); MICHOACÁN: La Estacada, m 2450, N19°24'04.3"-W101°32'59.8", carr. Méx-41 Patzcuaro-Tacámbaro, 25.07.2001, Dellacasa M. & Martínez I. leg., 15 exx. (MSNTC); OAXACA: Oaxaca, Hoege leg., 1 ex. (MNHNP); QUERÉTARO: La Quebrada, m 2300, N21°07'28.1"-W99°38'44.4", carr. Pinal de Amoles-Peña Blanca, 20.07.2001, Dellacasa M. & Martínez I. leg., 4 exx. (MSNTC); Parador Sta. Martha, m 1550, N21°16'09.2"-W99°09'50.4", La Vuelta dint., 19.07.2001, Dellacasa M. & Martínez I. leg., 3 exx. (MSNTC); VERACRUZ: Cuiyachapa, Mpio. Coscomatepec, m 2700, 12.05.1998, Cruz M. & Olivarez M. leg., 15 exx. (DCG); *ibidem*, 14.06.1999, Alvarado M. *et al.* leg., 188 exx. (DCG); *ibidem*, 18.06.1997, Martínez I. & Cruz M. leg., 7 exx. (IEX); *ibidem*, 20.06.2000, Cabrero F. *et al.* leg., 200 exx. (DCG); *ibidem*, 28.06.1999, Cruz M. leg., 15 exx. (IEX); *ibidem*, 13.07.1998, Cruz M. & Alvarado M. leg., 160 exx. (DCG); Estacion Las Lajas, camino, 13.06.1994, Arellano L. & Sanchez leg., 6 exx. (DCG); San José Aguazuelas, Perote dint., m 2800, N19°25'069"-W91°12'406", 02.07.2001, Dellacasa M. leg., 125 exx. (DCG, MSNTC); *ibidem*, 02.07.2001, Suarez T. leg., 32 exx. (MSNTC); *ibidem*, 18.07.2000, Pensado T. *et al.* leg., 27 exx. (MSNTC); *ibidem*, m 2884, 02.07.2001, Dellacasa M. leg., 184 exx. (MSNTC); Texmola, 15.06.1979, Zunino M. leg., 136 exx. (DCG).

Distribution from literature:

- MEXICO: Las Vigas, Mexico City, Huitzilac, Pachuca (Bates, 1887: 91); San José de Aguazuelas, Veracruz (Lobo & Halffter, 2000).

26.1. *Aphodius hogei* var. *durangoensis* Bates, 1887

Current status: *Cephalocyclus durangoensis* (Bates, 1887) stat. nov. & comb. nov. (Figs. 43, 54-55).

References

- Aphodius hogei* var. *durangoensis* Bates, 1887: 91; Blackwelder, 1944: 212.
Aphodius (Platyderus) durangoensis; Schmidt A., 1913: 123 (as synonym of *hogei*).
Aphodius (Platyderides) durangoensis; Schmidt A., 1922: 49 (as synonym of *hogei*); Dellacasa M., 1988: 123.
Cephalocyclus durangoensis; Dellacasa M., Gordon & Dellacasa G., 1998: 142.

Type locality: Refugio in Durango [Edo. Durango, Mexico].

Type depository: Natural History Museum. London.

Redescription: length 6-7 mm; oval-elongate, moderately convex, shiny; nearly glabrous. Brownish; epistome, disc of pronotum and elytral suture darker. Head transverse with epistome feebly gibbous at centre, finely sparsely and subregularly punctured, punctation somewhat irregular and coarser distally; clypeus anteriorly subtruncate, widely rounded at sides; distinctly bordered, border elongately and sparsely ciliate laterally; genae acutely angulate, posteriorly truncate, elongately and sparsely ciliate, much more protruding than eyes; frontal suture extremely fine and faintly trigibbous; front sparsely and subregularly punctured. Pronotum widely transverse, moderately convex, distinctly flattened on sides, finely and sparsely punctured, punctation sparser on disc, denser on sides; latter rounded and with cerciniform border sparsely and elongately ciliate; hind angles obliquely truncate; base bisinuate, not bordered. Scutellum triangular with curved sides, superficially microreticulate, sparsely but rather coarsely punctured. Elytra subparallel-sided, moderately convex, on preapical declivity with short and sparse yellowish hairs; epipleura wide, sparsely and elongately ciliate; striae fine, subcrenulate; interstices nearly flat, finely microreticulate, superficially and sparsely punctured. Fore tibiae distally tridentate and proximally subserrulate at outer margin; upperside smooth. Middle and hind tibiae with strong transverse carinae on outer face; fimbriate with elongate and irregularly unequal apical spinules. Superior apical spur of hind tibiae as long as first tarsal segment; latter nearly as long as following three combined. Male: head larger, relatively less convex; genae strongly protruding outward; pronotum more transverse and less convex; fore tibiae apical spur stout, strong, apically acuminate and abruptly bent downward. Female: head smaller, relatively more convex; genae less protruding outward; pronotum subquadrate, relatively more convex; fore tibial apical spur slender, straightly frontward directed.

Distribution: Mexico

Type material:

1 ♂, **lectotype herein designated** (NHML), bearing the following labels:

- white, printed: Refugio,/ Durango/ Höge.
- white, handwritten: Högei var/ *durangoensis*[s]/ ♂
- white, printed: B. C. A., Col., II (2)./ *Aphodius/ Hoge*i, Bates.
- white with red border, round, printed: Type.
- white with violet border, round, printed: Lecto-/ type.
- white, with red printing: Lectotype/ [handwritten black:] *Aphodius/ hoge*i var. *durangoensis*/ Bates;/ [printed red:] Gordon, 1971.
- red, printed: *Aphodius hoge*i var. *durangoensis* Bates, 1887; Lectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (MNHNP), bearing the following labels:

- white, printed: Refugio,/ Durango/ Höge.
- white, handwritten: Högei var./ *Durangoensis*/ Bates ♂
- red, printed: *Aphodius hoge*i var. *durangoensis* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

2 ♂♂, 1 ♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, printed: Refugio,/ Durango/ Höge.
- red, printed: *Aphodius hoguei* var. *durangoensis* Bates, 1887; Paralectotypus, Dellacasa M. des. 2000.

1 ♂, **paralectotype herein designated** (USNM), bearing the following labels:

- white, printed: Refugio,/ Durango/ Höge.
- red, printed: U.S.N.M. Paratype No. 49715; Paralectotype, R. Gordon 2001.

1 ♂, **paralectotype herein designated** (CNC), bearing the following labels:

- white, printed: Refugio,/ Durango/ Höge.
- white, handwritten: Högei var. *Durangoensis*.
- yellow, printed: COTYPE/CNCNo. 8087/ *Aph. hoguei durangoensis* Bates (handwritten); Paralectotype, R. Gordon 2001.

Material examined:

MEXICO: DURANGO: 10 mi. W El Salto, 9000 ft., 17.06.1964, Martin J. E. H. leg., 4 exx. (DCG); *ibidem*, 20.06.1964, Martin J. E. H. leg., 1 ex. (DCG); *ibidem*, 30.06.1964, Martin J. E. H. leg., 2 exx. (DCG); *ibidem*, 05.07.1964, Martin J. E. H. leg., 2 exx. (USNM); Rancho de La Peña, Res. Biosf. La Michilia, 06.07.1979, Zunino M. leg., 35 exx. (DCG); Refugio, Höge leg., 1 ex. (DCG); Reserva Biosfera La Michilia, m 2400, 04/06.07.1986, Terron R. leg., 3 exx. (IEX).

Distribution from literature:

– MEXICO: Refugio in Durango (Bates, 1887: 91); Durango, Biosphere Reserve “La Michilia” (Morón & Deloya, 1991: 262).

Remarks: Significant differences in aedeagal, epipharyngeal, and other morphological characters indicate that *durangoensis* is valid species instead of a “*varietas*” of *hoguei*.

27. *Aphodius mexicanus* Harold, 1862

Current status: *Cephalocyclus mexicanus* (Harold, 1862).

References

Aphodius mexicanus Harold, 1862: 380; Bates, 1887: 91; Blackwelder, 1944: 213.
Aphodius (Platyderus) mexicanus; Schmidt A., 1913: 123.
Aphodius (Platyderides) mexicanus; Schmidt A., 1922: 49; Dellacasa M., 1988: 162.
Cephalocyclus mexicanus; Dellacasa M., Gordon & Dellacasa G., 1998: 148 (new combination; habitus epipharynx and aedeagus figured; lectotype designated).

Distribution: Mexico, Guatemala.

Material examined:

GUATEMALA: EL QUICHÉ: Quiche Mts., 7-9000 ft., Champion leg., 1 ex. (MNHNP).

MEXICO: DISTRITO FEDERAL: Mexico city, 3 exx. (MNHNP); Mexico city, Höge leg., 1 ex. (MNHNP); DURANGO: Rancho de la Peña, Res. Biosf. La Michilia, 06.07.1979, Zunino M. leg., 3 exx. (DCG); HIDALGO: Zacualtipán, Höge leg., 1 ex. (DCG); JALISCO: El Tapeiztec, Mpio. Manantlan, m 2300,

Dellacasa et al.: Aphodiinae Bates in Biología Centrali-Americana

14.07.1989, Rivera L. leg., 3 exx. (DCG); *ibidem*, m 3200, Sierra Manantlan, 19.07.1989, Garcia E. leg., 1 ex. (DCG); EDO. DE MÉXICO: Chalma, México C., m 1550, 05.07.1980, Zunino M. leg., 3 exx. (DCG); El Jacal dint., m 2300, N19°24'13.1"-W100°05'53.9", carr. Méx-15 Zitácuaro-Toluca, 27.07.2001, Dellacasa M. leg., 2 exx. (MSNTC); Rancheria San Antonio, m 2250, N19°19'11.9"-W100°05'54.9", carr. -Valle de Bravo, 27.07.2001, Dellacasa M. & Martínez I. leg., 58 exx. (DCG, MSNTC); Valle de Bravo, 02.07.1976, Reyes P. leg., 3 exx. (DCG); Zitácuaro, 25.06.1979, Zunino M. leg., 3 exx. (DCG); MICHOACAN: La Estacada, m 2450, N19°24'04.3"-W101°32'59.8", carr. Méx-41 Patzcuaro-Tacámbaro, 25.07.2001, Dellacasa M. & Martínez I. leg., 7 exx. (DCG, MSNTC); Maravatío, 20.06.1979, Zunino M. leg., 2 exx. (DCG); *ibidem*, 25.06.1979, Zunino M. leg., 38 exx. (DCG); Mil Cumbres, m 2000, N19°39'17.2"-W100°59'38.8", carr. Méx-15 Morelia-Cd. Hidalgo, 26.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); Puerto El Tigre, 22.06.1979, Zunino M. leg., 7 exx. (DCG); Sta. Clara del Cobre dint., m 2200, N19°24'34.1"-W101°35'15.5", carr. Méx-41 Patzcuaro-Tacámbaro, 25.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); Uruapan, 28.07.1980, Zunino M. leg., 2 exx. (DCG); NAYARIT: Tepic, Pochotitán, m 950, 15.07.1995, Ramirez A. leg., 2 exx. (IEX); OAXACA: Juquila, Salle leg., 3 exx. (MNHNP); Oaxaca, Hoega leg., 1 ex. (MNHNP); Parada, Salle leg., 1 ex. (MNHNP); San Miguel Sta. Flor, m 2260, 30.06.1998, Nogueira G. leg., 1 ex. (IEX); PUEBLA: Puebla, Salle leg., 1 ex. (MNHNP); QUERÉTARO: El Chubete dint., m 1350, N21°09'37.3"-W99°32'46.8", cam. de Cascada de Chuveje-San Pedro, 20.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); El Madroño, m 1500, El Lobo dint., N21°17'07.9"-W99°08'36.4", carr. Méx-120, 19.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (MSNTC); La Quebrada, m 2300, N21°07'28.1"-W99°38'44.4", carr. Pinal de Amoles-Peña Blanca, 20.07.2001, Dellacasa M. & Martínez I. leg., 11 exx. (DCG, MSNTC); Parador Sta. Martha, m 1550, N21°16'09.2"-W99°09'50.4", La Vuelta dint., 19.07.2001, Dellacasa M. & Martínez I. leg., 80 exx. (DCG, MSNTC).

Distribution from literature:

- MEXICO: Parada, Oaxaca, Puebla, Etla, Juquila, Mexico City (Bates, 1887: 91); 8 Km Pte. de Tulancingo (Gibson & Carrillo, 1959: 108); Morelos: Colonia del Bosque, Cuernavaca, Tenango (Deloya, 1998: 101).
- GUATEMALA: Totonicapam [= Totonicapán] (Bates, 1887: 91).

28. *Aphodius gravidus* Harold, 1863

Current status: *Cephalocyclus gravidus* (Harold, 1863).

References

- Aphodius pinguescens* Harold, *in litteris* (nomen nudum).
Aphodius gravidus Harold, 1863: 330; Bates, 1887: 91; Blackwelder, 1944: 212.
Aphodius (Platyderus) gravidus; Schmidt A., 1913: 123.
Aphodius (Platyderides) gravidus; Schmidt A., 1922: 50; Dellacasa M., 1988: 136.
Cephalocyclus gravidus; Dellacasa M., Gordon & Dellacasa G., 1998: 144 (new combination; habitus epipharynx and aedeagus figured; lectotype designated).

Distribution: Mexico.

Material examined:

MEXICO: DURANGO: Minillas, Rva. Biosfera La Michilia, 09/14.10.1989, 4 exx. (IEX); Piedra Herrada, Res. Biosf. La Michilia, 09/23.07.1989, Anduaga S. leg., 52 exx. (DCG, IEX); *ibidem*, 09.08.1989, Anduaga S. leg., 5 exx. (DCG, IEX); *ibidem*, 14.08.1989, Anduaga S. leg., 13 exx. (DCG, IEX); HIDALGO:

Zacualtipán, Höge leg., 1 ex. (DCG); JALISCO: Sierra de Manantlan, 04/05.07.1990, Rivera L. leg., 8 exx. (DCG); EDO. DE MÉXICO: Bosencheve, 19.06.1979, Zunino M. leg., 1 ex. (DCG); Rancheria San Antonio, m 2250, N19°19'11.9"-W100°05'54.9", carr. -Valle de Bravo, 27.07.2001, Dellacasa M. & Martínez I. leg., 2 exx. (DCG); Temascaltepec, carr. Valle de Bravo, 04.06.1979, Zunino M. leg., 7 exx. (DCG); El Jacal dint., m 2300, N19°24'13.1"-W100°05'53.9", carr. Méx-15 Zitácuaro-Toluca, 27.07.2001, Dellacasa M. leg., 2 exx. (MSNTC); La Marquesa, 20.06.1979, Zunino M. leg., 14 exx. (DCG); Macho de Agua, Zitácuaro, 23.06.1979, Zunino M. leg., 31 exx. (DCG); MICHOACÁN: Maravatio, 25.06.1979, Zunino M. leg., 1 ex. (DCG); Sta. Clara del Cobre dint., m 2200, N19°24'34.1"-W101°35'15.5", carr. Méx-41 Patzcuaro-Tacámbaro, 25.07.2001, Dellacasa M. & Martínez I. leg., 1 ex. (DCG).

Distribution from literature:

- MEXICO: Mexico (Bates, 1887: 91).

Remarks: At Paris Museum we found four female specimens of this taxon named by Harold *Aphodius pinguescens*, as far as we know, *in litteris* only. Anyway we design lectotypes:

1 ♀, **lectotype herein designated** (MNHNP), bearing the following labels:

- white with red border, handwritten: Mexico / A. / *pinguescens* / Harold. / type (probably authograph).
- white printed: Ex Musaeo / E. Harold.
- red, printed: *Aphodius pinguescens* Harold, *in litteris*; Lectotypus, Dellacasa M. des. 2000.

3 ♀♀, **paralectotypes herein designated** (MNHNP), bearing the following labels:

- white, handwritten: Mexico.
- white printed: Ex Musaeo / E. Harold.
- red, printed: *Aphodius pinguescens* Harold, *in litteris*; Paralectotypus, Dellacasa M. des. 2000.

29. *Aphodius puncticeps* Harold, 1862

Current status: *Cephalocyclus puncticeps* (Harold, 1862).

References

Aphodius puncticeps Harold, 1862: 380; Bates, 1887: 91; Blackwelder, 1944: 213.
Aphodius (Platyderus) puncticeps; Schmidt A., 1913: 123.
Aphodius (Platyderides) puncticeps; Schmidt A., 1922: 47; Dellacasa M., 1988: 185.
Cephalocyclus puncticeps; Dellacasa M., Gordon & Dellacasa G., 1998: 149 (new combination; habitus epipharynx and aedeagus figured; lectotype designated).

Distribution: Mexico.

Material examined:

MEXICO: JALISCO: Estación científica "Las Joyas", m 1850, Sierra Manantlan, 20.07.1989, Torres D. leg., 4 exx. (DCG); EDO. DE MÉXICO: Salazar, 28.06.1954, Halffter G. leg., 2 exx. (USNM).

Dellacasa et al.: Aphodiinae Bates in *Biologia Centrali-Americana*

Distribution from literature:

- MEXICO: Chalchicomula (Bates, 1887: 91).

30. *Aphodius villosipes* Harold, 1862

Current status: *Cephalocyclus villosipes* (Harold, 1862).

References

Aphodius villosipes Harold, 1862: 384; Bates, 1887: 92; Blackwelder, 1944: 213.

Aphodius (Platyderus) villosipes; Schmidt A., 1913: 123.

Aphodius (Platyderides) villosipes; Schmidt A., 1922: 50; Dellacasa M., 1988: 214.

Cephalocyclus villosipes; Dellacasa M., Gordon & Dellacasa G., 1998: 151 (new combination; habitus epipharynx and aedeagus figured; lectotype designated).

Distribution: Mexico.

Material examined:

MEXICO: HIDALGO: Zacualtipán, 1 ex. (DCG).

Distribution from literature:

- MEXICO: Oaxaca (Bates, 1887: 92).

31. *Aphodius luridiventris* Harold, 1862

Current status: *Cephalocyclus luridiventris* (Harold, 1862).

References

Aphodius luridiventris Harold, 1862: 385; Bates, 1887: 92; Blackwelder, 1944: 213.

Aphodius (Platyderus) luridiventris; Schmidt A., 1913: 123.

Aphodius (Platyderides) luridiventris; Schmidt A., 1922: 50; Dellacasa M., 1988: 156.

Cephalocyclus luridiventris; Dellacasa M., Gordon & Dellacasa G., 1998: 147 (new combination; habitus epipharynx and aedeagus figured; lectotype designated).

Distribution: Mexico.

Material examined:

MEXICO: PUEBLA: Tehuacan, m 1600, 10.07.1988, Torres D. leg., 1 ex. (DCG).

Distribution from literature:

- MEXICO: Cinco Señores, Yolos, Mexico city (Bates, 1887: 92).

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