

The Aphodiinae and Rhyparinae (Coleoptera: Scarabaeidae) in southern states of Mexico (Chiapas, Oaxaca, Puebla and Veracruz)

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Abstract. Sixty three species of the Aphodiinae and Rhyparinae are recorded from southern states of Mexico, including 3 species described as new: *Aphodius chiapasensis* sp. n., *A. xalapensis* sp. n. and *Ataenius pseudousingeri* sp. n. One new synonym is proposed: *Ataenius crenulatus* SCHMIDT, 1910 (= *A. ricardsi* HINTON, 1938, syn. nov.). *Haroldi-ataenius limbatus* (BATES) is given in new combination, *Ataenius communis* HINTON is recorded from Mexico for the first time. The new state records are provided for 36 species and new country records for 12 species. References to taxonomic and faunistic treatments of all species are given, available biological informations are summarized following the species distribution. Habitus of several species, illustrated by means of scanning electron microscope and drawings of pertinent morphological details are included.

Key words: Scarabaeidae, Aphodiinae, Rhyparinae, taxonomy, new species, distribution, Mexico.

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I. INTRODUCTION

Many groups of Meso- and South American species of the Aphodiinae are confused taxonomically and their distribution and biogeographical limits are only sketchily known. The continuing discovery of undescribed species in the Neotropical region is an indication of how little is known about the biodiversity of most tropical areas.

The present work was accomplished on the basis of several projects (see Acknowledgements) with a view to measure the biodiversity of various ecosystems in Mexico and to analyse the local effects of the landscape transformation. The materials for study were recently collected and/or loaned from several museum collections. The 63 species listed in this paper represent only about two-thirds of the total Aphodiinae and Rhyparinae fauna of the southern states of Mexico, where many areas remain unexplored. Certain species previously recorded from this area were not collected because their habitats were not extensively sampled. In this connection, we do not wish to discuss here any

important biogeographical or systematic problems arising from the material examined. Of the total number of 63 species here recognised, three species are described as new, one species is found in Mexico for the first time, the new state records are provided for 36 species and new country records for 12 species. The south Mexican distribution pattern comprises most elements of the Meso- and South American origin (about 40 species), a number of presumably endemic forms (about 10 species), in a lesser degree the Nearctic species (about 6 species) and a bulk of the widely distributed, anthropogenic species of uncertain origin. As a general rule, tropical species exhibit a great variability in their seasonality and year-to-year abundance changes. It is our opinion and conclusion, as a result of recent studies, that intensified collecting over extensive tropical areas and periods of times is necessary to disclose the details of species complex.

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II. MATERIAL AND METHODS

The results summarized herein represent a joint effort of the authors. E. GALANTE and J. R. VERDÚ were largely responsible for the field work in Mexico and collecting the specimens with associated biological information. Z. STEBNICKA was responsible for accumulation of additional material housed in various collections, for descriptions, literature and comments.

The Aphodiinae material was collected in the last five years at various localities of Chiapas, Oaxaca, Puebla and Veracruz (Fig. 1). The specimens were captured using UV-light traps and pit-fall traps baited with fish and excrements. An average of 40 traps with fish and 40 traps with dung were placed in each site for 72 hours and beetles were removed at the end of this period. Additional specimens and larval stages of several species were taken directly from excrements, decaying matter, under vegetation, in soil and in the nests of *Atta* ants.

In connection with ongoing revision of the New World Aphodiinae by Z. STEBNICKA, most of the larger collections were examined and the type material available in various depositories was studied. The specimens from these collections found in the discussed area are here partially included, with verified distribution of particular species and available data on their bionomics. The taxonomy, phylogeny and keys for identification of most species listed herein are taken into consideration in the series of papers dealing with the New World fauna.

Specimens examined for this study are housed in the collections of the following institutions and individuals (abbreviations are as used in the text):

CEUA – Collection of Entomology, University of Alicante, Spain; **CMN** – Canadian Museum of Nature, Aylmer, Canada; **FSCA** – Florida State Collection of Arthropods, Gainesville; **HAHC** – Henry & Anne HOWDEN Collection, Ottawa, Canada; **ISEA** – Institute of Systematics and Evolution of Animals PAS, Krakow; **RTC** – Robert TURNBOW Collection, Gainesville, Florida; **UMS** – University of Mississippi Biology Department, Mississippi; **UNSM** – University of Nebraska State

Museum, Lincoln; **USNM** – United States National Museum of Natural History, Washington DC; **UZIL** – Universitetets Zoologiska Institution, Lund, Sweden.

III. AREA OF STUDY

(Fig. 1)

A) Veracruz State

Veracruz state is a megadiverse area, but with one of the highest amount of habitat destruction (HALFTER & ARELLANO 2002). The material was collected in three sites: La Mancha, Los Tuxtlas Biosphere Reserve and the area of Xalapa-Las Vigas.

1.- La Mancha (Fig. 1(1)) located in the coastal plain of central Veracruz north of the Santa Marta and San Andrés volcanoes, belongs to Actopan municipality and covers 5264 ha. This area is relatively humid (<1000 mm/year), but its climate is tropical dry due to the orographic influence of the mountains. Mean of annual temperatures ranges between 18°-22°C. The landscape is completely transformed and only small patches of dry forest are conserved along the central coastal plain of Veracruz. Scrub and secondary communities have replaced most of the original forest overlooking the Gulf of México. (NOVELO 1978).

2.- Los Tuxtlas Biosphere Reserve (Fig. 1(2))

The Tuxtlas Biosphere Reserve was created in 1998, and includes one of the largest portions of moist forests in Mexico. This reserve, located in the costal area of southern Veracruz covers 155.122 ha, and is composed of seven volcanoes and a variety of lakes, lagoons and marshlands. The Tuxtlas mountain range spreads from 200 m to 1700 m of elevation of the San Martin volcano. The annual temperatures range between 18°-26°C. This is the second wettest area in Mexico, with very heavy summer rains and an average of annual precipitation ranging from 1200 mm to 4500 mm. This region is an important centre of endemism and of a high biodiversity, but nearly 90 per-



Fig. 1. Map of Mexico. (1-5) Area of collecting. State of Veracruz: (1) – La Mancha, (2) – Los Tuxtlas Biosphere Reserve, (3) – Xalapa-Las Vigas area. States of Puebla and Oaxaca: (4) – Tehuacán-Cuicatlán Biosphere Reserve. State of Chiapas: (5) – Sierra Madre area.

cent of the original forests have been eliminated over the last 30 years and transformed into numerous, impoverished patches of forest. (GONZÁLEZ SORIANO et al. 1997). The most important reference localities are: Catemaco, San Andrés, Santiago, Santecomapan and Pajapan.

3.- Xalapa-Las Vigas area (Fig. 1(3)) descends from the slopes of the Cofre de Perote at 1700 m above sea level to 1100 m in the direction of the coastal plain (INEGI 1988). This region constitutes one of the most diverse ecosystems known as Mountain Rain Forest (ZOLA 1987). Las Vigas (2481m above sea level) is located 21 km NW from Xalapa. Evergreen oak and pinewoods in the high zone and liquidambar woods (sweet gum) in the low zone form its ecosystem (CHAZARO 1982, HALFTER et al. 1995).

B) Tehuacán-Cuicatlán Biosphere Reserve

The Tehuacán-Cuicatlán Biosphere Reserve (Fig. 1(4)) – states of Puebla and Oaxaca) was created in 1988 and covers 490,187 ha between Puebla and Orizaba cities. This area has drastic variations in both topography and annual rainfall, being delimited in the east and in the west by mountain ranges. The annual temperatures range from 18°-22°C in the Tehuacán Valley to 24.5°C in Cuicatlán. The mean of annual precipitation in the valley ranges from 250 mm to 500 mm, falling from May through October, with the majority between June and September (ENGE & WHITEFORD 1989). These regional geographic characteristics have created several unique microclimates with a rich diversity of fauna and flora. (ARRIAGA et al. 2000) The valley of Tehuacán-Cuicatlán is considered to be a centre for speciation (ARIAS et al. 2001). The original vegetation cover in a low elevation consists of deciduous forest, xerophitic scrublands with cactuses, and pine-oak forest in the Southern Sierra Madre.

C) Sierra Madre (Chiapas) (Fig. 1(5))

Chiapas, the southernmost state of Mexico, constitutes the border with Guatemala. The climate and landscape are diverse, ranging from semi-desert to rainforest, and elevation from sea level to 4000 m with subalpine vegetation. The area of collecting was situated in the southeastern corner of Chiapas, at the top of the Mesoamerican Biological Corridor of Sierra Madre.

The Sierra Madre is a narrow, steep range of volcanic mountains extending throughout Chiapas to Guatemala, with elevations between 1500 m in the north and 4080 m near the Guatemala border (Tacaná Volcano). The annual temperatures range from 12°C to 18°C and mean of annual rainfall is 2000 mm.

The tropical deciduous forest is common at lower elevation and the montane rain forest is found at the Tacaná Volcano area, but most of this rainforest has been destroyed for cultivations of coffee and corn. The area of collecting included the patches of pine-oak forest, montane rain forest and evergreen cloud forest (BREEDLOVE 1981).

IV. TAXONOMY AND DISTRIBUTION

A p h o d i i n a e

E u p a r i i n i

Species listed below are included to the ongoing revisions of the New World taxa. Redescriptions of some species and data on their distribution were published by STEBNICKA (2000, 2001a, 2002a,b, 2003 a,b)

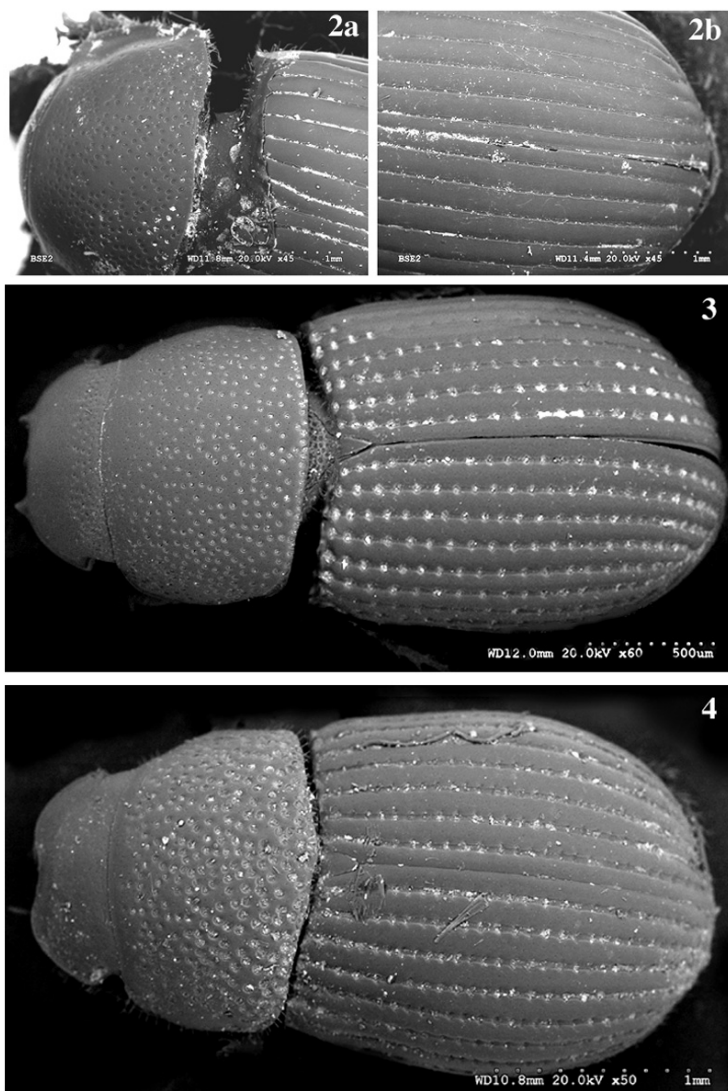
***Martineziella vandykei* (HINTON)**

(Fig. 2 a, b)

Euparia vandykei HINTON, 1936a: 273. Type locality: Mexico, Tejuzilco, Temascaltepec.

Martinezia (nom. praecoc.) *vandykei*: CHALUMEAU 1983a: 152, fig. 7.

Martineziella (nom. nov.) CHALUMEAU, 1986: 386.



Figs 2-4. 2 a, b – *Martineziella vandykei* (HINTON): a – pronotum, b – elytra; 3-4 – habitus: 3 – *Aphotoanius howdeni* CARTWRIGHT; 4 – *Haroldiataenius hintoni* (SAYLOR).

Distribution. Known only from Mexico.

Specimens examined (4) – **Chiapas** (new state record): Laguna Belgica, 16 km NW Ocozocoautla 970 m, 7.VI.1990, H. & A. HOWDEN (CEUA, CMN).

Previously recorded from Sinaloa (Mazatlan) and Cuernavaca by CHALUMEAU (1983).

Bionomics. The species is rarely collected, found in the detritus remnants at nests of fire ants.

Euparixia formica HINTON

Euparixia formica HINTON, 1934a: 27-28; WOODROFF & CARTWRIGHT 1967: 14-16, fig. 8. Type locality: Mexico, Tejupilco.

Distribution. Known only from Mexico.

Specimens examined (2) – **Chiapas** (new state record): Cinco Cerros 860 m, 9.VI.1990 H. & A. HOWDEN (HAHC, ISEA).

Bionomics: This myrmecophilous species was reported by HINTON (1934a) as being found at the type locality with *Atta sexdens*, but this ant was not ascertained in Mexico and this record probably refers to *Atta mexicana* SMITH.

Aphotaenius howdeni CARTWRIGHT

(Fig. 3)

Aphotaenius howdeni CARTWRIGHT, 1963: 51, fig. 5.- CHALUMEAU 1983b: 4; DELLACASA 1988: 193 (catalogue). Type locality: Mexico, Nuevo Leon, Chipinque Mesa.

Distribution. Known only from Mexico.

Specimen (1) – **Chiapas** (new state record): 3 km S of Chicoasen, Rd to Morador, 18.VI.1999, H. & A. HOWDEN (ISEA).

Bionomics: unknown.

Ataenopsis jaltipani STEBNICKA

Ataenopsis jaltipani STEBNICKA, 2003a: 109, figs 12,18. Type locality: Mexico, Veracruz, Jaltipan.

Distribution. Known only from Mexico.

Specimen examined (1) – **Oaxaca** (new state record): Jaltepec Isth., Tehuantepec, 21.V.1969, F. S. BLANTON (CEUA).

R e m a r k s. The species is closely related to *Ataenopsis duncani* (CARTWRIGHT). The latter species is distributed throughout northern Mexican states together with other Sonoran species of this genus, *Ataenopsis parkeri* (CARTWRIGHT) and *A. rugopygus* (CARTWRIGHT).

Bionomics. Unknown.

Haroldiataenius limbatus (BATES) comb. nov.

Ataenius limbatus BATES, 1887: 98.- SCHMIDT 1922: 435; DELLACASA 1988: 152 (catalogue). Type locality: Mexico, Sinaloa, Presidio.

Distribution. Mexico. New country record: Honduras.

Specimens examined (20) – (new state records): **Puebla**: Zapotitlan Salinas, 8.VII.1999, E. GALANTE; Tehuacan, Altapexi 1125 m, M. MORÓN. **Oaxaca**: San Sebastian Frontera, Cerro Colorado, 10.VII.1999, E. GALANTE (CEUA, ISEA); 62 km SW Valle National, 12.VIII.1986, H. & A. HOWDEN (HAHC). **Chiapas**: El Aguacero, 16 km W Ocozocoautla 680 m, 5.VI.1990, H. & A. HOWDEN (HAHC).

Bionomics. This species is usually collected in summer, sifted from leaf litter of oak-pine forest, found in cattle dung and in *Atta* dump.

Haroldiataenius hintoni (SAYLOR)

(Fig. 4)

Ataenius hintoni SAYLOR, 1933: 159.

Haroldiataenius (Sayloria) hintoni: CHALUMEAU 1981a: 140; DELLACASA 1988: 275 (catalogue). Type locality: Mexico, Tejupilco.

Distribution. Known only from Mexico.

Specimens examined (8) – **Chiapas** (new state record): Cinco Cerros, 860 m, 31.V.1990, H. & A. HOWDEN (CEUA, ISEA); Puente Macuilapa near Los Amates, 22.V.1964, R. WOODRUFF (CMN).

Previously recorded from Sonora (Alamos) and Tamaulipas (Magiscatzin) by CHALUMEAU (1981a).

Bionomics. The specimens were found in detritus remnants near the nest of *Atta*, also collected to light traps.

Auperia capitosus (HAROLD)

Ataenius capitosus HAROLD, 1867a: 83, et Auctt. Type locality: "Columbia".

Auperia capitosus: STEBNICKA, 2002a: 767-768, figs 5,29,34,39,41.

Distribution. Central and South America.

Specimens examined (4) – **Chiapas**: Rte 200, 25 mi W Huixtla, 200 ft, 4.VIII.1972, G.E.Ball (ISEA).

Previously recorded from Chiapas and Veracruz by STEBNICKA (2002a).

Bionomics. This species was collected throughout the year to light traps at altitude 400-1200 m, found in basal debris of *Bactris* palm and in *Atta* dump.

Auperia denominata CHEVROLAT

(Fig. 5 a, b)

Auperia denominata CHEVROLAT, 1864: 413.- STEBNICKA 2002a: 749-752, figs 2,6,15,20. Type locality: Cuba, Havana.

Synonyms: *Ataenius euglyptus* BATES, 1887: 97. Type locality: Mexico, Las Vigas

Ataenius benjaminbanderae ISLAS, 1955: 497. Type locality: Mexico, Cd Valles

Ataenius sciurus CARTWRIGHT, 1974: 65. Type locality: Florida, Gainesville

Distribution: USA (Florida), Central America, Colombia, Ecuador, Brazil, Venezuela, French Guyana, Cuba.

Specimens examined (4) – **Chiapas**: Bonampak Rd, 100 km SE Palenque 230 m, 8.VI. 1993, S. & J. PECK. **Veracruz**: Los Tuxtlas Biol.Sta., 18-22.VII.1984, D.H. LINDEMANN (HAHC, ISEA). **Oaxaca**: Oaxaca city, 3.VIII.1965, G. H. NELSON (CEUA).

Previously recorded from Chiapas, Oaxaca and Veracruz by STEBNICKA (2002a).

Bionomics. Species collected throughout the year, attracted to light, found in *Sciurus* nests.

Auperia squamosa (PETROVITZ)

(Fig. 6)

Phalangochaeta squamosa PETROVITZ, 1976: 280-282.- Type locality: Ecuador "Archidona Oriente".

Auperia squamosa: STEBNICKA 2002a: 772-773, figs 32,40,42.

Distribution: Central America, Colombia, Ecuador, Bolivia, Paraguay, Venezuela, Trinidad.

Specimens examined (32) - **Chiapas**: 6 km SW Ocosingo, 1400 m, 22.IX.1991, R. ANDERSON; Bonampak Rd, 100 km SE Palenque 230 m, 8.VII.1982, 8 VI.1993, S. & J. PECK (CMN). **Oaxaca**: 6 km S Valle Nacional, 200 ft, 19.V.1971, H. & A. HOWDEN (HAHC). **Veracruz**: 33 km NE Cate-maco, 160 m, Los Tuxtlas Biol.Sta., 1.VIII.1983, S. & J. PECK, 18-22.VII.1984, D. H. LINDEMANN; Fortin, 5.VIII.1969, S. & J. PECK; Cordoba, 4.VIII.1969, S. & J. PECK (HAHC-CMN, ISEA).

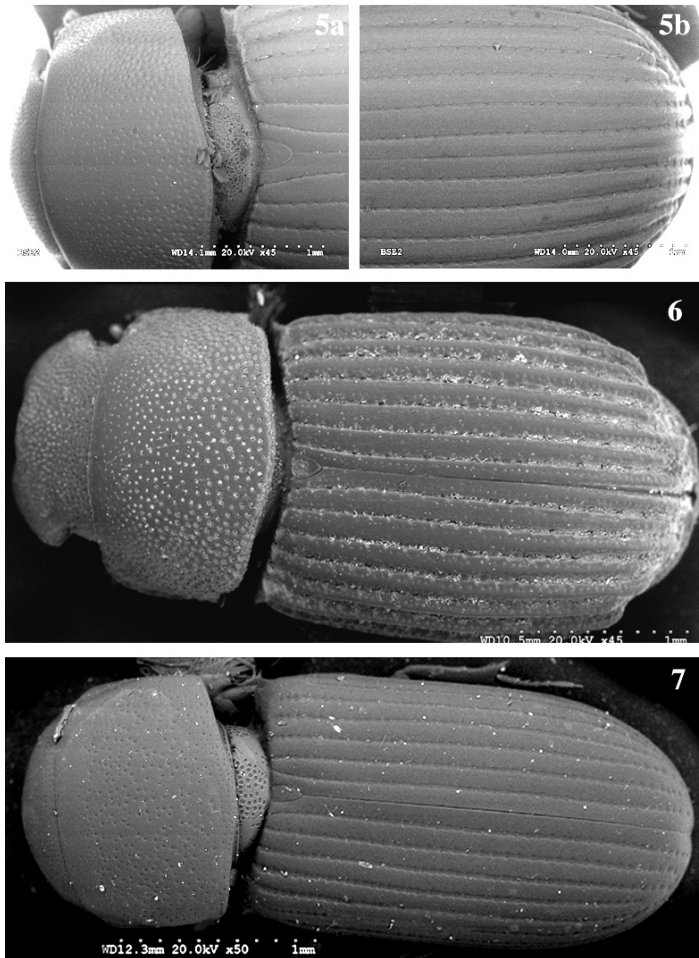
Previously recorded from Chiapas, Oaxaca and Veracruz by STEBNICKA (2002a).

Bionomics. The species occurs over a wide range and in diverse habitats; long series of specimens were collected between May and September in the wet montane forest litter, shrubs litter, coffee forest litter, buttress litter, decayed *Ficus* fruits, in paramo moss and in broken termite nests.

Passaliolla cossonoides (BATES)

(Fig. 7)

Saprosites cossonoides BATES, 1887: 93, t.6, fig. 22, et Auctt.. Type locality: Mexico, Cordoba.



Figs 5-7. 5 a, b – *Auperia denominata* CHEVROLAT: a – pronotum, b – elytra; 6-7 – habitus: 6 – *A. squamosa* (PETROVITZ). 7 – *Passaliolla cossonoides* (BATES).

Passaliolla cossonoides: STEBNICKA, 2000: 238-239, fig. 3.

Distribution: Mexico, Guatemala, Honduras, Costa Rica, Panama.

Specimens examined (3) – **Chiapas** (new state record): 10 km E San Cristobal, 23.VI.1989, E. ZUCCARO & E. LAGO (CEUA, ISEA); **Veracruz**: 33 km E Catemaco, 160 m, Los Tuxtlas Biol. Sta. I.VII-I.VIII.1983, S. & J. PECK (CMN).

Previously recorded from Veracruz by STEBNICKA (2000).

Bionomics. This is the most common species of the genus *Passaliolla*, collected under bark of dead trees and to FIT's intercept traps in tropical forest.

Parataenius simulator (HAROLD)

Ataenius simulator HAROLD, 1868: 85, et Auctt. Type locality: Argentina, Mendoza.

Parataenius simulator: STEBNICKA & HOWDEN, 1996: 140; STEBNICKA, 2001b: 26, figs 9,11,23.

Synonym: *Psammodius schwarzi* LINELL, 1896: 721.

Distribution. Southern United States to Argentina, West Indies, Australia, New Zealand, Africa, Europe (Portugal).

Specimens examined (4) – **Oaxaca** (new state record): Tehuantepec, 15-16.VII.1964, J. SPANGLER (ISEA, USNM).

Bionomics. Collected throughout the year to light traps. Larval stages were redescribed by VERDÚ & GALANTE (1999).

Ataenius scutellaris HAROLD

Ataenius scutellaris HAROLD, 1867a: 82.- 1876: 96 et Auctt. Type locality: Venezuela, Caracas.

Distribution. Central and South America, West Indies, Pacific Islands (Vanuatu).

Specimens examined (5) – **Chiapas**: Palenque, 18.VII.1980, S. & J. PECK (CMN); **Veracruz**: 34 mi E Jalapa, Pto National, 17.VIII.1960, H. & A. HOWDEN (HAHC); Lake Catemaco, 24-25.V.1969, H. & A. HOWDEN (CEUA).

Previously recorded from Chiapas, Puebla and Veracruz by DELOYA (1994).

Bionomics. The species is widely distributed but occurs sporadically, collected in January-March and October-December in forest, in pasture areas with *Brachiaria decumbens*, in human excrements, in bovine and *Guzera* droppings, attracted to light.

Ataenius steinheili HAROLD

(Fig. 8)

Ataenius steinheili HAROLD, 1874: 18.- SCHMIDT 1922: 455; Chapin 1940: 16-17; CHALUMEAU 1982: 328-329, fig. 8; DELLACASA 1988: 202 (catalogue). Type locality: Baranquilla Mompo, "Neu Granada" [Colombia].

Distribution. South Mexico (Yucatan, Quintana Roo, Escarcega), Colombia, West Indies.

Specimens examined (2) – **Veracruz** (new state record): Los Tuxtlas, 15.III.1985, J. RAZOWSKI (ISEA).

Bionomics. This species is very rare, the scarce specimens examined were collected to light trap. Data on its wide distribution given by CHAPIN (1940) and followed by DELOYA (1994) are misleading, and most probably concern a similar species from South America.

Ataenius crenulatus SCHMIDT

Ataenius crenulatus SCHMIDT, 1910: 359.- 1922: 431.- DELLACASA 1988: 116 (catalogue). Type locality: Rio Grande do Sul [Brazil].

Ataenius ricardsi HINTON, 1938a: 123, figs 1-4. Type locality: Mexico, Chiapas. **New synonymy**.

Distribution (new record). Central and South America to Argentina.

Specimens examined (23) – **Chiapas**: Puente Macuilapa nr Los Amates, 29.V.1964, R. WOODRUFF (FSCA); Cinco Cerros 800 m, 31.V.1990, 9.VI.1990, H. & A. HOWDEN; Cinco Cerros, 30 km on Hwy 190, 1500 m, 8.VI.1989; El Aguacero, 16 km W Ocozocoautla 650 m, 10.VI.1990, H. & A. HOWDEN (HAHC-CMN); vicinity of Simojovel, 28.V.1967, G. & V. HALFTER (CEUA). **Oaxaca** (new state record): Jaltepec Isth. Tehuantepec, 21.V.1964, F.S. BLANTON (CEUA). **Veracruz**: Poza Rica 2.VI.1987, J. WAPPES (FSCA); La Mancha, 24.VII.1999, E. GALANTE; La Mancha, Fortin de las Flores, 11.VII.1964, D. RABAGO (CEUA); Los Tuxtlas, X.1997, F. VAZ-DE-MELLO, 30.III.1985, J. RAZOWSKI (ISEA); Lake Catemaco, 24-25.V.1969, Santecomapan, 10.VI-1969, H. & A. HOWDEN (HAHC).

Previously recorded from Veracruz by DELOYA (1994) under the name *rickardasi* (sic!).

Bionomics. This species was collected throughout the year in open grassy forest, under tree bark and to light traps.

R e m a r k s. A comparison of the type specimens of *Ataenius crenulatus* and *A. ricardsi* showed them to be the same species which belongs to the *Ataenius scutellaris*-group (revision in preparation).

Ataenius sculptor HAROLD

Ataenius sculptor HAROLD, 1868: 85.- SCHMIDT 1922: 426; CARTWRIGHT 1974: 70-72; DELLACASA 1988: 280 (catalogue). Type locality: "Columbia".

Distribution. USA, Mexico, Colombia. New country records: Guatemala, Honduras, El Salvador.

Specimens examined (15) – **Chiapas**: Puente Macuilapa nr Los Amates, 2.VI.1987, leg. MUELLER (FSCA); Palenque, 28.VII.1983, H. & A. HOWDEN, 6.VI.1991, S. & J. PECK (HAHC); Tapachula, 10.IV.2002, (adults and larvae), J. R. VERDÚ (CEUA). **Veracruz**: Los Lirios, Rancho El Tajo, 12.X.1998, MARTINEZ & CRUZ (ISEA); La Mancha, 24.VII.1999, E. GALANTE (CEUA).

Previously recorded from Chiapas and Veracruz by DELOYA (1994).

Bionomics. Species collected from May to October to light traps, occasionally found in excrements. Phenology and reproductive features of *Ataenius sculptor* were discussed by MARTINEZ et al. (2002).

Ataenius complicatus HAROLD

(Fig. 9)

Ataenius complicatus HAROLD, 1869: 102.- SCHMIDT 1922: 425; DELLACASA 1988: 112 (catalogue); STEBNICKA 1998: 204. Type locality "Brasilía".

Distribution. Central and South America to Argentina.

Specimens examined (11) – **Chiapas** (new state record): 26 km NW Comitan Hwy, 6.VI.1989, H. & A. HOWDEN; 2.5 km W Cinco Cerros, 11.VI.1989, H. & A. HOWDEN (CEUA, HAHC). **Veracruz**: Los Lirios, Rancho El Tajo, 12.X.1998, MARTINEZ & CRUZ (ISEA).

Previously recorded from Veracruz and Oaxaca by DELOYA (1994).

Bionomics. Collected throughout the year to light traps, rarely found in cattle excrements.

Ataenius carinator HAROLD

Ataenius carinator HAROLD, 1874: 20.- SCHMIDT 1922: 450; DELLACASA 1988: 105 (catalogue). Type locality: "Venezuela".

Distribution. Mexico, Panama, Venezuela. New country records: Colombia, Ecuador, Peru, Bolivia, Surinam, West Indies.

Specimens examined (63) – (new state records) **Puebla**: Tehuacan, Altapexi 1125 m, M. MORÓN (CEUA). **Veracruz**: 25 mi S Acayucan, 4.VI.1965, P. J. SPANGLER (CEUA); Los Tuxtlas, X. 1997, F. VAZ-DE-MELLO (ISEA); Los Tuxtlas, San Andres, 22.VIII.2001, A. DIAZ (CEUA); Santecomapan, 10.VI.1969, H. & A. HOWDEN (CMN); Mocambo, 5 km S, 11.VII.1981, W. E. STEINER (USNM).

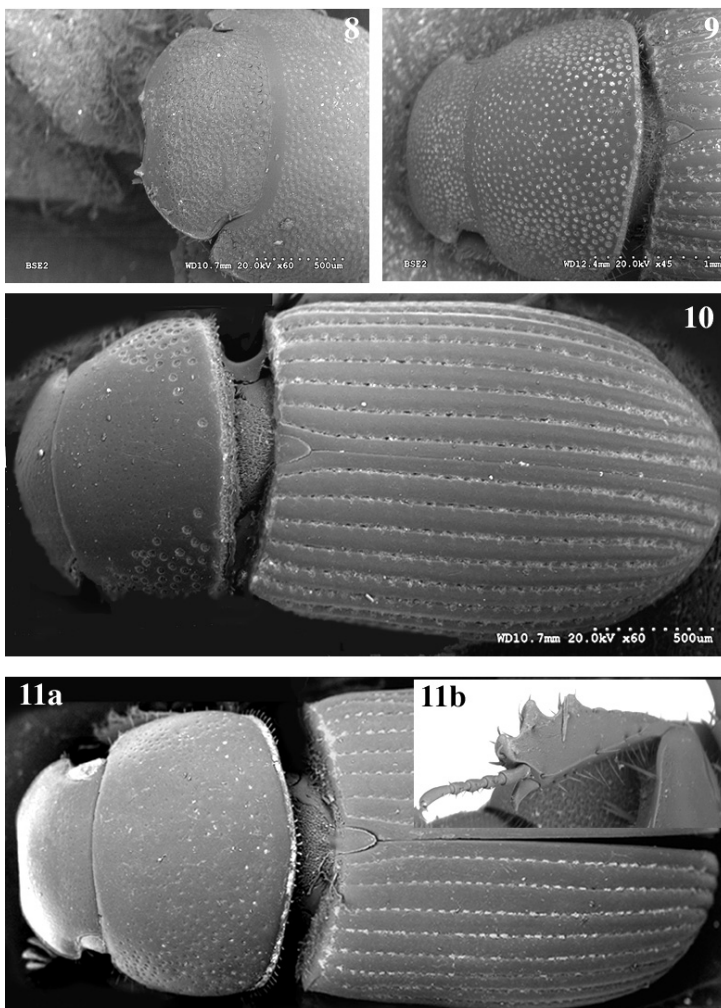
Bionomics. This extremely variable species is usually collected throughout the year on woodland areas, in litter of premontane moist forest and on riversides, taken to pitfall traps.

Ataenius jalapensis BATES, stat. nov.

Ataenius polyglyptus var. *jalapensis* BATES, 1887: 99-100.- SCHMIDT 1922: 451; DELLACASA 1988: 226 (catalogue) Type locality: Mexico, Jalapa.

Distribution. Mexico. New country records: Guatemala, Honduras, Belize, Panama.

Specimens examined (165) – (new state records) **Chiapas**: Huixtla, Puente Rio 155 m, 12.VI.1983, M. A. MORÓN (CEUA); El Chorreodero 8 km E Chiapa de Corzo, 17.VI.1989; Cinco Cerros 860 m, 9.VI.1990; El Aguacero 16 km W Ocozocoautla 680 m, 5.VI.1990, H. & A. HOWDEN (HAHC); El Aguacero, 26.VI.1989, P. K. & E. B. LAGO (UMS); P. Laguna Belgica 16 km NW Ocozocoautla, 25.VI.1989, H. & A. HOWDEN (CMN, HAHC). **Oaxaca**: Cuicatlan, 3, 15.VII.1999, E. GALANTE (CEUA). **Puebla**: Tehuacan, Altapexi 1125 m, M. MORÓN; Zapotitlan Salinas, 9.VII.1999, E. GALANTE (CEUA). **Veracruz**: 3 km S Xalapa, 1350 m, 25-30.V.1991, B. RATCLIFFE, J. ASHE, M. JAMESON (USNM); Lake Catemaco, 9, 24-25.V.1969, H. & A. HOWDEN (HAHC); 33.5 km S Nautla near E. Carranza 60 m, 15.XII.1978, E. BALL (CMN).



Figs 8-11. 8,9 – Head and pronotum: 8 – *Ataenius steinheili* HAROLD, 9 – *A. complicatus* HAROLD, 10-11a – habitus: 10 – *A. pseudousingeri* sp. n.; 11a – *A. liogaster* BATES; 11b – anterior spur of male of *A. liogaster* BATES.

Bionomics. This very common species is usually collected in April – August to light traps in a great number of specimens, occasionally found in dry dung.

Ataenius scalptifrons BATES

Ataenius scalptifrons BATES, 1887: 25.- SCHMIDT 1922: 451; DELLACASA 1988: 280 (catalogue). Type locality: Mexico, Cordoba, Veracruz.

Distribution. Mexico, Guatemala. New country records: Honduras, Belize, El Salvador, Costa Rica.

Specimens examined (11) – **Chiapas** (new state record): Huixtla, Puento Rio 155 m, 12.VI.1980, M. MORÓN (CEUA). **Oaxaca** (new state record): Jaltepec Isth. Tehuantepec, 21.V.1964, F. S. BLANTON (CEUA). **Veracruz**: Los Tuxtlas, 28.III.1985, J. RAZOWSKI (ISEA); Lake Catemaco, 24.V.1969, H. & A. HOWDEN (HAHC).

Bionomics. Collected in March – August to black light and UV light traps.

Ataenius gracilis (MELSHEIMER)

Oxyomus gracilis MELSHEIMER, 1844:137.

Ataenius gracilis: HAROLD, 1867b: 281.- SCHMIDT 1922: 436; CHAPIN 1940: 25; WOODRUFF 1973: 118-119; CARTWRIGHT 1974: 67-68; CARTWRIGHT & CHALUMEAU 1978: 12; DELLACASA 1988: 409 (catalogue). Type locality: Pennsylvania, USA.

Distribution. USA, Central and South America, West Indies, Micronesia.

Specimens examined (11) – **Chiapas**: 10 km W Tuxtla Gutierrez, 23.VI.1989, P. K. LAGO, E. ZUCCARO (ISEA, UMS). **Oaxaca** (new state record): Jaltepec Isth., Tehuantepec, 21.V.1964, F. S. BLANTON (CEUA). **Veracruz**: La Mancha, 24.VII.1999, E. GALANTE (CEUA)

Previously recorded from Chiapas and Veracruz by DELOYA (1994).

Bionomics. This very variable species is characterized by a wide range of climatic and edaphic conditions, collected throughout the year to light traps.

Ataenius aequalis HAROLD

Ataenius aequalis HAROLD, 1880: 40.- SCHMIDT 1922: 435; CARTWRIGHT 1974: 78-79, fig. 24; DELLACASA 1988: 83 (catalogue). Type locality: "Columbia, Ambalema".

Distribution verified. USA, Central and South America and West Indies.

Specimens examined (59) – **Chiapas** (new state record): near Palenque, Laguna Belgica, 5.VI.1990, H. & A. HOWDEN (HAHC). **Veracruz**: Los Tuxtlas, 30.III.1985, J. RAZOWSKI (ISEA); Lake Catemaco, 24.V.1969, Santecomapan, 10.VI.1969, H. & A. HOWDEN (HAHC); Hueyapan, 5.VIII.1971, B. RATCLIFFE (UNSM); Atoyac, 24.VI.1983, J. B. STRIBLING (UMS).

Previously recorded from Veracruz by DELOYA (1994).

Bionomics. Collected through all months to light traps, found in litter at forest edges, in droppings, fungi and under bark, sifted from beach scrubs.

Ataenius hirsutus HORN

Ataenius hirsutus HORN, 1871: 288.- SCHMIDT 1922: 428; CARTWRIGHT 1974:36-37; DELLACASA 1988: 139 (catalogue). Type locality: Camp Grant, Arizona. [USA].

Distribution verified. USA (Arizona, Kansas, New Mexico, Texas) Mexico.

Specimens examined (21) - (new state records) **Oaxaca**: Cuicatlán, 3, 15.VII.1999, E. GALANTE (CEUA). **Puebla**: 12 mi SE Izucar Matamoros, 5.IX.1969, S. & J. PECK; 20 mi S Izucar Matamoros, 8-9.VI.1971, H. & A. HOWDEN (CMN); Tehuacan, Altapexi 1125 m, M. MORÓN (CEUA). **Veracruz**: La Mancha, 24.VII.1999, (adults and larvae), E. GALANTE (CEUA).

Bionomics. Collected in May – September, attracted to light in open meadows, found in the nest of *Neotoma*. Most common in northern Mexico.

Ataenius setiger BATES

Ataenius setiger BATES, 1887: 98.- DELLACASA 1988: 226 (catalogue). Type locality: Chilpacingo, Guerrero [Mexico].

Distribution verified. USA (Arizona, Texas), Mexico.

Specimens examined (14) - (new state records) **Oaxaca**: Cuicatlan, 3.VII.1999, E. GALANTE (CEUA). **Puebla**: Tehuacan, Altapexi 1125 m, M. MORÓN (ISEA); Tehuixtla, 15.VIII.1971, B. RATCLIFFE (CEUA). **Veracruz**: Lake Catemaco, 24-25.V.1969, H. & A. HOWDEN (HAHC)

Bionomics. The species is very similar to *Ataenius hirsutus* and differs from that species only slightly by its significantly shorter and scarcer setae on the elytra. Collected to light traps in open meadows.

Ataenius usingeri HINTON

(Fig. 18)

Ataenius usingeri HINTON, 1937: 191-193, figs 30-34 (in part).- DELLACASA 1988: 213 (catalogue). Type locality: Mexico, Temascaltepec, Tejupilco, 3960 ft.

Distribution. Mexico. New country records: Guatemala, Honduras, Panama.

Specimens examined (189) – (new state records) **Chiapas**: Chorredoero, 3.VI.1991, B. RATCLIFFE, J. ASHE, M. JAMESON (CEUA, UNSM); El Aguacero, 16 km W Ocozocoautla 680 m, 4-5.VI.1990, H. & A. HOWDEN (HAHC), El Aguacero, 24.VI.1989, S. TESTA & E. B. LAGO (ISEA); Laguna Belgica, 16 km W Ocozocoautla 970 m, 13.VI.1990, 24.VI.1989, H. & A. HOWDEN; Chorredoero, 8 km E Chiapa de Corzo, 7.VI.1989, H. & A. HOWDEN; 2 km S Chicoasen, Rd to Mirador, 18.VI.1989, H. & A. HOWDEN; 30 km W Tuxtla Gutierrez 820 m, 4.VI.1990, B. D. GILL (HAHC), 20 km W Tuxtla Gutierrez, 23.VI.1989, P. K. LAGO & E. ZUCCARO (UMS); Sumidero Nat. Park, 14.VI.1989, P. K. LAGO & S. TESTA (UMS). **Oaxaca**: 5 mi W El Camaron, 20.IV.1969, H. & A. HOWDEN (CMN); Cuicatlná, 3.VII.1999, E. GALANTE (CEUA). **Puebla**: Tlaltizapan, Chapultepec; Cotaxtla, 17.VI.1958, D. CARDIAZ (USNM); 20 mi S Izucar Matamoros, 8-9.VI.1979, H. & A. HOWDEN (CMN); Tehuacan, Altapexi 1125 m, M. MORÓN (CEUA). **Veracruz**: Hueyapan, 5.VIII.1971, B. RATCLIFFE (UNSM); Poza Rica, 2.VI.1987, leg. MUELLER (CMN); La Mancha, 24.VII.1999, E. GALANTE (CEUA).

Bionomics. This species hitherto known only from its original description appears to be very common in southern Mexico, collected in summer (May-August) to black light traps, found in sheep droppings.

Ataenius pseudousingeri sp.n.

(Figs 10, 19)

Material. Holotype male, Mexico, **Chiapas**, Cinco Cerros 860 m, 31.V.1990, H. & A. HOWDEN, in CMN.

Paratypes: (335): 107 – same data as holotype; 17 – same locality, 9.VI.1990; 12 – Cinco Cerros km 30 on Hwy 190, 1500 m, 8.VI.1989, H. & A. HOWDEN; 8 – Cinco Cerros, 19.VI.1989, S. TESTA, P. K. LAGO; 10 – El Chorreadero, N of Tuxtla Gutierrez, 13.VI.1989, P. K. LAGO, S. TESTA; 4 – 10 km W Tuxtla Gutierrez, 23.VI.1989, P. K. LAGO, E. ZUCCARO; 30 – El Chorredoero, 8 km E Chiapa de Corzo 550 m, H. & A. HOWDEN; 5 – Chorredoero Cbyn, 5 km E Chiapa de Corzo, 29.V.1987, RATCLIFFE & JAMESON, 1 – same locality, 1.VI.1990; 3 – same locality, 8.VI.1989; 15 – same locality, 17.VI.1989; 5 – El Chorredoero, 26.VI.1990, R. TURNBOW; 3 – 2 km S Chicoasen, Rd to Mirador, 18.VI.1989, H. & A. HOWDEN; 1 – Chicoasen 400 m, 30.V.1990, B. Gill; 57 – 2 km S Chicoasen, 16-18.VI.1989, P. K. & E. B. LAGO; 13 – El Aguacero, 16 km W Ocozocoautla 680 m, 5.VI.1990, H. & A. HOWDEN; 13 – same locality, 10.VI.1990; 2 – Tapachula, 10.IV.2002, J. R. VERDÚ *Oaxaca*: 19 – 1.5 mi E Zapilote, ca. Carr. Panam. 5.VI.1987, at light, W. WARNER; 4 – 5 mi W El Camaron, 20.IV.1969, H. & A. HOWDEN; 4 – El Camaron, 20.V.1969, H. & A. HOWDEN. *Guatemala*: 1 – Zacapa, 6 km W Teculután, La Palmilla, 5.VI.1991, H. & A. HOWDEN. Paratypes are in CEUA, CMN, HAHC, ISEA, RTC, UMS, UNSM, USNM.

D e s c r i p t i o n. Length 3.2 – 3.8 mm. Body oblong oval, moderately shiny, glabrous; colour castaneous or red, elytra usually lighter than fore body. Head moderate in size, clypeal margin finely denticulate or angulate on each side of wide but shallow median emargination, sides straight to right-angled, prominent gena; clypeal surface from anterior margin to frons with transverse rugae, vertex with band of fine punctures. Pronotum convex, base margined and grooved, marginal line crenate by moderate punctures, side margin fringed with fine scarce setae; surface punctures of two types, those of median anterior disc fine, uniformly distributed, separated by about two diameters, coarse punctures concentrated on sides and here usually separated by less than one diameter, being sometimes united or confluent, in some specimens coarse punctures are more or

less numerous along pronotal base, scattered or lacking. Scutellum triangular, impunctate. Elytra slightly arcuate, striae deeply impressed with coarse, transverse punctures crenating inner margins of intervals; intervals convex, minutely to finely punctate or impunctate, lateral intervals not different. Ventral surface shiny; disc of metasternum convex, midline impressed, surface with 2-3 moderate punctures; abdominal sternites punctured only on sides, sternites 3-4 with coarse fluting on sides, sternite 5 fluted from side to side; pygidium scabrous in apical half. All femora fusiform, shiny, minutely punctured; meso- and metatibiae widened apically with thin spurs, very small accessory spine and fringe of short setae; tarsi moderate in length; basal tarsomere of metatarsus longer than upper tibial spur and shorter than following tarsomeres combined. In male, penultimate abdominal sternite shorter than in female; genitalia as in Fig. 19.

A f f i n i t y. *Ataenius pseudousingeri* is a sister species of *A. usingeri* HINTON; both species are very common in south Mexico and occur sympatrically, often in the same time and place. The new species differs from *A. usingeri* by having the body relatively smaller and lighter in colour, the clypeal margin dentate or angulate and the elytral striae deeper with coarser punctures. The male genitalia of both species also differ in shape (Figs 18, 19).

Ataenius liogaster BATES

(Fig. 11 a, b)

Ataenius liogaster BATES, 1887: 94; HINTON 1937: 193; CHAPIN 1940: 29-30. Type locality: Guatemala, Paso Antonio 400 ft..

Synonyms: *Ataenius orbicularis* SCHMIDT, 1914: 698. et Auctt.; STEBNICKA & HOWDEN, 1997: 744-746, figs 1-3, 21. Type locality: Samoa.

Ataenius edwardsi CHAPIN, 1940: 26-27 et Auctt. Type locality: Jamaica, Spa. Town (as synonym of *liogaster*: STEBNICKA & LAGO, in press).

Ataenius hoguei CARTWRIGHT & SPANGLER, 1981: 785-789, figs 1-5. Type locality: Mexico, Socorro Island (as synonym of *liogaster*: STEBNICKA & LAGO, in press).

Distribution verified. Central America and northern part of South America, West Indies, Micronesia, Indonezja, Australia.

Specimens examined (4) – **Veracruz**: Fortin de las Flores, 5.XII.1975, O. S. FLINT (ISEA, USNM); Los Tuxtlas, X.1997, F. VAZ-DE-MELLO (ISEA).

Previously recorded from Chiapas, Puebla and Veracruz by BATES (1887).

Bionomics. The species collected in all months through a wide area of distribution, commonly taken to light traps, occasionally found in cattle dung.

R e m a r k s. The males differ from the females by having the pronotal punctures finer and less close, the protibial spur hooked inwardly (Fig. 11 b) and the metasternal disc finely setigerous. The species belongs to the *Ataenius strigatus*-group (revision in press).

Ataenius castaniellus BATES

Ataenius liogaster var. *castaniellus* BATES, 1887: 95. Type locality: Guatemala, Zapote.

Ataenius castaniellus: HINTON 1937: 194; DELLACASA 1988: 106 (as synonym of *cognatus*!).

Distribution verified: Mexico, Guatemala. New country record: Honduras.

Specimens examined (57) – (new state records): **Oaxaca**: Oaxaca, 22.VI.1968, G. POLLARD (CMN); Pueblo Nuevo 1590 m, 1-12.VIII.1986, H. & A. HOWDEN (HAHC); 8 km S Suchixtepec, 10.VIII.1986, H. & A. HOWDEN (HAHC); Cuicatlan, 3, 15.VII.1999, E. GALANTE; Cuicatlan, Valerio Trujano, 15.VII.1999, E. GALANTE (CEUA). **Puebla**: Zapotitlan, Salinas, Jardin Botanico, 9.VII.1999, E. GALANTE; Tehuacan, Altepexi 1125 m, M. MORÓN (CEUA). **Veracruz**: Dos Rios, 18.VII.2000 (adults and larvae), J. R. VERDÚ (CEUA).

Bionomics. The species was hitherto little known and rarely collected. It is attracted to light and found in dry cattle excrements.

R e m a r k s. The females of *Ataenius castaniellus* are similar externally to the females of *A. liogaster* BATES, however, the male genitalia of both species markedly differ in shape. The species belongs to *Ataenius platensis*-group (revision in preparation).

Ataenius languidus SCHMIDT

Ataenius languidus SCHMIDT, 1911: 31.- 1922: 452-453; WOODRUFF 1973:122; CARTWRIGHT 1974: 50-51; DELLACASA 1988: 276 (catalogue). Type locality: Mexico, Sierra Madre de Durango.

Distribution verified: USA (Alabama, Florida, Texas, Bahama Isl.), Central America, Venezuela, West Indies.

Specimens examined (58) – **Chiapas** (new state record): Hwy 190 at Puente La Cintla, 15.VI.1990, R. TURNBOW (RTC); Cinco Cerros, km 30 on Hwy 190, 1500 m, 8.VI.1989; El Aguacero, 16 km W Ocozocoautla, 24.VI.1989, H. & A. HOWDEN; Parc Laguna Belgica. 16 km NW Ocozocoautla, 7.VI.1989, H. & A. HOWDEN; Cinco Cerros 860 m, 31.V.1990, 9.VI.1990, H. & A. HOWDEN (HAHC-CMN). **Oaxaca**: 5 mi W El Camaron; Cotaxtla, 17.VI.1958, D. CARDIAZ (USNM); El Camaron, 20.V.1969, H. & A. HOWDEN (HAHC); 1.5 mi E Zapilote, ca. Carr. Panam. 5.VI.1987, W. WARNER; Cuicatlán, 15.VII.1999, E. GALANTE (CEUA). **Veracruz**: Mocambo, 5 km S Veracruz, 11.VII.1981, W. E. STEINER (USNM); La Mancha, 28.VII.1999, E. GALANTE (CEUA).

Previously recorded from Veracruz and Oaxaca by DELOYA (1964).

Bionomics. This very variable species was collected in May-July to light traps, occasionally found in cattle dung.

Ataenius platensis (BLANCHARD)

Oxyomus platensis BLANCHARD, 1843: 185.

Ataenius platensis HAROLD: 1876: 95, et Auctt. Type locality: Argentina, Buenos Aires.

Distribution verified: Southeastern United States to Argentina, West Indies.

Specimens examined (6) – **Veracruz** (new state record): Los Tuxtlas, San Andrés, 22.VIII.2001, A. DIAZ (CEUA); Los Tuxtlas, 30.III.1985, J. RAZOWSKI (ISEA).

Previously recorded from Oaxaca and Puebla by DELOYA (1994).

Bionomics. Collected through all months in various habitats from sea level to about 1000 m, attracted to light, found in forest litter and in cattle dung. Larval stages were described by VERDÚ & GALANTE (1999).

R e m a r k s. The species is extremely variable, some populations have been described as separate species, however, it is not possible to distinguish them because of contiguous variation. It is not excluded that there are hybrids on the whole area of distribution of these forms. The DNA analysis may partially resolve the problem of populations or separate species.

Ataenius strigicauda BATES

Ataenius strigicauda BATES, 1887: 96, pl.VI, fig.24.- Horn 1887: 83; CHAPIN 1940: 31-32; CARTWRIGHT & CHALUMEAU 1978: 13, fig. 8; STEBNICKA 1998: 200-201. Type locality: Mexico Cordoba.

Distribution verified. South Mexico, Central and South America, West Indies, Madeira.

Specimens examined (18) – **Puebla** (new state record): Zapotitlan Salinas, Jardin Botanico, 9.VII.1999, E. GALANTE (CEUA). **Veracruz**: Barranca de Metlac, Fortin de las Flores, 4.XII.1975, C. M. & O. S. FLINT (ISEA).

Bionomics. The species is very common in South America, collected in all months mainly to light traps, occasionally found in excrements. Larval stages were described by VERDÚ & GALANTE (1999).

Ataenius picinus HAROLD

Ataenius picinus HAROLD, 1867b: 281, et Aucutt.; STEBNICKA & HOWDEN 1997: 746-748, figs 4, 5, 22, 39; STEBNICKA 2001b: 28-29, figs 11, 40, 52. Type locality "Chile".

Synonyms: *Ataenius darlingtoni* HINTON, 1937: 179. Type locality: Puerto Rico.

Ataenius saluator FALL, 1930: 99. Type locality: Florida

Distribution. Southern US, Central and South America, West Indies, Fiji, Vanuatu, New Caledonia, Australia, New Zealand.

Specimens examined (2) – **Veracruz** (new state record): La Mancha, 24.VII.1999, (adults with larvae), E. GALANTE (CEUA);

Bionomics. Ecologically very diverse species, collected throughout the year to light, found in pitfall traps, in cow and sheep dung, leaf litter samples and in compost heaps. It has some potential as a minor pest; larvae were noted damaging seedlings, adults damaging strawberries, potatoes, and beans. Larval stages were described by VERDÚ & GALANTE (1999).

Ataenius glabriventris SCHMIDT

Ataenius glabriventris SCHMIDT, 1911:52.- 1922: 433; DELLACASA 1988: 275 (catalogue). Type locality: "Mexico".

Distribution (new records): Central America to Venezuela.

Specimens examined (12) – **Oaxaca** (new state record): 1.5 mi E Zapilote, ca. Carr. Panam. 5.VI.1987, W. WARNER (CEUA); 8 mi NW Diaz Ordaz, 2400 m, 15.V.1979, H. & A. HOWDEN (HAHC). **Puebla** (new state record): Tlaltizapan, Chapultepec, 17.VI.1958, D. CARDIAZ (USNM). **Veracruz**: Mocambo, 15 km S Veracruz, 11.VII.1981, W. STEINER (USNM); 19 mi NE Totutla 2500 ft, 25.VII.1973, A. NEWTON (ISEA).

Previously recorded from Veracruz by DELOYA (1994).

Bionomics. Collected in May – August to light traps in open forest.

R e m a r k. The species belongs to the *Ataenius strigatus*- group (STEBNICKA & LAGO, in press)

Ataenius apicalis HINTON

Ataenius apicalis HINTON, 1937: 195, figs 40-44.- CARTWRIGHT 1948: 151; WOODRUFF 1973: 113; CARTWRIGHT 1974: 98-99; DELLACASA 1988: 89 (catalogue). Type locality: Mexico, Veracruz, Minatitlan.

Distribution. USA, Mexico.

Specimens examined (14) – **Chiapas** (new state record): Rte 186 W Catazaja, 250 ft, 22.V.1972, P.A. MEYER; Palenque 100 m, 2-5.VII.1983, S. & J. PECK (CMN, HAHC). **Oaxaca** (new state record): Jaltepec Isth., Tehuantepec, 21.V.1964, F. S. BLANTON (USNM). **Veracruz**: 4 mi SE Tecolutla, 14.VII.1973, A. NEWTON (CEUA); Lake Catemaco 30.IV-1.V, 24.V. 30.V.1969, H. & A. HOWDEN (HAHC);

Bionomics. In USA collected in racoon dung, in cow dung on borders of swamp forest, attracted to light. Specimens examined were found in *Typha* marsh, in fungi and in rainforest litter. Phenology of *Ataenius apicalis* and reproductive features were discussed by MARTINEZ et al. (2002).

R e m a r k. The species belongs to the *Ataenius strigatus*-group (STEBNICKA & LAGO, in press).

Ataenius texanus HAROLD

Ataenius texanus HAROLD, 1874: 23.- HORN 1887: 71; CARTWRIGHT 1974: 56-57; DELLACASA 1988: 208 (catalogue). Type locality: USA, Texas.

Distribution. USA (widely distributed), Mexico. New country record: Central America to Panama, West Indies.

Specimens examined (62) – **Chiapas**: El Aguacero, 26.VI.1989, P. K. & E. B. LAGO (UMS). **Oaxaca** (new state record): 7 km S Tlaxiaco, 10.X.1990, R. BARANOWSKI; 3 km E Santiago Yolomecatl, 9.X.1990, R. BARANOWSKI (ISEA, UZIL). **Veracruz**: Barranca de Metlac, Fortin de las Flores, 4.XII.1975, C. M. & O. S. FLINT (USNM); La Mancha, 24.VII.1999, (adults with larvae), E. GALANTE (CEUA).

Previously recorded from Chiapas and Veracruz by DELOYA (1994).

Bionomics. The species occurs in open grassy forest, collected to light traps, found in forest litter.

Ataenius imbricatus (MELSHEIMER)

Aphodius imbricatus MELSHEIMER, 1844: 136.

Ataenius imbricatus: HAROLD, 1869: 1066, et Auctt.- CARTWRIGHT 1974: 28-30; STEBNICKA 2003b: 225, figs 2,3. Type locality: USA, Pennsylvania.

Distribution verified: USA, Central and South America, West Indies.

Specimens examined (6) – **Chiapas**: 1 km W Cinco Cerros, 25.VI.1990, M. C. THOMAS; Boca del Chajul, 23.VIII.1984, D. C. DELOYA; Tapachula, 10.IV.2002, J. R. VERDÚ (CEUA); Palenque, 28.VI.1983, S. & J. PECK (CMN). **Oaxaca**: 1.5 mi E Zapilote, ca. Carr. Panam. 5.VI:1987, W. WARNER (CEUA). **Veracruz**: La Mancha, 24.VII.1999, E. GALANTE (CEUA).

Previously recorded from Chiapas, Oaxaca and Veracruz by DELOYA (1994).

Bionomics. This is one of the most common and widely distributed species of *Ataenius*, collected throughout the year to light traps and in cattle dung.

Ataenius nugator HAROLD

Ataenius nugator HAROLD, 1880:41, et Auctt.; STEBNICKA 2001a: 263-264, figs 5-6. Type locality: "Medellin, Columbia".

Distribution. Mexico, Central America, Colombia, Brazil, Bolivia, Venezuela.

Specimens examined (25) – **Chiapas**: 15-20 km W Tuxtla, 16.VI.1989, H. & A. HOWDEN (CMN, HAHC). **Oaxaca**: El Chorreodero, 3.VI.1991, B. RATCLIFFE, J. ASHE, M. JAMESON (CEUA); 11 mi S Valle National, 3000 ft, 17.V.1971, H. & A. HOWDEN (HAHC). **Veracruz**: Atoyac, 24.VI.1983, J. B. STRIBLING (UMS).

Previously recorded from Chiapas, Oaxaca and Veracruz by STEBNICKA (2001a).

Bionomics. Collected in January-August to light traps in a wet tropical montane and lowland forest, sifted from shrubs litter, coffee forest litter and cacao pod litter.

Ataenius cribrithorax BATES

Ataenius cribrithorax BATES, 1887: 95-96 et Auctt.; STEBNICKA 2001a: 264, figs 7-8. Type locality: Mexico, Cordoba.

Distribution. Central America to Panama, West Indies.

Specimens examined (66) – **Veracruz**: Los Tuxtlas, San Andrés, 22.VIII.2001, A. DIAZ (CEUA); Fortin, Canyon Rio Metlac, 5.VIII.1969, S. & J. PECK (CMN); Santecomapan, 20.VI.1963, H. & A. HOWDEN; Lake Catemaco, 24-25.V. 1969, H. & A. HOWDEN (HAHC); La Estancia, 6.VI.2000, M. CRUZ (CEUA).

Previously recorded from Veracruz by STEBNICKA (2001a).

Bionomics. Collected in January – August to light traps, often found in human excrements.

Ataenius chapini HINTON

Ataenius chapini HINTON, 1938b: 3, fig.6, et Auctt.; STEBNICKA 2001: 265-266, figs 11-12. Type locality: Mexico, Tejupilco, Temascaltepec.

Synonym: *Ataenius frankorum* DELOYA, 2000.

Distribution. Mexico, Guatemala, Honduras, Costa Rica, Panama.

Specimens examined (95) – **Chiapas**: Cinco Cerros 860 m, 9.VI.1990; El Chorreodero, 8 km E Chiapa de Corzo 590 m, 25.V.1990; Laguna Belgica, 16 km NW Ocozocoautla 970 m, 7.VI.1990, H. & A. HOWDEN (HAHC); 10 km W Tuxtla Gutierrez, 23.VI.1989, P. K. LAGO & E. ZUCCARO (UMS). **Veracruz**: La Mancha, 21.VII.1999, (adults with larvae), E. GALANTE (CEUA).

Previously recorded from Chiapas and Veracruz by STEBNICKA (2001a).

Bionomics. Collected in March – August in human excrements and in litter of thorn shrubs.

Ataenius communis HINTON

Ataenius communis HINTON, 1936b: 421-425, figs 8-10.- STEBNICKA 2001a: 266-267, figs 14, 15. Type locality: Panama, Canal Zone, Ciricito.

Distribution. Central America, Colombia, Venezuela, Trinidad. New record for Mexico.

Specimens examined (8) – **Chiapas**: 5 km E Ocozocoautla 820 m, 4.VI.1990, H. & A. HOWDEN (CEUA, HAHC, ISEA). **Oaxaca**: 5 mi W El Camaron, 20.V.1969, H. & A. HOWDEN (HAHC).

Bionomics. The species has a wide range, usually collected from May to December in human excrements and to light traps.

Ataenius opatrinus HAROLD

Ataenius opatrinus HAROLD, 1867a: 82, et Auctt.; STEBNICKA, 2001a: 273-274, figs 3, 37-38, 52. Type locality: Brazil, Bahia.

Synonym: *Ataenius paraperforatus* DELOYA & IBANEZ-BERNAL, 2000.

Distribution. Florida, Central and South America.

Specimens examined (3) – **Veracruz**: Santecomapan, 20.V. 1969, H. & A. HOWDEN (ISEA).

Previously recorded from Veracruz by STEBNICKA (2001a).

Bionomics. Collected in January – March and June – December to light traps in forest, found in human excrements. Larval stages were described by VERDÚ & GALANTE (1999).

Ataenius perforatus HAROLD

Ataenius perforatus HAROLD, 1867c: 98, et Auctt.; STEBNICKA 2001a: 275, figs 3, 39. Type locality: “Columbia”.

Distribution verified: Central and South America.

Specimens examined (2) – **Chiapas** (new state record): El Aguacero, 24. VI.1989, S. TESTA & E. B. LAGO (ISEA).

Previously recorded from Veracruz (Cordoba) by BATES (1887).

Bionomics. Collected in almost all months in horse dung and to light traps in subtropical forest.

Ataenius holopubescens HINTON

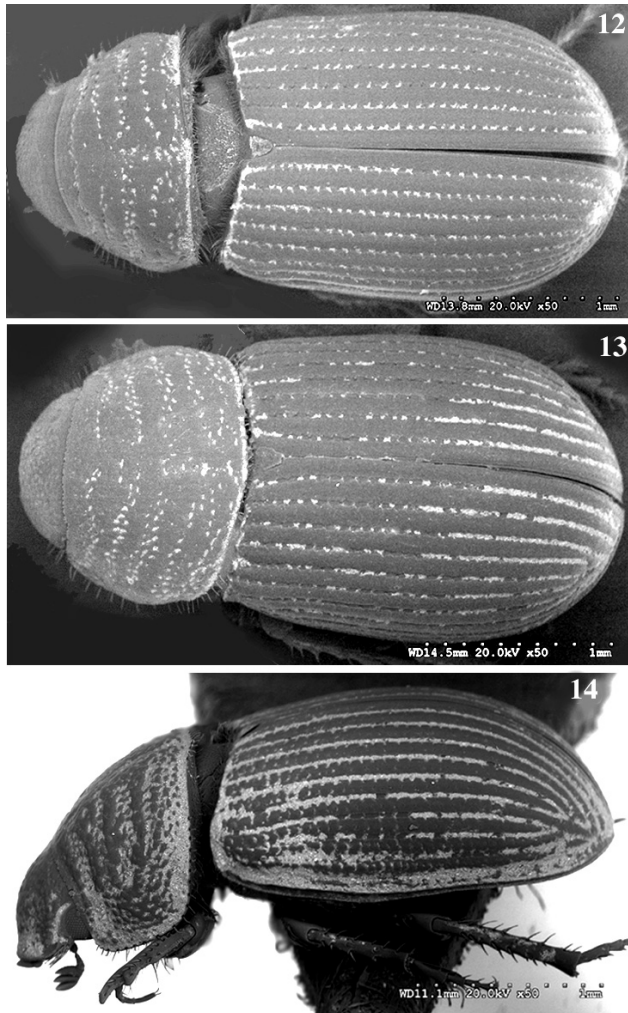
Ataenius holopubescens HINTON, 1938a: 124-126, figs 5.8; STEBNICKA 2003a: 232, figs 5, 23-24, 27. Type locality: Mexico, Tejupilco.

Distribution. Mexico. New country records: Guatemala, Honduras.

Specimens examined (21) – **Chiapas**: Cinco Cerros 860 m, 9.VI.1990, H. & A. HOWDEN (HAHC, ISEA); Mpio Cintalapa, 5 mi N Tenochtitlan, 3.VIII.1991, KOVARIK & PHILIPS (FSCA); El Aguacero. 16 km W Ocozocoautla 680 m, 5.VI.1990, H. & A. HOWDEN (CEUA, CMN).

Previously recorded from Puebla, Chiapas and Veracruz by DELOYA (1994).

Bionomics. This myrmecophilous species was collected in May – August, sifted from detritus remnants in the vicinity or in the nests of *Atta mexicana*.



Figs 12-14. Habitus: 12 – *Neopsammadius veraecrucis* (BATES); 13 – *N. werneri* (CARTWRIGHT), 14 – *N. culminatus* (BATES).

P s a m m o d i i n i

Neopsammadius veraecrucis (BATES)

(Fig. 12)

Psammadius veraecrucis BATES, 1887: 103.- SCHMIDT 1922: 477 (*Psammobius*); CARTWRIGHT 1955: 434-435. Type locality: Mexico, Veracruz.

Neopsammadius veraecrucis: RAKOVIČ 1986: 200; DELLACASA, 1988: 226 (catalogue); GORDON & PITTINO 1992: 264.

Distribution: Mexico.

Specimens examined (4) – **Oaxaca** (new state record): Cuicatlán, 3, 15.VII.1999, E. GALANTE (CEUA, ISEA). **Veracruz**: La Mancha, 24.VII.1999, E. GALANTE (CEUA); Mocambo, 14 km S Veracruz, 11.VII.1981, W. E. STEINER (ISEA).

Bionomics. Specimens were collected in sheep droppings.

Neopsammodius weneri (CARTWRIGHT)

(Fig. 13)

Psammodius weneri CARTWRIGHT, 1955: 429. Type locality: Mexico, S.L.P. Tamazunhale.*Neopsammodius weneri*: RAKOVIČ, 1986: 201; DELLACASA 1988: 313 (catalogue); GORDON & PITTINO 1992: 264.

Distribution. USA (Texas), Mexico, Honduras.

Specimens examined (5) – **Chiapas** (new state record): Cinco Cerros 800 m, 9.VI.1990, H. & A. HOWDEN (HAHC, ISEA).

Previously recorded from Veracruz by RAKOVIČ (1986).

Bionomics. Specimens were collected in cattle dung.*Neopsammodius culminatus* (BATES)

(Fig. 14)

Psammodius culminatus BATES, 1887: 103; SCHMIDT 1922: 481 (*Psammobius*); CARTWRIGHT

1955: 424-425. Type locality: Mexico, Presidio.

Neopsammodius culminatus: RAKOVIČ 1986: 200; DELLACASA 1988: 117 (catalogue); GORDON & PITTINO 1992: 264.

Distribution. Mexico.

Specimens examined (3) – **Veracruz** (new state record): La Mancha, 24.VII.1999, E. GALANTE (CEUA, ISEA).*Bionomics*. Specimens were collected in sheep droppings.*Trichiorhyssenus cristatellus* (BATES)*Rhyssenus cristatellus* BATES, 1887: 102.*Trichiorhyssenus cristatellus*: CLOUËT 1901: 27; SCHMIDT 1922: 519; GORDON & CARTWRIGHT 1980: 19-20, figs 7, 16, 30; GORDON & PITTINO 1992: 269. Type locality: Mexico, Presidio.

Distribution: Mexico, Guatemala, El Salvador.

Specimens examined (2) – **Chiapas**: Cinco Cerros 860 m, 9, 30.VI.1990, H. & A. HOWDEN (HAHC, ISEA).

Previously recorded from Chiapas and Veracruz by GORDON & CARTWRIGHT (1980).

Bionomics. Unknown.

A p h o d i i n i

In this tribe, the specimens collected mostly by the staffs of CIBIO are listed. Redescriptions of some species and data on their distribution are adequately covered by DELLACASA M. et al. (1998, 2002).

Oxyomus setosopunctatus SCHMIDT*Oxyomus setosopunctatus* SCHMIDT, 1911: 15.- DELLACASA M. & STEBNICKA 2001: 32-34, figs 2-4, 7. Type locality: "Mexico".

Distribution. Mexico.

Specimens examined (1) – **Veracruz**: Santecomapan, 20.V. 1969, H. & A. HOWDEN (ISEA).

Previously recorded from Veracruz by DELLACASA M. & STEBNICKA (2001).

Bionomics: Unknown.

Cephalocyclus villosipes (HAROLD)

Aphodius villosipes HAROLD, 1862: 384. Type locality: Mexico.

Aphodius (Platyderides) villosipes: SCHMIDT, 1922: 50; DELLACASA, 1988: 214 (catalogue).

Cephalocyclus villosipes: DELLACASA M. et al. 1998: 150-151, figs 19-21; DELLACASA M. et al. 2002: 220.

Distribution. Mexico.

Specimens examined (789) – **Puebla** (new state record): Zapotitlan Salinas, San Juan Raya, 7-9.VII.1999; Zapotitlan, Jardín Botánico, 8.VII.1999; Zapotitlan, El Salado, 7-9.VII.1999; Zapotitlan, Pto de Fierro, 7-8.VII.1999, E. GALANTE (CEUA). **Oaxaca**: San Sebastian Frontera, Cerro Chupamirto, 8.VII.1999; San Sebastian Frontera, Cerro Colorado, 10.VII.1999, E. GALANTE (CEUA). **Veracruz** (new state record): Ayahualulco, San Jose Aguasuelos, 26.VII.1999, E. GALANTE (CEUA).

Previously recorded from Oaxaca by BATES (1887).

Bionomics. Collected in a great number of specimens to pitfall traps baited with fresh cattle dung.

Cephalocyclus hogei (BATES)

Aphodius hogei BATES, 1887: 80. Type locality: Mexico, Las Vigas.

Aphodius (Platyderides) hogei: SCHMIDT 1922: 49; DELLACASA 1988: 140 (catalogue).

Cephalocyclus hogei: DELLACASA M. et al. 1998: 142; DELLACASA M. et al. 2002: 213-215, figs 44, 56, 57.

Distribution: Mexico, Guatemala.

Specimens examined (4) – **Veracruz**: Cruz Blanca (Xalapa) 2300 m, 17.VII.2000, J. R. VERDÚ (CEUA, ISEA).

Previously recorded from Veracruz by DELLACASA M. et al. (2002).

Bionomics. Specimens examined were collected in sheep dung on grassland. Populations of *C. hogei* and reproductive features were discussed by CRUZ et al. (2002).

Cephalocyclus stebnickae DELOYA

Cephalocyclus stebnickae DELOYA & IBÁÑEZ-BERNAL, 2000: 320-322, figs 10-15. Type locality: Mexico, Chiapas, Teopisca.

Specimens examined (3). **Chiapas**: San Cristobal, 2100 m, 3.VII.2002, M. DELLACASA & M. MARTINEZ (CEUA, ISEA).

R e m a r k. This species is here included through the courtesy of Marco DELLACASA who collected the specimens.

Aphodius (Gonaphodiellus) bimaculosus SCHMIDT

(Fig. 20 a, b)

Aphodius bimaculosus SCHMIDT, 1909: 19. Type locality: "Mexico".

Aphodius (Gonaphodiellus) bimaculosus: SCHMIDT 1913: 134; 1922: 120-121; DELLACASA 1988: 98 (catalogue).

Aphodius (Gonaphodiellus) maculosus: SCHMIDT 1916: 114 (lapsus calami).

Distribution: Mexico, Guatemala.

Specimens examined (33) – (new state records) **Chiapas**: Tapachula, El Porvenir, 11.IV.2002, J. R. VERDÚ (CEUA). **Oaxaca**: 17 km N Villa Diaz Ordaz, 2750 m, 7.IX.1990, R. BARANOWSKI; 16 km S Loma Morillo nr Garela, 15.IX.1994, R. BARANOWSKI; 18 km N Oaxaca City, 2400 m, 17.XI.1989, R. BARANOWSKI; 45 km NE Putla de Guerrero, 2400 m, 2.IX.1990, R. BARANOWSKI (ISEA, UZIL).

Bionomics. The specimens were sifted from leaf litter in pine-oak forest and taken from cow dung in cloud forest.

R e m a r k s. *Aphodius hoffmanni* ISLAS (1945:451-452, fig. 2) described from Chiapas (Aldea Coronado) is most probably conspecific with *A. bimaculosus*.

***Aphodius (Gonaphodiellus) xalapensis* sp. n.**

(Figs 15, 21 a, b, 23)

Material. Holotype male, Mexico, **Veracruz**, Las Vigas (Xalapa), 18.VII.2000, light trap in *Quercus* forest, 2000 m, J. R. VERDÚ, in CEUA. Paratypes (2) same data as holotype, in CEUA, ISEA.

D e s c r i p t i o n. Length 5.4-5.6 mm, greatest width 2.3-2.4 mm. Body elongate, convex, glabrous, shiny; colour dark brown, clypeal margin, pronotal sides and elytral base light brown, legs yellowish brown. Head converging anteriorly, clypeal median emargination shallow, edge obtusely rounded on each side of emargination and nearly straight toward small, right-angled gena; surface uniformly finely punctured, frontal suture indicated by line. Pronotum transverse, base sinuate lacking marginal line, posterolateral angles weakly truncate and finely margined; pronotal punctures everywhere fine, similar to those of head, generally separated by about two diameters. Scutellum triangular, shiny, impunctate. Elytra with minute humeral denticles; striae very fine, shallow, their punctures weakly crenate inner margins of intervals; all intervals flat from base to apex, surface punctures scattered, finer than those of pronotum. Ventral surface shiny; mesosternum with median gibbosity and pale hair on each side of gibbosity; metasternum convex, midline feebly impressed, surface punctures same size and spacing as those of elytral intervals; abdominal sternites with sutures convex and few scattered punctures, penultimate sternite and pygidium with 6-8 long pale hairs. Protibial outer teeth moderate in size, apical spur slender, acute in both sexes; meso- and metatibiae with weak transverse ridges, apex fringed with unequal setae, apical spurs slender; tarsi long; basal tarsomere of metatarsus one-fourth longer than upper tibial spur and subequal to following tarsomeres together. Epipharynx as in Fig. 23. In male, pronotum less convex than in female; genitalia as in Fig. 21 a, b.

A f f i n i t y. *Aphodius xalapensis* is closely related to *A. bimaculosus* SCHMIDT; it differs from that species primarily by having the head distinctly trapezoid with finer punctures, the elytra shiny lacking preapical spots and the posterolateral angle of pronotum simply truncate, not emarginate. The male genitalia of both species also differ in shape (Figs. 20 a, b, 21 a, b).

***Aphodius (Gonaphodiellus) opisthius* BATES**

Aphodius opisthius BATES, 1887: 92, et Auctt. Type locality: Veracruz, Cerro de Plumas.

Aphodius (Trichaphodius) opisthius: DELLACASA 1988: 173 (catalogue).

Gonaphodiellus opisthius: DELLACASA M. et al. 2002: 189-192, figs 32-34, 42.

Distribution: Mexico, Guatemala, Costa Rica, Honduras.

Specimens examined (8) – **Oaxaca**: 12 km N Oaxaca City, 1900 m, 5.X.1990, R. BARANOWSKI (ISEA); **Veracruz**: El Fresno (Xalapa) 1800 m, 18.VII.2000, J. R. VERDÚ (CEUA).

Previously recorded from Oaxaca and Veracruz by DELLACASA M. et al. (2002).

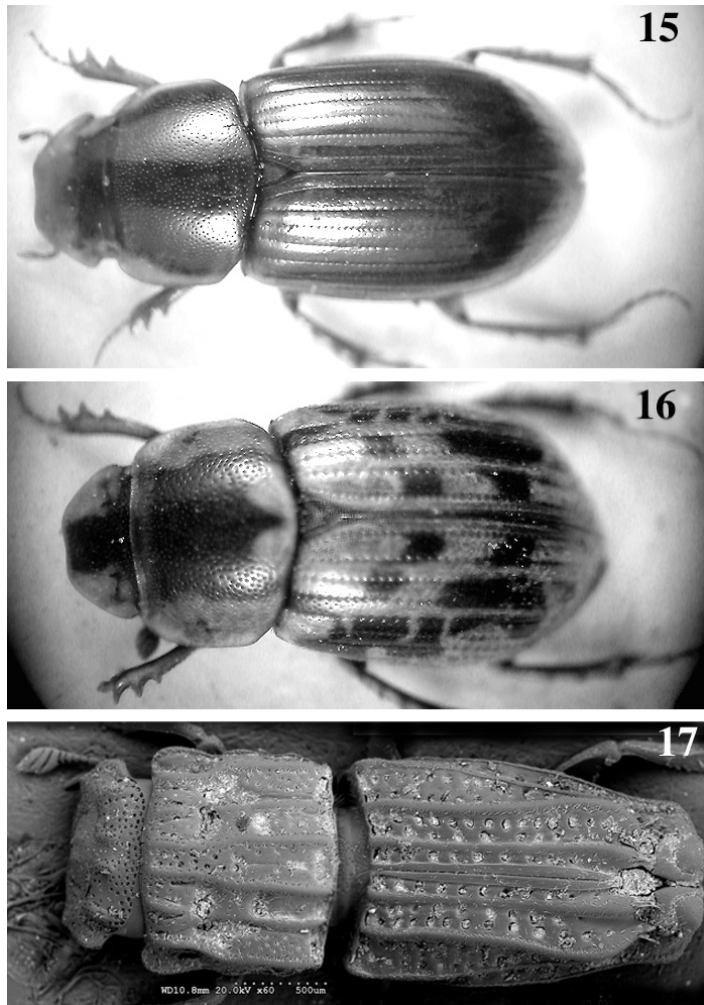
Bionomics. Specimens examined were collected to pitfall trap near stream in tropical montane forest.

***Aphodius (Blackburneus) guatemalensis* BATES**

Aphodius guatemalensis BATES, 1887: 88, et Auctt. Type locality: Guatemala, Quezaltenango.

Aphodius (Emadiellus) guatemalensis: DELLACASA 1988: 137 (catalogue).

Blackburneus guatemalensis: DELLACASA M. et al., 2002: 193-197, figs 28. 45-47.



Figs 15-17. Habitus: 15 – *Aphodius xalapensis* sp. n., 16 – *A. chiapasensis* sp. n., 17 – *Termitodius chaki* REYES & MARTINEZ.

Distribution: Mexico, Guatemala, Costa Rica, Panama.

Specimens examined (40) – **Chiapas** (new state record): Tapachula, 10.IV.2002, (adults with larvae), J. R. VERDÚ (CEUA); 10 km W Tuxtla Gutierrez, 23.VI.1989 P. K. LAGO, E. ZUCCARO; Sumidero Nat. Park., 21.VI.1989, E. ZUCCARO, P.K. LAGO; El Aguacero, 24.VI.1989, S. TESTA, E. B. LAGO (ISEA, UMS). **Oaxaca**: San Sebastian Frontera, Cerro Chupamirto, 8.VII.1999, E. GALANTE (CEUA). **Puebla** (new state record): Zapotitlan Salinas, El Salado, 7-9.VII.1999, E. GALANTE; Zapotitlan Salinas, 7-9.VII.1999, E. GALANTE; Zapotitlan, San Juan Raya, 7-11.VII.1999, E. GALANTE (CEUA).

Previously recorded from Oaxaca by DELLACASA M. et al. (2002).

Bionomics. Specimens examined were collected in cow and sheep dung. Populations and reproductive features of *Aphodius guatemalensis* were discussed by CRUZ et al. (2002).

***Aphodius (Blackburneus) charmionus* BATES**

Aphodius charmionus BATES, 1887: 89, et Auctt. Type locality: Mexico, Veracruz, Jalapa.

Aphodius (Chilothorax) charmionus: DELLACASA 1988: 108 (catalogue).

Blackburneus charmionus: DELLACASA M. et al. 2002: 201-202, figs.38-41.

Distribution. Central America.

Specimens examined (3). **Veracruz** – El Fresno, (Xalapa) 1800 m, 18.VII.2000, J. R. VERDÚ (CEUA).

Previously recorded from Veracruz by DELLACASA M. et al. (2002).

Bionomics. The specimens were collected to pitfall traps.

Aphodius (Blackburneus) saylori HINTON

Aphodius saylori HINTON, 1934b: 192. Type locality: Mexico, Temascaltepec, Real de Arriba 6000 ft.

Aphodius (Blackburneus) saylori: DELLACASA 1988: 147 (catalogue).

Distribution: Mexico.

Specimens examined (10) – **Puebla** (new state record): Zapotitlan Salinas, San Juan Raya, 7-11.VII.1999; Zapotitlan Salinas, Jardín Botánico, 7-9.VII.1999; Zapotitlan Salinas, Cerro Cutha, 7-9.VII.1999; Zapotitlan Salinas, El Salado, 7-9.VII.1999, E. GALANTE (CEUA, ISEA).

Bionomics. Specimens examined were collected in cow and sheep dung.

Aphodius (Agrilinus) sallei HAROLD

Aphodius sallei HAROLD, 1863: 336, et Auctt.. Type locality: Mexico, Cordoba.

Aphodius (Bodilus) sallei: DELLACASA 1988: 194 (catalogue); DELLACASA M. et al. 1998: 159-160, figs 41-44.

Agrilinus sallei: DELLACASA M. et al. 2002: 159-160.

Distribution. USA, Central America, West Indies.

Specimens examined (30) - **Chiapas**: Tapachula, 10.IV.2002 (adults with larvae), J. R. VERDÚ (CEUA). **Oaxaca**: San Sebastian Frontera, 10.VII.1999, E. GALANTE; Cuicatlán, Santiago Dominigillo, 14-15.VII.1999, E. GALANTE; Cuicatlán, Valerio Trujano, 15.VII.1999, E. GALANTE (CEUA). **Puebla**: Zapotitlan Salinas, 8-10.VII.1999, E. GALANTE (CEUA). **Veracruz**: Los Tuxtlas, 25.III.1985, J. RAZOWSKI (ISEA).

Recorded from southern states of Mexico by DELLACASA M. et al. (2002).

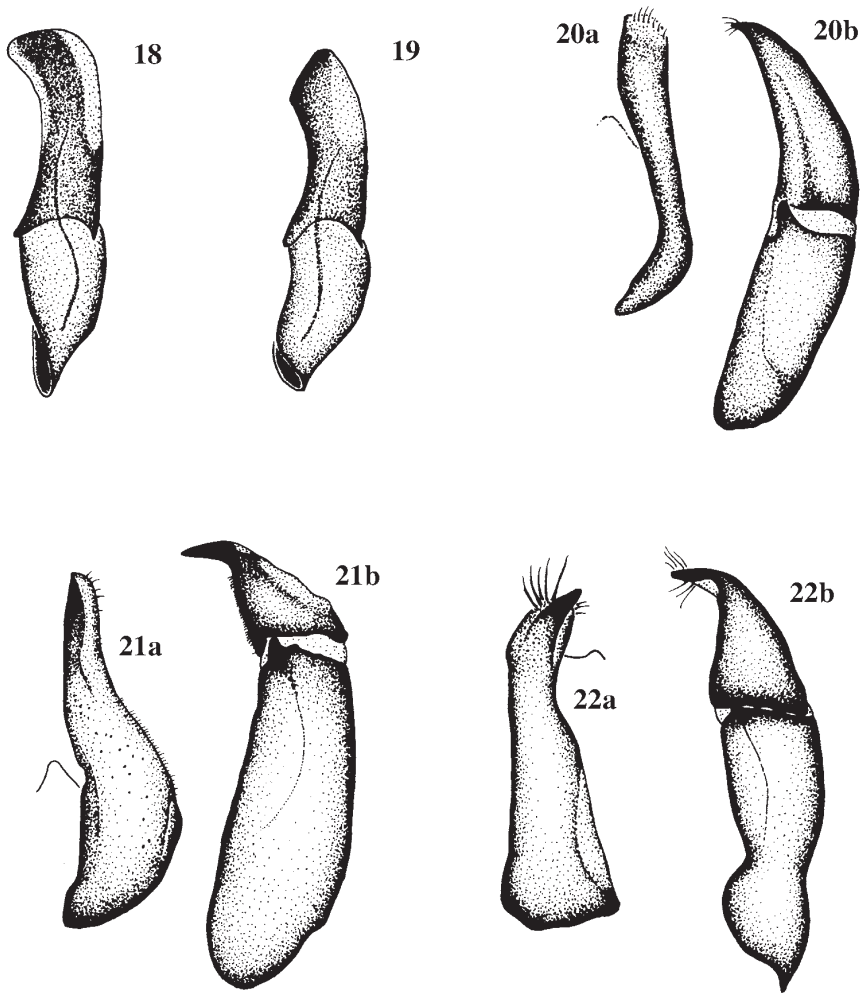
Bionomics. Specimens examined were collected to pitfall traps baited with cattle dung.

Aphodius (Agrilinus) chiapasensis sp. n.

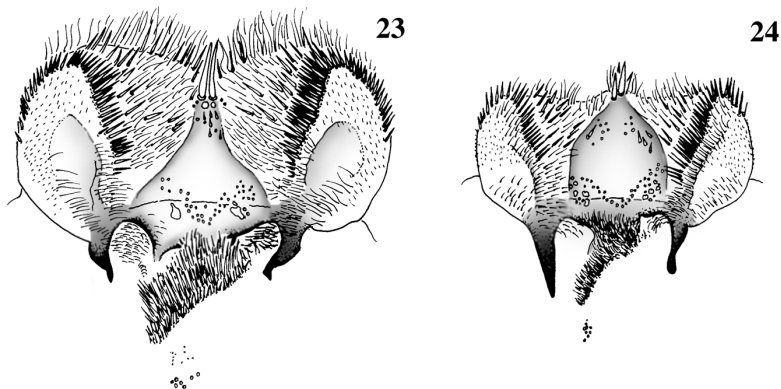
(Figs 16, 22 a, b, 24).

Material. Holotype male, Mexico, **Chiapas**, Mozotal, 10.IV.2002, J.R. VERDÚ, in CEUA. Paratype female, same data as holotype, in CEUA.

D e s c r i p t i o n. Length 3.8-4.0 mm, greatest width 1.8-2.0. Body oval, robust, microreticulate and moderately shiny; piceous with yellow markings. Head trapezoid, piceous medially with wide yellow spot on each side; median clypeal emargination shallow, edge obtusely rounded on each side of emargination, straight toward small rounded gena; frontal suture indicated by arcuate, slightly convex line, surface punctures fine but deep, separated by about one diameter. Pronotum convex, sides widely yellow with dark spot medially, piceous disc with two close yellow spots at base; pronotal lateral edge finely margined, base slightly sinuate lacking marginal line; surface everywhere punctured, punctures along anterior margin same size as those of vertical band of head, remained surface with moderate in size, evenly distributed punctures separated by their diameter. Scutellum widely triangular, yellow with darker margins and few punctures. Elytra arcuate, convex, minutely setigerous in apical third, with following dark markings: suture dark, intervals 2, 4 each with two median spots, intervals 6-7 with wide long spot joining apical spot of interval 4, interval 8 with two spots in anterior half; elytral humeral denticles minute, striae rather fine with round



Figs 18-22. Male genitalia: 18-19, 20b-22b – aedeagus in lateral view: 18 – *Ataenius usingeri* HINTON, 19 – *A. pseudousingeri* sp. n., 20b – *Aphodius bimaculosus* SCHMIDT, 21b – *A. xalapensis* sp. n., 22b – *A. chiapasensis* sp. n.; 20a-22a – left paramera in dorso-caudal view: 20a – *A. bimaculosus* SCHMIDT, 21a – *A. xalapensis* sp. n., 22a – *A. chiapasensis* sp. n.



Figs 23-24. Epipharynx: 23 – *Aphodius xalapensis* sp. n., 24 – *A. chiapasensis* sp. n.

vague punctures, intervals flat from base to apex, distinctly finely punctured along striae. Ventral surface alutaceous; disc of metasternum convex with few moderate punctures; abdominal sternites punctured with row of short pale setae. Legs moderate in length; meso- and metatibiae with well developed transverse ridges and apical fringe of short, equal setae; tarsi relatively long, basal tarsomere of metatarsus one-third longer than upper tibial spur and shorter than three next tarsomeres combined. Epipharynx as in Fig. 24. In male, pronotum wider and less convex than in female; genitalia as in Fig. 22 a, b.

A f f i n i t y. *Aphodius chiapasensis* is most similar to *A. ornatus* SCHMIDT, *A. multimaculosus* HINTON and *A. azteca* HAROLD. It differs from these species by having the base of pronotum with no trace of marginal line and the pronotal punctures uniform in size and spacing. A variation in colour pattern undoubtedly occurs in all the species mentioned. Although the type specimen of *A. Multimaculosus* HINTON was not studied by the authors, it seems likely that it is conspecific with *A. ornatus* SCHMIDT.

Aphodius (Dipterna) dugesi BATES

Aphodius dugesi BATES, 1887: 83. Type locality: Mexico, Guanajuato.

Aphodius (Dipterna) dugesi: DELLACASA G. 1986: 234-235, figs 25, 208-211.

Dipterna dugesi: DELLACASA M. et al., 2002: 158.

Distribution: Mexico.

Specimens examined (7) – **Puebla** (new state record): Zapotitlan Salinas, 8.VII.1999, E. GALANTE; Tehuacan, 8.VII.1999, E. GALANTE (CEUA, ISEA).

Previously recorded from Oaxaca by DELLACASA M. et al. (2002).

Bionomics. Specimens examined were collected at *Atta* nests.

Aphodius (Nialus) nigrita (FABRICIUS)

Aphodius nigrita FABRICIUS, 1801: 73, et Auctt. Type locality: Mauritius.

Aphodius (Nialus) nigrita: SCHMIDT 1913: 128.

Aphodius (Nialaphodius) nigrita: DELLACASA 1988: 168 (catalogue).

Nialaphodius nigrita: DELLACASA M. et al. 2002: 167-168

Distribution. USA, Central and South America, West Indies, Africa, Madagascar.

Specimens examined (6) – **Oaxaca**: Cuicatlán, Valerio Trujano, 15.VII.1999, E. GALANTE (CEUA). **Veracruz**: Los Tuxtlas, 29.III.1985, J. RAZOWSKI (ISEA).

Previously recorded from south Mexico by DELLACASA M. et al. (2002).

Bionomics. Specimens examined were collected in sheep dung.

Aphodius (Nialus) lividus (OLIVIER)

Scarabaeus lividus OLIVIER, 1789: 86. Type locality: France, Vincennes.

Aphodius (Nialus) lividus: REITTER 1892: 202, et Auctt.

Aphodius (Labarrus) lividus: DELLACASA 1988: 154 (catalogue).

Labarrus lividus: DELLACASA M. et al. 2002: 169-170, figs 21-22.

Distribution. All zoogeographical regions.

Specimens examined (7) – **Chiapas**: Tapachula, 10.IV.2002, J. R. VERDÚ (CEUA). **Oaxaca**: Cuicatlán, 3.VII.1999, E. GALANTE; Puebla, Zapotitlan Salinas, 7-9.VII.1999, E. GALANTE (CEUA). **Veracruz**: Los Tuxtlas, 30.III.1985, J. RAZOWSKI (ISEA).

Recorded from southern states of Mexico by DELLACASA M. et al. (2002).

Bionomics. Specimens examined were collected in cow dung.

R h y p a r i n a e

Termitodius chaki REYES & MARTINEZ

(Fig. 17)

Termitodius chaki REYES & MARTINEZ, 1979: 125-128, figs 8, 20-22.- CHALUMEAU 1981: 13 (nota); DELLACASA 1988: 267 (catalogue). Type locality: Mexico, Chiapas, Selva Lacandona.

Distribution: Mexico.

Specimens examined (3) – **Oaxaca** (new state record): 26 km E Teotitlan del Camino, 2250 m, 26.IX.1990, R. BARANOWSKI (ISEA, UZIL).

Bionomics. The species is very little known, found in the nest of termites *Coptotermes testaceus* (L.). The specimens examined were sifted from leaf litter in mixed oak forest.

Cartwrightia islasi CARTWRIGHT

Cartwrightia islasi CARTWRIGHT, 1967: 2-4, fig. 1.- DELLACASA 1988: 283 (catalogue). Type locality: El Salvador, San Salvador.

Distribution: Mexico, El Salvador, Guatemala.

Specimens examined (3) – **Chiapas** (new state records): Chorreodero, Cnyn, 3.VII.1991, B. RATCLIFFE & J. ASHE & M. JAMESON (UNSM); Palenque, 28.VII.1983, S. & J. PECK (HAHC). **Veracruz**: Cuitlahuac, 10-12.VIII.1964, P. SPANGLER (USNM).

Recorded from Veracruz by CARTWRIGHT (1967).

Bionomics: This myrmecophilous species was taken from a large detritus cavity of *Atta cephalotes* (L.).

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