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Artículo

An updated checklist of Mexican handsome fungus beetles: Families Endomychidae, Anamorphidae and Eupsilobiidae (Polyphaga: Coccinelloidea), with new records from the Neotropical region

Lista actualizada de los escarabajos de los hongos de México: Familias Endomychidae, Anamorphidae y Eupsilobiidae (Polyphaga: Coccinelloidea), con nuevos registros para la región Neotropical

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RESUMEN

Se actualiza la lista de especies para México de las familias de escarabajos micófagos Endomychidae, Anamorphidae y Eupsilobiidae. Se reportan 53 especies y dos subespecies de Endomychidae, nueve de Anamorphidae y dos de Eupsilobiidae. *Bystus* es el género más diverso en Anamorphidae (4spp.). *Stenotarsus* (23 spp.) es el género más diverso de Endomychidae seguido por *Epipocus* (21 spp.). Veracruz es el estado con mayor diversidad de las tres familias (31 spp de Endomychidae, 5 spp. de Anamorphidae spp. y 1 sp. de Eupsilobiidae) seguido por Chiapas (17 spp. de Endomychidae spp.) Oaxaca (15 spp. de Endomychidae) y Jalisco (13 spp. de Endomychidae). Adicionalmente, se incluyen primeros registros de especies para diversos estados en México y países de la región Neotropical. *Stenotarsus lemniscatus* Gorham se registra de Belice, *S. mexicanus* Arriaga-Varela *et al*. de Belice, *Epipocus alvaradi* Strohecker de El Salvador, *E. manni* Strohecker de Honduras, *E. punctatus* LeConte de Nicaragua, *Anidrytus compactus* Strohecker de Ecuador y *A. helvolus* Gerstaecker de Argentina.

Palabras clave: escarabajos micófagos, región Neotropical, listado, nuevos registros.

ABSTRACT

The list of species of fungus beetle families Endomychidae, Anamorphidae and Eupsilobiidae (Endomychidae sensu lato) in Mexico is updated. Fifty three species and two subspecies of Endomychidae, nine of Anamorphidae and two of Eupsilobiidae are reported. *Bystus* is the most diverse genus in Anamorphidae (4 spp.); *Stenotarsus* (23 spp.) is the most diverse genus in Endomychidae followed by *Epipocus* (21 spp.). Veracruz is the Mexican state with the highest diversity for the three families (31 spp. Endomychidae, 5 spp. Anamorphidae and 1 sp. Eupsilobiidae), followed by Chiapas (17 spp. Endomychidae), Oaxaca (15 spp. Endomychidae) and Jalisco (13 spp. Endomychidae). Additionally, first records for Mexican states and countries of the Neotropical region are provided. *Stenotarsus lemniscatus* Gorham is recorded from Belize, *S. mexicanus* Arriaga-Varela *et al*. from Belize, *Epipocus alvaradi* Strohecker from El Salvador, *E. manni* Strocheker from Honduras, *E. punctatus* LeConte from Nicaragua, *Anidrytus compactus* Strohecker from Ecuador and *A. helvolus* Gerstaecker from Argentina.

Key words: handsome fungus beetles, Neotropical region, list, new record.

The knowledge of the handsome fungus beetles (Endomychidae sensu Tomaszewska 2000, 2005) from Mexico was synthesized by Arriaga-Varela *et al*. (2007). These authors presented a commented checklist of the species recorded from the country and provided original information on their distribution and natural history. Since then, taxonomical actualizations and additions to the Mexican fauna have been published (Arriaga-Varela 2013; Arriaga-Varela and Shockley 2010; Arriaga-Varela *et al*. 2013, 2014, 2018). The concept of the family has changed recently due to a comprehensive phylogenetic study based on DNA sequences (Robertson *et al*. 2005). Three of the former subfamilies of Endomychidae were raised to family status: Anamorphidae, Eupsilobiidae and Mycetaeidae.

Members of Endomychidae are typically mycophagous feeding on hyphae or spores of a wide variety of fungal types (Shockley *et al*. 2009b). However, few exceptions are known, including predation on small arthropods by members of Oriental genus *Saula* Gerstaecker (Endomychinae). Anamorphids are suspected to be obligate spore feeders. Species in the family Eupsilobiidae are very seldomly collected and almost nothing is known about their biology. Nevertheless, specimens of the South African genus *Microxenus* Wollaston have been collected in association with ants (Pakaluk and Ślipiński 1990; Tomaszewska 2011).
The present contribution updates the list by Arriaga-Varela *et al*. (2007) taking into account the taxonomical changes at familiar and subfamiliar level by Robertson *et al*. (2015)

and additions to the fauna published since 2007. Additionally, new country records from the Neotropical region are included.

MATERIAL AND METHODS

The present checklist is based on the lists by Arriaga-Varela *et al*. (2007) and Shockley *et al*. (2009a) plus the additions by Arriaga-Varela and Shockley (2010), Arriaga-Varela (2013) and Arriaga-Varela *et al*. (2013, 2014, 2018). Additional new geographical records from Mexico and the Neotropics are based on the study of specimens deposited in the following entomological collections:

CNIN – Colección Nacional de Insectos, Instituto de Biología, UNAM, Distrito Federal, México (Santiago Zaragoza Caballero),
CZUG - Colección Entomológica, Centro de Estudios en Zoología, UdeG, Zapopan, México (José Luis Navarrete-Heredia),
FSCA – Florida State Collection of Arthropods, Gainesville, United States of America (Paul Skelley),
IRSNB - Institute Royal des Sciences Naturelles de Belgique, Brussels, Belgium (P. Limbourg),
NMPC - National Museum, Prague, Czech Republic (Lukaš Sekerka).

Distribution for states is provided for Mexico. When information on the distribution within Mexico is not available just the country is listed. New distributional records for Mexican states and other countries in the Neotropical regions are marked with an '*' and the specimens label data are provided verbatim. Acronyms used for the Mexican states are: BCS: Baja California Sur; CAMP: Campeche; COL: Colima; CHIH: Chihuahua; CHIS: Chiapas; DF: Distrito Federal; DGO: Durango; GRO: Guerrero; HGO: Hidalgo; JAL: Jalisco; MEX: Estado de México; MICH: Michoacán; MOR: Morelos; NAY: Nayarit; OAX: Oaxaca; PUE: Puebla; QRO: Querétaro; QROO: Quintana Roo; SLP: San Luis Potosí; SIN: Sinaloa; SON: Sonora; TAB: Tabasco; TAMPS: Tamaulipas; VER: Veracruz; YUC: Yucatán.

Habitus photographs were taken using a Canon D-550 digital camera with attached Canon MP-E65mm f/2.8 1–5 macro lens.

RESULTS

We record the presence in Mexico of 9 described species of Anamorphidae, 53 of Endomychidae and 2 of Eupsilobiidae. Five subfamilies of Endomychidae are reported from Mexico: Merophysiinae (2 genera, 11 species), Lycoperdininae (2 gen., 2 spp.), Endomychinae (1 gen., 23 spp), Epipocinae (4 gen., 26 spp.) and Pleganophorinae (1 gen., 1 spp.). The genus *Stenotarsus* Perty is the most diverse with 23 species, whereas *Epipocus* has 21. Merophysiine genera *Holoparamecus* Curtis and *Rueckeria* Arriaga-Varela *et al*. include 6 and 5 species, respectively. A preliminary study of specimens in different collections, however, suggests that the diversity of the latter genus could be highly underestimated at the moment, as they seem to have a high degree of endemism which manifests itself in many species in small patches of cloud forests and other mountain ecosystems in Mexico and Central America (personal observation). Veracruz is the state with the highest number of species registered (5 Anamorphidae, 31 Endomychidae and 1 Eupsilobiidae) followed by Chiapas (17 Endomychidae) and Oaxaca (15 Endomychidae). Jalisco has 15 species of Endomychidae that contrasts with the six species recorded by Arriaga-Varela *et al*. (2007). This is mainly a product of extensive field work and revision of specimens in many collections done for the review of *Stenotarsus* from the region (Arriaga-Varela *et al* 2013).

Mycetaeidae, one of the former subfamilies within Endomychidae, is composed of two genera distributed in Africa and the Palearctic region, hence it is not present in Mexico. However, *Mycetaea subterranea* (Fabricius) is known to be widespread in Europe, United States, and other regions of the globe, probably due to an association with molds in stored products, so its occurrence in Mexico cannot be discarded but still needs to be confirmed.

Checklist of Mexican Anamorphidae, Endomychidae and Eupsilobiidae

Family Anamorphidae Strohecker, 1953: 15 (=Mychotheninae)

This family has nearly worldwide distribution, with 36 genera occurring in all main biogeographical regions except for New Zealand (Shockley *et al*. 2009a). Adults and larvae are spore feeders and can be found in the surface of rotten logs of hard bracket fungi (Shockley *et al*. 200b). Larvae of the Neotropical genera, *Bystus* Guérin-Méneville (Fig. 1) and *Catapotia* Thomson (Fig. 2), both present in Mexico, are known to cover themselves with debris from the environment avoid predators (Leschen and Carlton 1993; Arriaga-Varela and Tomaszewska 2015). Six genera and nine species are known to occur in Mexico.

Acritosoma Pakaluk and Ślipiński, 1995: 330

Type species: *Acritosoma elongatum* Pakaluk and Ślipiński, 1995: 332.

A. ovatum Pakaluk and Ślipiński, 1995.

Mexico: SLP.

Acritosoma ovatum Pakaluk and Ślipiński, 1995: 334; Arriaga-Varela *et al*. 2007: 5; Shockley *et al*. 2009a: 7.

Bystus Guérin-Méneville, 1857: 270

Type species: *Bystus coccinelloides* Guérin-Méneville, 1857: 270.

Rhymbus Gerstaecker, 1858: 347.

Type species: *Rhymbus hemisphaericus* Gerstaecker, 1858: 349.

B. apicalis (Gerstaecker, 1858)
Mexico, Guatemala, Colombia.
Rhymbus apicalis Gerstaecker, 1858: 350; Gorham 1890: 143; Blackwelder 1945: 440.
Bystus apicalis: Strohecker 1953: 21; Arriaga-Varela *et al*. 2007: 7; Shockley *et al*. 2009a: 9.
B. fibulatus (Gorham, 1890)
Mexico: VER.
Rhymbus fibulatus Gorham, 1890: 144; Blackwelder 1945: 440.
Bystus fibulatus: Strohecker 1953: 21; Arriaga-Varela *et al*. 2007: 7; Shockley *et al*. 2009a: 9.
B. hemisphaericus (Gerstaecker, 1858)
Mexico: VER, GRO; Belize, Guatemala, Costa Rica, Panama.
Rhymbus hemisphaericus Gerstaecker, 1858: 349; Gorham 1890: 143; Blackwelder 1945: 440.
Bystus hemisphaericus: Strohecker 1953: 21; Arriaga-Varela *et al*. 2007: 7; Shockley *et al*. 2009a: 9.
B. limbatus (Gorham, 1873)
Mexico: PUE, VER, QRO.
Rhymbus limbatus Gorham, 1873: 63; Gorham 1890: 142; Blackwelder 1945: 440.
Bystus limbatus: Strohecker, 1953: 22; Arriaga-Varela *et al*. 2007: 7; Shockley *et al*. 2009a: 10.

Catapotia Thomson, 1860: 13

Type species: *Catapotia laevissima* Thomson, 1860: 142.
Cremnodes Gerstaecker, 1858: 412 (non *Cremnodes* Foerster, 1850).
Type species: *Cremnodes glabra* Gerstaecker, 1858: 414.
C. laevissima Thomson, 1860
Mexico: VER, SLP; Guatemala, Nicaragua, Panama, Ecuador, Peru.
Catapotia laevissima Thomson, 1860: 14; Gorham 1891: 148; Blackwelder 1945: 440; Strohecker 1953: 23: Arriaga-Varela *et al* 2007: 7; Shockley *et al*. 2009a: 10.

Exysma Gorham, 1891: 145

Type species: *Exysma laevigata* Gorham, 1891: 145.
Parexysma Csiki, 1905: 573.
Type species: *Exysma parvula* Gorham, 1891: 145.
E. laevigata Gorham, 1891.
Mexico: TAB, VER; Panama.
Exysma laevigata Gorham, 1891: 145; Blackwelder 1945: 437; Strohecker 1953: 27; Arriaga-Varela *et al*. 2007: 9; Shockley *et al*. 2009a: 13. Shockley *et al*. 2009a: 15.

Micropsephus Gorham, 1891: 149

Type species: *Micropsephus mniophilinus* Gorham, 1891: 149.
M. mniophilinus Gorham, 1891.
Mexico: TAB; Guatemala.
Micropsephus mniophilinus Gorham, 1891: 149; Blackwelder 1945: 437; Strohecker 1953: 18; Arriaga-Varela *et al*. 2007: 9; Shockley *et al*. 2009a: 15.

Rhymbomicrus Casey, 1916: 139

Type species: *Alexia lobata* LeConte and Horn, 1883: 121.
Micropsephellus Arrow, 1920: 79.
Type species: *Micropsephus hemisphaericus* Champion, 1913: 118.
R. hemisphaericus (Champion, 1913)
Mexico, Guatemala, Nicaragua.
Micropsephus hemisphaericus Champion, 1913: 118.
Micropsephellus hemisphaericus: Arrow 1920: 80; Blackwelder 1945: 437.
Rhymbomicrus hemisphaericus: Strohecker 1953: 17; Arriaga-Varela *et al*. 2007: 9; Shockley *et al*. 2009a: 16.

Family Endomychidae Leach, 1815: 116
Subfamily Merophysiinae Seidlitz, 1872: 39 (=Holoparamecinae)

This subfamily has a worldwide distribution and comprises 13 genera. The concept of *Blumenus* Belon as a subgenus of *Holoparamecus* is questionable and its definition by Reike *et al*. (2020) based solely on the number of antennomeres renders an evidently artificial group. Therefore, we follow here the generic concepts of *Blumenus* (=*Lycoperdinella* Champion) and *Rueckeria* as valid genera, separate from *Holoparamecus* (Arriaga-Varela *et al*. 2018) until a more detailed study of the morphology and comprehensive phylogenetic hypothesis of the subfamily is available.

Holoparamecus Curtis, 1833: 185

Type species: *Holoparamecus depressus* Curtis, 1833: 186.
H. constrictus Sharp, 1902
Mexico: GRO; Guatemala.
Calyptobium constrictus Sharp, 1902: 628.
Holoparamecus constrictus: Sharp 1902: 628; Blackwelder 1945: 435; Arriaga-Varela *et al*. 2007: 11.
H. depressus Curtis, 1833: 186.
Mexico, United States of America, Brazil, Cosmopolitan: Australia, Belgium,Cameroon, Canada, China, Denmark, France, Great Britain, Greece, Hispaniola, Italy, Japan, Madagascar, Madeira, Martinique, Mauritius, Myanmar, The Netherlands, New Caledonia, Reunion, Senegal, Serbia and Montenegro, Switzerland, Vietnam.
Holoparamecus depressus Curtis 1833: 186; Shockley *et al*. 2009a 67.
Holoparamecus integer Rey, 1889: 54.
Calyptobium kunzei Aubé, 1843: 245.
H. gabrielae Rücker, 2003
Mexico: VER.
Holoparamecus gabrielae Rücker, 2003: 10; Arriaga-Varela *et al*. 2007: 11; Shockley *et al*. 2009a: 67; *Holoparamecus (Blumenus) gabrielae* Reike *et al*. 2020: 253.

H. pumilus Sharp, 1902
Mexico: GRO.
Holoparamecus pumilus Sharp, 1902: 627; Blackwelder 1945: 435; Arriaga-Varela *et al*. 2007: 11; Shockley *et al.* 2009a: 68
Holoparamecus (*Blumenus) pumilus* (Sharp, 1902); Belon 1902; Reike *et al*. 2020: 253.
H. singularis (Beck), 1817
Mexico: VER; United States of America, Cosmopolitan: Algeria, Azores, Belgium, Canada, Canary Islands, China, Cyprus, Egypt, France, Great Britain, Greece, India, Israel, Italy, Lebanon, Libya, Madeira, Mexico, Morocco, The Netherlands, South Korea,
Spain, Switzerland, Tunisia, Turkey.
Silvanus singularis Beck, 1817: 160.
Holoparamecus singularis: Motschulsky 1844: 442; Sharp 1902: 627; Blackwelder 1945: 435; Arriaga-Varela *et al*. 2007: 11; Shockley *et al*. 2009a: 68.
H. ragusae Reitter, 1875
Mexico, Canada, United States of America, Chile, Cosmopolitan: Belgium, Czech Republic, France, Hungary, Italy, Japan, The Netherlands, Switzerland.
Holoparamecus ragusae Reitter, 1875: 309; Shockley *et al*. 2009a: 68.

Rueckeria Arriaga-Varela, Tomaszewska, Huo and Seidel, 2018: 16

Type species *Rueckeria inecol* Arriaga-Varela, Tomaszewska, Huo and Seidel, 2018: 18.

R. inecol Arriaga-Varela, Tomaszewska, Huo and Seidel, 2018
Mexico: VER.
Rueckeria inecol Arriaga-Varela, Tomaszewska, Huo and Seidel, 2018: 18; Reike *et al.* 2020: 253.
R. puma Arriaga-Varela, Tomaszewska, Huo and Seidel, 2018
Mexico: HGO.
Rueckeria puma Arriaga-Varela, Tomaszewska, Huo and Seidel, 2018: 21; Reike *et al.* 2020: 253.
R. nigrileonis Arriaga-Varela, Tomaszewska, Huo and Seidel, 2018
Mexico: VER.
Rueckeria nigrileonis Arriaga-Varela, Tomaszewska, Huo and Seidel, 2018: 23; Reike *et al.* 2020: 253.
R. skelleyi Arriaga-Varela, Tomaszewska, Huo and Seidel, 2018
Mexico: QRO.
Rueckeria skelleyi Arriaga-Varela, Tomaszewska, Huo and Seidel, 2018: 27; Reike *et al.* 2020: 253.

R. ocelotl Arriaga-Varela, Tomaszewska, Huo and Seidel, 2018
Mexico: HGO.
Rueckeria ocelotl Arriaga-Varela, Tomaszewska, Huo and Seidel, 2018: 31; Reike *et al.* 2020: 253.

Subfamily Lycoperdininae Bromhead, 1838: 419 (=Eumorphinae)

This is the most diverse subfamily in Endomychidae at the generic and species level. Forty three genera are described and distributed all over the world except for New Zealand. Nevertheless, in Mexico the subfamily Lycoperdininae is represented only by two genera and two species.

Archipines Strohecker, 1953: 57

Type species: *Phalantha exsanguis* Gerstaecker, 1858: 204.
Phalantha Gerstaecker, 1858: 202 (non *Phalantha* Gistel, 1839).
A. intricata (Gorham, 1889)
Mexico: CHIS, OAX, TAB, TAMPS, VER; Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia.
Phalantha intricata Gorham, 1899: 119; Blackwelder 1945: 438.
Archipines intricata: Strohecker 1953: 58; Tomaszewska 2002: 376; Arriaga-Varela *et al*. 2007: 12; Shockley *et al*. 2009a: 40.

Corynomalus Chevrolat in Dejean, 1836: 439

Type species: *Corynomalus tarsatus* Erichson, 1847: 181.
C. perforatus Gerstaecker, 1857.
Mexico: CHIS, OAX*, VER. Belize, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guyane.
Corynomalus perforatus Gerstaecker, 1857: 238; Arriaga-Varela *et al*. 2007: 13; Shockley *et al*. 2009a: 40.
Corynomalus dentatus Gorham, 1889: 117 (nec Gerstaecker, 1858).
Amphix perforatus: Blackwelder 1945: 437; Strohecker 1953: 88; Strohecker 1980: 25.
Amphix dentatus: Blackwelder 1945: 437 (in part).

Subfamily Endomychinae Leach, 1815: 116

As it stands now, this subfamily includes all genera previously included in Stenotarsinae plus *Endomychus* Panzer. Eleven genera are known in this family but only two are reported from the Neotropical region and one is known from Mexico specifically. *Stenotarsus* is the most speciose endomychid genus in Mexico with 23 species. Species of *Stenotarsus* can be found on rotting logs and on different kind of mushrooms of families Russulaceae, Sirobasidiaceae, Polyporaceae etc. (Arriaga-Varela *et al*. 2007). They have a tendency to aggregate as adults and during pupation (Roubik and Skelley 2001) (Fig. 3).

Stenotarsus Perty, 1832: 112

Type species: *Stenotarsus brevicollis* Perty, 1876: 112.
Quirinus Thomson, 1857: 157.
Type species: *Quirinus sulcithorax* Thomson, 1857: 157.
Systaecha Gorham, 1890: 132.
Type species: *Systaecha cyanoptera* Gorham, 1890: 133.
Stenotarsoides Csiki, 1900: 401.

Type species: *Stenotarsoides quadrimaculatus* Csiki, 1900: 401.

S. cortesi Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013.

Mexico: JAL.

Stenotarsus cortesi Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013: 11; Zaragoza-Caballero and Pérez-Hernández 2017: 47.

S. exiguus Gorham, 1890.

Mexico: VER, Belize, Guatemala

Stenotarsus exiguus Gorham, 1890: 141. Blackwelder 1945: 439; Strohecker 1953: 52; Shockley *et al*. 2009a: 81; Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia 2013: 12.

S. globosus Guérin–Méneville, 1857.

Mexico: CHIS, OAX, VER, Guatemala.

Stenotarsus globosus Guérin–Méneville, 1857: 270. Gorham 1890: 136; Arrow 1920: 50; Blackwelder 1945: 439; Strohecker 1953: 52; Roubik and Skelley 2001: 255; Arriaga-Varela *et al.* 2007: 14; Shockley *et al.* 2009a: 82; Arriaga-Varela *et al*. 2011: 13.

Stenotarsus circumdatus Gerstaecker, 1858: 323. Gorham 1890: 136; Arrow 1920: 50; Blackwelder 1945: 439; Strohecker 1953: 51; Arriaga-Varela *et al*. 2007: 14; Shockley *et al*. 2009a: 81.

Stenotarsus cordatus Gorham, 1890: 134.

Stenotarsus discipennis Gorham, 1890: 136. Blackwelder 1945: 439; Strohecker 1953: 52; Arriaga-Varela *et al*. 2007: 14; Shockley *et al*. 2009a: 81.

Stenotarsus tarsalis Gorham, 1890: 137. Strohecker 1953: 57; Arriaga-Varela *et al.* 2007: 16; Shockley *et al.* 2009a: 85;

Stenotarsus circumdatus var. *tarsalis* Arrow, 1920: 50; Blackwelder 1945: 439.

S. incisus Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013

Mexico: CHIS, OAX, VER; Guatemala.

Stenotarsus incisus Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013: 17; Arriaga-Varela *et al.* 2007: 15 (as *Stenotarsus marginalis* Arrow, 1920 in part).

S. kafkai Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013

Mexico: VER.

Stenotarsus kafkai Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia 2011: 19.

S. latipes Arrow, 1920.

Mexico: CHIH, GRO, DGO, JAL, MOR, OAX, VER; Guatemala.

Stenotarsus latipes Arrow, 1920: 52. Blackwelder 1945: 439; Strohecker 1953: 53; Roubik and Skelley 2001: 155; Arriaga- Varela *et al.* 2007: 14; Navarrete-Heredia *et al.* 2008: 120; Shockley *et al.* 2009a: 82; Arriaga-Varela *et al.* 2013; 18.

Stenotarsus angustulus Gorham, 1890: 138 (not Gerstaecker, 1858: 327).

S. lemniscatus Gorham, 1890

Mexico: VER; Guatemala, Belize*, Honduras, Costa Rica.

Stenotarsus lemniscatus Gorham, 1890: 139. Strohecker 1953: 53; Shockley *et al.* 2009a: 82; Roubik and Skelley 2001: 255; Arriaga-Varela *et al*. 2013: 22.

* First record for Belize: BELIZE: 16º20’24.7’’N; 89º09’09.7’’W, BELIZE: Toledo District, Columbia Forest Reserve Edwards Central, 10.VIII.2006, Kovarik, rotting wood (11: FSCA).

S. mesoamericanus Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013

Mexico: CHIS, PUE.

Stenotarsus mesoamericanus Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013: 25; Zaragoza-Caballero and Pérez-Hernández 2017: 47.

S. mexicanus Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013

Mexico: VER; Belize*

Stenotarsus mexicanus Arriaga-Varela *et al.* 2013: 26; Zaragoza-Caballero and Pérez-Hernández 2017: 47.

* First record for Belize: BELIZE: Orange Walk Dist., Rio Bravo Conserv. Area Mahogany trail (vic. Res. Station), 10.IX.1995, P. W. Kovarik, collector, on mushroom at night (4: FSCA).

S. militaris Gerstaecker, 1858

Mexico: CHIS, QROO, SLP, VER, YUC; Guatemala.

Stenotarsus militaris Gerstaecker, 1858: 325; Gorham 1890: 137; Blackwelder 1945: 440; Strohecker 1953: 54; Arriaga-Varela *et al.* 2007: 15; Shockley *et al.* 2009a: 83; Arriaga-Varela *et al.* 2013: 27.

Stenotarsus pilatei Gorham, 1873: 53. Gorham 1890: 135; Blackwelder 1945: 440; Strohecker 1953: 55; Arriaga-Varela *et al.* 2007: 15; Shockley *et al.* 2009a: 84; Arriaga-Varela *et al*. 2013: 27.

S. molgorae Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013

Mexico: JAL.

Stenotarsus molgorae Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013: 29.

S. nigricans Gorham, 1890

Mexico: JAL; Guatemala.

Stenotarsus nigricans Gorham, 1890: 135. Blackwelder 1945: 440; Strohecker 1953: 54; Shockley *et al.* 2009a: 83; Arriaga-Varela *et al*. 2013: 31.

S. oblongulus Gorham, 1890

Mexico: CHIS, OAX, VER, Guatemala.

Stenotarsus oblongulus Gorham, 1890: 138. Blackwelder 1945: 440, Strohecker 1953: 55;

Shockley *et al.* 2009a: 84; Arriaga-Varela *et al.* 2013: 33.

S. ovalis Arrow, 1920.

Mexico, Guatemala, Costa Rica, Panama.

Stenotarsus ovalis Arrow, 1920: 50. Blackwelder 1945: 440; Strohecker 1953: 55; Roubik and Skelley 2001: 256; Shockley *et al.* 2009a: 84; Arriaga-Varela et al. 2013: 35.

Stenotarsus rotundus Arrow, 1920: 52. Blackwelder 1945: 440; Strohecker 1953: 56;

Stenotarsus orbicularis Gorham, 1890: 134 (in part).

Stenotarsus pilatei Gorham, 1890: 135 (in part).

S. parellelicornis Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013

Mexico: OAX*, VER.

Stenotarsus parallelicornis Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013: 36.

* First record for Oaxaca: MEXICO: Oaxaca, San Miguel Chimalapa, San Antonio, "Paraje el Gringo", close to zone "Paraje El Retén", 16º40'53.39''N, 94º15'48.7''W, 1628 m, 23-26.vii.2017; Arriaga, Alvarado, Ponce, Mora lgt. (20: CZUG; 19 NMPC).

S. raramuri Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013.

Mexico: DGO, JAL.

Stenotarsus raramuri Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013: 38; Zaragoza-Caballero and Pérez-Hernández 2017: 47.

S. rubrocinctus Gertaecker, 1858.

Mexico: HGO, QRO, VER.

Stenotarsus rubrocinctus Gerstaecker, 1858: 324; Gorham 1890: 137; Blackwelder 1945: 440; Strohecker 1953: 56; Arriaga- Varela *et al.* 2007: 15; Shockley *et al.* 2009a: 85; Arriaga-Varela *et al.* 2013: 39.

S. rulfoi Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013

Mexico: JAL.

Stenotarsus rulfoi Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013: 39.

S. sallaei Gorham, 1873

Mexico: VER, Guatemala.

Stenotarsus sallaei Gorham, 1873: 63; Gorham 1890: 140; Arrow 1920: 51; Blackwelder 1945: 440; Strohecker 1953: 56; Arriaga-Varela *et al.* 2007: 15; Shockley *et al.* 2009a: 85; Arriaga-Varela *et al.* 2013: 39.

Stenotarsus distinguendus Arrow, 1920: 51; Blackwelder 1945: 439; Strohecker 1953: 56; Shockley *et al.* 2009a: 81.

S. shockleyi Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013

Mexico: VER.

Stenotarsus shockleyi Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013: 44.

S. smithi Gorham, 1890

Mexico: TAB.

Stenotarsus smithi Gorham, 1890: 140. Blackwelder 1945: 440; Strohecker 1953: 56; Arriaga-Varela *et al.* 2007: 16; Shockley *et al.* 2009a: 85.

S. spiropenis Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013

Mexico: JAL.

Stenotarsus spiropenis Arriaga-Varela, Zaragoza-Caballero, Tomaszewska and Navarrete-Heredia, 2013: 46.

S. thoracicus Gorham, 1890

Mexico: HGO, VER.

Stenotarsus thoracicus Gorham, 1890: 136; Blackwelder 1945: 440; Strohecker 1953: 57; Arriaga-Varela *et al.* 2007: 16; Shockley *et al.* 2009a: 85, Arriaga-Varela *et al*. 2013: 48.

Subfamily Epipocinae Gorham, 1873: 20

The four genera classified in this subfamily are known in Mexico, however, three of them are just represented in the country by a couple of species found in the tropical parts of southern Mexico. On the other hand, Mexico is the main diversification area for the genus *Epipocus*, with 21 species distributed in almost all kinds of vegetation types across the country. Species of *Epipocus* can be found under bark of dead logs, in hard bracket fungi or fleshy sporophores of the families like Boletaceae, Schyzophyllaceae, Stereaceae, etc. (Arriaga-Varela *et al*. 2007). Larvae of *Epipocus tibialis* (Chevrolat) have been observed to resort to cannibalism in captivity (Fig. 4) (Arriaga-Varela and Tomaszewska 2015).

***Anidrytus* Gerstaecker, 1858: 256**

Type species: *Anidrytus bipunctatus* Gerstaecker, 1858: 257.

A. guatemalae Arrow, 1920

Mexico: CHIS, Guatemala, Honduras.

Anidrytus guatemalae Arrow 1920: 46; Gorham 1889: 126 (as *Anidrytus liquefactus* Gorham, 1873); Strohecker 1953: 66; Strohecker, 1997: 177; Shockley *et al*. 2009a: 22; Arriaga-Varela 2013, 47.

A. mexicanus Strohecker, 1997

Mexico: CHIS.

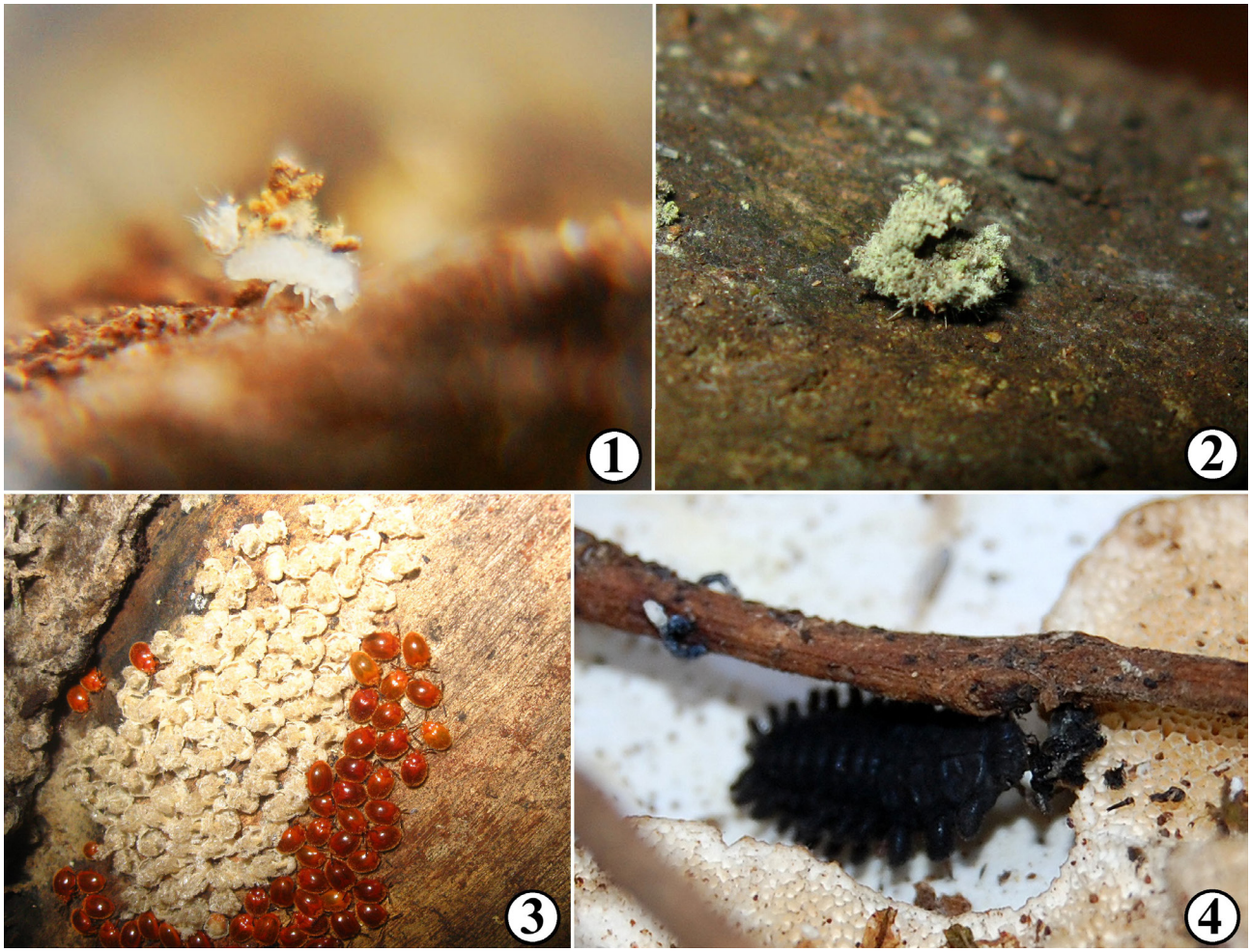
Anidrytus mexicanus Strohecker, 1997: 176; Arriaga-Varela *et al*. 2007: 17; Shockley *et al*. 2009a: 23.

A. nitidularius Gerstaecker, 1858

Mexico: YUC.

Anidrytus nitidularius Gerstaecker, 1858: 262; Gorham 1889: 126; Blackwelder 1945: 438; Strohecker 1953: 66; 1997: 171; Arriaga-Varela *et al*. 2007: 17; Shockley *et al*. 2009a; 23.

***Ephebus* Chevrolat in Dejean, 1836: 439**



Figs. 1-4. Natural history of Anamorphidae and Endomychidae. 1. Debris cloacked larva of *Bystus fibulatus* (Gorham) from Xalapa, Veracruz. 2. Debris cloacked larva of *Catapotia larvissima* (Gorham) from Xalapa, Veracruz. 3. Freshly moulted adults of *Stenotarsus parallelicornis* Arriaga-Varela *et al*. from Chimalapas, Oaxaca. 4. Larva of *Epipocus tibialis* (Chevrolat) eating a prepupa of *Epipocus* sp. from Monte Blanco, Veracruz.

Type species: *Ephebus cardinalis* Gerstaecker, 1858: 294.

E. piceus Gorham, 1889

Mexico: VER, QRO, CHIS, Colombia, Costa Rica, El Salvador.

Ephebus sulcatus Gorham, 1889: 131; Strohecker, 1975: 336; Shockley *et al*. 2009a: 23; Arriaga-Varela and Shockley 2010: 209.

E. sulcatus Strohecker, 1975

Mexico: CHIS, Guatemala, Colombia, Costa Rica, Nicaragua, Panama.

Ephebus sulcatus Strohecker, 1975: 336; Arriaga-Varela *et al*. 2007: 18; Shockley *et al.* 2009a: 24; Arriaga-Varela and Shockley 2010: 209.

***Epipocus* Germar, 1843: 86**

Type species: *Endomychus tibialis* Chevrolat, 1834: 94.

E. aztecus Strohecker, 1977

Mexico: OAX.

Epipocus aztecus Strohecker, 1977: 307; Arriaga-Varela *et al*. 2007: 18; Shockley *et al*. 2009: 24.

E. balli Strohecker, 1977

Mexico: CHIS; Guatemala.

Epipocus balli Strohecker, 1977: 311; Arriaga-Varela *et al*. 2007: 18; Shockley *et al*. 2009: 24.

E. brunneus Gorham, 1889.

Mexico: DGO, JAL, NAY, SIN.

Epipocus brunneus Gorham, 1889: 124; Strohecker 1977: 308; Arriaga-Varela *et al*. 2007: 18; Shockley *et al*. 2009a: 24.

Epipocus mollicomus Arrow, 1920: 45; Blackwelder 1945: 438; Strohecker 1953: 67.

E. cinctus LeConte, 1853

Mexico, CHIS, OAX, PUE, SLP, VER. United States of America, Guatemala.

Epipocus cinctus LeConte, 1853: 358; Gerstaecker 1858: 246; Gorham 1889: 121; Blackwelder 1945: 438; Strohecker 1953: 67; Strohecker 1977: 313; Arriaga-Varela *et al*. 2007: 19; Shockley *et al*.

2009a: 24.

Epipocus mutilatus Gerstaecker, 1858: 249; Gorham 1889: 122; Blackwelder 1945: 438; Strohecker 1953: 67.

E. cryptus Strohecker, 1977

Mexico: VER.

Epipocus cryptus Strohecker, 1977: 320; Arriaga-Varela *et al*. 2007: 19; Shockley *et al.* 2009: 24.

E. figuratus Gerstaecker, 1858

Mexico: CAMP, CHIS, QROO, TAB, VER, YUC. Guatemala, Belize, Costa Rica.

Epipocus figuratus Gerstaecker, 1858: 247; Gorham 1889; Blackwelder 1945: 438; Strohecker 1953: 67; Strohecker 1977: 314; Arriaga-Varela *et al*. 2007: 19; Shockley *et al*. 2009: 24.

E. flavipes Strohecker, 1977

Mexico: VER.

Epipocus flavipes Strohecker, 1977: 322; Arriaga-Varela *et al*. 2007: 20; Shockley *et al.* 2009: 24.

E. gorhami Strohecker, 1977

Mexico: DGO, JAL*, NAY, SIN.

Epipocus gorhami Strohecker, 1977: 308; Arriaga-Varela *et al*. 2007: 20; Shockley *et al*. 2009: 24.

* First record for Jalisco: México: Jalisco, Zapotlanejo, Río Verde, La Toma. Bosque de galería. 1044m, 20º43'N, 103º13'W, 18.VII.2007, CEAS Arcediano col. (3: CZUG).

E. guatemoc Strohecker, 1977

Mexico.

Epipocus guatemoc Strohecker, 1977: 324; Arriaga-Varela *et al*. 2007: 20; Shockley *et al*. 2009: 24.

E. longicornis Gerstaecker, 1858

Mexico: DF, GRO, JAL, MEX, MICH, MOR, OAX*, SIN, VER.

Epipocus longicornis Gerstaecker, 1858: 255; Gorham 1889: 123; Blackwelder 1945: 438; Strohecker 1953: 67; Strohecker 1977: 305; Arriaga-Varela *et al*. 2007: 20; Shockley *et al*. 2009: 24; Arriaga-Varela *et al*. 2007: 20; Shockley *et al* 2009a: 24.

Epipocus binotatus Gorham, 1889: 124; Blackwelder 1945: 438; Strohecker 1953: 67; Strohecker 1977: 305; Navarrete-Heredia 1996: 64.

E. mixtecus Strohecker, 1977

Mexico.

Epipocus mixtecus Strohecker, 1977: 324; Arriaga-Varela *et al*. 2007: 21; Shockley *et al*. 2009: 24.

E. olmecus Arriaga-Varela, Tomaszewska and Shockley, 2015

Mexico: VER.

Epipocus olmecus Arriaga-Varela *et al*. 2015: 149; Zaragoza-Caballero and Pérez-Hernández 2017: 47.

E. opacus Strohecker, 1977

Mexico: BCS; United States of America.

Epipocus opacus Strohecker, 1977: 306; Arriaga-Varela *et al*. 2007: 21; Shockley et al. 2009: 24.

E. punctatus LeConte, 1853

Mexico, CHIS, DGO, PUE, SLP, TAMPS, VER, YUC; United States of America, Guatemala, Nicaragua*

Epipocus punctatus LeConte, 1853: 358; Guérin-Méneville 1857: 265; Gerstaecker 1858: 252; Strohecker 1953: 67; Strohecker 1977: 311; Arriaga-Varela *et al*. 2007: 21; Shockley *et al*. 2009a: 24.

Epipocus bivittatus Gerstaecker, 1858: 253; Gorham 1889: 122; Blackwelder 1945: 438; Strohecker 1953: 67.

*First record for Nicaragua: Nicaragua, Managua, I G 22,233 / V-1960 / Leg J Bredo (1: IRSNB) (Fig. 5).

E. rufitarsis (Chevrolat, 1835)

Mexico: VER; Guatemala.

Endomychus rufitarsis Chevrolat, 1835: 123.

Epipocus rufitarsis: Gerstaecker 1858: 243; Gorham 1889: 120; Arrow 1920: 45; Blackwelder 1945: 438; Strohecker; 1953: 67; Strohecker 1977: 319; Arriaga-Varela *et al*. 2007: 21; Shockley *et al* 2009a: 24.

E. sallaei Gorham, 1889

Mexico: HGO, PUE, VER.

Epipocus sallaei Gorham, 1889: 125; Blackwelder 1945: 438; Strohecker 1953: 67; Strohecker 1977: 315; Arriaga-Varela *et al*. 2007: 21; Shockley *et al*. 2009a: 24.

E. subcostatus Gorham, 1889

Mexico: GRO, JAL, MOR, OAX.

Epipocus subcostatus Gorham, 1889: 123; Blackwelder 1945: 438; Strohecker 1953: 67; Strohecker 1977: 309; Arriaga-Varela *et al*. 2007: 22; Shockley *et al*. 2009a: 24.

E. tibialis (Chevrolat, 1834)

Mexico: CHIS, HGO, JAL, NAY, SLP, OAX, PUE, QRO, TAB, VER, YUC; Guatemala, Belize.

Endomychus tibialis Chevrolat, 1834: no. 94.

Endomychus (*Epipocus*) *tibialis* Chevrolat, 1844: 317.

Epipocus tibialis Gerstaecker, 1858: 251; Gorham 1889: 122; Blackwelder 1945: 438; Strohecker 1953: 68; Strohecker 1977: 310; Arriaga-Varela *et al*. 2007: 22; Shockley *et al*. 2009a: 25.

E. toltecus Strohecker, 1977

Mexico: OAX.

Epipocus toltecus Strohecker, 1977: 308; Arriaga-Varela *et al*. 2007: 22; Shockley *et al*. 2009: 25.

E. tristinoctis Strohecker, 1977

Mexico.

Epipocus opacus Strohecker, 1977: 321; Arriaga-Varela *et al*. 2007: 22; Shockley *et al*. 2009: 25.

E. unicolor Horn, 1870

Mexico: CHIH, COL, JAL, SON; United States of America.

Epipocus unicolor Horn, 1870: 96; Blackwelder 1945: 438; Strohecker 1953: 68; Strohecker 1977: 305; Arriaga-Varela *et al*. 2007: 23; Shockley *et al*.

2009: 25.
Epipocus parvus Arrow, 1920: 45; Blackwelder 1945: 438; Strohecker 1953: 67.
Epipocus punctipennis Casey, 1916: 145; Blackwelder 1945: 438; Strohecker 1953: 67.

***Epopterus* Chevrolat in Dejean, 1836: 439**

Type species: *Erotylus ocellatus* Olivier, 1791: 437.

E. partitus partitus Gerstaecker, 1858

Mexico: YUC; Nicaragua, Costa Rica, Panamá
Epopterus partitus Gerstaecker, 1858: 277; Gorham 1890: 130; Blackwelder 1945: 439.
Epopterus partitus partitus Strohecker, 1953: 63; Strohecker 1997: 160; Arriaga-Varela *et al*. 2007: 23; Shockley *et al*. 2009a:26.

E. partitus maculosus Gorham, 1890

Mexico: TAB; Belize, Guatemala, Nicaragua.
Epopterus ocellatus maculosus Gorham, 1890: 129; Blackwelder 1945: 439.
Epopterus partitus maculosus Arrow, 1920: 48; Strohecker 1953: 63; Strohecker 1997: 160; Arriaga-Varela *et al*. 2007: 24; Shockley *et al*. 2009: 26.

Subfamily Pleganophorinae Jacqueline du Val, 1858: 186 (= Trochoideinae)

This is a small subfamily containing two genera, *Pleganophorus* Hampe from Europe and *Trochoideus* Westwood distributed in the tropical-most parts of the globe except for Australia. Only one species of *Trochoideus* is known from Mexico. Species in this subfamily are found in association with social insects although very little is known about their biology (Shockley *et al*. 2009b).

***Trochoideus* Westwood, 1833: 673**

Type species: *Paussus cruciatus* Dalman, 1825: 400.

Trochoides Chapuis, 1876: 147 (error).

Pseudopaussus Schulze, 1916: 292.

Type species: *Pseudopaussus monstrosus* Schulze, 1916: 292.

T. mexicanus Strohecker, 1978

Mexico: CHIS
Trochoideus mexicanus Strohecker, 1978: 351; Joly and Bordon 1996: 2; Arriaga-Varela *et al*. 2007: 25; Shockley *et al*. 2009a: 73.

Family Eupsilobiidae Casey, 1895: 454 (= Eidoreinae, Cerasommatidiidae)

A small family with 7 genera found in the Neotropical region, South Africa and scattered islands around the globe (Tomaszewska 2011). Two genera and two species are recorded from Mexico. Very little is known about the biology of this group.

***Eidoreus* Sharp, 1885: 146**

Type species: *Eidoreus minutus* Sharp, 1885: 146.

Eupsilobius Casey, 1895: 454.

Type species: *Eupsilobius politus* Casey, 1895: 454.

Pseudalexia Kolbe, 1910: 34.

Type species: *Pseudalexia sechellarum* Kolbe, 1910: 34.

E. politus (Casey, 1895)

Mexico, United States of America, Belize.
Eupsilobius politus Casey, 1895: 455.
Eidoreus politus: Sen Gupta and Crowson 1973: 442; Arriaga-Varela *et al*. 2007: 24; Shockley *et al*. 2009a: 28.

***Evolocera* Sharp, 1902: 628**

Type species: *Evolocera championi* Sharp, 1902: 632.

Adamia Tomaszewska, 2000: 465.

Type species: *Adamia mexicana* Tomaszewska, 2000: 466.

E. championi Sharp, 1902

México: SLP, VER; Guatemala, Honduras.
Evolocera championi Sharp, 1902: 628; Blackwelder 1945: 435; Tomaszewska 2005: 77; Arriaga-Varela *et al*. 2007: 25; Shockley *et al*. 2009a: 28.
Adamia mexicana Tomaszewska, 2000: 466.

New country records for the Neotropical region

Subfamily Endomychidae Leach, 1815: 116
Subfamily Epipocinae Gorham, 1873: 20
***Anidrytus* Gerstaecker, 1858: 256**

A. compactus Strohecker, 1997

Colombia, Ecuador*, Perú.
Anidrytus compactus Strohecker 1997: 173; Shockley *et al*. 2009a: 22.

* First record for Ecuador: Ecuador, prov. Napo (10)3.3 km W of Archidona, S 00º54’48’’ W 77º50’15’’, 625 m, 19-21. xi.2006, M. Fikáček and J. Skruhovec lgt. // plantations of indig. people: hollow trunk of *Bactris gasipaes* palm (very wet decaying leaves and trunk tissues), exposed (1: NMPC) (Fig. 8).

A. helvolus Gerstaecker, 1858

Argentina*, French Guiana, Guyana, Suriname, Venezuela
Anidrytus helveolus Gerstaecker 1858: 272; Strohecker 1997: 172.
Ephebus ignobilis Gorham, 1875a: 17.

* First record for Argentina: Santiago del Estero, Rio Salado, Argentine (1: NMPC).

***Epipocus* Germar, 1843: 86**

E. alvaradi Strohecker, 1977

Guatemala, El Salvador*.
Epipocus alvaradi Strohecker 1977: 311; Shockley *et al*. 2009: 25.

* First record for El Salvador: EL SALVADOR, San Salvador, 19-VI-1959, Leg. J. Bechyné (1: IRSNB) (Fig. 6).

E. manni Strohecker, 1977
Costa Rica, Guatemala, Honduras*
Epipocus manni Strohecker 1977: 321; Shockley *et al*. 2009: 25; Arriaga-Varela *et al*. 2015: 152.
* First record for Honduras: Honduras: Olancho, Dept. P.N. La Muralla, 30-XI-1995, F. W. Skillman Jr. (1: FSCA) (Fig. 7).

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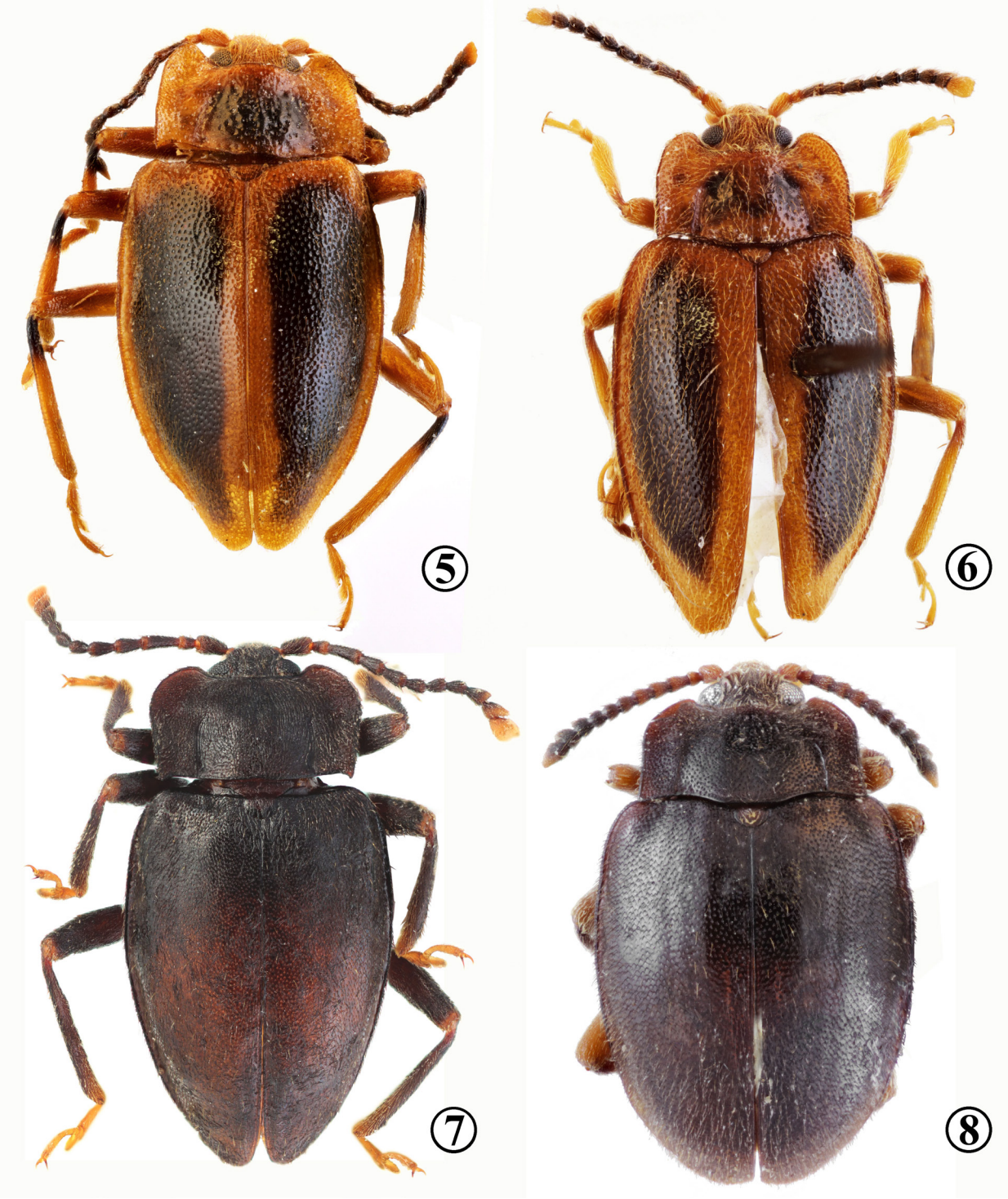

Figs. 5-8. Dorsal habitus pictures of selected Endomychidae species from the Neotropical region. 5. *Epipocus punctatus* LeConte. 6. *Epipocus alvaradi* Strohecker. 7. *Epipocus alvaradi* Strohecker. 8. *Anidrytus compactus* Strohecker.

cal collections listed in this paper for allowing us to study specimens in their institutions. Special thanks to the communal of San Miguel Chimalapa, San Antonio and Benito Juárez for permission to collect in the mountains of the Chimalapas region, Oaxaca where *Stenotarsus parallelicornis* was collected, and to Eder Mora-Aguilar, Andrés Ramírez-Ponce, Fredy Alvarado and all members of the 2017 expedition. The first author is funded by a posdoctoral grant at the Entomological Collection of the Centro de Estudios en Zoología, Universidad de Guadalajara by CONACyT, Mexico.

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