



A synopsis of the Endomychidae (Coleoptera: Cucujoidea) of México

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Table of contents

Abstract	1
Introduction	2
Material and methods	3
Results	4
Checklist of Mexican Endomychidae Leach, 1815.....	5
Subfamily Anamorphinae Strohecker, 1953: 15 (=Mychotheninae)	5
Subfamily Merophysiinae Seidlitz, 1872: 39. (=Holoparamecinae).....	10
Subfamily Lycoperdininae Redtenbacher, 1844. (=Eumorphinae).	12
Subfamily Stenotarsinae Chapuis, 1876: 125.	13
Subfamily Epipocinae Gorham, 1873: 20.	17
Subfamily Eupsilobiinae Casey, 1895: 454 (=Eidoreinae; incl. Cerasommatidiidae)	24
Subfamily Pleganophorinae Jacqueline du Val, 1858: 186 (= Trochoideinae).....	25
Discussion	29
Acknowledgements	30
References	30
Appendix 1. Studied material.	33

Abstract

The state of knowledge of Mexican Endomychidae is summarized. A checklist for all described species recorded from México is presented, including comments on taxonomy, biology and distribution. 56 species are recorded (including two subspecies); *Stenotarsus marginalis* Arrow is recorded for the first time from México. These species belong to 18 genera; *Lycoperdinella* Champion is recorded based on an undescribed species. 7 subfamilies are present in the Mexican fauna: Anamorphinae, Merophysiinae, Lycoperdininae, Stenotarsinae, Epipocinae, Eupsilobiinae and Pleganophorinae. *Epipocus* is the most diverse genus with 20 species, followed by *Stenotarsus* with 13. The highest diversity is known from Veracruz, where 30 (32?) species are known, followed by Chiapas with 12 (13?) species.

Key words: Coleoptera, Endomychidae, checklist, México

Introduction

Endomychidae is a heterogeneous, moderately diverse family of beetles. It is part of the Cerylonid series within the superfamily Cucujoidea. About 120 genera and 1300 species are recognized from all zoogeographical regions, with the highest diversity in tropical and subtropical areas of the world (Tomaszewska 2005).

Endomychids are small to moderately sized, mostly red-brown in color and usually with contrasting markings on the pronotum and/or elytra. Most endomychids resemble coccinellid beetles (ladybugs), and due to the pseudotrimerous tarsi in members of “higher” Endomychidae (*sensu* Tomaszewska 2005), they have been historically considered closely related to them (Burakowski & Ślipiński 2000). These beetles are recognized by the presence of two longitudinal sulci or sublateral lines on the pronotum (absent in some Anamorphinae), presence of a frontoclypeal suture (absent in some Eupsilobiinae) and the absence of postcoxal lines on abdominal ventrite I (Skelley & Leschen 2001). More specific morphological details for members of this family are presented in Tomaszewska (2000).

Endomychidae are typically mycophagous. They feed on a wide variety of fungal types, i.e. Agaricales, Polyporales, molds, etc. The feeding source seems to be fungal spores or hyphae. Their most frequent habitat is rotting wood and fungus-infested bark, although some species can be collected directly from the sporophores of large Basidiomycetes or in forest litter. Larvae may occur in the same habitats as adults. Some exceptions to mycophagy have been reported. Both adults and larvae of *Saula japonica* Gorham prey on scale insects and phytophagous mites (Sasaji 1978), whereas the larvae of *Trycherus* seem to feed on lichens (Strohecker 1953). Other species of several genera (e.g. *Trochoideus*, *Pleganophorus*, *Merophysia*, *Eidoreus*, *Microxenus*) have been collected in association with ants and termites, but little is known about their food habits. Immature stages are known only for 30 of the 120 recognized genera, belonging to 11 of the 12 subfamilies (the larva of Danascelinae remains unknown) (Tomaszewska 2005).

Various classifications were proposed during the 19th and the first half of 20th century to accommodate the species of Endomychidae. Apart from Gerstaecker's monograph of the Endomychidae (1858), which was the first general survey of the family, very few works of broad scope have appeared during that period. The largest work on the family of the 20th century was Strohecker's (1953) generic review and world catalogue, in which a revised classification of the endomychid suprageneric taxa, a key for identification of all genera and a catalog of all species described so far were presented. Since then, the inclusion of *incertae sedis* Clavicornia groups, like Eupsilobiinae (Sen Gupta & Crowson 1973), Merophysinae and Holoparamecinae (Lawrence 1982, 1991) could engender polyphyly of the Endomychidae (Ślipiński & Pakaluk 1992). Lawrence and Newton (1995) in their classification of families and subfamilies of the Order Coleoptera recognized the following subfamilies: Merophysinae, Holoparamecinae, Leiestinae, Eupsilobiinae, Endomychinae, Epipocinae, Lycoperdininae, Mycetaeinae, Anamorphinae, Pleganophorinae and Xenomycetinae. Subsequently, Acritosomatinae was established by Pakaluk and Ślipiński (1995) based on *Acritosoma*, a new genus from Perú and México. Tomaszewska (2000) made a thorough and detailed analysis of adult morphology of this family and its relationship with Coccinellidae. In that work, 12 subfamilies were proposed: Danascelinae, Xenomycetinae, Endomychinae, Anamorphinae (incl. Acritosomatinae), Merophysinae (incl. Holoparamecinae), Lycoperdininae, Stenotarsinae, Epipocinae, Eupsilobiinae, Pleganophorinae, Mycetaeinae and Leiestinae. At the same time, a sister relationship between Endomychidae and Coccinellidae was suggested; in the present paper, we follow this classification. The most recent analysis (Tomaszewska 2005) based on adult and larval characters corroborated the definitions of the subfamilies proposed previously but failed in confirmation of the Endomychidae-Coccinellidae sister relationship.

Mexican endomychids have never been the subject of study as a whole. No Mexican coleopterist has focused on taxonomy, biology or some other aspects of these beetles. Papers by Mexican entomologists usually cite endomychids at the family or generic levels (some with misidentifications) (Hoffman *et al.* 2004; Navarrete-Heredia 1996, 1997; Rojas 1989).

Taxonomic revisions that included species distributed in México never used specimens from Mexican entomological collections. As a result, there are no new species descriptions based on these specimens and there are no types of any Endomychidae species in national collections. Moreover, most of the specimens in Mexican collections of this family remain unidentified.

The main goal of this paper is to provide a synopsis of Mexican Endomychidae to update the state of knowledge of these beetles and include the information dealing with any aspect of this family in México. This work is intended to be the starting point for future works on Mexican endomychids.

Material and methods

The following checklist is based on several sources. As a starting point we generated our first checklist from Blackwelder (1945). Information about the distribution of the species cited in that paper was taken primarily from Gorham (1873, 1889, 1890, 1899), Sharp (1902), Gerstaecker (1858), Champion (1913) and Arrow (1920). After Blackwelder's checklist, new records and new taxa were described from México, according to the following references: Pakaluk & Ślipiński (1990, 1995), Roubik & Skelley (2001), Rucker (2003), Sen Gupta & Crowson (1973), Strohecker (1953, 1975, 1977, 1978, 1980, 1997) and Tomaszewska (2000, 2002). Additionally, 512 specimens from the following institutions were studied:

CNIN	Colección Nacional de Insectos Instituto de Biología, UNAM, Distrito Federal, México
CZUG	Centro de Estudios en Zoología Universidad de Guadalajara, Zapopan, Jalisco, México
FMNH	Field Museum of Natural History, Chicago, Illinois, U.S.A.
IEXA	Instituto de Ecología Xalapa, Veracruz, México
JLN	José Luis Navarrete-Heredia Private Collection, Zapopan, Jalisco, México
LESM	Laboratorio de Ecología y Sistemática de Microartrópodos, Facultad de Ciencias, UNAM, Distrito Federal, México
MIZ	Muzeum i Instytut Zoologii PAN, Warszawa, Poland
MNHUB	Museum für Naturkunde der Humboldt-Universität, Berlin, Germany
NMNH	National Museum of Natural History, Washington, D.C., U.S.A.

Other entomological collections cited in the text are:

BMNH	The Natural History Museum, London, England
CAS	California Academy of Sciences, San Francisco, California, U.S.A.
FSCA	Florida State Collection of Arthropods, Division of Plant Industry, Gainesville, Florida, U.S.A.
IMLA	Fundación e Instituto Miguel Lillo, Universidad Nacional de Tucumán, Tucumán, Argentina
MCZ	Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, U.S.A.
MMUE	Manchester Museum, Manchester, England
MNHN	Muséum National d'Histoire Naturelle, Paris, France

Most of the acronyms are cited following Evenhuis & Samuelson (2004). All the information was systematized using Mantis 1.0 Database (Naskrecki 2001). The checklist is organized following the system of subfamilies proposed by Tomaszewska (2000). The number of known genera with some comments and biogeographical information are provided for each subfamily. The genera are ordered alphabetically following the format:

Genus name Author, Year of description: Page number of description.

Type species (by original or subsequent designation).

Generic synonymies.

General comments on taxonomy, distribution and biology of the genus. Number of species described from México.

Subsequently the species recorded from México are listed according to the following format:

Consecutive number. **Species name** Author, Year of description.

Original reference and list of synonymies with relevant references to the study area.

Type locality (by original or subsequent designation - if the syntypes were collected from various localities, we cited the type locality as not designated).

Depository institution of the primary type material (holotypes, syntypes, lectotypes).

Distribution, beginning with México and followed by other countries or regions where the species is recorded. For the Mexican states the acronyms listed below are used. The state marked with an asterisk (*) means a first state record for the species.

Comments on taxonomy, distribution, habits and habitats (when available).

Information on the type locality and depository institution of the type material is provided in order to facilitate future taxonomic work on Mexican Endomychidae species.

Specific data for localities cited in literature and on the specimen labels, were obtained from INEGI Nomenclator (Instituto Nacional de Geografía e Informática 2000). Data for localities cited in the *Biologia Centrali-Americana* (Gorham 1889, 1890, 1891, 1899; Sharp 1902) were obtained from Selander & Vaurie (1962).

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.

Distribution maps for widespread or relevant species were elaborated using Map Maker Pro (Map Maker LTD), marking the localities with precise geographical locations. The states from which species are known without precise geographical locations are colored gray.

Photographs were taken using a digital camera attached to a Zeiss SV6® microscope and edited digitally in Adobe Photoshop®.

Results

In this paper we record 56 described species (including two subspecies) of Endomychidae for the Mexican fauna. They belong to 18 genera and seven subfamilies: Anamorphinae (6 genera and 9 species), Merophysinae (2 and 4), Lycoperdininae (2 and 2), Stenotarsinae (1 and 13), Epipocinae (4 and 24 including two subspecies), Eupsilobiinae (3 and 2) and, Pleganophorinae (1 and 1). *Stenotarsus marginalis* Arrow is recorded for the first time. Among studied unnamed material, we found many specimens that represent apparently undescribed species of *Epipocus*, *Anidrytus* and especially *Stenotarsus*. Descriptions of these species are beyond the scope of the present work and will be the focus of future contributions.

Endomychids are known from 25 of the 32 Mexican states. Specimens from Campeche, Colima, México and Querétaro states are recorded here for the first time. The highest diversity is known from Veracruz, where 30 (32?) species are known, followed by Chiapas with 12 (13?) species, whereas in Baja California Sur,

Campeche, Chihuahua, Colima, Distrito Federal, México State, Michoacán, Quintana Roo and Sonora, there is only one species known. Aguascalientes, Baja California, Coahuila, Guanajuato, Nuevo León, Tlaxcala and Zacatecas lack specific records.

Checklist of Mexican Endomychidae Leach, 1815

Subfamily Anamorphinae Strohecker, 1953: 15 (=Mychotheninae)

Species of this subfamily occur in all main zoogeographical regions (Tomaszewska 2005) with approximately 26 genera belonging or probably belonging to it (Tomaszewska 2000).

***Acritosoma* Pakaluk & Ślipiński, 1995: 330.**

Type species: *Acritosoma elongatum* Pakaluk & Ślipiński, 1995.

This is a Neotropical genus with two described species: one from Perú and the other from México (Pakaluk & Ślipiński 1995).

1. *A. ovatum* Pakaluk & Ślipiński, 1995.

Acritosoma ovatum Pakaluk & Ślipiński, 1995: 334.

Type locality: México: San Luis Potosí, 26 mi. E. of Ciudad del Maíz.

Type material: holotype in CAS.

Distribution: México: SLP.

***Bystus* Guérin-Méneville, 1857: 270.**

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

Rhymbus Gerstaecker, 1858: 347.

This is a tropical genus distributed in the western hemisphere. In México species of *Bystus* are known from the Gulf and Southeastern areas and have been collected from rotting logs and logs infested by hard bracket fungi. Hoffman *et al.* (2004) mentioned the occurrence of an unidentified species (as *Rhymbus*) in a cave from Yucatan Peninsula. Leschen & Carlton (1993) described *B. decorator* from Perú, detailing an interesting behavior of larvae which cloak themselves with debris collected from the surrounding microhabitat, probably for protection from predators. Four species recorded from México.

2. *B. apicalis* (Gerstaecker, 1858).

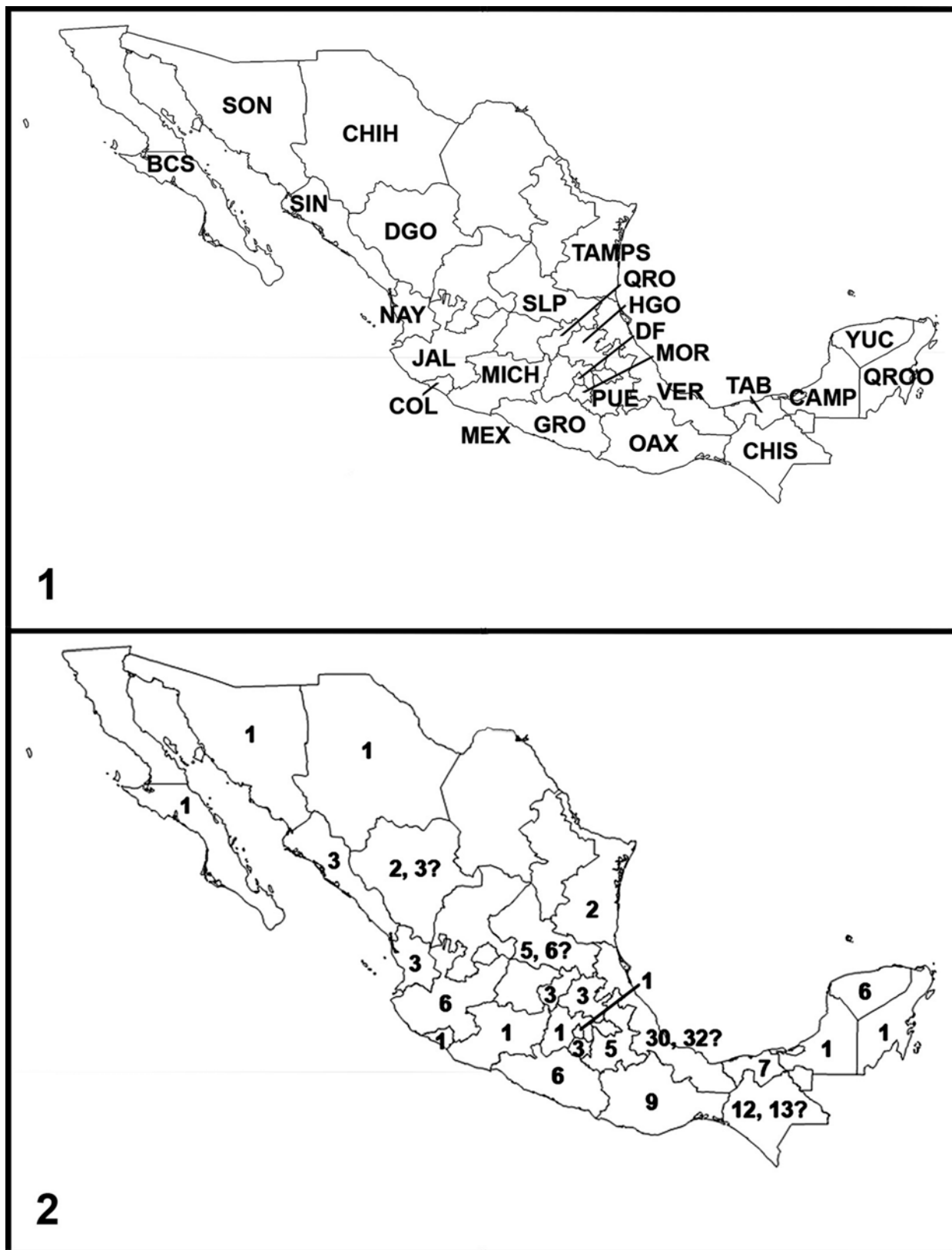
Rhymbus apicalis Gerstaecker, 1858: 350; Gorham 1890: 143; Blackwelder 1945: 440.

Bystus apicalis: Strohecker 1953: 21.

Type locality: Colombia

Type material: syntypes in MNHUB, BMNH

Distribution: México (without specific records on the distribution), Guatemala, Colombia.



FIGURES 1–2. 1, Map showing Mexican states where endomychid species are recorded and the abbreviations used in the text: 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. 2, Map showing the number of Endomychidae species recorded for each Mexican state including dubious records.

3. *B. fibulatus* (Gorham, 1890).

Rhymbus fibulatus Gorham, 1890: 144; Blackwelder 1945: 440.
Bystus fibulatus: Strohecker 1953: 21.

Type locality: México: VER, Tuxpan

Type material: syntypes in BMNH.

Distribution: México: VER.

4. *B. hemisphaericus* (Gerstaecker, 1858).

Rhymbus hemisphaericus Gerstaecker, 1858: 349; Gorham 1890: 143; Blackwelder 1945: 440.
Bystus hemisphaericus: Strohecker 1953: 21.

Type locality: Costa Rica.

Type material: holotype in MNHUB

Distribution: México: VER, GRO; Belize, Guatemala, Costa Rica, Panamá.

5. *B. limbatus* (Gorham, 1873).

Figs 3, 15.

Rhymbus limbatus Gorham, 1873: 63; Gorham 1890: 142; Blackwelder 1945: 440; Strohecker 1953: 22.

Type locality: México.

Type material: holotype in BMNH

Distribution: México: PUE, VER, QRO*.

A first record for the state of Querétaro reported here is based on a specimen collected in a rotten log.

***Catapotia* Thomson, 1860: 13.**

Type species: *Catapotia laevissima* Thomson, 1860.

Cremnodes Gerstaecker, 1858: 412 (nec Foerster).

This is a Neotropical genus with 5 species distributed from Central México to South America. One species in México.

6. *C. laevissima* Thomson, 1860.

Fig. 16.

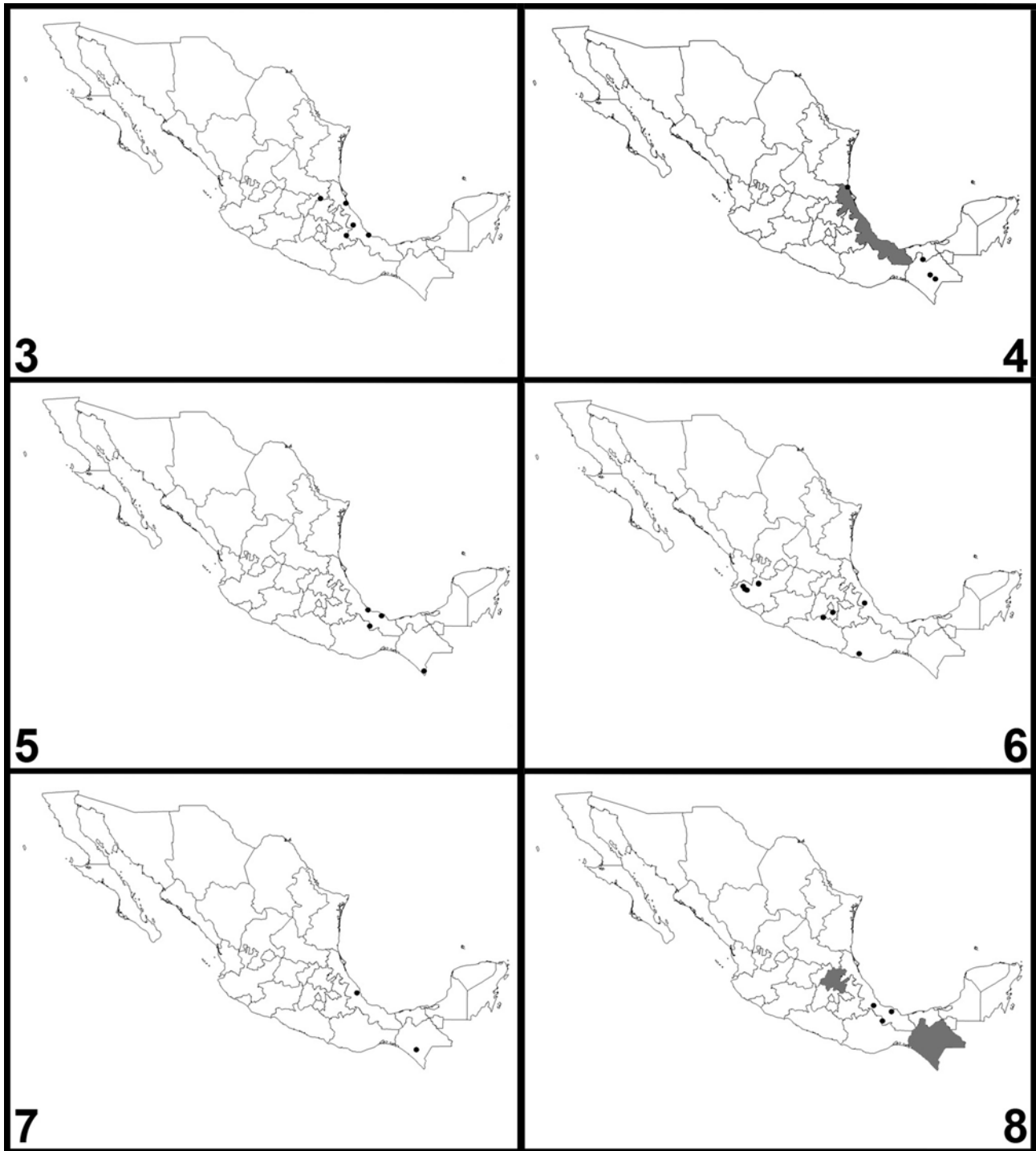
Catapotia laevissima Thomson, 1860: 14; Gorham 1891: 148; Blackwelder 1945: 440; Strohecker 1953: 23.

Type locality: México.

Type material: syntypes probably in MNHN

Distribution: México: VER, SLP?*; Guatemala, Nicaragua, Panamá, Ecuador, Perú.

One specimen in NMNH is labeled "Valles", which probably refers to Ciudad Valles in eastern San Luis Potosí. One of the two specimens examined was collected in orchids.



FIGURES 3–8. Distribution maps. 3, *Bystus limbatus* (Gorham). 4, *Archipines intricata* (Gorham). 5, *Corynomalus perforatus* Gerstaecker. 6, *Stenotarsus latipes* Arrow. 7, *Stenotarsus marginalis* Arrow. 8, *Stenotarsus rubrocinctus* Gerstaecker. Shading indicates state record(s) only.

***Exysma* Gorham, 1891: 145.**

Type species: *Exysma laevigata* Gorham, 1891.
Parexysma Csiki, 1905: 573.

A Neotropical genus with 3 species distributed from México to Central America. One species in México.

7. *E. laevigata* Gorham, 1891.

Fig. 17

Exysma laevigata Gorham, 1891: 145; Blackwelder 1945: 437; Strohecker 1953: 27.

Type locality: not designated.

Type material: syntypes in BMNH.

Distribution: México: TAB, VER; Panamá.

Some specimens were collected on a primavera (Bignoniaceae: *Tabebuia*) log and on pineapple.

***Micropsephus* Gorham, 1891: 149.**

Type species: *Micropsephus mniophilinus* Gorham, 1891.

Monotypic genus known only from the specimens reported by Gorham (1891) from Tabasco in México and Guatemala.

8. *M. mniophilinus* Gorham, 1891.

Micropsephus mniophilinus Gorham, 1891: 149; Blackwelder 1945: 437; Strohecker 1953: 18.

Type locality: not designated.

Type material: syntypes in BMNH

Distribution: México: TAB; Guatemala.

***Rhymbomicrus* Casey, 1916: 139.**

Type species: *Alexia lobata* LeConte & Horn, 1883.

Micropsephellus Arrow, 1920: 79.

American genus with 5 known species: 3 from eastern United States, one from Lesser Antilles and one from México, and Central America (Pakaluk 1987). Most specimens have been collected in forest litter or under bark (Pakaluk 1987).

9. *R. hemisphaericus* (Champion, 1913)

Fig. 18.

Micropsephus hemisphaericus Champion, 1913: 118.

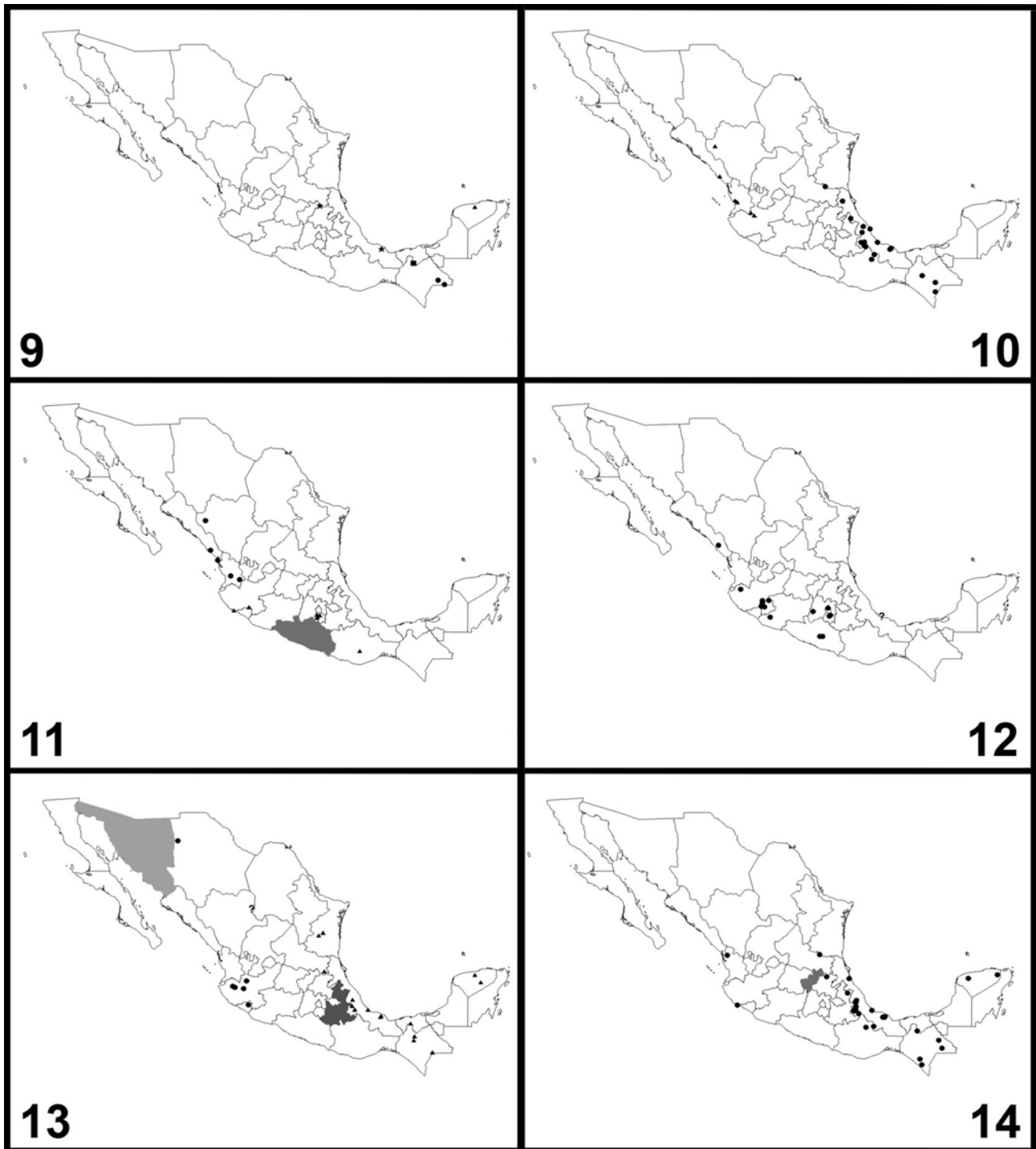
Micropsephellus hemisphaericus: Arrow 1920: 80; Blackwelder 1945: 437.

Rhymbomicrus hemisphaericus: Strohecker 1953: 17.

Type locality: not designated.

Type material: syntypes in BMNH.

Distribution: México, Guatemala, Nicaragua.



FIGURES 9–14. Distribution maps. 9, *Anidrytus mexicanus* Strohecker (circles), *Anidrytus nitidularius* Gerstaecker (triangle), *Ephebus sulcatus* Strohecker (stars), *Epopterus partitus maculosus* Gorham (square). 10, *Epipocus brunneus* Gorham (triangles), *Epipocus cinctus* LeConte (circles). 11, *Epipocus gorhami* Strohecker (circles), *Epipocus subcostatus* Gorham (triangles). 12, *Epipocus longicornis* Gerstaecker. 13, *Epipocus punctatus* LeConte (triangles, darker gray, including dubious record from DGO), *Epipocus unicolor* Horn (circles, lighter gray). 14, *Epipocus tibialis* (Chevrolat). Shading indicates state record(s) only.

Subfamily Merophysyiinae Seidlitz, 1872: 39. (=Holoparamecinae).

This subfamily contains 11 genera. *Holoparamecus* occurs in all main zoogeographical regions and the

remaining genera are distributed in warmer parts of the world.

***Holoparamecus* Curtis, 1833: 185.**

Type species: *Holoparamecus depressus* Curtis, 1833.

This genus is distributed throughout the world (Tomaszewska 2000). In the United States 6 species are known, primarily collected from forest litter or with flight intercept traps (Skelley & Leschen 2001). *Holoparamecus gabriellae* Rucker was found in bat guano inside a cave in Veracruz State (Rucker 2003). Rojas (1989) reported an unidentified species of *Holoparamecus* as associated with the debris of *Atta mexicana* (Smith) in an arid zone of Querétaro. Navarrete-Heredia (2001), however, considers that the occurrence of these beetles in this particular habitat is accidental so this association needs to be fully investigated. There is no updated work that could help in identification of the Mexican species. In Tomaszewska (2000) a detailed generic description is presented. Four species are known from México.

10. ***H. constrictus*** Sharp, 1902.

Holoparamecus constrictus Sharp, 1902: 628; Blackwelder 1945: 435.

Type locality: México: Guerrero, Chilpancingo.

Type material: holotype in BMNH.

Distribution: México: GRO; Guatemala.

Sharp (1902) described this species from México, but Blackwelder (1945) cited this species for Guatemala (without specific distributional details).

11. ***H. gabriellae*** Rucker, 2003.

Fig. 19.

Holoparamecus gabriellae Rucker, 2003: 10.

Type locality: México: Veracruz, Puente Nacional, Cueva del Arroyo del Bellaco.

Type material: holotype in MMUE.

Distribution: México: VER.

These are blind and wingless cave beetles found in bat guano.

12. ***H. pumilus*** Sharp, 1902.

Holoparamecus pumilus Sharp, 1902: 627; Blackwelder 1945: 435.

Type locality: México: Guerrero, Chilpancingo.

Type material: holotype in BMNH.

Distribution México: GRO.

13. ***H. singularis*** (Beck), 1817.

Silvanus singularis Beck, 1817: 160.

Holoparamecus singularis: Motschulsky 1844: 442; Sharp 1902: 627; Blackwelder 1945: 435.

Type locality: Germany: Bavaria.

Type material: probably lost.

Distribution: México: VER; United States of America, Europe, Asia, Africa.

This is a species with worldwide distribution.

***Lycoperdinella* Champion, 1913: 114.**

Type species: *Lycoperdinella subcaeca* Champion, 1913.

The members of this enigmatic Central American genus seem to live in leaf litter feeding on microfungi or mold and are only collected in berlese funnel samples. This genus has not been formally recorded from México; however, some specimens from Querétaro state are known and represent a new species in process of description (F. Shockley pers. comm.)

Subfamily Lycoperdininae Redtenbacher, 1844. (=Eumorphinae).

This subfamily is distributed throughout the world and contains currently 39 genera; highest diversity is found in southeast Asia (Tomaszewska 2005, 2006).

***Archipines* Strohecker, 1953: 57.**

Type species: *Phalantha exsanguis* Gerstaecker, 1858.

Phalantha Gerstaecker, 1858: 202. (nec Gistel)

This is a Neotropical genus with 15 species distributed from México to South America. Tomaszewska (2002) revised this genus and described the immature stages based on specimens collected in banana leaves. One species in México.

14. *A. intricata* (Gorham, 1889).

Figs. 4, 20.

Phalantha intricata Gorham, 1899: 119; Blackwelder 1945: 438.

Archipines intricata: Strohecker 1953: 58; Tomaszewska 2002: 376.

Type locality: Belize: Río Hondo.

Type material: lectotype in BMNH.

Distribution: México: CHIS, OAX*, TAB, TAMPS* VER*.

Many of the examined specimens were collected in banana debris. Collecting data do not describe a specific pattern of seasonality; specimens were collected in January, March, July, August, September, November and December, from 25 to 1800 meters above sea level.

***Corynomalus* Chevrolat in Dejean, 1836: 439.**

Type species: *Corynomalus tarsatus* Erichson, 1847.

A Neotropical genus with 49 species distributed from southern México to South America. Strohecker (1980) made a generic revision. A species from Costa Rica seems to feed on lichens. Tomaszewska (2005) provided

a detailed generic description.

According to Bousquet (2004) the name *Corynomalus* was first validated by Chevrolat (1836: 439) in the fifth release of Dejean's second edition of his catalogue and has priority over the widely used name *Amphix* Laporte (1840). Based on this argument, we include the single Mexican species in the genus *Corynomalus* instead of *Amphix*.

15. *C. perforatus* Gerstaecker, 1857.

Figs. 5, 21.

Corynomalus perforatus Gerstaecker, 1857: 238.

Corynomalus dentatus Gorham, 1889: 117 (nec Gerstaecker).

Amphix perforatus: Blackwelder 1945: 437; Strohecker 1953: 88; Strohecker 1980: 25.

Amphix dentatus: Blackwelder 1945: 437 (in part).

Type locality: Guyane: Cayenne.

Type material: lectotype in MNHUB.

Distribution: México: CHIS, OAX*, VER. Belize, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guyane.

This species has been collected from 40 to 750 meters above sea level in July and August.

Subfamily Stenotarsinae Chapuis, 1876: 125.

Species of this subfamily are widely distributed throughout the world except for Europe; with 9 genera included or probably included (Tomaszewka 2000).

Stenotarsus Perty, 1832: 112.

Type species: *Stenotarsus brevicollis* Perty, 1876.

Quirinus Thomson, 1857: 157.

Systaecha Gorham, 1890: 132.

Stenotarsoides Csiki, 1900: 401.

A pantropical genus with more than 200 species worldwide and about 100 species in America (Roubik & Skelley 2001). This is the most diverse genus in the family. In México, specimens of at least five species have been collected feeding on sporophores of Russulaceae (*Lactarius* and *Russula*); others have been collected frequently in rotting logs or logs infested by lignicolous fungus like *Sirobasidium sanguineum* (Sirobasidiaceae) or *Favolus tenuiculus* (= *F. brasiliensis*) (Polyporaceae). Additionally, some specimens were collected with Malaise, flight intercept and carrion baited traps. In México, species of this genus are present in association with various vegetation, like cloud forest, pine-oak forest, tropical forest and rarely in deciduous tropical forest. Tomaszewska (2000) presented a detailed generic description. Immature stages were described by McHugh & Pakaluk (1997). Roubik & Skelley (2001) synthesized the natural history of the aggregating beetle *S. subtilis* Arrow and presented a key for species described from Panama. However there is no updated work that could help in the identification of Neotropical species. A review of the Mexican and Central American fauna is desperately needed. Some discrepancies in the localities for various species exist among different authors (Gorham 1890; Arrow 1920; Blackwelder 1945 and Strohecker 1953). 13 described species in México. Among the studied material about 20 unidentified species were found, that apparently represent, at least, some undescribed species.

16. *S. circumdatus* Gerstaecker, 1858.

Stenotarsus circumdatus Gerstaecker, 1858: 323; Gorham 1890: 136; Blackwelder 1945: 439; Strohecker 1953: 51.

Type locality: México: VER, Xalapa.

Type material: syntypes in MNHUB.

Distribution: México: VER.

Known only from Veracruz. One specimen was collected on an unidentified species of *Russula* (Russulaceae).

17. *S. discipennis* Gorham, 1890.

Stenotarsus discipennis Gorham, 1890: 136; Blackwelder 1945: 439; Strohecker 1953: 52.

Type locality: not designated.

Type material: syntypes in BMNH.

Distribution: México: VER?; Guatemala, Costa Rica.

Gorham (1890) described this species from Guatemala and Costa Rica, and Blackwelder (1945) added México to its distribution. Strohecker (1953), however, mentioned only Guatemala. Among the studied material, some specimens from Veracruz have been tentatively identified as belonging to this species.

18. *S. globosus* Guérin-Méneville, 1857.

Stenotarsus globosus Guérin-Méneville, 1857: 270; Gorham 1890: 136; Arrow 1920: 50; Blackwelder 1945: 439; Strohecker 1953: 52; Roubik & Skelley 2001: 255.

Stenotarsus cordatus Gorham, 1890: 134; Arrow 1920: 50.

Type locality: México.

Type material: holotype in BMNH.

Distribution: México: OAX*, VER; Guatemala, Honduras?, Panamá?, Colombia?, Guyana?, Perú?, Bolivia?.

The first record reported here from Oaxaca was based on a specimen collected from an unidentified mushroom. There are some discrepancies in the South and Central America localities; Gorham (1890) and Strohecker (1953) only mentioned México and Guatemala, but Blackwelder (1945) listed Honduras, Panamá, Colombia, Guyana, Perú, and Bolivia. These records are treated here as dubious.

19. *S. latipes* Arrow, 1920.

Figs. 6, 22.

Stenotarsus latipes Arrow, 1920: 52; Blackwelder 1945: 439; Strohecker 1953: 53; Roubik & Skelley 2001: 155.

Stenotarsus angustulus Gorham, 1890: 138 (nec Gerstaecker).

Type locality: not designated.

Type material: syntypes in BMNH.

Distribution: México: GRO*, JAL, MOR*, OAX, VER; Guatemala, Costa Rica.

This species of *Stenotarsus* has its widest distribution in México. Many specimens have been collected on sporophores of various Russulaceae (*Russula* sp., *Lactarius deliciosus* and *Lactarius* spp.), and from the mycelium of *Lactarius* sp. in leaf litter (J. Cortés-Aguilar pers. comm.). It is also common under bark and was collected in high numbers on a trunk infested by *Sirobasidium sanguineum* (Sirobasidiaceae). This species

seems to be present from June to September, in an altitudinal range from 1410 to 2210 meters above sea level. Roubik & Skelley (2001) reported the aggregating behavior of this species in Costa Rica. In México it has been collected in series of about 30 specimens.

20. *S. marginalis* Arrow, 1920. (**FIRST RECORD FOR MÉXICO**)

Fig. 7.

Stenotarsus marginalis Arrow, 1920: 50; Blackwelder 1945: 440; Strohecker 1953: 54.
Stenotarsus maculicollis Gorham, 1890: 141 (nec Gerstaecker).

Type locality: Guatemala: Zapote.

Type material: holotype in BMNH.

Distribution: México*: VER*, CHIS*. Guatemala.

S. marginalis is recorded for the first time from México based on specimens collected in Chiapas from *Russula mexicana* in July and in Veracruz from *Lactarius* sp. in August.

21. *S. militaris* Gerstaecker, 1858.

Stenotarsus militaris Gerstaecker, 1858: 325; Gorham 1890: 137; Blackwelder 1945: 440; Strohecker 1953: 54.

Type locality: México.

Type material: syntypes in MIZ and probably in MNHN.

Distribution: México: VER, CHIS*

22. *S. pilatei* Gorham, 1873.

Stenotarsus pilatei Gorham, 1873: 53; Gorham 1890: 135; Blackwelder 1945: 440; Strohecker 1953: 55.

Type locality: México: Yucatán.

Type material: holotype in BMNH.

Distribution: México: YUC; Guatemala, Belize, Costa Rica, Nicaragua.

In spite of the references of Gorham (1890) and Blackwelder (1945), Strohecker (1953) cited this species exclusively from México.

23. *S. rubrocinctus* Gerstaecker, 1858.

Fig. 8.

Stenotarsus rubrocinctus Gerstaecker, 1858: 324; Gorham 1890: 137; Blackwelder 1945: 440; Strohecker 1953: 56.

Type locality: México

Type material: syntypes in MIZ and MNHUB.

Distribution: México: CHIS*, VER, HGO*.

Several specimens were collected in a rotting log.

24. *S. sallei* Gorham, 1873.

Stenotarsus sallei Gorham, 1873: 63; Gorham 1890: 140; Arrow 1920: 51; Blackwelder 1945: 440; Strohecker 1953: 56.

Type locality: not designated

Type material: syntypes in BMNH.

Distribution: México: VER, Costa Rica?.

Arrow (1920) mentioned this species as peculiar to México, and suggested that the specimens cited by Gorham as *S. sallei* from Guatemala belong to *S. distinguendus* Arrow. This was followed by Strohecker (1953). In Blackwelder's catalogue (1945), however, *S. sallei* was cited from Costa Rica, although without specific details. Record for this country remains questionable.

25. *S. smithi* Gorham, 1890.

Stenotarsus smithi Gorham, 1890: 140; Blackwelder 1945: 440; Strohecker 1953: 56.

Type locality: México: Tabasco, Teapa.

Type material: holotype in BMNH.

Distribution: México: TAB.

26. *S. tarsalis* Gorham, 1890.

Stenotarsus tarsalis Gorham, 1890: 137; Strohecker 1953: 57.

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

Type locality: not designated.

Type material: syntypes in BMNH.

Distribution: México: VER.

Described originally by Gorham (1890) from Veracruz, this species was proposed by Arrow (1920:50) as a color form of *S. circumdatus*. Blackwelder (1945) followed this arrangement and cited it as a variety of *S. circumdatus*. Strohecker (1953), however, resurrected the original status and cited *S. tarsalis* as a valid species from México.

27. *S. thoracicus* Gorham 1890.

Stenotarsus thoracicus Gorham, 1890: 136; Blackwelder 1945: 440, Strohecker 1953: 57.

Type locality: not designated.

Type material: syntypes in BMNH and probably in MNHN.

Distribution: México: VER.

28. *S. validicornis* Gerstaecker, 1858.

Stenotarsus validicornis Gerstaecker, 1858: 331; Arrow 1920: 49; Blackwelder 1945: 440; Strohecker 1953: 57.

Stenotarsus claviger Gorham, 1890: 141, pl. VII, fig. 10, (nec Gerstaecker).

Type locality: Guyane: Cayenne.

Type material: syntypes in BMNH and MNHN.

Distribution: México: VER; Panamá, Colombia, French Guyane.

Gorham (1890) studying specimens from México (Veracruz) and Panamá identified them as *S. claviger* Gerstaecker. Subsequently, Arrow (1920) clarified that the specimens studied by Gorham agreed more with *S. validicornis* than with *S. claviger*. Roubik & Skelley (2001) followed this situation for Panamá beetles. None

of these species, however, were cited from México by Strohecker (1953) or Blackwelder (1945). We record this species as present in México based on Arrow's identification of Gorham's specimens. This record needs to be confirmed.

Subfamily Epipocinae Gorham, 1873: 20.

Four Neotropical genera with Nearctic species of *Epipocus* (Tomaszewska 2000).

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

Type species: *Anidrytus bipunctatus* Gerstaecker, 1858.

This genus contains 54 species distributed from México to South America (Strohecker 1997). The reported distribution in México is restricted to the southern states of Chiapas and Yucatan. Very little is known about the biology of the Mexican species; one specimen of *A. mexicanus* Strohecker was collected in a bromelid plant. Although Strohecker (1997) made a catalogue of all known species, he did not provide a key for their identification, which is mainly based on a comparison of male genitalia. McHugh & Pakaluk (1997) described immature stages. Two species in México, and probably one unnamed species.

29. *A. mexicanus* Strohecker, 1997.

Figs. 9, 23.

Anidrytus mexicanus Strohecker, 1997: 176.

Type locality: México: Chiapas, San Quintín.

Type material: holotype in FSCA.

Distribution: México: CHIS.

30. *A. nitidularius* Gerstaecker, 1858.

Fig. 9.

Anidrytus nitidularius Gerstaecker, 1858: 262; Gorham 1889: 126; Blackwelder 1945: 438; Strohecker 1953: 66; Strohecker 1997: 171.

Type locality: México.

Type material: holotype probably lost.

Distribution México: YUC.

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

Type species: *Ephebus cardinalis* Gerstaecker, 1858.

A Neotropical genus with 9 species distributed from Central México to South America. There is little information regarding the habits of these beetles. A larva tentatively identified as *Ephebus* was described by McHugh & Pakaluk (1997).

According to Bousquet (2004) the name *Ephebus* was first validated by Chevrolat (1836) in the fifth release of Dejean's second edition of his catalogue, not by Gerstaecker (1858) as previously suggested. One species in

México.

31. *E. sulcatus* Strohecker, 1975.

Figs. 9, 24.

Ephebus sulcatus Strohecker, 1975: 336.

Type locality: México: Veracruz, Coyame, Lago Catemaco.

Type material: holotype in FSCA.

Distribution: México: VER, QRO*; Colombia.

The first record of this species for the State Querétaro is based on a specimen collected with a flight intercept trap.

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

Type species: *Endomychus tibialis* Chevrolat, 1834.

This is the most diverse genus in México and its species are widespread in this country. It usually has been collected from rotting logs, under bark and feeding on lignicolous fungi of the families Auriculariaceae, Sirobasidiaceae and Polyporaceae and on sporophores of Boletaceae mushrooms (Navarrete-Heredia 1996, 1997). Some specimens have been found on rotting bananas and some others were attracted to lights. In México *Epipocus* is present in almost all kinds of forests and in plantations of coffee and bananas; collected through the year but more abundant in the rainy season: June to October. Strohecker (1977) revised this genus and recognized 32 species distributed from northeastern United States to Colombia, with México being the most important diversification center. Tomaszewska (2000) presented a detailed generic description. McHugh & Pakaluk (1997) described the larval stages. Twenty described and one probably unnamed species in México.

32. *E. aztecus* Strohecker, 1977.

Epipocus aztecus Strohecker, 1977: 307.

Type locality: México: Oaxaca, 22.4 mi. N. Puerto Escondido.

Type material: holotype in FSCA.

Distribution: México: OAX.

All recorded specimens were collected from Oaxaca in July. The paratype specimen labeled “C. de Plumas” designated by Strohecker (1977) probably belongs to the locality “Cerro de las Plumas (Ihuitepec)” in Oaxaca (Instituto Nacional de Estadística, Geografía e Informática 2002).

33. *E. balli* Strohecker, 1977.

Epipocus balli Strohecker, 1977: 311.

Type locality: México: Chiapas, 3.1 mi. N. Pueblo Nuevo, Rte 195.

Type material: holotype in FSCA.

Distribution: México: CHIS; Guatemala.

34. *E. brunneus* Gorham, 1889.

Fig. 10.

Epipocus brunneus Gorham, 1889: 124; Strohecker 1977: 308.

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

Type locality: México: Sinaloa?, Presidio.

Type material: lectotype in BMNH.

Distribution: México: DGO, JAL, NAY, SIN.

According to the known distribution of this species, the locality “Presidio” in the Biología Centrali-Americana (Gorham 1889) refers to “Estacion Presidio in Mazatlan” (Selander & Vaurie 1962) in Sinaloa. Beetles of this species have been collected from June to August, although little is known about their habits.

35. *E. cinctus* LeConte, 1853.

Fig. 10.

Epipocus cinctus LeConte, 1853: 358; Gerstaecker 1858: 246; Gorham 1889: 121; Blackwelder 1945: 438; Strohecker 1953: 67; Strohecker 1977: 313.

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

Type locality: United States of America: Texas.

Type material: holotype in MCZ.

Distribution: México, CHIS, OAX, PUE*, SLP, VER. United States of America, Guatemala.

The specimens of this species have been collected from April to November at an altitude from 30 to 1640 meters above sea level.

36. *E. cryptus* Strohecker, 1977.

Epipocus cryptus Strohecker, 1977: 320.

Type locality: México: Veracruz, Xalapa.

Type material: holotype in BMNH.

Distribution: México: VER.

This species seems to be present near 1500 meters above sea level. A specimen in IEXA collection was collected in June from “fungus and trunk”. Two females from “Motzorongo” and “Paraje Nueve” Veracruz, preserved in NMNH are labeled as paratypes of “*Epipocus cryptus* Strohecker, 1974”. However, in the formal description of *Epipocus cryptus* (Strohecker 1977) these specimens were not designated as type material, but are listed as *E. rufitarsis* (Chevrolat) to which they clearly belong.

37. *E. figuratus* Gerstaecker, 1858.

Epipocus figuratus Gerstaecker, 1858: 247; Gorham 1889; Blackwelder 1945: 438; Strohecker 1953: 67; Strohecker 1977: 314.

Type locality: México.

Type material: lectotype in MNHN.

Distribution: México: CAMP*, CHIS*, QROO, TAB, VER?, YUC. Guatemala, Belize, Costa Rica.

The first record from Campeche is also the first record for the family in this state. The record from Xalapa, Veracruz in Gorham (1889) is treated here as dubious due to the distribution of this species reported by

Strohecker (1977) where no Veracruz locality was cited. Collected from January to July at an altitude from 7 to 850 meters above sea level.

38. *E. flavipes* Strohecker, 1977.

Epipocus flavipes Strohecker, 1977: 322.

Type locality: México: Veracruz, Tlapacoyan.

Type material: holotype in IMLA.

Distribution: México: VER.

39. *E. gorhami* Strohecker, 1977.

Fig. 11.

Epipocus gorhami Strohecker, 1977: 308.

Type locality: United States of America: Arizona, Patagonia.

Type material: holotype in FSCA.

Distribution: México: DGO, NAY, SIN; United States of America.

Specimens have been collected in logs infested by Polyporaceae fungus from June to September at an altitude from 1 to 1360 meters above sea level.

40. *E. guatemoc* Strohecker, 1977.

Epipocus guatemoc Strohecker, 1977: 324.

Type locality: México.

Type material: holotype in MNHUB.

Distribution: México (without specific data of the distribution).

41. *E. longicornis* Gerstaecker, 1858.

Fig. 12.

Epipocus longicornis Gerstaecker, 1858: 255; Gorham 1889: 123; Blackwelder 1945: 438; Strohecker 1953: 67; Strohecker 1977: 305.

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

Type locality: México.

Type material: holotype in MNHUB.

Distribution: México: DF, GRO, JAL, MEX*, MICH, MOR, SIN, VER?.

The first record from the State of Mexico is also the first record for the family in this State. The record from Cordoba, Veracruz reported by Gorham (1889) was not confirmed in Strohecker's review (1977) where no Veracruz locality was listed. Therefore it is treated here as dubious.

Specimens of this species has been collected from February to November, predominantly present in localities over 1140 meters above sea level, with one record from Sinaloa at 120 m. The majority of the specimens have been found in rotting logs or logs infested by lignicolous fungus like *Sirobasidium sanguineum* (Sirobasidiaceae); others seem to feed on Boletaceae mushrooms (Navarrete-Heredia 1996).

42. *E. mixtecus* Strohecker, 1977.

Epipocus mixtecus Strohecker, 1977: 323.

Type locality: México.

Type material: holotype in BMNH.

Distribution: México (without specific data of the distribution).

43. *E. opacus* Strohecker, 1977.

Epipocus opacus Strohecker, 1977: 306.

Type locality: United States of America: Arizona, Sta. Cruz Co., 2 mi. w. Patagonia.

Type material: holotype in FSCA.

Distribution: México: BCS; United States of America.

The locality cited by Strohecker (1977) as “20 mi. n. Comondu” occurs in the Mexican state of Baja California Sur (Instituto Nacional de Estadística, Geografía e Informática 2002).

44. *E. punctatus* LeConte, 1853.

Fig. 13.

Epipocus punctatus LeConte, 1853: 358; Guérin-Méneville 1857: 265; Gerstaecker 1858: 252; Strohecker 1953: 67; Strohecker 1977: 311.

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

Type locality: United States of America: Georgia.

Type material: lectotype in MCZ.

Distribution: México, CHIS, DGO?, PUE, SLP*, TAMPS, VER, YUC; United States of America, Guatemala, El Salvador, Honduras, Costa Rica, Panamá.

The record from “Villa Lerdo in Durango” in Gorham (1889) is treated here as dubious due to the distribution of this species reported by Strohecker (1977) where none Durango locality was listed. Some specimens have been collected from hard bracket fungus and banana debris. Present at an altitude from 7 to 1769 meters above sea level from June to October.

45. *E. rufitarsis* (Chevrolat, 1835).

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.

Type locality: México.

Type material: neotype in MNHN.

Distribution: México: VER; Guatemala.

In México this species is known only from Veracruz. Collected during the whole year, at an altitude from 7 to 1769 meters above sea level.

46. *E. sallaei* Gorham, 1889.

Epipocus sallaei Gorham, 1889: 125; Blackwelder 1945: 438; Strohecker 1953: 67; Strohecker 1977: 315.

Type locality: México: Hidalgo, Jacala.

Type material: lectotype in BMNH.

Distribution: México: HGO, PUE, VER.

This species has been collected at an altitude from 1320 to 2160 meters above sea level.

47. *E. subcostatus* Gorham, 1889.

Figs. 11, 25.

Epipocus subcostatus Gorham, 1889: 123; Blackwelder 1945: 438; Strohecker 1953: 67; Strohecker 1977: 309.

Type locality: México: Morelos, Cuernavaca.

Type material: lectotype in BMNH.

Distribution: México: GRO, JAL, MOR, OAX*.

We were not able to find the locality cited by Strohecker (1977) as “Sola”, but it may refer to Sola de Vega in Oaxaca (Instituto Nacional de Estadística, Geografía e Informática 2002). This species has been collected from June to November at an altitude of 1050 to 1952 meters above sea level, with one record from 10 meters. Some specimens were attracted to light.

48. *E. tibialis* (Chevrolat, 1834).

Fig. 14.

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.

Type locality: México.

Type material: Illustration of lectotype in the Iconographie Regne Animal, partie 7: pl. 50, fig. 9.

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

This is an endomychid species with a wide distribution throughout the Mexican territory. However, the data obtained are not enough to infer the habits of this species. It has been found associated with lignicolous fungi like *Auricularia mesenterica* and unidentified Polyporaceae, also in banana debris. Present at an altitude from 10 to 1460 meters above sea level, practically during the whole year.

49. *E. toltecus* Strohecker, 1977.

Epipocus toltecus Strohecker, 1977: 308.

Type locality: México: Oaxaca, 22.4 mi. n. Puerto Escondido.

Type material: holotype in FSCA.

Distribution: México: OAX.

50. *E. tristinotus* Strohecker, 1977.

Epipocus tristinotus Strohecker, 1977: 321.

Type locality: México.

Type material: holotype in BMNH.

Distribution: México: CHIS?.

One female from Chiapas was tentatively identified as belonging to this species.

51. *E. unicolor* Horn, 1870.

Fig. 13.

Epipocus unicolor Horn, 1870: 96; Blackwelder 1945: 438; Strohecker 1953: 68; Strohecker 1977: 305.

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

Epipocus punctipennis Casey, 1916: 145; Blackwelder 1945: 438; Strohecker 1953: 67.

Type locality: United States of America: Colorado.

Type material: lectotype in MCZ.

Distribution: México: CHIH, COL*, JAL, SON.

This is the first confirmed record for this species and for the family Endomychidae from the state of Colima. This record is based on a specimen from NMNH, which bears the label data "Colima Col.". This specimen was studied by H.F. Strohecker and could be the reference for the locality cited as "Jalisco, Volcan Colima" (Strohecker 1977). The most frequent habitat of this species is in rotting logs and under bark; in addition, a group of beetles were found feeding on *Fistulinella* sp. (Boletaceae). This species is present in areas above 1800 meters above sea level, mainly in pine and pine-oak forests.

Comment on *Epipocus fuliginosus*

Guérin-Méneville (1857) and Gerstaecker (1858) named their new species as *Epipocus fuliginosus*.

Epipocus fuliginosus Guérin-Méneville, 1857: 266

Type locality: Cartagena

E. fuliginosus Gerstaecker, 1858: 244

Type locality: Nova Granada

Strohecker (1953) in his catalogue treated both names as synonymies and reported the species from Colombia and México. In his revision of *Epipocus* (Strohecker 1977), however, he considered Guérin's and Gerstaecker's species as separate. He classified the species of Gerstaecker in the genus *Epipocus* giving to it a new name *E. funeralis*, while the species of Guérin was later moved to the genus *Anidrytus* (Strohecker 1997). Neither *Anidrytus fuliginosus* nor *Epipocus funeralis* were listed in Strohecker's papers as present in México. We are following this situation in the present paper.

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

Type species: *Erotylus ocellatus* Olivier, 1791.

Neotropical genus with 64 species distributed from south México to South America. According to Bousquet (2004) the name *Epopterus* was first validated by Chevrolat (1836) in the fifth livraison of Dejean's second edition of his catalogue, not by Chevrolat in 1844, as previously thought. One species with two subspecies in México.

52. *E. partitus partitus* Gerstaecker, 1858.

Epopterus partitus Gerstaecker, 1858: 277; Gorham 1890: 130; Blackwelder 1945: 439.

Epopterus partitus partitus Strohecker, 1953: 63; Strohecker 1997: 160.

Type locality: México: Yucatán.
Type material: lectotype in BMNH.
Distribution: México: YUC; Nicaragua, Costa Rica, Panamá

53. *E. partitus maculosus* Gorham, 1890.

Epopterus ocellatus maculosus Gorham, 1890: 129; Blackwelder 1945: 439.
Epopterus partitus maculosus Arrow, 1920: 48; Strohecker 1953: 63; Strohecker 1997: 160.

Type locality: Nicaragua: Chontales.
Type material: lectotype in BMNH.
Distribution: México: TAB; Belize, Guatemala, Nicaragua.

Subfamily Eupsilobiinae Casey, 1895: 454 (= Eidoreinae; incl. Cerasommatidiidae)

Subfamily with 6 genera distributed mainly in Central and South America and in South Africa, with widely scattered species of *Eidoreus* (Tomaszewska 2000, 2005).

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

Type species: *Eidoreus minutus* Sharp, 1885.

Eupsilobius Casey, 1895: 454.
Pseudalexia Kolbe, 1910: 34.

This genus has a peculiar distribution: it is known mainly from widely scattered islands around the globe: Antilles, Hawaii, Galapagos, Seychelles, Samoa, Sri Lanka, Japan, etc. (Pakaluk & Ślipiński 1995). Sen Gupta & Crowson (1973) studied specimens from México and Belize and established the synonymy of *Eupsilobius* and *Eidoreus*. Members of this genus are rarely collected; their most frequent habitat seems to be forest debris. Although *Eidoreus* specimens have been found in association with ants, the nature of this relationship is unclear (Pakaluk & Ślipiński 1995). One species in México.

54. *E. politus* (Casey, 1895)

Eupsilobius politus Casey, 1895: 455.
Eidoreus politus: Sen Gupta & Crowson 1973: 442.

Type locality: United States of America: Florida, Key West.
Type material: holotype in NMNH.
Distribution: México, United States of America, Belize.

Sen Gupta & Crowson (1973) studied specimens from México and Belize compared with the type of *E. politus*.

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

Type species: *Evolocera championi* Sharp, 1902.
Adamia Tomaszewska, 2000: 465.

Monotypic genus known from Mexican states of Veracruz and San Luis Potosí to Central America. Tomaszewska (2000) provided a detailed description (as *Adamia*).

55. *E. championi* Sharp, 1902.

Evolocera championi Sharp, 1902: 628; Blackwelder 1945: 435; Tomaszewska 2005: 77.
Adamia mexicana Tomaszewska, 2000: 466.

Type locality: Guatemala: San Juan in Verapaz.

Type material: lectotype in BMNH.

Distribution: México: SLP, VER; Guatemala, Honduras.

Tomaszewska (2005) described the larva of this species and recognized *Evolocera* as a senior synonym of *Adamia*.

***Microxenus* Wollaston, 1861: 139 (NOT IN MÉXICO).**

The unidentified species from México cited by Pakaluk & Ślipiński (1990) as *Microxenus* sp. does not belong in this genus. Its identity remains uncertain (Ślipiński pers. comm.)

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

A subfamily with 3 genera worldwide: *Pleganophorus* endemic to southeastern Europe, *Dadocerus* distributed in Oriental region, and *Trochoideus* occurring in tropical areas throughout the world (Tomaszewska 2005).

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

Type species: *Paussus cruciatus* Dalman, 1825.
Trochoides Chapuis, 1876: 147. (error)
Pseudopaussus Schulze, 1916: 292.

A genus with 16 species from tropical areas around the World (Strohecker 1953, 1968; Joly & Bordon 1996). In America 9 native species are known from Chiapas in México to north Argentina (Strohecker 1978; Joly & Bordon 1996). The striking modifications of antennae, mainly in male specimens, could be related to the apparent association of these beetles with ants and termites (Strohecker 1978). *Trochoideus desjardinsi* Guérin-Méneville distributed from Madagascar to Taiwan has been accidentally introduced to the southern United States, which probably was associated with the introduction of social insects (termites) to America (Skelley & Burgess 1995). One species in México.

56. *T. mexicanus* Strohecker, 1978.

Fig. 26

Trochoideus mexicanus Strohecker, 1978: 351; Joly & Bordon 1996: 2.

México: Chiapas, San Quintín.

Type material: holotype in FSCA.

Distribution: México: CHIS.



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16



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FIGURES 15–18. Endomychidae species recorded from México. 15, *Bystus limbatus* (Gorham) (3.3 mm). 16, *Catapotia laevis* Thomson (3.1 mm). 17, *Exysma laevigata* Gorham (1.7 mm). 18, *Rhymbomicrus hemisphaericus* (Champion) (1.0 mm).



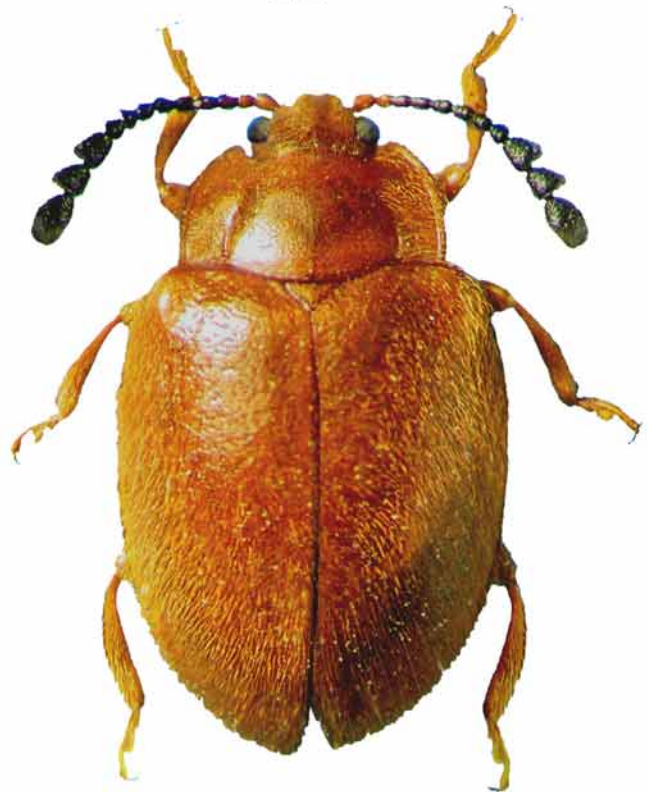
19



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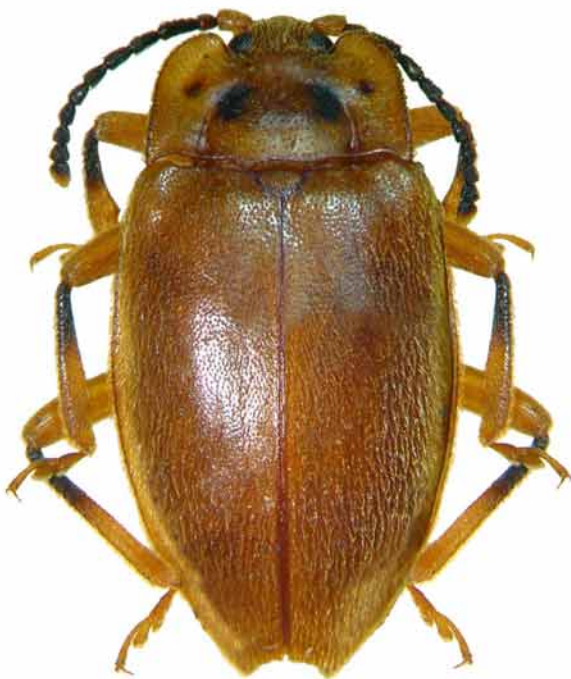
FIGURES 19–22. Endomychidae species recorded from México. 19, *Holoparamecus gabriellae* Rucker (1.1 mm). 20, *Archipines intricata* (Gorham) (3.8 mm). 21, *Corynomalus perforatus* Gerstaecker (7.2 mm). 22, *Stenotarsus latipes* Arrow (4.8 mm).



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FIGURES 23–26. Endomychidae species recorded from México. 23, *Anidrytus mexicanus* Strohecker (6.3 mm). 24, *Ephebus sulcatus* Strohecker (4.9 mm). 25, *Epipocus subcostatus* Gorham (10.8 mm). 26, *Trochoideus mexicanus* Strohecker (4.3 mm).

Discussion

The current state of knowledge about Mexican Endomychidae is fragmentary and far from being complete. There is a great lack of information in practically all aspects of species of the family: taxonomy, biology and distribution. A significant number of taxa collected in México remain unnamed. Some of them certainly are new species, but others remain as dubious species that may belong to described or undescribed taxa. During a study of specimens deposited in some collections, a substantial number of potential new species were found, especially of *Stenotarsus*, *Epipocus* and *Anidrytus*. This situation emphasizes the necessity for the revision of the genus *Stenotarsus*. This could be, however, a very difficult task, due to the interspecific variation, high diversity and great similarity among species.

Holoparamesus is another genus which needs to be reviewed; there is no updated work that can help in the identification of American species. This problem is magnified because of the cryptic habits, small size and the appearance of members of this genus that make them hard to associate with typical Endomychidae beetles. In the same way, some Anamorphinae genera like *Micropsephodes* and *Anamorphus*, which are present in the United States, Central America and the Antilles (Strohecker 1953; Leschen & Carlton 2000), have not been recorded from México, probably due to lack of exploration of the habitats preferred by these beetles.

A large bias is evident in the known distributions of the Mexican species in the state of Veracruz, where the majority of collecting efforts have been concentrated since Biología Centrali-Americana times. However, even Veracruz is one of the larger states of México and is confirmed to be the most diverse region for many Coleoptera groups in the country (Noguera & Chemsak 1996, Zaragoza & Mendoza 1996), such data hardly reflect the real situation of the Endomychidae as a result of different collecting efforts in this country.

It is notable that states with important forest cover like Michoacán and Durango have only 1 or 2 confirmed records, and many states from North and Central Altiplane have just a few or no records. We find it difficult to confirm whether or not the family is actually present when confirmed records are lacking. It is necessary to increase the field work focused in sampling in specific habitats like rotting logs, fungi or forest litter, throughout the whole Mexican territory.

The distributional limits of many Neotropical genera, e.g. *Acritosoma*, *Catapotia*, *Exysma* (Anamorphinae); *Trochoideus* (Pleganophorinae); *Evolocera* (Eupsilobiinae); *Anidrytus*, *Ephebus*, *Epopterus* (Epipocinae); *Corynomalus* and *Archipines* (Lycoperdininae), are found in South and Central regions of México. The composition at the generic level of the Mexican fauna indicates a clear neotropical affinity. Among other examples, we miss here the presence of Leisteninae, members of the Lycoperdininae genera *Aphorista* and especially *Lycoperdina* which is distributed in the United States near the border with México (Pakaluk 1984).

The biology of Mexican endomychids is poorly known. The complete life cycles of all the species are unknown. Information about the habits and habitats of the beetles is usually gathered from the label data of specimens deposited in entomological collections, and from the scarce information in the literature. In many cases, however, specimens lack important biological data like habitat, collecting method or vegetation type of the locality. Sometimes even data concerning the collecting date or specific locality are missing.

The highest diversity and abundance of specimens in entomological collections are represented by two genera: *Epipocus* and *Stenotarsus*, and these also have the most biological data available. Specimens of *Epipocus* have been found associated with Boletaceae and lignicolous fungi (mainly Polyporaceae) (*E. unicolor* with *Fistulinella* sp. (Boletaceae), *E. longicornis* with *Boletus edulis* while *E. gorhami*, *E. punctatus*, and *E. tibialis* with unidentified Polyporaceae). *Stenotarsus* species (*S. circumdatus*, *S. latipes*, *S. marginalis* and *S. spp.*) have been collected in Russulaceae mushrooms (*Lactarius* and *Russula*). However, even these available data are too scarce to talk about specific fungal host relationships as in some Nearctic beetles like *Endomychus biguttatus* Say with *Schizophyllum commune* (Leschen & Carlton 1988) and *Lycoperdina ferruginea* Leconte with *Lycoperdon pyriforme* (Pakaluk 1984).

Many interesting behaviors known in this family have not been fully explored in Mexican species. Gre-

garism, for instance, was reported for *Stenotarsus latipes* in Costa Rica (Roubik & Skelley 2001) and although this species is known from México, there are no reports of this behavior. Larvae of two different Mexican Anomorphinae members seem to cloak themselves with debris collected from their surrounding microhabitats (Leschen & Carlton, 1993), but the precise identity and life cycles of these beetles are unknown.

In conclusion, knowledge of the family Endomychidae is far from complete, leaving a large gap in our understanding of these interesting beetles. A great amount of work still needs to be done - from collecting to the description of new taxa and the natural history of species.

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Appendix 1. Studied material.

An asterisk (*) indicates the first state record for the species.

Bystus limbatus (Gorham)

MÉXICO: QUERÉTARO*, Landa de Matamoros, Neblinas, 9.VIII.2002, Alt. 600 m, tronco podrido, Q. Santiago y L. Delgado/ *Bystus limbatus* (Gorham), F.W. Shockley det. 2002 (1: IEXA).

Bystus spp.

MÉXICO: VERACRUZ, Córdoba, Guadalupe del Barreal, 8.VII.2001, alt. 960, cafetal, en polyporaceo, V.A. Gomez y L. Delgado cols. No. 84/ *Bystus* spp. F.W. Shockley det. 2002 (1: IEXA); same data except: No. 85 (1: IEXA); same data except: 14–17.X.2003, en tronco, R. Arce y L. Delgado cols (1: IEXA); Córdoba, 1ª Manzana Guadalupe del Barreal, Alt. 960, 8.VII.2001, ex *Tricholoma?*, No. 84, L. Delgado col. (1: IEXA).

Catapotia laevissima Thomson

MÉXICO: SAN LUIS POTOSÍ*?, Valles, 24 Nov 1976, Brownsy.6891/ *Catapotia* sp. 77 JMR/ *Catapotia laevissima* Thomson, E. Arriaga-Varela det. 2007 (1: NMNH); N/D, Br. Tex.76490, 1-31-55, 3873/ *Catapotia* sp. Rozen (1: NMNH).

Exysma laevigata Gorham

MÉXICO; N/D, Under bark on Primavera log, ex. Mexico, XI-18-1935, N.O. # 25462/ *Exysma* spp., det. J. Pakaluk 1986/ *Exysma laevigata* Gorham, E. Arriaga-Varela det. 2007 (1: NMNH); V.25-42/ with pineapples/ Laredo TX No. 28757/ Lot.No. 42 6656/ *Bystus* sp. det. Fisher (1: NMNH).

Holoparamecus gabriellae Rücker

MÉXICO: VERACRUZ, Puente Nacional, Cueva del Arroyo Del Bellaco, ex Guano, 12.VIII.1992, G. Castaño col. (2: CZUG, 4: LESM).

Archipines intricata (Gorham)

MÉXICO: OAXACA, Loma Bonita/ March 1947, NLHKrauss/ *Archipines intricata* (Gorh) det. J. Pakaluk 1986 (3: NMNH); TAMAULIPAS, Tampico, 21.12/ EASchwarz collector/ *Phalanthia intricata* Gorh/ *Phalanthia intricata* Gorh, dt. Stroh (4: NMNH); same data except: 18.12 (2: NMNH); same data except: 22.12 (1: NMNH); VERACRUZ, Dry leaf of banana from Vera Cruz, Dec 9 1925, NO. #575 (1: NMNH); N/D, ex Mexico, on cactus, Nogales 83164, 61.5584/ *Archipines intricata* (Gorham) (1: NMNH); on banana, ex. Mexico, VIII-15-1934, J.A. Ramos, Phila. 24194 (1: NMNH); same data except: XI-2-1933, A.B. Wells, Phila. 19705 (1: NMNH); same data except: VII-3-1935, U.G. Hadden, N.O. 12621 (1: NMNH); same but I-10-1934, .G. Hadden, N.O. 7884 (1: NMNH); on Banana debris, ex Mexico, IX, 26-1935, N.O. 414014 (1: NMNH); same data except: XI-20-1935, N.O. 14591 (1: NMNH); on banana leaf ex Mexico, N.O. #6916 (1: NMNH).

Corynomalus perforatus Gerstaecker

MÉXICO: CHIAPAS, Reserva El Ocote, 2–10/VII/1993, G. Ortega, E. Barrera, A. Casasola/ *Corynomalus perforatus* Gerstaecker, E. Arriaga-Varela det. 2007 (1: CNIN); OAXACA*, Temascal, VII-11-1965, A.B. Lau/ *Amphix* spp.(1: NMNH); VERACRUZ, Cordoba, VIII-13-1964, Paul J. Spangler/ *Corynomalus perforatus* Gerstaecker, E. Arriaga-Varela det. 2007 (1: NMNH).

Anidrytus mexicanus Strohecker

MÉXICO: CHIAPAS, Marqués de Comillas, Boca de Chajul, 200 m, 16°7'4" N, 90°55'27" W, 23.I.1983, *ex* Bromeliaceas, C. Fragoso col./ *Anidrytus mexicanus* Strohecker, E. Arriaga-Varela 2007 det. (1: CZUG).

Anidrytus sp.

MÉXICO: CHIAPAS, El Chorreadero, 13-Marzo, 1993, G. Ortega & E. Barrera (1: CNIN); Reserva El Ocote, 9/III/1993, E. Barrera, G. Ortega (1: CNIN); same data except. 2-10/VII/93, G. Ortega, E. Barrera, A. Casasola (1: CNIN).

Ephebus sulcatus Strohecker

MÉXICO: QUERÉTARO*, Landa de Matamoros, Neblinas, Alt. 600 m, 9.VIII.2002, trampa de intercepción, Q. Santiago y L. Delgado/ *Ephebus sulcatus* Strohecker E. Arriaga-Varela det. 2006 (1: IEXA).

Epipocus aztecus Strohecker

MÉXICO: OAXACA; Km 41 carr. Pto. Escondido - Sola de Vega, 855 msnm, 4-VII-1990, E. Barrera, A. Cadena/ *Epipocus aztecus* Strohecker, E. Arriaga-Varela det. 2006 (2: CNIN).

Epipocus brunneus Gorham

MÉXICO: JALISCO, Etzatlan, Jal Mex, Aug 1934, PW Avery/ *mollicomus* dt. Stroh. (1: NMNH); Tala, Ahuisculco, BTCpert, 1350 m, *ex* hojarasca a la orilla del río, 12.VI.1996, G.A. Quiroz col./ *Epipocus brunneus* Gorham, E. Arriaga-Varela det. 2007 (2: CZUG); NAYARIT, Jalcotán, 30-VII-84, García (4: CNIN); same data except: A. Ibarra/ *Epipocus brunneus* Gorham, E. Arriaga-Varela det. 2006 (1: CNIN); Km 4 carr. No. 15, desviación a San Blas Nayarit, 29/VII/84 (2: CNIN); SINALOA, ChFuchs dedit/ *Epipocus mollicomus* Gorh./ *Epipocus mollicomus* Gorh. dt. Stroh/ *Epipocus brunneus* Gorham, det. H.F. Strohecker, from study of types (1: NMNH); Venodio, Sin Mex, Kusche 18.VI.16/ BPClark donor/ *Epipocus binotatus* Gorh. (1: NMNH).

Epipocus cinctus LeConte

MÉXICO: CHIAPAS, CC. Hoffman, XI-1904/ *Epipocus cinctus* LeConte, CC. Hoffman det. (1: CNIN); OAXACA, StLucrecia Tehuantepec, Mexico, Apr.23/ W M Mann collector/ *Epipocus cinctus* LeC./ *Epipocus cinctus* LeC. Dt. Stroh. (1: NMNH); Tuxtepec, Apr. 1923/ W M Mann (1: NMNH); PUEBLA*, El Ajengibre, 27-IV-51/ *Epipocus cinctus* LeConte, E. Arriaga-Varela det. 2006 (1: CNIN); SAN LUIS POTOSÍ, El Salto Falls, 26 mi. W. Antiguo Morelos, Tamps. 2000' (not in Tamaulipas, but in San Luis Potosí)/ July 11-14. 1963, Duckworth & Davis (1: NMNH); VERACRUZ, Boca Andrea, colecta nocturna, 15-VIII-79, M Ramírez (1: CNIN); Catemaco, Catemaco, 305 m, 18°25' N, 95°07' W, 1.V.1992, J.L. Navarrete col. (1: CZUG); same data except: VIII-7-9-1964, Paul J. Spangler (1: NMNH); Cordoba, VII-8-65, A.B. Lau (1: NMNH); same data except: VII-23-1963 (1: NMNH); same data except: (illegible date), Fred k Knab Collector (1: NMNH); same data except: VII-28-1964, A.B. Lau/ *Epipocus cinctus* LeConte, det. H.F. Strohecker, (over) (1: NMNH); same data except: 7 Jun 1966, Flint & Oritz (1: NMNH); Cordova, Mex, 19.5/ Collection WmSchaus/ *cinctus* dt. Stroh (1: NMNH); Est. Biol. Los Tuxtlas, 13-V-85, A. Ibarra (1: CNIN); Jalapa, Mex., W. Schaus./ Collection ANicolay (1: NMNH); La Buena Ventura, 7- -09/ Mexico/ Collection ANicolay (1: NMNH); Presidio, July 30, 1963, Alfred B. Lau (3: NMNH); same data except: IX-1940, F. Islas, *Epipocus cinctus* LeConte, F. Islas det. 1940 (1: CNIN); Tezonapa V.C., XI.05/ W.L. Tower Collection/ Collection ANicolay (1: NMNH);

Epipocus cryptus Strohecker

MÉXICO: VERACRUZ, Km. 30 carr. Fortín – Huatusco, 24.VI.2003, alt. 1500 m, en hongos y tronco, A. y L. Delgado/ *Epipocus cryptus* Strohecker, L. Delgado det. 2004 (1: IEXA).

Epipocus figuratus Gerstaecker

MÉXICO: CAMPECHE*, Escarcega/ F. Islas S., trap Light, 24-IV-1962/ *Epipocus figuratus* Gerstaecker, E. Arriaga-Varela det. 2007 (1: NMNH); CHIAPAS*, Ocosingo, Montes azules, 9-14/VII/87, F. Arias y L. Cervantes/ *Epipocus figuratus* Gerstaecker, E. Arriaga-Varela det. 2006 (1: CNIN); QUINTANA ROO, 4 Km al S. de Tres Garantías, 25.VI.88, SMS, Trampa de Luz 19-22 hrs., D. Garrido y L. Delgado, *Epipocus cinctus* LeConte det. F.W. Shockley 2002/ *Epipocus figuratus* Gerstaecker, E. Arriaga-Varela det. 2006 (1: IEXA); Km. 146 Carr. Chetumal – Cancún, 3-V-82, M. García (1: CNIN); TABASCO, Tenosique, 60 msnm, I/45 (3: CNIN).

Epipocus gorhami Strohecker

MÉXICO: NAYARIT, La Yesca, Presa El Cajón, 21°21'37.6" N, 104°23'47.6" W, 380m, BTC pert, 24.VIII.2006, J. Cortés col/ *Epipocus gorhami* Strohecker, E. Arriaga-Varela det. 2006. (17: CZUG); Río Huaymanota, Los Sabinos, 8-11.VII.1991, R. Barba, E. Barrera/ *Epipocus gorhami* Strohecker, E. Arriaga-Varela det. 2006. (1: CNIN); SINALOA, Villa Union, Presidio R./ JAKusche, 28-ix-1918/ *Epipocus gorhami* PARATYPE, Strohecker 1974 (1: NMNH); Venodio, SinMex, Kusche' 18, VI.10/ BPClark donor/ *Epipocus subcos-*

tatus Gorh./ *Epipocus subcostatus* Gorh., dt.Stroh. (1: NMNH); paratype of *Epipocus gorhami*, same data except: VII.7/ *Epipocus subcostatus* Gorh./ *Epipocus subcostatus* Gorh., dt.Stroh. *Epipocus gorhami* PARATYPE, Strohecker 1974 (1: NMNH).

Epipocus longicornis Strohecker

MÉXICO: N/D, Holotype of *Epipocus longicornis* Gerstaecker/ *longicornis* Gerst. Mexico, v. Gerh/ Hist.-Coll. (Coleoptera, Nr. 21814, *Epipocus longicornis* Gerst., Mexico, v. Gerh. Zool. Mus. Berlin/ holotypus *Epipocus longicornis* Gerstaecker 1858, labelled by MNHUB 2006 (MNHUB); GUERRERO, Omiltemi, 10.VI.86, F. Arías (1: CNIN); JALISCO, Atoyac, Roble Viejo, BPE, 2020 m, ex. tronco, 18.X.2005, J. Cortés col. (1: CZUG); Colima Vulcano, Mex, L. Conrad (2: NMNH); same data except: / *longicornis* dt. Stroh.(1: NMNH); / *Epipocus longicornis* Gerst., dt. Stroh./ *E. longicornis* Gerst (1: NMNH); Gómez Farías, El Rodeo, BP, 2053 m, 19°49'59.6" N, 103°25'55.6" W, 30.X–28.XI.2005, NTP Calam, A.G. Naranjo-López (1: CZUG); Mascota, El Atajo, carr. Mascota-Las Palmas, BMM, 1413 m, 20°38'01"N, 104°51'45"W, 6.VII.2005, ex *Sirobasidium sanguineum* (Tremellaceae), J. Cortés-Aguilar (1: CZUG); Tuxpan, Atenquique, Cerro Alto, BEPp, 1840m, 19°31'50" N, 103°30'41" O, A, Rocha, G. Gozález, Y. Rentería cols. (3: CZUG); MORELOS, Tlayacapan, San José de los Laureles, 20-X-1990. Col. J.L. Navarrete y G.A. Quiroz, ex *Boletus edulis* IV #627 (1: JLN); same data except: 15.IX.1991, ex Tronco #1091 (1: CZUG); same data except: 23.VII.1991, J.L. Navarrete y G.A. Quiroz y J. Márquez, ex tronco con micelio #870 (1: JLN); same data but: 22.VII.1991, ex Boletaceo IV #838; same data but: BMM, 1800m, 2–3.VII.1994, ex *Amanita* y *Boletus*, J. Márquez Luna. (1: CZUG); same data except: 1768m, 14.VIII.1993, G.A. Quiroz y J.L. Navarrete, ex Tronco en descomp. (4: CZUG, 4: JLN); ESTADO DE MÉXICO*, Valle de Bravo, 2.Feb.1991, K.A. y H. Brailovsky (4: CNIN); MICHOACÁN, 1 Km al norte de Dos Aguas, 6-V-83, H. Brailovsky (1: CNIN).

Epipocus punctatus LeConte

MÉXICO: CHIAPAS, Soyaló, 12.VI.74, J. Hendrichs/ ex Colección J. Hendrichs (1: CNIN); TABASCO, Rio Samaria Cumuapa 1ª Secc. (descarga) Est. No. 3, 8/10/1996, Bueno, Contreras, Barba (1: CNIN); SAN LUIS POTOSÍ*, 2 mi. N. Tamazunchale, S.L.P., 400', Aug. 3–4, 1963, Duckworth & Davis/ *Epipocus* spp. (1: NMNH); VERACRUZ, Catemaco, VIII-7-9-1964, Paul J. Spangler/ *Epipocus punctatus* LeC., det. H.F. Strohecker, from study of types (1: NMNH); Catemaco, Dos Amates, 15.VIII.1990, Col. J.L. Navarrete, ex Polyporaceae resupinado #474 (3:JLN, 4:CZUG); Huatusco, 5-VIII-71, Leg: H. Müller/ ex Colección J. Hendrichs (1: CNIN); Los Tuxtlas, 5.IX.86, L. Cervantes (1: CNIN); N/D, on banana, ex. Mexico, VII-23-1935, M. Mirimanion, N.O. 12952/ *Epipocus bivittatus* Gerstaecker (1: NMNH); N/D, on Banana debris, ex Mexico, IX-16-1936, N.O. 21174 (1: NMNH).

Epipocus rufitarsis (Chevrolat)

MÉXICO: N/D, MIZ 103158 (1: MIZ); VERACRUZ, 8 Km. NW Paraje Nueve, VER., J. Reddell, J. Fish, Aug.3.1967/ 370/ *Epipocus cryptus* PARATYPE, Strohecker 1974 (1: NMNH); Barranca Metlac, 31/I/76, Grinver (3: CNIN); Est. Biol. Los Tuxtlas, 22/IV/1985, A. Ibarra (1: CNIN); Córdoba, Cuahutémoc, Alt. 940 m, 9.IX.97/ *Epipocus mixtecus* Strohecker, F.W. Shockley det. 2002/ *Epipocus rufitarsis* (Chevrolat) E. Arriaga-Varela det. 2006 (1: IEXA); Guadalupe del Barreal, 5-Junio-2005, 960 m, Q. Santiago y L. Delgado/ *Epipocus rufitarsis* (Chevrolat) L. Delgado det. 2005 (1: IEXA); Motzorongo, V. C., Mex. Feb/3/'93/ H. Osborn collector/ *Epipocus fuliginosus* Guer/ *Epipocus fuliginosus* Guer. dt. Stroh./ *Epipocus cryptus* PARATYPE, Strohecker 1974 (1: NMNH); Presidio, XI.1940, F. Islas (1: CNIN); same data except: 29.V.1940 (1: CNIN).

Epipocus sallei Gorham

MÉXICO: N/D/ *Epipocus sallei* Gorham, det. Strohecker (1: NMNH).

Epipocus subcostatus Gorham

MÉXICO: MORELOS, Xochitepec, 26/Jun/65, Licht, Col. J. Hendrichs/ ex Colección J. Hendrichs (2: CNIN); same data except: 29/Jun/62 (1: CNIN); same data except: 1/Jul/62 (1: CNIN); same data except: 4/Sept/65, Luz (1: CNIN); same data except: 21/mai/65, ans Licht (1: CNIN); same data except: 29/VIII/71 Licht (1: CNIN); OAXACA*, Pluma Hidalgo, 2-XI-87, R. Barba (1: CNIN).

Epipocus tibialis (Chevrolat)

MÉXICO: N/D, 102 and 103, MIZ 103160 and MIZ 103161 (2: MIZ); CHIAPAS, L. Conradt S., 20. 09.1907, MIZ 103159 (1: MIZ); 1: Chajul, 8.XI.86, L. Cervantes (1: CNIN); Escuintla, Finca Sta. Isabel, 900 msnm, 5–7/VII/1988, A. Cadena, L. Cervantes (2: CNIN); Ocosingo, Chajul, Reserva Montes Azules, 10–16/VII/87, F. Arias, R. Barba, L. Cervantes (4: CNIN); same data except: 9–14/VII/87, F. Arias, R. Barba (1: CNIN); HIDALGO*, Otongo, colecta nocturna, 11-V-80 (1: CNIN); JALISCO*, Melaque, 8.VIII.85, H. Brailovsky (1: CNIN); OAXACA, Valle Nacional, X-19-1963, A.B. Lau (1: NMNH); PUEBLA*, Cuatzalan, San Andrés, Tzicuilan, Cascada, 27–30/IV/1994, G. Ortega, E. Barrera (1: CNIN); Km 3 Carr. Xicontepec – Barranca de Patla, 1130 m, 12-VII-1994, A. Casasola (1:

CNIN); Km 5 Pahuatlán – La Cruz, 5.VIII.1995, H. Brailovsky (1: CNIN); QUERÉTARO*, Km 2 Neblinas – Sta. Elena, 237VI/98, L. Cervantes, G. Ortega (1: CNIN); VERACRUZ, Catemaco, VIII-7-9-1964, P.J. Spangler (1: NMNH); Catemaco, Dos Amates, 13.VII.1991, *ex* tronco con mohos, Col. J.L. Navarrete (1: JLN); same data except: 15-VIII-1990, *ex Auricularia mesenterica* #475 (1: CZUG); same data except: *ex* Polyporaceo resupinado #474 (1: JLN); Chocamán, 1200 msnm, 6-I-2000, H. Brailovsky y E. Barrera (2: CNIN); Coatepec, Xico, 20.V.1995, J. Márquez col., *ex* hongo de tronco en descomposición (1: CZUG); Cordoba, Höge (1: NMNH); same data except: 6-9-XI-1966, A. B. Lau (1: NMNH); same data except: VI-12-22-65 (1: NMNH); same data except: VII.23.1963 (1: NMNH); Cordoba, Sábana Larga, 10/VII/2001, 1080m, *ex Favolus brasiliensis*, L. Delgado y J.A. Gómez, (1: IEXA); Córdoba, Guadalupe de Barreal, 15.VII.1999, Alt. 960 m, cafetal, L. Delgado col., *Epipocus tibialis* (Chevrolat) E. Arriaga-Varela det. 2006 (2: IEXA); Cpto. Miguel Alemán, II.49, J.H. Corzo (1: CNIN); Est. Biológica Los Tuxtlas, 16.VIII.85, E. Ramírez (1: CNIN); same data except: 13.VI.85, L. Cervantes (1: CNIN); Estación Biológica los Tuxtlas, 1-5.V.73 (1: CNIN); Finca Prusia, Jaltenango, 10–12.V.85, F. Arias, H. Velasco, M. Vertiz (2: CNIN); Finca Prusia, 21-I-85, F. Arias (3: CNIN); same data except: M. García (1: CNIN); same data except: H. Velasco (1: CNIN); Huatusco, J. Reddel *et al*, Aug.3.1967 (2: NMNH); same data except: *Epipocus tibialis* (Chevr.), det. H.F. Strohecker (1: NMNH); same data except: / 308/ *Epipocus cinctus* LeC., det. J.M. Kingsolver/ *Epipocus tibialis* (Chevr.), det. H.F. Strohecker (1: NMNH); Ixtaczoquitlán, 1000msnm, 9/II/2000, H. Brailovsky, E. Barrera (1: CNIN); Jalapa (1: NMNH); same data except: J. T. Mason (2: NMNH); same data except: Hoege (1: NMNH); same data except: *Epipocus tibialis* Chev (1: NMNH); Los Tuxtlas, 17.IX.88, F. Arias (4: CNIN); Palma Sola, VIII.1972, G. Halffter, P. Reyes cols (1: IEXA); Presidio, July 30, 1963, Alfred B. Lau (1: NMNH); Quetzalapan, 9-VI-64, *E. bivittatus* Zaragoza det. (1: CNIN); Teocelo, Cafetal-Platanal, 1136m, 12.VI.1998, 19°23'56" N, 96°58'58.8" W, *ex* Platanos en descomposición, H. Fierros y J.L. Navarrete cols. (1: CZUG, 1:JLN); Xalapa (1: CNIN); same data except: VII/85, col. J. Peña (2: CNIN); same data except: 23 nov 87, Col. J. Peña M., INMECAFE 3744 (1: CZUG); Xico, Km 1.2 camino Xico, Cascada Texolo, Cafetal, 1.XI.1997, H.E. Fierros (3: JLN, 4: CZUG); same data except: BMM, 1800 m, 22.VII.1995, J.L. Navarrete col. (1: CZUG); without data (1: JLN).

Epipocus tristinotus Strohecker

MÉXICO: CHIAPAS, Boca del Chajul, 22/X/84, J.F. Villalobos/ *Epipocus tristinotus* Strohecker, L. Delgado det. 2004 (2: IEXA).

Epipocus unicolor Horn

MÉXICO: COLIMA*, Col. Mex., Conradt/ 692/ *Epipocus unicolor* Horn/ *Epipocus unicolor* Horn, dt. Stroh/ *Epipocus unicolor* Horn, det. H.F. Strohecker '74, from study of lectotypes (1: NMNH); JALISCO, Atenguillo, Cerro El Faro, Km 85 carr. Ameca-Mascota, BPE, 1950 m, 20°22'35" N, 104°36'10" W, 11.IX.2005, *ex Fistulinela* (Boletaceae), E. Arriaga-Varela (5:CZUG); Mascota, Cerro La Mona, Km. 107 Carr. Ameca-Mascota, BEP, 20°27' N, 104°45' W, 5.VI.2004, *ex* Corteza, J. Cortés-Aguilar, V. Zamora. (3:CZUG); Tapalpa, 2060 m, 16°59'42" N, 103°45'29" W, BPE, *ex* Corteza *Pinus*, 16.I.1994, J.L. Navarrete col. (7:CZUG); Tecolotlán, Sierra de Quila, Estación La Ciénega, 2300 m, 20°18'5" N, 104°2'1" W, BEP, *ex* Bajo corteza de *Pinus*, 18.III.2006, E. Arriaga-Varela & A. Mólgora cols. (1:CZUG); Tequila, Volcán de Tequila, BMM, 1800 m, 22.VII.1995, J.L. Navarrete col. (3:CZUG).

Epipocus spp.

MÉXICO: GUERRERO, Argelia, DESv. A la Mina la Concepción, Km. 5, 660m, 18°24'04"N10°11'50"W, 21-X-2005, E. Barrera (1: CNIN); JALISCO, Ameca, Cerro de Ameca, BTC, 9.VIII.1994, J.L. Navarrete col. (1: CZUG); Gómez Farías, San Andrés Ixtlán, El Salto, BTC, 1544 m, 19°29'49.7" N, 103°27'32.2" W, NTP Calam, A.G. Naranjo-López (1: CZUG); Km 93 Carr. Guadalajara – Ixtlán, /-VII-82, E. Barrera (1: CNIN); same data except: H. Brailovsky Col. (1: CNIN); Mascota, Río Juanacatlán, 2240, BPE, *ex* exc. Vaca, 7.VII.2005, Q. Quiroz col. (1: CZUG); Mascota, Carr. Mascota-Las Palmas, El Atajo, 1413 m, 20°38'1" N, 104°41'55" W, BMM, 6.VII.2005, J.L. Navarrete-Heredia col. (1: CZUG); Mismaloya, 2-VIII-84, A. Ibarra (1: CNIN); Mixtlán, Cerro Chato, Km 48 carr Ameca-Mascota, BPE, bajo corteza, 5.VI.2004, 20°28'58" N, 104°22'35.2" W, 1750m, J. Cortez-Aguilar col. (1: CZUG); Tecolotlán, Quila, Km 20 Teco-Quila, BMM, 1800 m, 20°21'17" N, 104°5'4" W, 16.VII.1999, *ex Crepidotus*, H.E. Fierros-López (1: CZUG); Tequila, Volcán de Tequila, 1800 m, 20°48' N, 103°51" W, *ex* tronco con micelio, 21.IX.2006, H.E. Fierros-López (1: CZUG); same data except: BPE, 1868 m, *ex* Polyporaceo, 23.IX.2006, E. Arriaga-Varela col. (1: CZUG); same data except: *ex* Tronco (1: CZUG); Zapopan, Ex Hda. Del Lazo, NTP-80, VII.1998, J.L. Navarrete col (1: CZUG); same data except: BTC, 21.VII.2000, tronco en descomposición, J.L. Navarrete (1: CZUG); without data (2: CZUG); VERACRUZ, Barranca Metlac, 31/I/76, G. Grinver (4: CNIN); N/D, Col. 23, CEFRE, 4(-5, -10), 15-V-83, A. López (1: CNIN).

Stenotarsus circumdatus Gerstaecker

MÉXICO: VERACRUZ, Syntypes of *Stenotarsus circumdatus* Gerstaecker/ Xalappa, Deppe/ Hist.-Coll. (Coleoptera, Nr. 21857, *Stenotarsus circumdatus* Gerst., Xalappa, Deppe, Zool. Mus. Berlin/ Syntypus *Stenotarsus circumdatus*

Gerstaecker, 1858, labelled by MNHUB 2006" (2: MNHUB); Cerro Acatlán, Mesófilo, 17-VIII-1990, Col. J.L. Navarrete y L. Delgado/ *ex Russula* IIIA #488/ *Stenotarsus circumdatus* Gerstaecker, E. Arriaga-Varela det. 2006 (1: CZUG); Cordoba, 5-VIII-1964, A.B. Lau/ *Stenotarsus circumdatus* Gerstaecker, E. Arriaga-Varela det. 2007 (1: NMNH); Tejenapa, Sierra Zongolica, 10/VII/77, col. J. Hendrichs/ *ex* Colección J. Hendrichs/ *Stenotarsus circumdatus* Gerstaecker, E. Arriaga-Varela det. 2006 (1: CNIN).

Stenotarsus discipennis Gorham

MÉXICO: VERACRUZ, Córdoba, Miguel Aguilar, Alt. 940 m, 29–31.III.1996, E. Santos y L. Delgado/ *Stenotarsus militaris* Gerstaecker, F.W. Shockley det. 2002/ *Stenotarsus discipennis* Gorham E. Arriaga-Varela det. 2006 (1: IEXA); Veracruz, , Apr, 9, 1969, in Bromeliads/ 69 – 5 – 789, Laredo 69868/ *Stenotarsus discipennis* Gorh., det. JMK 69 (1: NMNH); N/D, on Pineapple, Mex, 6.14.40, Laredo 22459/ *Stenotarsus discipennis* Gorh., WSF'ho (1: NMNH).

Stenotarsus globosus Guérin-Méneville

MÉXICO: OAXACA*, Km. 1 carr. Juquila – San Pedro Ocotepc, 19-VIII-2003, Alt. 1600 m, Hongos, Q. Santiago y L. Delgado, *Stenotarsus globosus* Guérin-Méneville E. Arriaga-Varela det. 2006 (1: IEXA); VERACRUZ, Presidio, 8-VII-1993, C. Mayorga. (1: CNIN).

Stenotarsus latipes Arrow

MÉXICO: GUERRERO*, Tetipac, El Peral, 2210m, BMM, 18°35'46" N, 99°37'12" W, *ex Lactarius delisiosus*, J.L. Navarrete col (1: CZUG); JALISCO, Atenguillo, Cerro El Faro, Km. 85 carr. Ameca-Mascota, BPE, 1935 m, 20°22'N, 104°36'W, 5.VI.2004, *ex* Corteza, J. Cortés-Aguilar, V. Zamora (3: CZUG); Autlán, Puerto Los Mazos, BMM, 1630 m, 19°41'29"N, 104°23'69" W, 25.VII.1994, *ex* Agarical, G.A. Quiroz-Rocha (1: CZUG); Mascota, Cerro La Mona, carr. Ameca-Mascota, 1456 m, BPE, 20°27'41.3"N, 104°45'0.0"W, 4–17.VII.2005, NTP Calamar, K. Paredes (1: CZUG); Mascota, El Atajo, carr. Mascota-Las Palmas, BMM, 1413 m, 20°38'01"N, 104°51'45"W, 6.VII.2005, *ex Sirobasidium sanguineum* (Tremellaceae), J. Cortés-Aguilar (34: CZUG); same data except: 14.XII.2004, *ex* tronco, 1413 m, 20°38' N, 104°51' w, J.L. Navarrete-Heredia, V.H. Flores cols (4: CZUG); Tequila, Volcán de Tequila, BEP, 1868 m, 20°49'24.8"N, 103°51'21" w, *ex Lactarius*, 21.IX.2006, E. Arriaga-Varela & A. Mólgora cols. (11: CZUG); same data except: 2000 m, 20°46'34.5"N, 103°51'48"W, *ex Lactarius*, 22.IX.2006, E. Arriaga-Varela & A. Mólgora cols. (35: CZUG); same data except: Km. 12 de la brecha alas antenas, BPE, 2200 m, *ex Lactarius*, 16.IX.2006, I.G. Rocha & J. Cortés cols. (26: CZUG); MORELOS*, Tlayacapan, San José de los Laureles, BMM, 18°55'58" N, 99°0'9" W, *ex Russula* IIIB, 15.IX.1991, J.L. Navarrete col. (1: JLN); OAXACA, Km 21 carretera Yolotepec – Juquila, BE, 1850m, *ex Lactarius* IIIB, 30–31.VII.1991, J.L. Navarrete, G.A. Quiroz y L. Delgado #871 (1: CZUG).

Stenotarsus marginalis Arrow

MÉXICO: CHIAPAS, Ángel Albino Corzo, Reserva "El Triunfo", Julio – 1991, Mesófilo, E. Guevara,col./ *ex Russula mexicana*/ *Stenotarsus marginalis* Arrow, E. Arriaga-Varela det. 2006 (2: CZUG, 2: JLN); VERACRUZ, Banderilla, La Martinica, 30.VIII.2001, en *Lactarius* sp. No. 43, Alt. 1550, L. Delgado col./ *Stenotarsus marginalis* Arrow, E. Arriaga-Varela det. 2006 (1: IEXA).

Stenotarsus militaris Gerstaecker

MÉXICO: N/D, Syntype of *Stenotarsus militaris* Gerstaecker/ Mexico/ 138/ MIZ 103152 (1: MIZ); CHIAPAS*, Pacific Slope Cordilleras, 800–1000 M, L. Tosen '19/ *St. militaris* Gerst./ *Stenotarsus militaris* Gerst., dt. Stroh. (1: NMNH).

Stenotarsus rubrocinctus Gerstaecker

MÉXICO: N/D, Syntypes of *Stenotarsus rubrocinctus* Gerstaecker, males/ Mexico/ MIZ 103153, MIZ 103154 (2: MIZ); CHIAPAS*, Pacific Slope Cordilleras, 800–1000 M, L. Tosen '19/ *St. militaris* Gerst./ *Stenotarsus militaris* Gerst., dt. Stroh. (3: NMNH); same data except: / *Stenotarsus discipennis* Gorh./ *Stenotarsus discipennis* Gorh. dt. Stroh (1: NMNH); same data except: / *discipennis* dt. Stroh/ *Stenotarsus rubrocinctus* Gerstaecker, K.W. Tomaszewska det. 2007 (1: NMNH); same data except: / *Stenotarsus discipennis* Gorh. (1: NMNH); HIDALGO*, 45 Km. Tlanchinol carr. Molango – Huejutla, en tronco podrido, 3/III/79, R. Terrón (23: CNIN); VERACRUZ, Cotaxtla, 9.VI.1987, K.R. Pullen, Trampa de Malaise/ *Stenotarsus rubrocinctus* Gerstaecker, K.W. Tomaszewska det. 2007 (2: CZUG); Tuxtla, El Vigía, 6-VIII-64 (1: CNIN);

Stenotarsus spp.

MÉXICO: CHIAPAS, Aguacatenan (1: NMNH); same data except: /P. Hubbell, VII.1975 (1: NMNH); / *Stenotarsus* sp., det. J. Pakaluk 1986 (1: NMNH); El Triunfo, 8-VII-1993, C. Mayorga (1: CNIN); JALISCO, Casimiro Castillo, Arroyo Tacubaya, BTS, 600m, *ex Rigidoporus microsporus*, 4.VII.2002, 19°35'47"N, 104°25'52"W, H. E. Fierros-

López col. (13: CZUG); same data except: H.E. Fierros, A. Rocha & G. González cols. (3: CZUG); Casimiro Castillo, El Parotal, cam. a El Parotal, BTC, 700m, *ex Favolus brasii*. J.L. Navarrete col. (4: CZUG); San Sebastián del Oeste, Casimiro Castillo, BMM, 1650 m, 20°41'40" N, 104°52'30" W, *ex hongo*, E. Arriaga-Varela col. (1: NMNH); OAXACA, Candelaria, Loxicha, Finca La Media Luna, 26-VIII-2003, Alt. 550 m, Q. Santiago y L. Delgado (3: IEXA); Juquila, Santa María Yolotepec, 1–2.VIII.1990, *ex Hojarasca*, J.L. Navarrete, G.A. Quiroz-Rocha y L. Delgado cols. (1: CZUG); Km 21 carretera Yolotepec – Juquila, BE, 1850m, *ex Lactarius* IIIB, 30–31.VII.1991, J.L. Navarrete, G.A. Quiroz y L. Delgado #871 (2: CZUG, 2: JLN); Km 3 carr. Sto. Domingo Tepuxtepec – Juquila Mixes, 19-VIII-2003, Alt. 2000 m, Tr. Intercepción, Q. Santiago & L. Delgado (1: IEXA); Mascota, El Atajo, carr. Mascota-Las Palmas, BMM, 1413 m, 20°38'01"N, 104°51'45"W, 6.VII.2005, *ex Sirobasidium sanguineum* (Tremellaceae), J. Cortés-Aguilar (6: CZUG); same data except: 14.XII.2004, *ex tronco*, 1413 m, 20°38'N, 104°51'W, J.L. Navarrete-Heredia, V.H. Flores cols. (3: CZUG); San Gabriel, El Floripondio, 2300m, BEP, 27.X.1997, *ex bajo corteza Pinus*, J.L. Navarrete (5: CZUG); Mascota, El Atajo, carr. Mascota l Las Palmas, BMM, 1407m, 104°41'58" W, 20°38'0" N, *ex Favollus*, 6.VIII.2005, H.E. Fierros-López col. (1: CZUG); QUERÉTARO, Landa de Matamoros, Neblinas, 9.VIII.2002, Alt. 600 m, en tronco podrido, Q. Santiago y L. Delgado (1: IEXA); VERACRUZ, Altotonga, Río Pancho Poza, 25-IX-2001, *Lactarius* No. 167, Alt. 1900, L. Delgado col. (1: IEXA); Los Tuxtlas, Est. Biol., 2–10/VII/85, C. Mayorga (1: CNIN); same data except: 13.VIII.1985, M.L. Castillo (2: IEXA);

Evolocera championi Sharp

MÉXICO: VERACRUZ, Holotype of *Adamia mexicana*: Mexico, Tezonapa, Veracruz, Mex. 8.VIII.41/ coll & pres by Henry S. Dybas" (1: FMNH); SAN LUIS POTOSI, paratype, female, Mex, S.L.P. Quinta Chila, Tamazunchale, 20.XII.1948, H.B. Leech Collector (1: FMNH); paratype, male, Mex, L.S. Potosi Palitla, 5 mi, N of Tamazunchale, 22.XII.1948, H.B. Leech Collector, MIZ 103156 (1: MIZ);

Trochoideus mexicanus Strohecker

MÉXICO: CHIAPAS, Paratype of *Trochoideus mexicanus*: San Quintín 700', 91°20'–16°24', rain-forest, II.5-20.1966/ George E. Ball, D. R. Whitehead collectors/ PARATYPE, *Trochoideus mexicanus* Strohecker (1: NMNH).