Revista Mexicana de Biodiversidad

Revista Mexicana de Biodiversidad 94 (2023): e945117

Taxonomy and systematics

Catalog and distribution atlas of the Scarabaeoidea (Insecta: Coleoptera) of El Salvador

Catálogo y atlas de distribución de los Scarabaeoidea (Insecta: Coleoptera) de El Salvador

José D. Pablo-Cea [a, b, *], Ronald D. Cave [c], Francisco A. Serrano-Peraza [d], Raquel Alvarado-Larios [e], Cuauhtémoc Deloya [b], Katerin A. Serrano-Chicas [a], Elizabeth Alfaro [a], Abizai C. Chinchilla-Rodríguez [f], Daniel Girón-Segovia [g], Jorge Ari Noriega [h]

[a] *Universidad de El Salvador, Facultad de Ciencias Naturales y Matemática, Escuela de Biología, Final 25 Avenida Norte, San Salvador, El Salvador.*

[b] *Instituto de Ecología, A. C., Red de Interacciones Multitróficas, Carretera antigua a Coatepec 351, Colonia El Haya, 91073 Xalapa, Veracruz, Mexico*

[c] *University of Florida, Institute of Food and Agricultural Sciences, Entomology & Nematology Department, Indian River Research & Education Center, 2199 South Rock Road, Ft. Pierce, Florida, 34945 USA*

[d] *Universidad de Panamá, Vicerrectoría de Investigación y Postgrado, Programa Centroamericano de Maestría en Entomología, Bella Vista, Manuel E. Batista y Avenida José de Fábrega, Panamá, Panama*

[e] *Museo de Historia Natural de El Salvador, Final Calle Los Viveros, Colonia Nicaragua, Barrio San Jacinto, San Salvador, El Salvador*

[f] *Universidad de El Salvador, Facultad de Ciencias Naturales y Matemática, Jóvenes Talento de El Salvador, Final 25 Avenida Sur, San Salvador, El Salvador*

[g] *Red de Investigadores Ambientales (REDIA), Colonia Vista hermosa Calle Principal, No.103 C, San Salvador, El Salvador*

[h] *Universidad El Bosque, Facultad de Ingeniería, Grupo de Agua, Salud y Ambiente, Avenida Carrera 9 No. 131A-02, Bogotá, Colombia*

*Corresponding author: jose.pablo@ues.edu.sv (J.D. Pablo-Cea)

Received: 30 August 2022; accepted: 1 February 2023

Abstract

Less than 1% of the literature on El Salvador's biodiversity is about terrestrial invertebrates, which limits our knowledge of this group's diversity, richness, and distribution in the territory. Scarabaeoidea are megadiverse in multiple ecosystems and perform many functions. This work aims to catalog the Scarabaeoidea in El Salvador. We conducted an exhaustive review of published literature and reviewed numerous entomological collections with relevant material. Maps were constructed to visualize the known distribution of each species in the country. There are 295 scarab beetle species (including 19 new country records) representing 106 genera in 7 families in El Salvador. Six precinctive species are known. Twenty-two species are discarded as occurring in El Salvador, either because they are not valid species or because of misidentifications or dubious records. This work is the first approach to knowing the

ISSN versión electrónica: 2007-8706; Universidad Nacional Autónoma de México, Instituto de Biología. https://doi.org/10.22201/ib.20078706e.2023.94.5117

Scarabaeoidea in El Salvador, a territory that is usually considered of no importance for the conservation of regional biodiversity due to its small area, high rate of deforestation, and overpopulation. The results of this work reinforce the need for biological prospecting in the territory to know, conserve, and protect the remaining biodiversity.

Keywords: Beetles; New records; Faunal biodiversity; Central America; Maps

Resumen

Menos de 1% de la literatura sobre la biodiversidad de El Salvador es de invertebrados terrestres, lo que limita el conocimiento de la diversidad, riqueza y distribución del grupo en el territorio. Los Scarabaeoidea son megadiversos en varios ecosistemas en donde desempeñan muchas funciones. En este trabajo se catalogó a los Scarabaeoidea de El Salvador. Se realizó una revisión exhaustiva de la literatura publicada y se revisaron numerosas colecciones entomológicas con material relevante. Se construyeron mapas de la distribución conocida de cada especie en el país. Existen 295 especies (incluyendo 19 registros nuevos para El Salvador), 106 géneros y 7 familias de escarabajos. Se conocen 6 especies endémicas. Veintidós especies se descartan como presentes en el país, ya sea porque no son válidas, por identificaciones erróneas o por registros dudosos. Este trabajo es la primera aproximación al conocimiento de los Scarabaeoidea en El Salvador, un territorio que usualmente se considera sin importancia para la conservación de la biodiversidad regional debido a su pequeña superficie, alta tasa de deforestación y sobrepoblación. Los resultados de este trabajo refuerzan la necesidad de realizar una prospección biológica en el territorio para conocer, conservar y proteger la biodiversidad remanente.

Palabras clave: Escarabajos; Registros nuevos; Biodiversidad faunística; Centroamérica; Mapas

Introduction

The fauna of El Salvador has been variably studied. The richness and distribution of fish (González-Murcia, 2019; McMahan et al., 2013), amphibians and reptiles (Köhler et al., 2006), birds (Dickey & Van Rossem, 1938; Ibarra-Portillo, 2013), and mammals (Owen & Girón, 2012) have been reasonably inventoried and documented; however, the knowledge on invertebrate animals is quite different. Less than 1% of the literature on Salvadoran biodiversity is about the invertebrate animal fauna (Gallo, 2005), which leaves many gaps in what we know of the distribution of the species. A clear example is Coleoptera, the most speciose order of Insecta, with at least 386,000 described species in 176 families (Bouchard et al., 2017). The species richness of Coleoptera in El Salvador is unknown, but recent efforts have been made to catalog the beetle fauna. For example, Van Roie et al. (2019) documented 420 species and 132 genera of Chrysomelidae, and Pablo-Cea et al. (2021) recorded 96 especies in 38 genera of Staphylinidae. Both families are important for their diverse feeding habits and behaviors in a variety of ecosystems (Asenjo et al., 2013; Jolivet 1988; Navarrete-Heredia, 2002). Also, they are taxonomically diverse families and together with Scarabaeidae, Curculionidae, Carabidae, and Cerambycidae constitute the 6 megadiverse families of Coleoptera (Bouchard et al., 2017).

The objective of the present work was to document the current species list of Scarabaeoidea in El Salvador and their distributions. Scarab beetles are an important group due to their broad diversity of feeding habits and the functions the member species perform in ecosystems (Deloya et al., 2007). Scarab beetles are easily recognized by the asymmetrical antennal club of multiple lamellae that are united or separated (Marshall et al., 2018). The superfamily encompasses 13 extant families worldwide (Bouchard et al., 2017), 10 of which occur in the New World: Geotrupidae, Glaphyridae, Glaresidae, Hybosoridae, Lucanidae, Diphyllostomatidae, Ochodaeidae, Passalidae, Pleocomidae, Scarabaeidae, and Trogidae. Worldwide, there are about 2,500 genera and 35,000 recognized especies (Scholtz & Grebennikov, 2005), and in the New World there are at least 7,403 species distributed among 267 genera (Deloya et al., 2018).

The first valid scarabaeoid species recorded in El Salvador date from the 19th Century. These species, documented by the German A. F. Kuwert (1897, 1898) in "Die Passaliden dichotomisch bearbeitet", were 5 passalids: *Arrox agassizi* (Kaup), *Chondrocephalus granulum* (Kuwert), *Ogyges championi* (Bates), *Petrejoides subrecticornis* (Kuwert), and *Vindex sculptilis* Bates. Thirty-seven years later, Hincks and Dibb (1935) added 2 passalid species, *Paxillus leachi* MacLeay and *Ptichopus angulatus* (Percheron), without giving a specific collection

locality in the country. The decade 1950-1959 was the second most important period in the history of cataloging the Scarabaeoidea of El Salvador, when 61 species were documented among 5 publications. Two works by German authors presented important contributions to the knowledge of the scarabaeoid beetles of the country: "The Passalidae (Ins. Col.) of El Salvador" by W. D. Hincks (1953) added 7 passalid species; and "Scarabaeidae Rutelinae aus El Salvador" by E. Franz (1955) recorded 13 new country records in the subfamily. Described in this work was *Paranomala vicenti* (Franz), 1 of 6 precinctive scarabaeoid species in El Salvador. In 1957, one of the principal contributions to the entomological knowledge in El Salvador, "Lista de Insectos Clasificados de El Salvador" by P. A. Berry and M. Salazar-Vaquero, was published. In this technical bulletin, 29 species were added for the superfamily, mostly in the family Scarabaeidae (Scarabaeinae: 4 species, Rutelinae: 8 species, Dynastinae: 8 species, and Cetoniinae: 8 species), and 1 species of Trogidae, *Omorgus suberosus* (Fabricius). Of equal importance was "Segunda Lista de Insectos Clasificados de El Salvador" (Berry, 1959b) that complemented the first list and added 11 more species of Scarabaeidae (2 species each of Aphodiinae, Scarabaeinae, Rutelinae, and Dynastinae, along with 3 species of Melolonthinae). At the end of the decade, Vaurie (1958) cited *Diplotaxis poropyge* Bates in the country.

In the 1960s and 1970s, another 26 scarab beetle species were added to the Salvadoran fauna. Vaurie (1960) added 10 species of *Diplotaxis* Kirby. Howden and Cartwright (1963) recorded *Onthophagus incensus* Say and described *O. batesi*. The only contributions to the knowledge of Geotrupidae are from Howden (1964, 1974), who reported 7 species from the country. Howden (1974) described *Haplogeotrupes guatemalensis tridentatus* (Howden), a subspecies considered precinctive to the country. Cartwright (1967) added 1 species of Aphodiinae, Howden (1968) added 3 species of Cetoniinae, and 1 species of Passalidae was documented for the first time by Reyes-Castillo (1973). Ratcliffe (1978) recorded a second species of Trogidae, *Omorgus fuliginosus* Robinson. Andrews et al. (1979) recorded 2 phytophagous species of Melolonthinae and Rutelinae as crop pests.

In the 1980s, 18 additional species were reported: 1 species of Passalidae (Schuster, 1989), 1 of Aphodiinae (Gordon & Cartwright, 1980), 11 of Scarabaeinae (Howden & Young, 1981; Zunino & Halffter, 1988), 2 of Rutelinae (Morón, 1983, 1987) , 1 of Melolonthinae (Morón, 1988), and 2 of Cetoniinae (Cave, 1983), including 3 precinctive species: *Onthophagus salvadorensis* Zunino & Halffter (Scarabaeinae), *Chlaenobia solanophaga* (Morón) (Melolonthinae), and *Chondrocephalus salvadorae* (Schuster) (Passalidae). In the 1990s, 27 species were recorded in 12 publications. Schuster and Reyes-Castillo (1990), Morón and Howden (1992), and Warner (1992) recorded single species of Passalidae, Melolonthinae, and Dynastinae, respectively. Ratcliffe and Deloya (1992) documented 2 species of Cetoniinae, including the precinctive *Hologymnetis vulcanorum* Ratcliffe & Deloya; and 8 species of *Phyllophaga* Harris and 2 of *Chlaenobia* Blanchard were added to the fauna by King (1994), Mendoza (1994), and Morón (1994). Ten species of Scarabaeinae were added by Edmonds (1994), Kohlmann and Solís (1997), Fuentes (1998), and Rivera-Cervantes and Halffter (1999).

The period 2000-2009 is the most important in understanding the fauna of Scarabaeoidea in El Salvador due to the addition of 97 species. Schuster and Cano (2005) reported 1 species of Passalidae. Eight publications newly recorded 22 species of Aphodiinae, principally in the genus *Ataenius* Harold, with 16 species (Dellacasa et al., 2002, 2008; Galante et al., 2003; Horgan, 2008; Stebnicka, 2001, 2002, 2003, 2005, 2006, 2007; Stebnicka & Lago, 2005; Stebnicka & Skelley, 2007). Kohlmann (2000), Delgado and Kohlmann (2001), Horgan (2001, 2002, 2008), Kohlmann et al. (2003), Morón (2003), Solís and Kohlmann (2004), Pulido-Herrera and Zunino (2007), Fuentes (2008, 2009), and Génier (2009) reported new records for 17 species of Scarabaeinae. Morón (2006), Arce-Pérez (2008), and Evans and Smith (2009) documented the first country records for 7 species of Melolonthinae, including 4 species of *Macrodactylus* Dejean. Morón and Paucar-Cabrera (2003) and Delgado et al. (2006) added 2 species of Rutelinae. In 2006, Ratcliffe and Cave published an important contribution to the scarab beetle knowledge in El Salvador: "The Dynastine Scarab Beetles of Honduras, Nicaragua, and El Salvador (Coleoptera: Scarabaeidae: Dynastinae)". They inventoried the fauna of Dynastinae in El Salvador, Honduras and Nicaragua, adding 46 species to the scarab beetle fauna of the country. The only species of Hybosoridae known to occur in El Salvador, *Anaides laticollis* Harold and *Chaetodus teamscaraborum* Ocampo, were documented by Ocampo (2006).

The decade of 2010-2019 is the third most important historical period in the development of knowledge about Salvadoran Scarabaeoidea. Thirty-one more species were newly recorded, among them, 1 species of Passalidae, *Chondrocephalus granulifrons* (Bates) (Serrano-Peraza, 2017), 1 of Ochodaeidae, *Parochodaeus puncticollis* (Arrow) (Paulsen, 2012), and 1 of Lucanidae, *Trogellus* (*Mayaesalus*) *trifinius* Paulsen, that is precinctive to the

country (Paulsen, 2013). Three Aphodiinae were added to the Salvadoran fauna by Dellacasa et al. (2012, 2013), including the precinctive *Gonaphodioides cartwrighti* Dellacasa, Dellacasa, & Gordon. Seven species of Scarabaeinae, including the non-native *Digitonthophagus gazella* (Fabricius), were recorded by Edmonds and Zidek (2010), Solís and Kohlmann (2013), Deloya et al. (2014), Pablo-Cea (2014), and Pablo-Cea et al. (2017). Rivera-Gasperín and Morón (2017) newly reported 1 species of *Chlaenobia*, and the Salvadoran K. A. Serrano-Chicas (2019) added 4 more species of Melolonthinae and 4 species de Rutelinae. López-Sorto and Sermeño-Chicas (2013) reported for the first time 3 species of *Chrysina* Kirby. López-Sorto et al. (2014) reported 1 species of Dynastinae, *Dynastes maya* Hardy. For Cetoniinae, new country records were documented for 3 species of *Euphoria* Burmeister (Orozco, 2012) and 2 of *Gymnetis* MacLeay (Ratcliffe, 2018). During 2020-2022, new Salvadoran records of Melolonthinae (2 species, Arce-Pérez & Morón, 2020; Pablo-Cea, 2021), Rutelinae (1 species, Pablo-Cea, 2021), and Cetoniinae (5 species, Pablo-Cea, 2021; Pablo-Cea & Alfaro, 2020) were documented. In the catalog herein we add 19 species to the fauna of Scarabaeoidea in El Salvador: Passalidae: *Ameripassalus guatemalensis* (Kaup); Scarabaeidae: Aphodiinae: *Ataenius carinator* Harold; Melolonthinae: *Diplotaxis brevipilosa* Moser, *D. cavifrons* Moser, *Isonychus pictus* Sharp, *Chlaenobia vexata* (Horn), *Phyllophaga baneta* Saylo, *P. colimana* (Moser), and *P. punctuliceps* (Bates); Rutelinae: *Pelidnota guatemalensis* Bates, *P. notata* Blanchard, *Paranomala championi* Bates, *P. plurisulcata* Bates, *P. semicincta* Bates, *P. denticollis* (Bates), *P. eucoma* (Bates), *P. sticticoptera* (Blanchard), and *P. undulata undulata* (Melsheimer); Dynastinae: *Euetheola humilis* (Burmeister). We also first report the presence of the genus *Germarostes* Paulian (Hybosoridae: Ceratocanthinae) in the country.

Materials and methods

The compilation of data on the Scarabaeoidea known to occur in El Salvador is based on published taxonomic and ecological literature and label data with specimens available from the following collections: CMNC - Canadian Museum of Nature, Ottawa, Canada; CNCI - Canadian National Collection of Insects, Ottawa, Canada; DZUP - Coleção Entomológica Padre Jesus Santiago Moure, Departamento de Zoologia, Universidade Federal do Paraná, Curitiba, Brazil; EAPZ - Universidad Zamorano, Francisco Morazán, Honduras; EMEC - Essig Museum of Entomology, University of California, Berkeley, California, USA; FMNH - Field Museum of Natural History, Chicago, Illinois, USA; IFIT-CP - Instituto de Fitosanidad, Campus Montecillo, Colegio de Postgraduados, Mexico; MUHNES - Museo de Historia Natural de El Salvador, San Salvador, El Salvador; MZSP - Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil; RDCC - Ronald D. Cave Private Collection, Port St. Lucie, Florida, USA; TAMU - Texas A&M University, College Station, Texas, USA; UNSM - University of Nebraska State Museum, Lincoln, Nebraska, USA.

All species are organized by family, subfamily, and tribe following the classification of Bouchard et al. (2011). The information for each species is organized as follows: Scientific name, Author, year of description.

Distribution. Primarily based on Schoolmeesters (2022). If the species was not listed in Schoolmeesters (2022), the reference used to establish the distribution of the species is indicated. If the species does appear in Schoolmeesters (2022) but was not cited for El Salvador, the first reference citing the species from the territory is given. The countries in the Americas are ordered north to south and west to east, followed by the West Indian countries ordered in the same way. This section does not contain an exhaustive bibliography of the complete distribution of the species, so some countries where the species occur may not be listed.

Locality records. Department: specific locality record. If the species is reported for the country only, "no specific department: no specific locality" is indicated, followed by the reference(s) and the page where it is cited for the country (as in Asenjo et al., 2013). Departments are listed from west to east as presented in Table 1 in which geocoordinates, elevation, and topographic zone are given for each locality.

Years of collection. All years in which the species has been collected (if known).

Months of collection. All months in which the species has been collected (if known). Ranges include all months within the given range.

Topographic zone. All topographic regions where the species was collected (if known).

Elevational range. Minimum to maximum elevation at which the species was collected (if known). Only 1 parameter is listed if the species is only known from a single collection site in El Salvador.

Comments. Miscellaneous observations about collection methods and the authors' observations about the species. Old names prior to nomenclatural changes or erroneous determinations are provided if they were used for the species in older literature. Precinctive species and new records for the fauna of El Salvador are indicated. Names of localities reported in the literature or on labels with specimens deposited in museums but could not be related to any known site are noted.

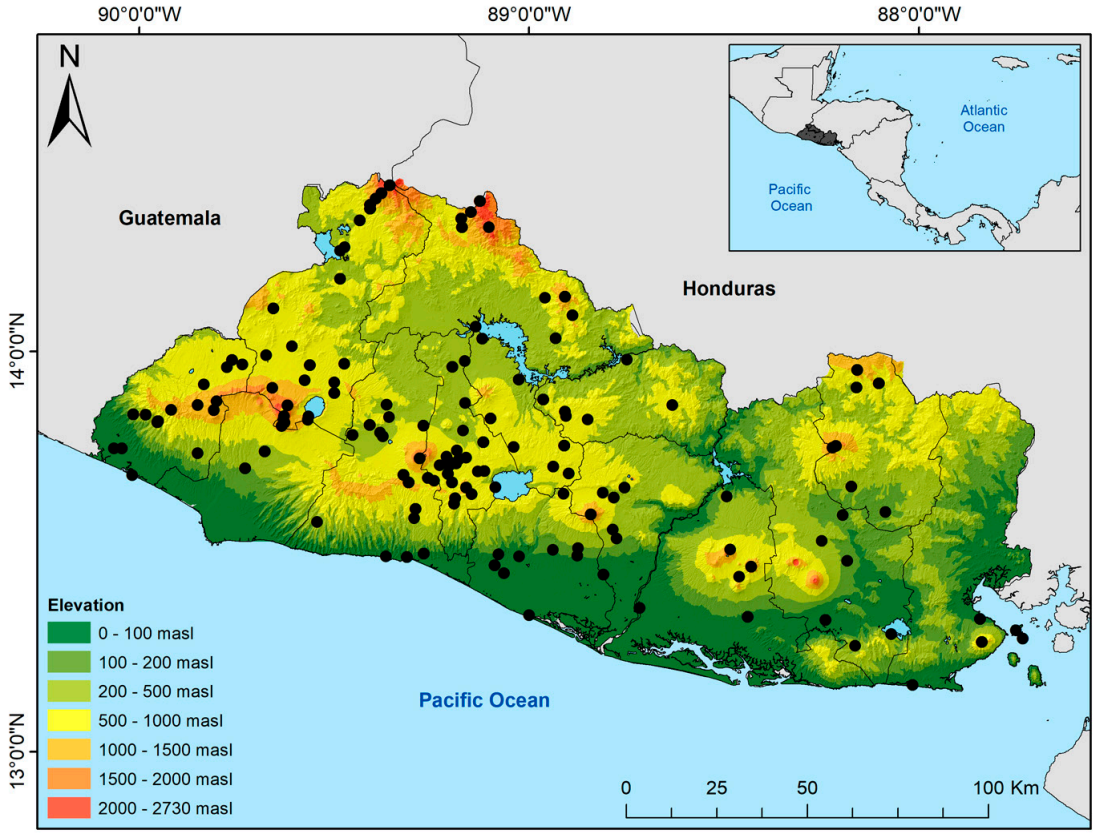

Figure 1. Location of El Salvador in Central America, topographic map of the country showing departmental borders and collecting sites in El Salvador cited in this work.

A topographic map of El Salvador (Fig. 1) was used for displaying the distribution of each species with specific locality data in El Salvador. Twenty-one species have no specific locality data. The maps are presented in the same order the species are listed in the catalog. In the case of specimens with a department record only, the departmental capital's coordinates were used for representation in the map (red points in maps).

El Salvador encompasses 21,041 km² and is the smallest country in Central America. The territory is divided into 4 well-differentiated topographic zones (Daugherty, 1969): Coastal Plain (0-300 m); Volcanic Chain (250-2,200 m); Interior Valley (200-700 m); and Northern Mountains (700-2,700 m) with the highest peak in El Salvador. The Coastal Plain, Volcanic Chain, and Interior Valley belong to the Pacific Lowlands, whereas the Northern Mountains are a continuation of the Chiapas Highlands biogeographic province (Morrone, 2014). El Salvador is divided into 14 departments (Fig. 1).

Results

In El Salvador, 295 species in 106 genera of scarabaeoid beetles are known to occur.

Superfamily Scarabaeoidea Latreille, 1802
Family Geotrupidae Latreille, 1802
Subfamily Bolboceratinae Mulsant, 1842
Tribe Athyreini Lynch Arribálzaga, 1878
Neoathyreus Howden & Martínez, 1963
Neoathyreus (*Neoathyreus*) *excavatus* (Laporte, 1840)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago, Guyana, Suriname, French Guiana, Brazil, and Peru (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (RDCC); Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Howden, 1964: 19); San Jacinto (Howden, 1964: 19); San Salvador: San Salvador (Howden, 1964: 19); La Paz: Comalapa (La Providencia) (Horgan, 2002: 30) (Fig. 2).

Table 1
Localities, including coordinates, elevation, and topographic zone, reported in the checklist.

Locality	Longitude (º)	Latitude (º)	Elevation (m)	Topographic zone
Ahuachapán				
Ahuachapán	-89.830653	13.920428	805	Interior valley
Apaneca	-89.805093	13.856031	1,475	Coastal mountains
Atiquizaya	-89.758674	13.982036	590	Interior valley
Atiquizaya (Izcaquillo)	-89.732329	13.970957	700	Interior valley
Barra de Santiago	-90.012751	13.693399	5	Coastal plain
Cara Sucia	-90.038920	13.759845	5	Coastal plain
Concepción de Ataco	-89.845975	13.868998	1,265	Coastal mountains
Guaymango	-89.846144	13.748809	400	Coastal plain
Laguna Las Ninfas	-89.797889	13.878704	1,660	Coastal mountains
Parque Nacional El Imposible (cerro Campana)	-89.913909	13.857055	1,390	Coastal mountains
Parque Nacional El Imposible (La Fincona)	-89.979315	13.844796	750	Coastal mountains
Parque Nacional El Imposible (San Benito)	-89.947066	13.828299	780	Coastal mountains
Parque Nacional El Imposible (San Francisco Menéndez)	-90.010743	13.845076	250	Coastal plain
San Miguelito	-89.949255	13.825815	725	Coastal mountains
Turín	-89.772054	13.963396	630	Interior valley
Zanjón El Chino	-90.059278	13.759603	5	Coastal plain
Santa Ana				
Candelaria de la Frontera	-89.653838	14.111024	720	Interior valley
Chalchuapa	-89.671264	13.994175	700	Interior valley
Coatepeque	-89.497177	13.926842	760	Coastal mountains
El Congo	-89.496983	13.899829	820	Coastal mountains
Finca San Jorge	-89.483285	14.18492	480	Interior valley
Flor Amarilla (Abajo)	-89.573345	13.931753	885	Coastal mountains
Hacienda Las Brumas	-89.627435	13.833268	1,850	Coastal mountains
Lago de Coatepeque	-89.564858	13.833271	815	Coastal mountains
Lago de Coatepeque (isla Teopán)	-89.563374	13.841227	800	Coastal mountains
Las Cruces	-89.655626	13.912336	1,110	Coastal mountains
Metapán	-89.433216	14.331471	530	Interior valley
Parque Nacional Cerro Verde	-89.624153	13.826147	2,020	Coastal mountains
Parque Nacional Güija	-89.483409	14.256001	450	Interior valley
Parque Nacional Los Andes	-89.617115	13.869134	1,730	Coastal mountains
Parque Nacional Montecristo (bosque nebuloso)	-89.356726	14.418906	2,360	Northern mountains
Parque Nacional Montecristo (La Torre)	-89.392258	14.385536	1,450	Northern mountains
Parque Nacional Montecristo (Los Planes)	-89.377719	14.39969	1,890	Northern mountains
Parque Nacional Montecristo (Majaditas)	-89.406302	14.370462	1,070	Northern mountains
Parque Nacional Montecristo (San José Ingenio)	-89.406851	14.360399	810	Northern mountains
Planes del Ranchador	-89.605888	14.016956	725	Interior valley

Table 1. Continued

Locality	Longitude (º)	Latitude (º)	Elevation (m)	Topographic zone
San Diego	-89.471620	14.264053	560	Interior valley
San Jacinto	-89.471582	13.973073	570	Interior valley
Santa Ana	-89.559701	13.969707	715	Interior valley
Volcán San Diego	-89.480019	14.273007	760	Interior valley
Volcán de Santa Ana	-89.625712	13.842294	1,850	Coastal mountains
Sonsonate				
Izalco	-89.674860	13.753986	470	Coastal plain
Sonsonate	-89.724355	13.711424	225	Coastal plain
Volcán de Izalco	-89.631869	13.817645	1,730	Coastal mountains
Chalatenango				
Cerca del puente Lempa (camino a La Palma)	-89.135792	14.066791	245	Interior valley
Cerro El Pital	-89.125165	14.380307	2,660	Northern mountains
Cerro Malcotal	-89.102575	14.314290	2,190	Northern mountains
Chalatenango	-88.931470	14.037146	420	Interior valley
Comalapa	-88.958927	14.138606	500	Coastal plain
La Montañona	-88.908087	14.141144	1,600	Northern mountains
La Palma	-89.171081	14.314641	1,005	Northern mountains
Las Ceibas (Las Vueltas)	-88.888140	14.094364	710	Interior valley
Las Pilas	-89.148482	14.352483	1,700	Northern mountains
San Ignacio	-89.173055	14.336455	1,060	Northern mountains
La Libertad				
El Barillo	-89.289235	13.610710	785	Coastal mountains
El Playón	-89.300394	13.793054	100	Coastal mountains
La Ceiba	-89.242253	13.681427	810	Interior valley
La Libertad	-89.311367	13.490311	70	Coastal plain
Laguna Caldera	-89.357676	13.840063	465	Interior valley
Los Chorros	-89.320191	13.695529	730	Coastal mountains
Parque El Bicentenario	-89.257861	13.687924	870	Coastal mountains
Parque Nacional Walter Thilo Deininger	-89.268065	13.499369	135	Coastal plain
Plan de La Laguna	-89.247595	13.669811	810	Coastal mountains
Playa El Majahual	-89.364536	13.492330	15	Coastal plain
Puerto de La Libertad	-89.310240	13.486997	30	Coastal plain
Quezaltepeque	-89.269709	13.819018	490	Interior valley
Río Agua Caliente	-89.380204	13.801783	450	Interior valley
San Andrés	-89.406128	13.820124	475	Interior valley
San Diego	-89.249406	13.480971	15	Coastal plain
San Juan Opico	-89.363131	13.871279	480	Interior valley
Santa Tecla	-89.307315	13.676716	900	Coastal mountains
Sitio del Niño	-89.373173	13.792368	450	Interior valley
Teotepeque	-89.540100	13.578083	520	Coastal plain

Table 1. Continued

Locality	Longitude (º)	Latitude (º)	Elevation (m)	Topographic zone
Volcán de San Salvador (El Boquerón)	-89.279342	13.737430	1,845	Coastal mountains
Zapotitán	-89.450660	13.794952	480	Interior valley
Zaragoza	-89.292366	13.587301	585	Coastal mountains
San Salvador				
Aguilares	-89.195189	13.965812	300	Interior valley
Apopa	-89.168345	13.807192	455	Interior valley
Cerro San Jacinto	-89.160002	13.664463	980	Coastal mountains
Cuscatancingo	-89.184238	13.757348	520	Interior valley
Delgado	-89.160165	13.739168	555	Interior valley
Guazapa	-89.162617	13.875972	400	Interior valley
Hacienda Los Planes	-89.2108	13.741233	720	Interior valley
Ilopango	-89.113807	13.705773	625	Interior valley
Lago de Ilopango	-89.085258	13.665537	510	Interior valley
Los Planes de Renderos	-89.188008	13.638052	1,005	Coastal mountains
Mejicanos	-89.185911	13.724776	640	Interior valley
Parque Saburo Hirao	-89.196320	13.677462	700	Interior valley
Puerta del Diablo	-89.191252	13.623698	1,100	Coastal mountains
Ruinas de Cihuatán	-89.163765	13.980546	325	Interior valley
San Antonio Abad	-89.228327	13.719642	805	Interior valley
San Salvador	-89.207232	13.698300	685	Interior valley
San Salvador (Scandia)	-89.178651	13.734336	635	Interior valley
San Salvador (Universidad de El Salvador)	-89.203353	13.719010	695	Interior valley
Santo Tomás	-89.146380	13.647834	760	Coastal mountains
Soyapango	-89.130588	13.705094	610	Interior valley
Tonacatepeque	-89.116517	13.777866	625	Interior valley
Zacamil	-89.204179	13.729932	700	Interior valley
Cuscatlan				
Área Natural Protegida Colima (Cerrón Grande)	-89.119307	14.036226	305	Interior valley
Cojutepeque	-88.938005	13.716985	925	Interior valley
El Rosario	-88.910082	13.768744	720	Interior valley
San Cristobal	-88.89814	13.699469	675	Interior valley
San José Guayabal	-89.098335	13.8371	560	Interior valley
San Pedro Perulapan	-89.038958	13.765777	650	Interior valley
Suchitoto	-89.026017	13.933687	385	Interior valley
La Paz				
Comalapa (Aeropuerto)	-89.063571	13.450623	35	Coastal plain
Comalapa (La Providencia)	-89.087256	13.469758	40	Coastal plain
El Rosario	-89.025157	13.492537	85	Coastal plain
Playa Costa de Sol	-88.999425	13.345474	5	Coastal plain
Ichanmichen	-88.876571	13.494042	150	Coastal plain

Table 1. Continued

Locality	Longitude (º)	Latitude (º)	Elevation (m)	Topographic zone
Mercedes La Ceiba	-88.911334	13.648521	530	Interior valley
San Juan Talpa	-89.077337	13.497502	90	Coastal plain
San Luis [Talpa]	-89.087499	13.469897	40	Coastal plain
Santiago Nonualco	-88.938983	13.509066	160	Coastal plain
Zacatecoluca	-88.874675	13.513209	235	Coastal plain
Cabañas				
Chorrera del Guayabo	-88.749795	13.983412	225	Interior valley
Cinquera	-88.963609	13.883845	385	Interior valley
Ilobasco	-88.849672	13.834286	725	Interior valley
Sensuntepeque	-88.634008	13.870523	775	Interior valley
Tejutepeque	-88.908306	13.854483	720	Interior valley
Tejutepeque (el Tamagás)	-88.90577	13.842588	700	Interior valley
San Vicente				
Apastepeque (Poza Azul)	-88.755653	13.66383	500	Interior valley
Eco-Parque Tehuacán	-88.785945	13.559549	405	Interior valley
San Cayetano Istepeque	-88.811454	13.651609	515	Interior valley
San Vicente	-88.783168	13.63896	380	Interior valley
Santa Cruz Porrillo	-88.810131	13.447224	40	Interior valley
Santo Domingo	-88.856434	13.721256	675	Interior valley
Tecoluca	-88.776066	13.537091	260	Interior valley
Volcán de San Vicente-Chinchontepec	-88.841898	13.597258	2,000	Coastal mountains
Usulután				
Alegría	-88.486527	13.508741	1,130	Coastal mountains
California	-88.464156	13.441346	685	Coastal mountains
Cerro el Tigre	-88.432898	13.466371	1,580	Coastal mountains
Estanzuelas	-88.495439	13.641666	195	Interior valley
Nancuchiname	-88.717394	13.363542	15	Coastal plain
Usulután	-88.442079	13.340821	80	Coastal plain
San Miguel				
Ciudad Barrios (cerro Cacahuatique)	-88.224722	13.762599	1,405	Northern mountains
La Ceiba	-88.168632	13.267426	170	Coastal plain
Laguna el Jocotal	-88.244122	13.332036	25	Coastal plain
Laguna Olomega	-88.076948	13.296508	80	Coastal plain
Moncagua	-88.252975	13.529777	245	Interior valley
San Jacinto	-88.199453	13.594686	135	Interior valley
San Miguel	-88.188263	13.480268	140	Interior valley
Morazán				
Arambala (río Sapo)	-88.105972	13.923175	665	Northern mountains
Cerro Cacahuatique	-88.21621	13.76705	1,400	Northern mountains
Cerro Perquín	-88.16126	13.956736	1,205	Northern mountains

Table 1. Continued

Locality	Longitude (º)	Latitude (º)	Elevation (m)	Topographic zone
Hacienda San Pedro	-88.090737	13.601598	180	Interior valley
Jocoaitique	-88.163206	13.913066	655	Northern mountains
Osicala	-88.15008	13.805826	560	Interior valley
Yamabal	-88.176728	13.665945	260	Interior valley
La Unión				
Isla Martín Pérez	-87.741356	13.283754	40	Coastal plain
Isla Zacatillo	-87.759238	13.304685	110	Coastal plain
La Unión	-87.850088	13.333036	30	Coastal plain
Playa El Icacal	-88.022671	13.169356	15	Coastal plain
Volcán de Conchagua	-87.846052	13.276187	1,190	Coastal mountains

Years of collection: 1925, 1958, 1960, 1979, 1995-1998.

Months of collection: May and June.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 40-2,360 m.

Comments: reported as *Neoathyreus quadridentatus* by Howden (1964) and Horgan (2002). Specimens were captured at lights in San Salvador (Howden, 1964) and in pitfall traps baited with cow dung in Comalapa (Horgan, 2002).

Neoathyreus (*Neoathyreus*) *interruptus* Howden, 1964

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Howden, 1964: 23) (Fig. 2).

Years of collection: 1958.

Months of collection: June.

Topographic zone: interior valley.

Elevation range: 685 m.

Neoathyreus (*Neoathyreus*) *mexicanus* (Klug, 1845)

Distribution: Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Los Planes) (Howden, 1964: 27); Chalatenango: Las Ceibas [probably Las Vueltas] (Howden, 1964: 27); San Salvador: San Salvador (Howden, 1964: 27); La Paz: Comalapa (La Providencia) (Horgan, 2008: 2969) (Fig. 2).

Years of collection: 1960, 1999.

Months of collection: May-July, and October.

Topographic zone: northern mountains, interior valley, coastal plain.

Elevation range: 40-1,890 m.

Comments: specimens from Comalapa were captured in pitfall traps baited with beef carrion (Horgan, 2008).

Tribe Bolboceratini Mulsant, 1842

Bolbelasmus Boucomont, 1911

Bolbelasmus (*Bolbelasmus*) *arcuatus* (Bates, 1887)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022)

Locality records: Santa Ana: San Jacinto (Howden, 1964: 40); La Libertad: Parque Nacional Walter Thilo Deininger (Horgan, 2008: 2968); San Salvador: San Salvador (Howden, 1964: 40) (Fig. 2).

Years of collection: 1925, 1958-1960.

Months of collection: May and June.

Topographic zone: interior valley, coastal plain.

Elevation range: 135-685 m.

Comments: specimens were captured at lights in San Salvador (Howden, 1964) and in pitfall traps baited with cow dung in Comalapa (Horgan, 2008).

Bolbelasmus (*Bolbelasmus*) *monticolus* Howden, 1974

Distribution: Guatemala and El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Cerro Verde (Howden, 1974: 569); Parque Nacional Montecristo (Bosque Nebuloso) (RDCC); La Libertad: Volcán de San Salvador (El Boquerón) (Howden, 1974: 568) (Fig. 2).

Years of collection: 1965-1967, 1971, 1999.

Months of collection: May and August.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 1,845-2,360 m.

Comments: captured at light in El Boquerón.

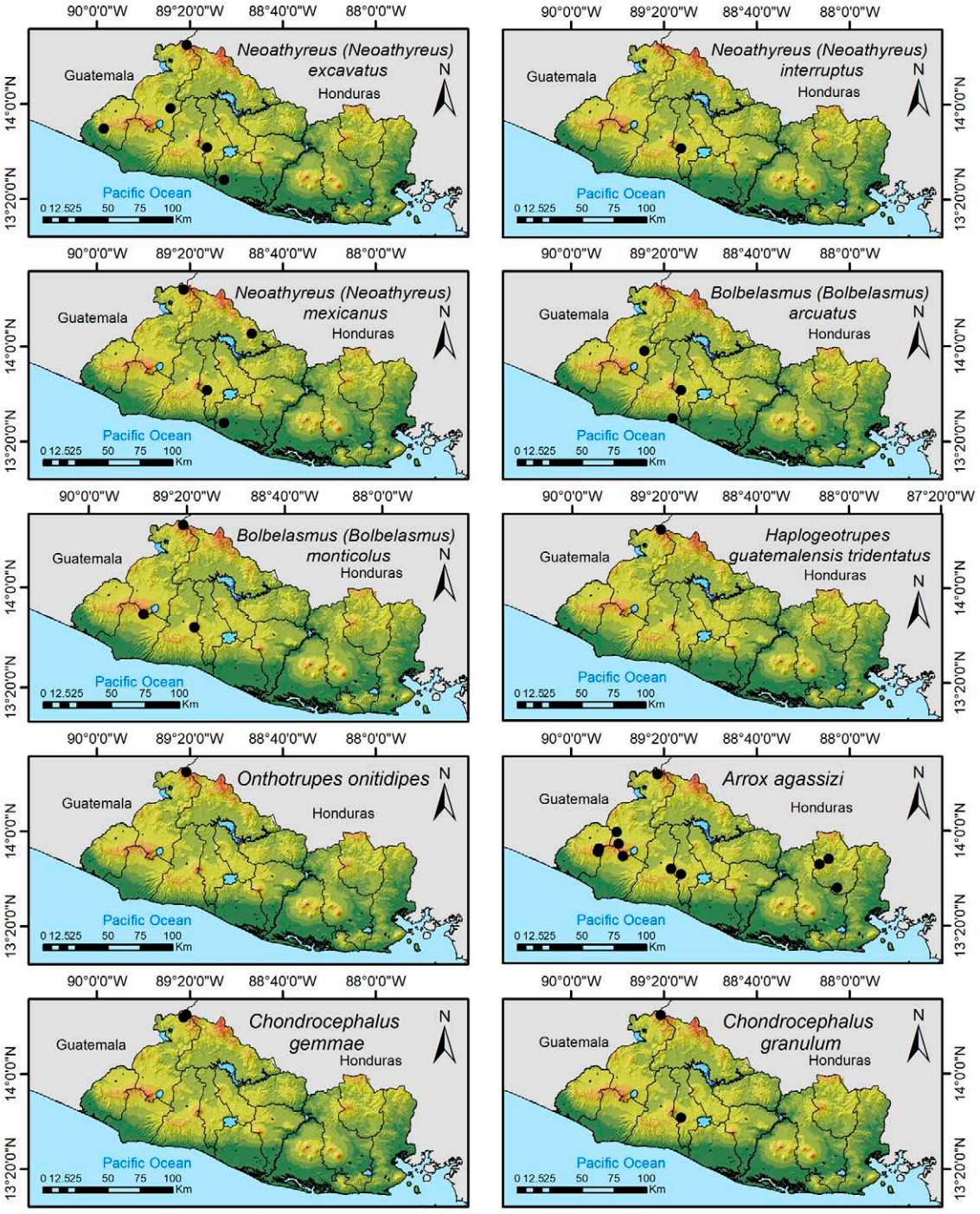

Figure 2. Distribution maps for *Neoathyreus* (*Neoathyreus*) *excavatus*, *N.* (*N.*) *interruptus*, *N.* (*N.*) *mexicanus*, *Bolbelasmus* (*Bolbelasmus*) *arcuatus*, *B.* (*B.*) *monticolus*, *Haplogeotrupes guatemalensis tridentatus*, *Onthotrupes onitidipes*, *Arrox agassizi*, *Chondrocephalus gemmae*, and *C. granulum* in El Salvador.

Subfamily Geotrupinae Latreille, 1802
Tribe Geotrupini Latreille, 1802
Haplogeotrupes Nikolajev, 1979
Haplogeotrupes guatemalensis tridentatus (Howden, 1974)

Distribution: El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Howden, 1974: 571) (Fig. 2).

Years of collection: 1971.

Months of collection: May.

Topographic zone: northern mountains.

Elevation range: 2,360 m.

Comments: precinctive to El Salvador. Reported as *Geotrupes guatemalensis tridentatus* by Howden (1974). Specimens were collected from horse dung.

Onthotrupes Howden, 1964
Onthotrupes onitidipes (Bates, 1887)

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Howden, 1964: 62) (Fig. 2).

Years of collection: 1958, 1999.

Months of collection: May.

Topographic zone: northern mountains.

Elevation range: 2,360 m.

Comments: reported as *Geotrupes* (*Onthotrupes*) *onitidipes* by Howden (1964). Specimens were found under cow dung.

Family Passalidae Leach, 1815
Subfamily Passalinae Leach, 1815
Tribe Proculini Kaup, 1868
Arrox Zang, 1905
Arrox agassizi (Kaup, 1871)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: Ahuachapán: Apaneca (Boucher, 2005: 391); Laguna Las Ninfas (MUHNES); Santa Ana: Chalchuapa (Boucher, 2005: 391); Parque Nacional Cerro Verde (Boucher, 2005: 391); Las Cruces (Boucher, 2005: 391); Parque Nacional Montecristo (Los Planes) (Schuster & Cano, 2005: 258; Serrano-Peraza, 2017: 42; Serrano-Peraza et al., 2022: 4); La Libertad: Volcán de San Salvador (El Boquerón) (Boucher, 2005: 391); San Salvador: San Salvador (Kuwert, 1897: 303; Hincks & Dibb, 1935: 23; Boucher, 2005: 388); Morazán: Cerro Cacahuatique (Hincks, 1953: 33; Boucher, 2005: 391); Hacienda San Pedro (MUHNES); Osicala (Boucher, 2005: 391) (Fig. 2).

Years of collection: 1897, 1919, 1951, 1959, 1974, 1979, 1992, 2015.

Months of collection: June, July, and September-December.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 180-2,020 m.

Comments: reported as *Sertorius assmanni* Kuwert by Kuwert (1897) and Hincks & Dibb (1935).

Chondrocephalus Kuwert, 1896
Chondrocephalus gemmae Reyes-Castillo & Castillo, 1986

Distribution: Mexico and El Salvador (Serrano-Peraza, 2017; Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso, Los Planes) (Schuster & Cano, 2005: 258; Serrano-Peraza, 2017: 42; Serrano-Peraza et al., 2022: 4) (Fig. 2).

Years of collection: 2015.

Months of collection: September-December.

Topographic zone: northern mountains.

Elevation range: 1,890-2,360 m.

Chondrocephalus granulum Kuwert, 1897

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Hincks, 1953: 33; Reyes-Castillo, 1970: 104); San Salvador: San Salvador (Kuwert, 1897: 302; Hincks & Dibb, 1935: 33) (Fig. 2).

Years of collection: 1897, 1951.

Months of collection: June and August.

Topographic zone: northern mountains, interior valley.

Elevation range: 685-2,360 m.

Comments: larvae were collected in June and adults in August (Hincks, 1953).

*Chondrocephalus granulifron*s (Bates, 1886)

Distribution: Mexico, Guatemala, El Salvador, and Ecuador (Serrano-Peraza, 2017; Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Serrano-Peraza, 2017: 42; Serrano-Peraza et al., 2022: 4) (Fig. 3).

Years of collection: 2015.

Months of collection: September-December.

Topographic zone: northern mountains.

Elevation range: 2,360 m.

Chondrocephalus salvadorae (Schuster, 1989)

Distribution: El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Schuster, 1989: 695; Schuster & Cano, 2005: 258; Serrano-Peraza, 2017: 44) (Fig. 3).

Years of collection: 1960, 1972, 2015.

Months of collection: April, July, and September-December.

Topographic zone: northern mountains.

Elevation range: 2,360 m.

Comments: precinctive to El Salvador. Reported as *Petrejoides salvadorae* by Schuster (1989) and Serrano-Peraza (2017).

Heliscus Zang, 1905

Heliscus eclipticus (Truqui, 1857)

Distribution: Mexico, Guatemala, El Salvador, Costa Rica, and Colombia (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (San José Ingenio, Los Planes) (Hincks, 1953: 32; Serrano-Peraza, 2017: 44; Serrano-Peraza et al., 2022: 4); Finca San Jorge (Hincks, 1953: 32) (Fig. 3).

Years of collection: 1951, 1973-1977, 2015.

Months of collection: April, May, July, and September-December.

Topographic zone: northern mountains, interior valley.

Elevation range: 480-1,890 m.

Comments: reported as *Popilius eclipticus* by Hincks (1953) and Serrano-Peraza (2017).

Odontotaenius Kuwert, 1896

Odontotaenius striatopunctatus (Percheron, 1835)

Distribution: Mexico, Belize, El Salvador, Nicaragua, Costa Rica, Honduras, and Colombia (Hincks, 1953; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (La Fincona, San Benito) (MUHNES, RDCC); Santa Ana: Parque Nacional Montecristo (San José Ingenio) (Serrano-Peraza, 2017: 43; Serrano-Peraza et al., 2022: 4); Sonsonate: Izalco (Los Guates Farm) (MUHNES); San Salvador: Los Planes de Renderos (MUHNES); Parque Saburo Hirao (MUHNES); San Salvador (Hincks, 1953: 32; Reyes-Castillo, 2003: 164); Cuscatlán: no specific locality (MUHNES) (Fig. 3).

Years of collection: 1951, 1974-1979, 2013-2015.

Months of collection: May, June, September, November, and December.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 470-1,005 m.

Comments: reported as *Popilius striatopunctatus* by Hincks (1953). Some specimens in MHUNES are labeled as collected in Cuscatlán: *La Burrada*, but we are not aware of a site with that name in El Salvador.

Ogyges Kaup, 1871

Ogyges championi (Bates, 1886)

Distribution: Mexico, Guatemala, El Salvador?, and Nicaragua? (Schuster & Reyes-Castillo, 1990).

Locality records: San Salvador: San Salvador (Kuwert, 1897: 292; Schuster & Reyes-Castillo, 1990: 32-33) (Fig. 3).

Years of collection: 1877.

Months of collection: December.

Topographic zone: interior valley.

Elevation range: 685 m.

Comments: reported as *Ogyges laevior* (Kaup) by Kuwert (1897) and Schuster & Reyes-Castillo (1990). The presence of the species in El Salvador and Nicaragua requires confirmation (Schuster & Reyes-Castillo, 1990).

Ogyges hondurensis Schuster & Reyes-Castillo, 1990

Distribution: El Salvador and Honduras (Schoolmeesters, 2022).

Locality records: Chalatenango: Cerro El Pital (López-Sorto et al., 2014: 42); La Libertad: Volcán de San Salvador (El Boquerón) (Schuster & Reyes-Castillo, 1990: 17; Schuster et al., 2005: 130) (Fig. 3).

Years of collection: 1979.

Months of collection: February.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 1,845-2,660 m.

Ogyges politus (Hincks, 1953)

Distribution: Guatemala and El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Hincks, 1953: 32; Schuster & Reyes-Castillo, 1990: 22; Schuster & Cano, 2005: 258; Cano, 2017: 9; Serrano-Peraza, 2017: 43; Cano et al., 2018: 109; Serrano-Peraza et al., 2022: 4); Chalatenango: no specific locality [probably Cerro El Pital] (Cano et al., 2018: 109) (Fig. 3).

Years of collection: 1951, 1960, 1970-1977, 1999, 2015.

Months of collection: February, March, May, July, and September-December.

Topographic zone: northern mountains.

Elevation range: 2,360 m.

Comments: reported as *Procolejus politus* by Hincks (1953).

Oileus Kaup, 1869

Oileus sargi (Kaup, 1871)

Distribution: Mexico, Guatemala, El Salvador, and Costa Rica (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Schuster & Cano, 2005: 258) (Los Planes) (Hincks, 1953: 32; Serrano-Peraza et al., 2022: 4) (Fig. 3).

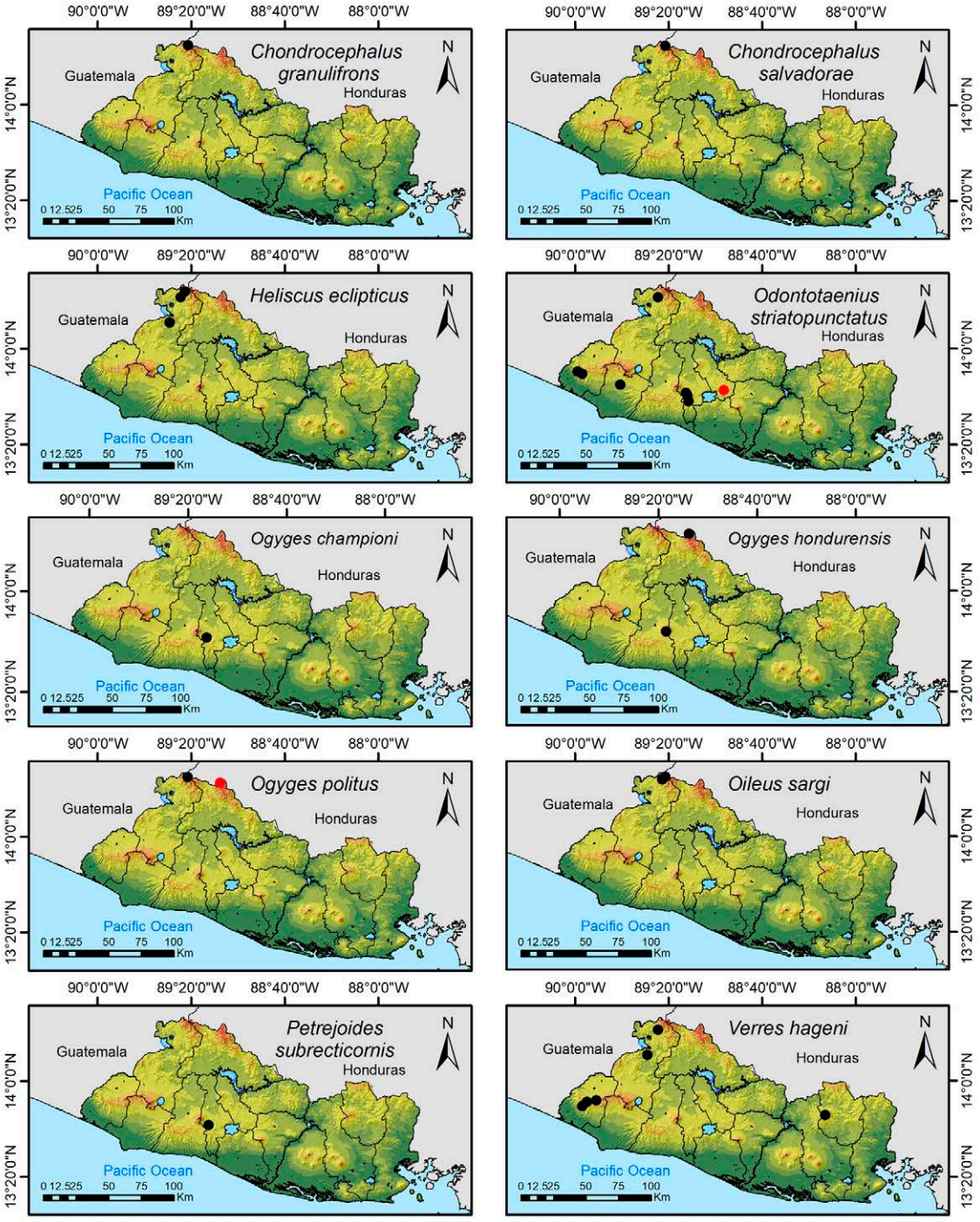

Figure 3. Distribution maps for *Chondrocephalus granulifrons*, *C. salvadorae*, *Heliscus eclipticus*, *Odontotaenius striatopunctatus*, *Ogyges championi*, *O. hondurensis*, *O. politus*, *Oileus sargi*, *Petrejoides subrecticornis*, and *Verres hageni* in El Salvador.

Years of collection: 1951, 1973, 2015.

Months of collection: May, June, and September-December.

Topographic zone: northern mountains.

Elevation range: 1,890-2,360 m.

Petrejoides Kuwert, 1896

Petrejoides subrecticornis (Kuwert, 1897)

Distribution: Guatemala, El Salvador, and Costa Rica (Castillo & Reyes-Castillo, 1984)

Locality records: San Salvador: San Salvador (Kuwert, 1897: 301) (Fig. 3).

Years of collection: 1877.

Months of collection: December.

Topographic zone: interior valley.

Elevation range: 685 m.

Comments: reported as *Popilius scutellopunctatus* Kuwert by Kuwert (1897).

Verres Kaup, 1871

Verres hageni Kaup, 1871

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Colombia (Schoolmeesters, 2022).

Locality records: Ahuachapán: Concepción de Ataco (MUHNES); Parque Nacional El Imposible (Cerro Campana) (MUHNES); (San Benito) (RDCC); Santa Ana: Finca San Jorge (Hincks, 1953: 33); Parque Nacional Montecristo (San José Ingenio) (Serrano-Peraza, 2017: 44; Serrano-Peraza et al., 2022: 4); Morazán: *Cerro Cacahuatique* (MUHNES) (Fig. 3).

Years of collection: 1951, 1975, 1979, 1999.

Months of collection: April-June.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 480-1,400 m.

Vindex Kaup, 1871

Vindex sculptilis Bates, 1886

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Francisco Menéndez) (MUHNES); Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Hincks, 1953: 34; Schuster & Cano, 2005: 258; Serrano-Peraza, 2017: 44; Serrano-Peraza et al., 2022: 4) (Los Planes) (Schuster & Cano, 2005: 258); San Salvador: San Salvador (Kuwert, 1898: 15; Hincks & Dibb, 1935: 33) (Fig. 4).

Years of collection: 1897, 1951, 1976.

Months of collection: June and August.

Topographic zone: northern mountains, interior valley, coastal plain.

Elevation range: 250-2,360 m.

Comments: reported as *Vindex quadrangulifrons* Kuwert by Kuwert (1898) and Hincks & Dibb (1935).

Tribe Passalini Leach, 1815

Ameripassalus Jiménez-Ferbans & Reyes-Castillo, 2014

Ameripassalus guatemalensis (Kaup, 1869)

Distribution: Mexico, Guatemala, Honduras, Nicaragua (Schoolmeesters, 2022), and El Salvador.

Locality records: Santa Ana: Parque Nacional Montecristo (San José Ingenio) (MUHNES) (Fig. 4).

Years of collection: no data.

Months of collection: no data.

Topographic zone: northern mountains.

Elevation range: 810 m.

Comments: new country record.

Passalus Fabricius, 1792

Passalus interstitialis Eschscholtz, 1829

Distribution: Mexico, El Salvador, Honduras, Nicaragua, Costa Rica, Colombia, Venezuela, Trinidad & Tobago, Guyana, Suriname, French Guiana, Ecuador, Brazil, Peru, Bolivia, Paraguay, Argentina, Cuba, Jamaica, and Grenada (Reyes-Castillo 1973, Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (RDCC); (San Francisco Menéndez) (MUHNES); Santa Ana: Lago de Coatepeque (Isla Teopán) (MUHNES); El Congo (RDCC); La Libertad: El Barillo (MUHNES); Los Chorros (MUHNES, RDCC); Puerto de La Libertad (Romero-Nápoles, 2021); no specific department: no specific locality (Reyes-Castillo, 1973: 1582) (Fig. 4).

Years of collection: 1973-1980, 1999.

Months of collection: February, March, May, and September.

Topographic zone: coastal mountains, coastal plain.

Elevation range: 30-820 m.

Passalus punctatostriatus (Percheron, 1835)

Distribution: USA, Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Suriname, and Brazil (Schoolmeesters, 2022).

Locality records: Ahuachapán: Laguna Las Ninfas (MUHNES); Santa Ana: Finca San Jorge (Hincks, 1953: 34); Parque Nacional Montecristo (San José Ingenio) (Serrano-Peraza, 2017: 43; Serrano-Peraza et al., 2022: 4); Sonsonate: Izalco (Los Guates Farm) (MUHNES); La Libertad: Parque Nacional Parque Nacional Walter Thilo Deininger (MUHNES); San Salvador: San Salvador (Hincks, 1953: 34); San Vicente: Volcán de San Vicente-

Chinchontepec (Hacienda El Carmen) (Hincks, 1953: 34) (Fig. 4).

Years of collection: 1951, 1973-1976.

Months of collection: April-June, and November.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 135-2,000 m.

Passalus punctiger Le Peletier & Audinet-Serville, 1825

Distribution: USA, Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, Colombia, Venezuela, Trinidad & Tobago, French Guiana, Ecuador (Galápagos Islands), Brazil, Peru, Bolivia, Chile, Paraguay, Argentina, Jamaica, St. Vincent & the Grenadines, and Grenada (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (MUHNES, RDCC); Santa Ana: Finca San Jorge (Hincks, 1953: 34); Lago de Coatepeque (Isla Teopán) (MUHNES); Parque Nacional Montecristo (San José Ingenio) (Serrano-Peraza, 2017: 43; Serrano-Peraza et al., 2022: 4); La Libertad: (Laguna de) Zapotitán (Hincks, 1953: 34); Parque Nacional Walter Thilo Deininger (MUHNES); San Salvador: Lago de Ilopango (Isla Asino) (MUHNES); Los Planes de Renderos (MUHNES); Parque Saburo Hirao (MUHNES); San Salvador (Hincks, 1953: 35) (Fig. 4).

Years of collection: 1951, 1973-1979, 1999.

Months of collection: February, April-June, and October-December.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 135-1,005 m.

Comments: the specimens collected in Zapotitán and Finca San Jorge were identified as *Passalus interruptus* (Linnaeus) in Hincks (1953) (see species that do not occur in El Salvador).

Paxillus MacLeay, 1819

Paxillus leachi MacLeay, 1819

Distribution: Canada, USA, Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guyana, Suriname, French Guiana, Ecuador, Brazil, Peru, Bolivia, Chile, Paraguay, Argentina, and Uruguay (Schoolmeesters, 2022). The species is not present in the Antilles (Jiménez-Ferbans et al., 2015).

Locality records: Santa Ana: El Congo (MUHNES, RDCC); Finca San Jorge (Hincks, 1953: 34); La Libertad: Los Chorros (RDCC); Parque Nacional Walter Thilo Deininger (MUHNES); Plan de La Laguna (MUHNES); Puerto de La Libertad (Romero-Nápoles, 2021); no specific department: no specific locality (Hincks & Dibb, 1935: 36) (Fig. 4).

Years of collection: 1951, 1966, 1974-1980.

Months of collection: January, February, April, May, July, and September-December.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 30-820 m.

Ptichopus Kaup, 1869

Ptichopus angulatus (Percheron, 1835)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (MUHNES, RDCC); Santa Ana: Finca San Jorge (MUHNES); Parque Nacional Montecristo (San José Ingenio) (MUHNES); San Salvador: San Salvador (Hincks, 1953: 35); no specific department: no specific locality (Hincks & Dibb, 1935: 63) (Fig. 4).

Years of collection: 1951, 1975-1976, 1999.

Months of collection: April-June.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 480-810 m.

Family Trogidae MacLeay, 1819

Subfamily Omorginae Nikolajev, 2005

Omorgus Erichson, 1847

Omorgus (*Omorgus*) *fuliginosus* Robinson, 1941

Distribution: USA, Mexico, El Salvador, and Costa Rica (Schoolmeesters, 2022).

Locality records: La Libertad: La Libertad (Ratcliffe, 1978: 301); Santa Tecla (Ratcliffe, 1978: 301) (Fig. 4).

Years of collection: 1971.

Months of collection: May

Topographic zone: coastal mountains, coastal plain.

Elevation range: 70-900 m.

Comments: reported as *Trox fuliginosus* by Ratcliffe (1978).

Omorgus (*Omorgus*) *suberosus* (Fabricius, 1775)

Distribution: USA, Mexico, El Salvador, Panama, Colombia, Venezuela, Guyana, French Guiana, Ecuador, Brazil, Peru, Bolivia, Paraguay, Argentina, Uruguay, and Martinique; and Palearctic, Oriental, and Australian regions (Berry & Salazar-Vaquero, 1957; Schoolmeesters, 2022).

Locality records: Usulután: Alegría (Berry & Salazar-Vaquero, 1957: 47) (Fig. 4).

Years of collection: no data.

Months of collection: no data.

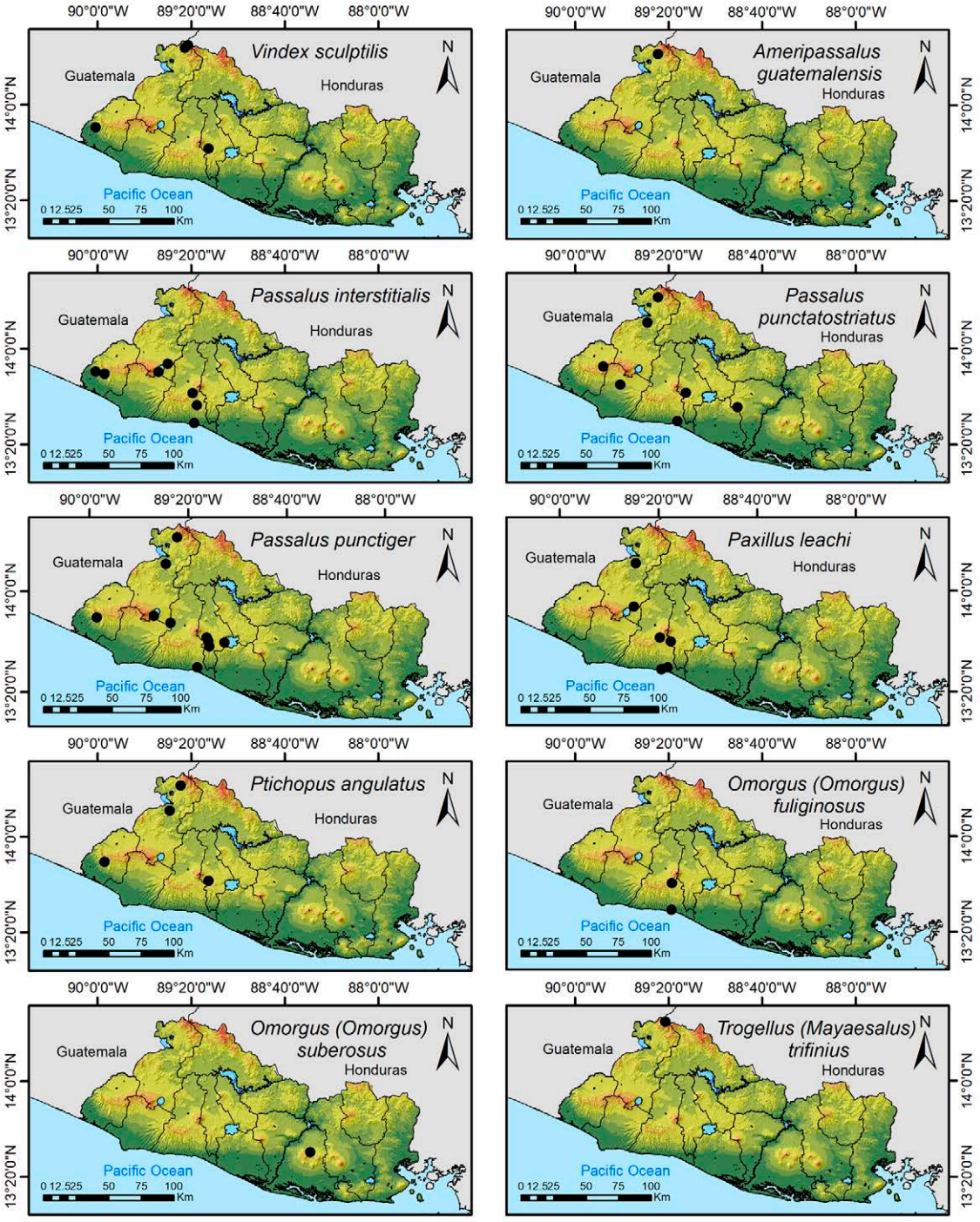

Figure 4. Distribution maps for *Vindex sculptilis*, *Ameripassalus guatemalensis*, *Passalus interstitialis*, *P. punctatostriatus*, *P. punctiger*, *Paxillus leachi*, *Ptichopus angulatus*, *Omorgus* (*Omorgus*) *fuliginosus*, *O.* (*O.*) *suberosus*, and *Trogellus* (*Mayaesalus*) *trifinius* in El Salvador.

Topographic zone: coastal mountains.
Elevation range: 1,130 m.
Comments: reported as *Trox suberosus* by Berry and Salazar-Vaquero (1957).

Family Lucanidae Latreille, 1804
Subfamily Aesalinae MacLeay, 1819
Tribe Aesalini MacLeay, 1819
Trogellus Paulsen, 2013
Trogellus (*Mayaesalus*) *trifinius* Paulsen, 2013
Distribution: El Salvador (Paulsen, 2013).
Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Paulsen, 2013: 17) (Fig. 4).
Years of collection: 2002.
Months of collection: June.
Topographic zone: northern mountains.
Elevation range: 2,360 m.
Comments: the species is precinctive to El Salvador.

Family Ochodaeidae Mulsant & Rey, 1871
Subfamily Ochodaeinae Mulsant & Rey, 1871
Tribe Ochodaeini Mulsant & Rey, 1871
Parochodaeus Nikolajev, 1995
Parochodaeus puncticollis (Arrow, 1911)
Distribution: Guatemala. El Salvador, and Honduras (Paulsen, 2012).
Locality records: Santa Ana: no specific locality (Paulsen, 2012: 178) (Fig. 5).
Years of collection: no data.
Months of collection: no data.
Topographic zone: no data.
Elevation range: no data.
Comments: the species is known only from montane forests from Chiapas to Honduras (Paulsen, 2012), therefore the locality record is probably Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) as for the lucanid *T. trifinius* (Paulsen, 2013).

Family Hybosoridae Erichson, 1847
Subfamily Anaidinae Nikolajev, 1996
Anaides Westwood, 1845
Anaides laticollis Harold, 1863
Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).
Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (J. Pablo, personal observation); no specific department: no specific locality (Ocampo, 2006: 43) (Fig. 5).
Years of collection: 2013.
Months of collection: June-November.
Topographic zone: coastal mountains.
Elevation range: 780 m.
Comments: specimens from Parque Nacional El Imposible were captured in pitfall traps baited with human dung and chicken carrion (J. Pablo, personal observation).

Chaetodus Westwood, 1845
Chaetodus (*Chaetodus*) *teamscaraborum* Ocampo, 2006
Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).
Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ocampo, 2006: 140) (Fig. 5).
Years of collection: no data.
Months of collection: no data.
Topographic zone: coastal mountains.
Elevation range: 780 m.

Subfamily Ceratocanthinae Martínez, 1968
Tribe Ceratocanthini Martínez, 1968
Germarostes Paulian, 1982
Comments: specimens of this genus were collected (2018-2019) in El Salvador at lights in Ahuachapán: *Parque Nacional El Imposible* (*San Benito*); Santa Ana: *Parque Nacional Montecristo* (*San José Ingenio*); La Libertad: *Parque El Bicentenario* (Fig. 5). Unfortunately, none of them have been identified to species level. They are deposited in the CMNC with the hope that their identity will be revealed in the future.

Family Scarabaeidae Latreille, 1802
Subfamily Aphodiinae Leach, 1815
Tribe Aphodiini Leach, 1815
Agrilinellus Dellacasa, Dellacasa, & Gordon, 2008
Agrilinellus chiapasensis (Galante, Stebnicka & Verdú, 2003)
Distribution: Mexico and El Salvador (Dellacasa et al., 2008; Schoolmeesters, 2022).
Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Dellacasa et al., 2008: 10) (Fig. 5).
Years of collection: 1958, 1971.
Months of collection: May.
Topographic zone: northern mountains.
Elevation range: 2,360 m.

Blackburneus Schmidt, 1913
Blackburneus charmionus (Bates, 1887)
Distribution: Mexico, El Salvador, Costa Rica, Panama, and Brazil (Schoolmeesters, 2022).
Locality records: Santa Ana: Parque Nacional Cerro Verde (Dellacasa et al., 2002: 202) (Fig. 5).

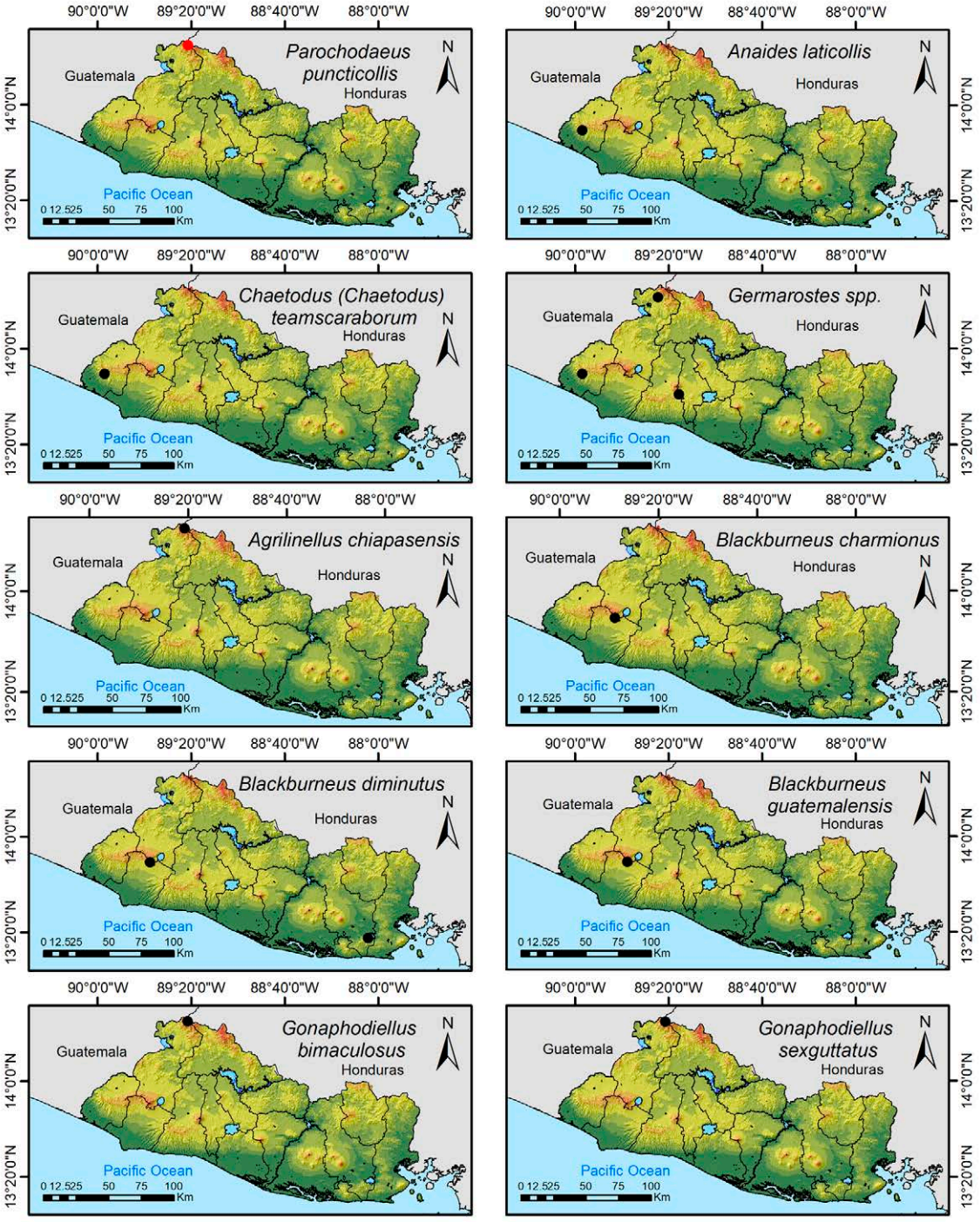

Figure 5. Distribution maps for *Parochodaeus puncticollis*, *Anaides laticollis*, *Chaetodus* (*Chaetodus*) *teamscaraborum*, *Germarostes* spp., *Agrilinellus chiapasensis*, *Blackburneus charmionus*, *B. diminutus*, *B. guatemalensis*, *Gonaphodiellus bimaculosus*, and *G. sexguttatus* in El Salvador.

Years of collection: 1958.
Months of collection: June.
Topographic zone: coastal mountains.
Elevation range: 2,020 m.

Blackburneus diminutus (Bates, 1887)

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Cerro Verde (Dellacasa et al., 2002: 205); San Miguel: Laguna Olomega (Dellacasa et al., 2002: 205) (Fig. 5).

Years of collection: 1958.
Months of collection: June.
Topographic zone: coastal mountains, coastal plain.
Elevation range: 80-2,020 m.

Blackburneus guatemalensis (Bates, 1887)

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Cerro Verde (Dellacasa et al., 2002: 195) (Fig. 5).

Years of collection: 1958.
Months of collection: June.
Topographic zone: coastal mountains.
Elevation range: 2,020 m.

Gonaphodiellus Schmidt, 1913

Gonaphodiellus bimaculosus (Schmidt, 1909)

Distribution: Mexico and El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Dellacasa et al., 2012: 6) (Fig. 5).

Years of collection: 1971.
Months of collection: May.
Topographic zone: northern mountains.
Elevation range: 2,360 m.

Gonaphodiellus sexguttatus (Schmidt, 1916)

Distribution: Mexico, El Salvador, Honduras, Costa Rica, Panama, and Colombia (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Dellacasa et al., 2012: 14) (Fig. 5).

Years of collection: 1958, 1971.
Months of collection: May.
Topographic zone: northern mountains.
Elevation range: 2,360 m.

Gonaphodioides Dellacasa, Dellacasa, & Gordon, 2012

Gonaphodioides cartwrighti Dellacasa, Dellacasa & Gordon, 2013

Distribution: El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Dellacasa et al., 2013: 1-2) (Fig. 6).

Years of collection: 1958.
Months of collection: May.
Topographic zone: northern mountains.
Elevation range: 2,360 m.
Comments: the species is precinctive to El Salvador.

Haroldiellus Gordon & Skelley, 2007

Haroldiellus sallei (Harold, 1863)

Distribution: USA, Mexico, Guatemala, El Salvador, Nicaragua, and Costa Rica (Berry, 1959b; Dellacasa et al., 2002; Schoolmeester 2022).

Locality records: Santa Ana: no specific locality (Gordon & Skelley, 2022: 3); Chalatenango: Cerro El Pital (EAPZ); La Libertad: no specific locality (Skelley & Keller, 2022: 3); San Salvador: no specific locality (Skelley & Keller, 2022: 3); Cuscatlán: no specific locality (Skelley & Keller 2022: 3); San Vicente: no specific locality (Skelley & Keller, 2022: 3) (Fig. 6); no specific department: no specific locality (Berry, 1959b: 7).

Years of collection: 1994.
Months of collection: July.
Topographic zone: interior valley, Northern mountains.
Elevation range: 2,660 m.
Comments: reported as Aphodius sallaei in Berry (1959b).

Nialaphodius Kolbe, 1908

Nialaphodius nigrita (Fabricius, 1801)

Distribution: USA, Mexico, Belize, El Salvador, Honduras, Panama, Colombia, Venezuela, Ecuador, Brazil, Peru, Chile, Paraguay, Puerto Rico, Martinique, and St. Vincent & the Grenadines; and Afrotropical region (Horgan, 2008; Schoolmeesters, 2022).

Locality records: La Libertad: Parque Nacional Walter Thilo Deininger (Horgan, 2008: 2969); La Paz: Comalapa (La Providencia) (Horgan, 2008: 2969) (Fig. 6).

Years of collection: 1995-1997.
Months of collection: no data.
Topographic zone: coastal plain.
Elevation range: 40-135 m.
Comments: specimens were captured in baited pitfall traps in Comalapa (cow dung and fruit) and Parque Nacional Walter Thilo Deininger (cow dung) (Horgan, 2008).

Tribe Eupariini Schmidt, 1910

Ataenius Harold, 1867

Ataenius aequalis Harold, 1880

Distribution: USA, Mexico, Guatemala, Belize, El Salvador, Honduras, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago, Guyana, Brazil, Bolivia, Argentina, Guadeloupe, and St. Vincent & the Grenadines (Schoolmeesters, 2022).

Locality records: Santa Ana: Volcán San Diego (Stebnicka, 2005: 105) (Fig. 6).

Years of collection: no data.

Months of collection: no data.

Topographic zone: interior valley.

Elevation range: 760.

Ataenius carinator Harold, 1874

Distribution: USA, Mexico, Honduras, Costa Rica, Panama, Colombia, Venezuela, Guyana, Suriname, Ecuador, and Peru (Stebnicka, 2007; Schoolmeesters, 2022), and El Salvador.

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (RDCC) (Fig. 6).

Years of collection: 2000.

Months of collection: May.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Comments: new country record.

Ataenius castaniellus Bates, 1887

Distribution: Mexico, Guatemala, El Salvador, and Honduras (Schoolmeesters, 2022).

Locality records: La Libertad: Los Chorros (Stebnicka, 2005: 110) (Fig. 6).

Years of collection: 1971.

Months of collection: May.

Topographic zone: coastal mountains.

Elevation range: 730.

Ataenius communis Hinton, 1936

Distribution: Mexico, Guatemala, El Salvador, Costa Rica, Panama, Colombia, Venezuela, and Trinidad & Tobago (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo [probably San José Ingenio] (Stebnicka, 2001: 267); La Libertad: Los Chorros (Stebnicka, 2001: 267); Volcán de San Salvador (El Boquerón) (Stebnicka, 2001: 267) (Fig. 6).

Years of collection: no data.

Months of collection: no data.

Topographic zone: coastal mountains, northern mountains.

Elevation range: 730-1,845 m.

Ataenius complicatus Harold, 1869

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Curaçao, Venezuela, Brazil, Peru, Bolivia, Paraguay, and Argentina (Schoolmeesters, 2022).

Locality records: La Libertad: no specific locality (Stebnicka, 2006: 94) (Fig. 6).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Ataenius cribrithorax Bates, 1887

Distribution: Mexico, El Salvador, Honduras, Costa Rica, Panama, Cuba, Jamaica, and US Virgin Islands (Schoolmeesters, 2022).

Locality records: La Libertad: Santa Tecla (Stebnicka, 2001: 264) (Fig. 6).

Years of collection: no data.

Months of collection: no data.

Topographic zone: coastal mountains.

Elevation range: 900 m.

Ataenius glabriventris Schmidt, 1911

Distribution: Mexico, Guatemala, El Salvador, Honduras, Costa Rica, Panama, and Venezuela (Schoolmeesters, 2022).

Locality records: La Libertad: no specific locality (Stebnicka & Lago, 2005: 72) (Fig 6).

Years of collection: 1971.

Months of collection: May.

Topographic zone: no data.

Elevation range: no data.

Comments: the collection site is reported simply as "S Area" (Stebnicka & Lago, 2005). It likely refers to an area near or in the city of La Libertad because of the date of collection: 11-V-1971 or dates near (13-V-1971). The collector of the specimen, H. Howden, collected other specimens around that area (Ratcliffe, 1978; Kohlmann, 1996; González-Alvarado & Vaz-de-Mello, 2014; Darling & Génier, 2018).

Ataenius gracilis (Melsheimer, 1845)

Distribution: Canada, USA, Mexico, El Salvador, Nicaragua, Panama, Colombia, Ecuador (Galápagos Islands), Peru, Chile, Argentina, Cuba, Jamaica, Haiti, Dominican Republic, Puerto Rico, US Virgin Islands, St. Kitts & Nevis, Guadeloupe, Martinique, St. Vincent & the Grenadines, Barbados, and Grenada (Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Berry, 1959b: 9).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Ataenius imbricatus (Melsheimer, 1844)

Distribution: Canada, USA, Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago,

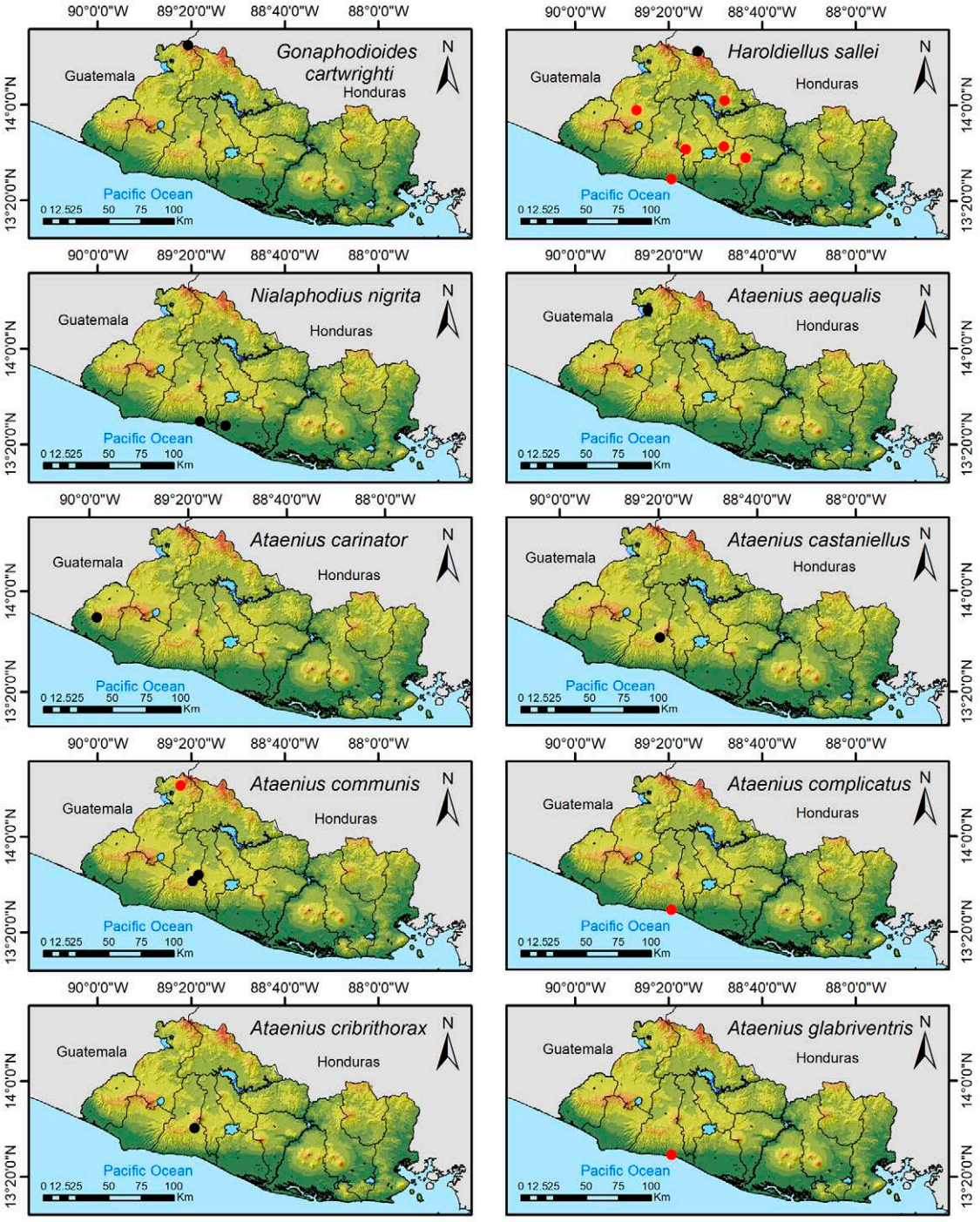

Figure 6. Distribution maps for *Gonaphodioides cartwrighti*, *Haroldiellus sallei*, *Nialaphodius nigrita*, *Ataenius aequalis*, *A. carinator*, *A. castaniellus*, *A. communis*, *A. complicatus*, *A. cribrithorax*, and *A. glabriventris* in El Salvador.

Guyana, Suriname, Brazil, Paraguay, Argentina, Bahamas, Cuba, Dominican Republic, Puerto Rico, US Virgin Islands, Guadeloupe, and Barbados (Schoolmeesters, 2022).

Locality records: San Vicente: no specific locality (Stebnicka, 2003: 225) (Fig 7).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Ataenius liogaster Bates, 1887

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Venezuela, Jamaica, Dominican Republic, Puerto Rico, US Virgin Islands, Antigua & Barbuda, Guadeloupe, St. Lucia, St. Vincent & the Grenadines, Barbados, Grenada, Galápagos Islands. Australia: Christmas Island. Asia: Thailand, Vietnam, Philippines, Micronesia, and Indonesia (Stebnicka & Lago, 2005; Schoolmeesters, 2022).

Locality records: La Libertad: Santa Tecla (Stebnicka & Lago, 2005: 61) (Fig. 7).

Years of collection: no data.

Months of collection: no data.

Topographic zone: coastal mountains.

Elevation range: 900 m.

Ataenius nugator Harold, 1880

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Brazil, Peru, Bolivia, Jamaica, Dominican Republic, US Virgin Islands, and Martinique (Schoolmeesters, 2022).

Locality records: La Libertad: Los Chorros (Stebnicka, 2001: 263) (Fig. 7).

Years of collection: no data.

Months of collection: no data.

Topographic zone: coastal mountains.

Elevation range: 730 m.

Ataenius perforatus Harold, 1867

Distribution: Mexico, Guatemala, El Salvador, Honduras, Costa Rica, Panama, Colombia, Venezuela, and Brazil (Schoolmeesters, 2022).

Locality records: La Libertad: Volcán de San Salvador (El Boquerón) (Stebnicka, 2001: 275) (Fig. 7).

Years of collection: no data.

Months of collection: no data.

Topographic zone: coastal mountains.

Elevation range: 1,845 m.

Ataenius platensis (Blanchard, 1846)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Brazil, Peru, Bolivia, Chile, Paraguay, Argentina, Uruguay, and Guadeloupe (Schoolmeesters, 2022).

Locality records: La Libertad: Los Chorros (Stebnicka, 2005: 126) (Fig. 7).

Years of collection: 1980.

Months of collection: January.

Topographic zone: coastal mountains.

Elevation range: 730 m.

Comments: collection data from specimen in RDCC.

Ataenius scalptifrons Bates, 1887

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, and Costa Rica (Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Galante et al., 2003: 293).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Ataenius sculptor Harold, 1868

Distribution: USA, Mexico, Guatemala, El Salvador, Honduras, and Colombia (Schoolmeesters, 2022).

Locality records: Ahuachapán: Cara Sucia (Pablo-Cea et al., 2017: 528); La Libertad: no specific locality (Stebnicka, 2006: 94) (Fig. 7).

Years of collection: 2016.

Months of collection: July.

Topographic zone: coastal plain.

Elevation range: 5 m.

Ataenius texanus Harold, 1874

Distribution: USA, Mexico, Guatemala, El Salvador, and Costa Rica (Stebnicka, 2007).

Locality records: no specific department: no specific locality (Stebnicka, 2007: 67).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Ataenius usingeri Hinton, 1937

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: La Libertad: La Libertad (Stebnicka, 2005: 133); Santa Tecla (Stebnicka, 2005: 133) (Fig. 7).

Years of collection: 1971

Months of collection: May and June.

Topographic zone: coastal plain, coastal mountains.

Elevation range: 70-900 m.

Odontolytes Koshantschikov, 1916

Odontolytes capitosus (Harold, 1867)

Distribution: Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, and Panama (Stebnicka, 2002).

Locality records: La Libertad: Los Chorros (Stebnicka, 2002: 768) (Fig. 7).

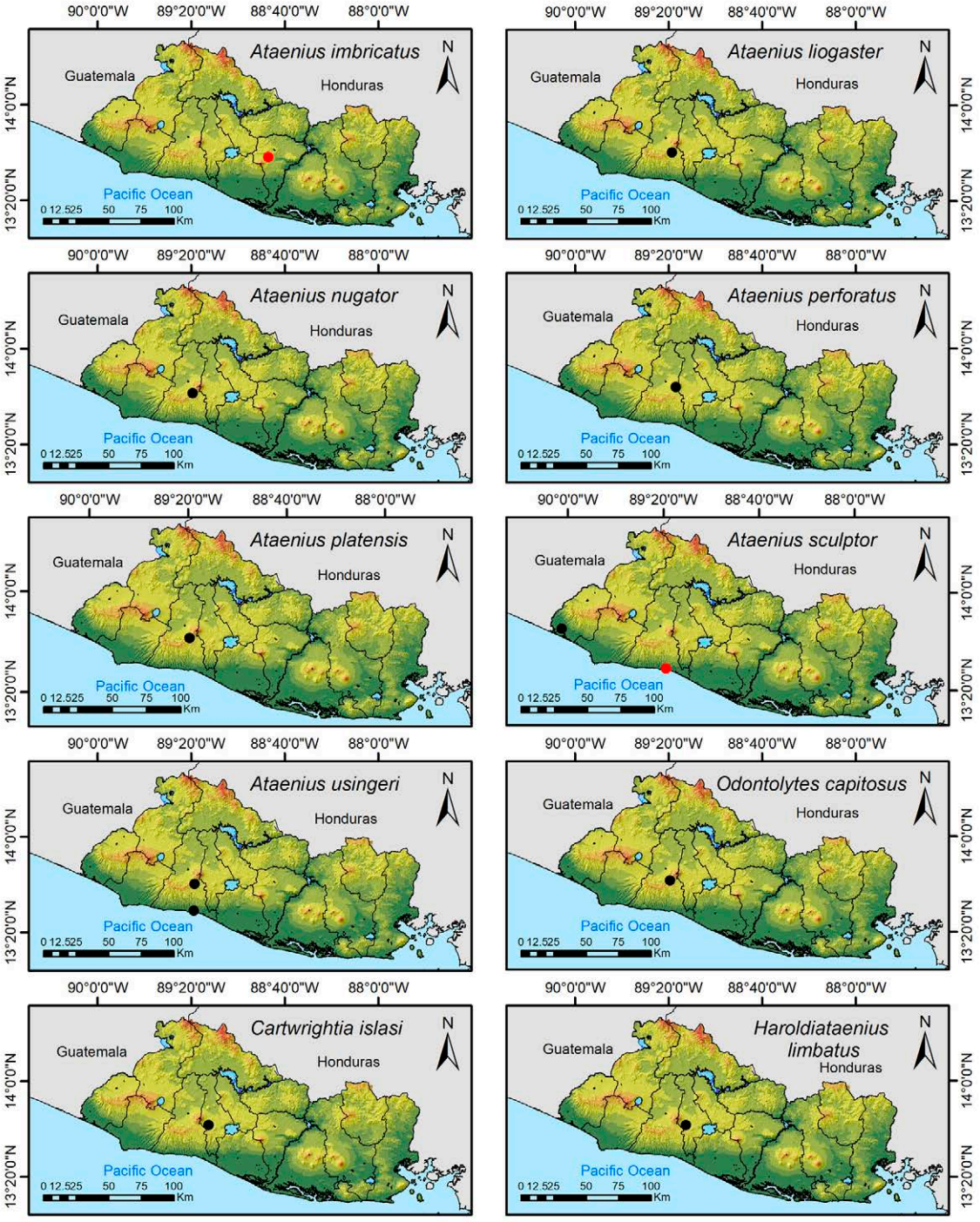

Figure 7. Distribution maps for *Ataenius imbricatus*, *A. liogaster*, *A. nugator*, *A. perforatus*, *A. platensis*, *A. sculptor*, *A. usingeri*, *Odontolytes capitosus*, *Cartwrightia islasi*, and *Haroldiataenius limbatus* in El Salvador.

Years of collection: no data.
Months of collection: no data.
Topographic zone: coastal mountains.
Elevation range: 730 m.

Cartwrightia Islas, 1958
Cartwrightia islasi Cartwright, 1967
Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).
Locality records: San Salvador: San Salvador (Cartwright, 1967: 4) (Fig. 7).
Years of collection: 1957.
Months of collection: May.
Topographic zone: interior valley.
Elevation range: 685 m.
Comments: the species was described from specimens collected at lights in San Salvador (Cartwright, 1967).

Haroldiataenius Chalumeau, 1981
Haroldiataenius limbatus (Bates, 1887)
Distribution: Mexico, Guatemala, El Salvador, and Honduras (Stebnicka & Skelley 2007; Schoolmeesters, 2022).
Locality records: San Salvador: San Salvador (Stebnicka & Skelley, 2007: 11) (Fig. 7).
Years of collection: 1958.
Months of collection: June.
Topographic zone: interior valley.
Elevation range: 685 m.
Comments: specimens were captured in the detritus from a nest of *Atta* sp. (Hymenoptera: Formicidae) (Stebnicka & Skelley, 2007: 11).

Tribe Psammodiini Mulsant, 1842
Trichiorhyssemus Clouët, 1901
Trichiorhyssemus cristatellus (Bates, 1887)
Distribution: Mexico, Guatemala, El Salvador, and Nicaragua (Schoolmeesters, 2022).
Locality records: Sonsonate: no specific locality (Gordon & Cartwright, 1980: 20) (Fig. 8).
Years of collection: no data.
Months of collection: no data.
Topographic zone: no data.
Elevation range: no data.

Subfamily Scarabaeinae Latreille, 1802
Tribe Ateuchini Perty, 1830
Ateuchus Weber, 1801
Ateuchus (*Ateuchus*) *colossus* Moctezuma, Sánchez-Huerta & Halffter, 2018

Distribution: Mexico and El Salvador (Moctezuma et al., 2018, M. Cupello, personal communication).
Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso, La Torre [Camino hacia la Hacienda Montecristo], Los Planes) (Kohlmann, 2000: 244) (Fig. 8).
Years of collection: 1971.
Months of collection: May.
Topographic zone: northern mountains.
Elevation range: 1,450-2,360 m.
Comments: the specimens Kohlmann (2000) identified as *Ateuchus chrysopyge* from El Salvador are *A. colossus*. *Ateuchus chrysopyge* is a junior synonym of *A. illaesus* and does not occur on the Pacific side of Central America (M. Cupello, personal communication).
Ateuchus (*Ateuchus*) *rodriguezi* (Preudhomme de Borre, 1886)
Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).
Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46, Pablo-Cea et al., 2020: 6; Pablo-Cea, 2021: 20; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 378); La Libertad: Los Chorros (Kohlmann, 1996: 187); Parque Nacional Walter Thilo Deininger (Fuentes, 1998: 29; Horgan, 2008: 2968); No specific locality (MZSP); San Salvador: Apopa (Josué Chávez, personal communication); No specific locality (CMNC, CNCI); Cuscatlán: Cojutepeque (MZSP); La Paz: Comalapa (La Providencia) (Horgan, 2002: 30); San Vicente: Volcán de San Vicente-Chinchontepec (Finca La Paz) (MZSP); No specific locality (DZUP); San Miguel: San Miguel (EMEC); La Unión: La Unión (Berry & Salazar-Vaquero, 1957: 43) (Fig. 8).
Years of collection: 1959-1962, 1971, 1995-1998, 2013, 2018.
Months of collection: April-July, September, and October.
Topographic zone: interior valley, coastal mountains, coastal plain.
Elevation range: 30-2,000 m.
Comments: reported as *Ateuchus ampliatus* Bates by Berry and Salazar-Vaquero (1957). The species is rare in Parque Nacional El Imposible (Pablo-Cea, 2014, 2021). Specimens were captured with baited pitfall traps in Parque Nacional Walter Thilo Deininger (cow dung, beef carrion, and fruit) (Horgan, 2008), Comalapa (cow and horse dung) (Horgan, 2001), Cara Sucia (Fuentes, 2009; Pablo-Cea et al., 2017), and Parque Nacional El Imposible (human dung) (Pablo-Cea, 2014, 2021).

Scatimus Erichson, 1847
Scatimus ovatus Harold, 1862

Distribution: Mexico, Guatemala, Belize, El Salvador, Nicaragua, Costa Rica, Panama, and Colombia (Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Howden & Young, 1981: 50).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Uroxys Westwood, 1842
Uroxys boneti Pereira & Halffter, 1961

Distribution: Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, Panama, and Colombia (Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Solís & Kohlmann, 2013: 293).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Uroxys deavilai Delgado & Kohlmann, 2007

Distribution: Mexico, Guatemala, El Salvador, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2016: 220, 2020: 6) (Fig. 8).

Years of collection: 2013.

Months of collection: June-November.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Comments: specimens were captured in pitfall traps baited with human dung and chicken carrion (Pablo-Cea, 2014).

Uroxys microcularis Howden & Young, 1981

Distribution: Mexico, El Salvador, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46, Pablo-Cea et al., 2016: 220; Pablo-Cea et al., 2020: 6) (Fig. 8).

Years of collection: 2013.

Months of collection: June-November.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Comments: specimens were captured in pitfall traps baited with human dung and chicken carrion (Pablo-Cea, 2014).

Tribe Coprini Leach, 1815
Canthidium Erichson, 1847
Canthidium (*Canthidium*) *laetum* Harold, 1867

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: La Paz: El Rosario (Solís & Kohlmann, 2004: 49; Kohlmann & Solís, 2006: 255); La Unión: La Unión (Solís & Kohlmann, 2004: 49; Kohlmann & Solís, 2006: 255) (Fig. 8).

Years of collection: 1958.

Months of collection: May.

Topographic zone: coastal plain.

Elevation range: 30-85 m.

Comments: captured under dung.

Canthidium (*Canthidium*) *pseudopuncticolle* Solís & Kohlmann, 2004

Distribution: USA, Mexico, El Salvador, and Costa Rica (Solís & Kohlmann, 2004, Pablo-Cea et al., 2016).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46, Pablo-Cea et al., 2016: 219-220, 2020: 6) (Fig. 8).

Years of collection: 2013.

Months of collection: June-November.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Comments: reported as *Canthidium pseudopunticolle* [sic] by Pablo-Cea (2014) and Pablo-Cea et al. (2016, 2020). Specimens were captured in pitfall traps baited with human dung and chicken carrion (Pablo-Cea, 2014).

Copris Geoffroy, 1762
Copris (*Copris*) *aspericollis* Gillet, 1910

Distribution: Guatemala, El Salvador, and Costa Rica (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Los Planes) (Kohlmann et al., 2003: 13) (Fig. 8).

Years of collection: 2002.

Months of collection: June.

Topographic zone: northern mountains.

Elevation range: 1,890 m.

Copris (*Copris*) *boucardi* Harold, 1869

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (FMNH); no specific department: no specific locality (Deloya et al., 2014: 73) (Fig. 8).

Years of collection: 1971.

Months of collection: May.

Topographic zone: northern mountains.

Elevation range: 2,360 m.

Copris (*Copris*) *costaricensis* Gahan, 1894

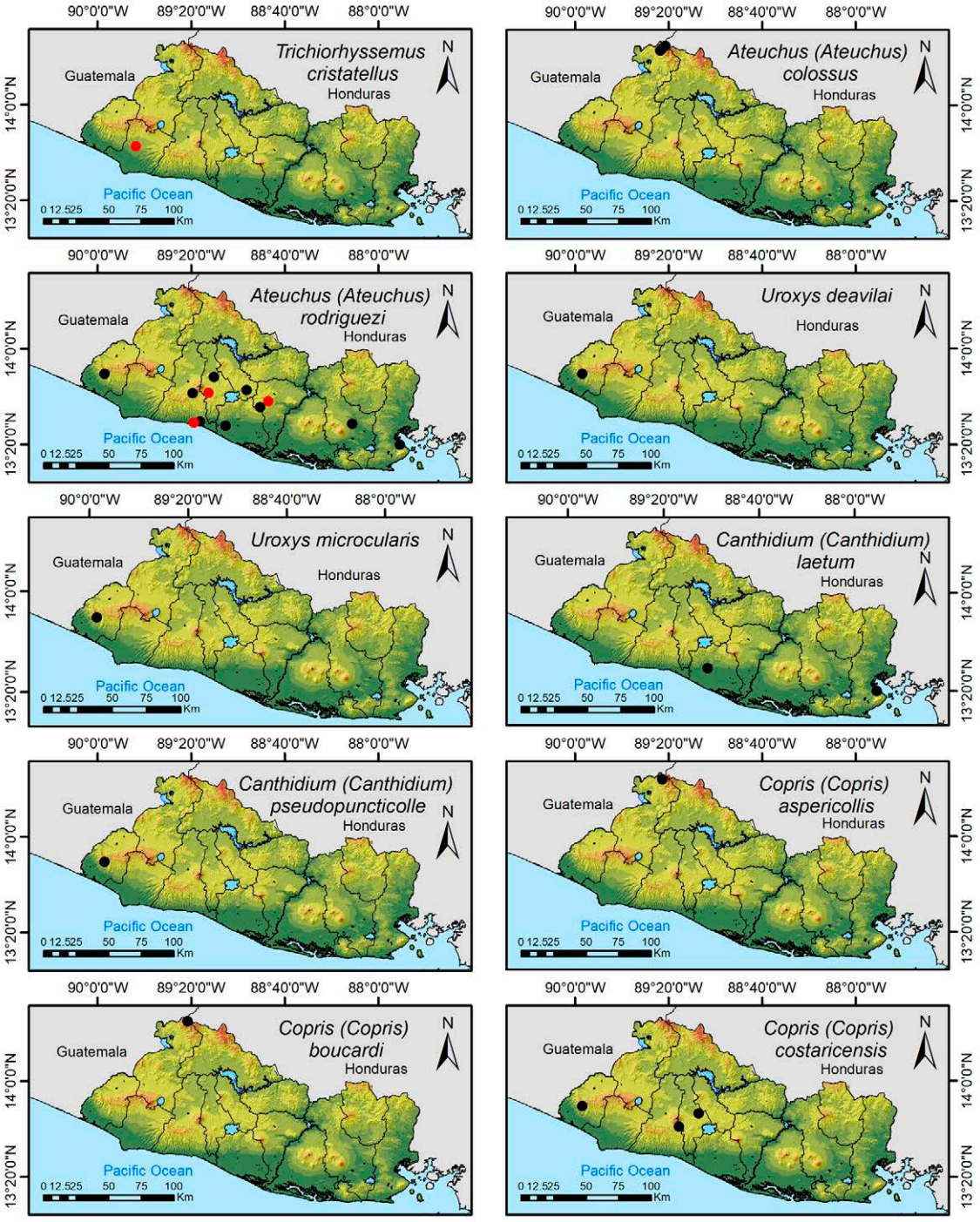

Figure 8. Distribution maps for *Trichiorhyssemus cristatellus*, *Ateuchus* (*Ateuchus*) *colossus*, *A.* (*A.*) *rodriguezi*, *Uroxys deavilai*, *U. microcularis*, *Canthidium* (*Canthidium*) *laetum*, *C.* (*C.*) *pseudopuncticolle*, *Copris* (*Copris*) *aspericollis*, *C.* (*C.*) *boucardi*, and *C.* (*C.*) *costaricensis* in El Salvador.

Distribution: Mexico, El Salvador, Costa Rica, and Panama (Fuentes, 2009; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 378); La Libertad: Parque El Bicentenario (Pablo-Cea, 2021: 20; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378); San Salvador: Tonacatepeque (Fuentes, 2009: 22) (Fig. 8).

Years of collection: 2007, 2013, 2018.

Months of collection: June-November.

Topographic zone: interior valley, coastal mountains.

Elevation range: 625-870 m.

Comments: specimens were captured in pitfall traps baited with human dung and chicken carrion in Parque Nacional El Imposible (Pablo-Cea, 2014), cattle dung in Tonacatepeque (Fuentes, 2009), and squid carrion in Parque El Bicentenario (Pablo-Cea, 2021).

Copris (*Copris*) *laeviceps* Harold, 1869

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, and Colombia (Horgan, 2001; Schoolmeesters, 2022).

Locality records: Morazán: Jocoaitique (El Rodeo) (Horgan, 2001: 106) (Fig. 9).

Years of collection: 1997.

Months of collection: May and August.

Topographic zone: northern mountains.

Elevation range: 655 m.

Comments: specimens were captured in pitfall traps baited with cow dung.

Copris (*Copris*) *lugubris* Boheman, 1858

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Ahuachapán: Cara Sucia (Pablo-Cea et al., 2017: 528); Parque Nacional El Imposible (La Fincona) (MUHNES); (San Benito) (Pablo-Cea, 2014: 46; Darling & Génier, 2018: 21; Pablo-Cea et al., 2020: 6); Santa Ana: Metapán (Darling & Génier, 2018: 21); Santa Ana (Darling & Génier, 2018: 21); Chalatenango: Chalatenango (Darling & Génier, 2018: 21); La Palma (Darling & Génier, 2018: 21); La Libertad: La Libertad (Darling & Génier, 2018: 21); Los Chorros (Darling & Génier, 2018: 21); Parque Nacional Walter Thilo Deininger (Fuentes, 1998: 29; Horgan, 2008: 2968); Santa Tecla (Darling & Génier, 2018: 21); San Salvador: Aguilares (Darling & Génier, 2018: 21); San Salvador (Darling & Génier, 2018: 21); (Universidad de El Salvador) (Josué Chávez and Melissa Oviedo, personal communication); Tonacatepeque (Fuentes, 2009: 22); La Paz: Comalapa (MUHNES); (La Providencia) (Fuentes, 1998: 29; Horgan, 2001: 106; Horgan, 2002: 30; Horgan, 2008: 2969); Cuscatlán: Área Natural Protegida Colima (Cerrón Grande) (J. Pablo, personal observation); No specific locality (Darling & Génier, 2018: 21); Cabañas: Chorrera del Guayabo (Darling & Génier, 2018: 21); Usulután: Cerro El Tigre (MUHNES); San Miguel: Laguna El Jocotal (MUHNES); Morazán: Arambala (Río Sapo) (MUHNES); Cerro Cacahuatique (MUHNES); Cerro Perquín (Fuentes, 1998: 29; Horgan, 2001: 106); Jocoaitique (El Rodeo) (Fuentes, 1998: 29; Horgan, 2001: 106); La Unión: Volcán de Conchagua (Darling & Génier, 2018: 21); no specific department: no specific locality (Howden & Young, 1981: 132) (Fig. 9).

Years of collection: 1958-1960, 1971, 1979, 1995-2001, 2007, 2012-2013, 2016.

Months of collection: February-December.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 5-1,580 m.

Comments: specimens were captured in baited pitfall traps in Parque Nacional Walter Thilo Deininger (cow dung, beef carrion, fruit) (Horgan, 2008), Comalapa (beef carrion, cow and horse dung) (Horgan, 2001, 2008), Jocoaitique and Cerro Perquín (cow and horse dung) (Horgan, 2001), Cara Sucia and Tonacatepeque (cow dung) (Fuentes, 2009; Pablo-Cea et al., 2017), and Parque Nacional El Imposible (human dung) (Pablo-Cea, 2014).

Copris (*Copris*) *matthewsi pacificus* Delgado & Kohlmann, 2001

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Delgado & Kohlmann, 2001: 350); Chalatenango: Cerro El Pital (Kohlmann et al., 2003: 15) (Fig. 9).

Years of collection: 1971, 2002.

Months of collection: May, June, and September.

Topographic zone: northern mountains.

Elevation range: 2,360-2,660 m.

Dichotomius Hope, 1838

Dichotomius (*Dichotomius*) *annae* Kohlmann & Solís, 1997

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6); Santa Ana: Parque Nacional Montecristo (Los Planes) (RDCC); Sonsonate: Sonsonate (Kohlmann & Solís, 1997: 356); La Libertad: La Libertad (Kohlmann

& Solís, 1997: 356); Parque El Bicentenario (Pablo-Cea, 2021: 20; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378); Parque Nacional Walter Thilo Deininger (Horgan, 2008: 2968); San Andrés (MUHNES); San Salvador: Parque Saburo Hirao (MUHNES); San Salvador (Kohlmann & Solís, 1997: 356); Tonacatepeque (Fuentes, 2009: 22); La Paz: Comalapa (Aeropuerto) (MUHNES); (La Providencia) (Horgan, 2008: 2969); San Miguel: Laguna El Jocotal (MUHNES); Morazán: Arambala (Río Sapo) (MUHNES) (Fig. 9).

Years of collection: 1905, 1920, 1953, 1958, 1979, 1998-2001, 2013, 2018-2019.

Months of collection: April-September, and November.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 35-1,890 m.

Comments: specimens were captured in baited pitfall traps in Parque Nacional Walter Thilo Deininger and Comalapa (beef carrion and cow dung) (Horgan, 2008), Parque Nacional El Imposible and Parque El Bicentenario (human dung) (Pablo-Cea, 2014; Pablo-Cea, 2021), and Jocoaitique (cow dung) (Horgan, 2001).

Dichotomius (*Selenocopris*) *centralis* (Harold, 1869)

Distribution: Guatemala, Belize, El Salvador, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6); Chalatenango: Comalapa (Kohlmann & Solís, 1997: 358); La Libertad: Parque El Bicentenario (Pablo-Cea, 2021: 20; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378); Parque Nacional Walter Thilo Deininger (Fuentes, 1998: 29; Horgan, 2008: 2968); San Salvador: San Salvador (Berry & Salazar-Vaquero, 1957: 47); (Universidad de El Salvador) (Josué Chávez & Melissa Oviedo, personal communication); Tonacatepeque (Fuentes, 2009: 22); La Paz: Comalapa (La Providencia) (Fuentes, 1998: 29; Horgan, 2001: 106, 2002: 30, 2008: 2969); Morazán: Cerro Perquín (Fuentes, 1998: 29; Horgan, 2001: 106); Jocoaitique (El Rodeo) (Fuentes, 1998: 29; Horgan, 2001: 106) (Fig. 9).

Years of collection: 1976, 1995-1998, 2008, 2013, 2018-2019.

Months of collection: April-November.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 40-1,205 m.

Comments: reported as *Pinotus centralis* by Berry and Salazar-Vaquero (1957). Specimens were captured in baited pitfall traps in Parque Nacional Walter Thilo Deininger (beef carrion, cow and horse dung, fruit) (Fuentes, 1998, Horgan, 2008), Comalapa (La Providencia) (beef carrion, cow and horse dung) (Horgan, 2001, 2008), Parque El Bicentenario (squid carrion, human dung, decaying fruit) (Pablo-Cea, 2021), Parque Nacional El Imposible (chicken carrion, human dung) (Pablo-Cea, 2014), Jocoaitique (El Rodeo) and Cerro Perquín (cow and horse dung) (Horgan, 2001), and Tonacatepeque (cow dung) (Fuentes, 2009).

Dichotomius (*Selenocopris*) *yucatanus* (Bates, 1887)

Distribution: Mexico, El Salvador, Honduras, Nicaragua, Costa Rica, and Colombia (Fuentes, 1998; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6); Chalatenango: San Ignacio (MUHNES); La Libertad: Parque El Bicentenario (Pablo-Cea, 2021: 20; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378); Parque Nacional Walter Thilo Deininger (Fuentes, 1998: 29; Horgan, 2008: 2968); Cabañas: Cinquera (RDCC) (Fig. 9).

Years of collection: 1979, 1995-1998, 2001, 2013, 2018-2019.

Months of collection: April-November.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 135-1,060 m.

Comments: specimens were captured in baited pitfall traps in Parque El Bicentenario (squid carrion, human dung, decaying fruit) (Pablo-Cea, 2021), Parque Nacional Walter Thilo Deininger (beef carrion, cow and horse dung) (Fuentes, 1998; Horgan, 2008), and Parque Nacional El Imposible (chicken carrion, human dung) (Pablo-Cea, 2014).

Tribe Deltochilini Lacordaire, 1856

Agamopus Bates, 1887

Agamopus lampros Bates, 1887

Distribution: El Salvador, Nicaragua, Costa Rica, Panama, and Colombia (Fuentes, 1998; Schoolmeesters, 2022).

Locality records: La Libertad: Parque Nacional Walter Thilo Deininger (Fuentes, 1998: 29; Horgan, 2008: 2968); no specific department: no specific locality (Howden & Young, 1981: 41) (Fig. 9).

Years of collection: 1995-1997.

Months of collection: no data.

Topographic zone: coastal plain.

Elevation range: 135 m.

Comments: specimens were captured in pitfall traps baited with beef carrion, cow dung, and fruit (Horgan, 2008).

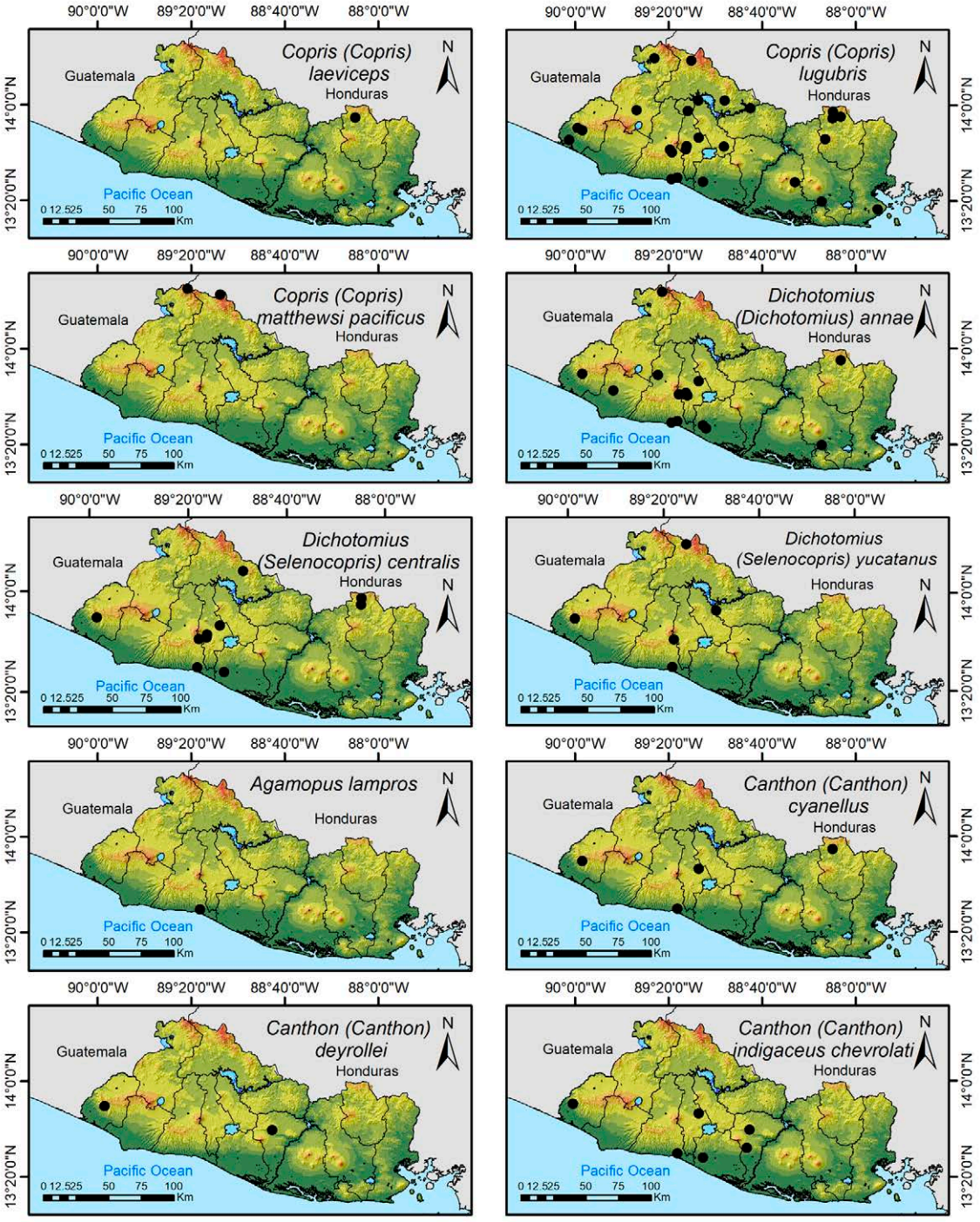

Figure 9. Distribution maps for *Copris* (*Copris*) *laeviceps*, *C.* (*C.*) *lugubris*, *C.* (*C.*) *matthewsi pacificus*, *Dichotomius* (*Dichotomius*) *annae*, *D.* (*Selenocopris*) *centralis*, *D.* (*S.*) *yucatanus*, *Agamopus lampros*, *Canthon* (*Canthon*) *cyanellus*, *C.* (*C.*) *deyrollei*, and *C.* (*C.*) *indigaceus chevrolati* in El Salvador.

Canthon Hoffmannsegg, 1817

Canthon (*Canthon*) *cyanellus* LeConte, 1859

Distribution: USA, Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, and Venezuela (Fuentes, 1998; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6); La Libertad: Parque Nacional Walter Thilo Deininger (Horgan, 2008: 2968); San Salvador: Tonacatepeque (Fuentes, 2009: 22); Morazán: Jocoaitique (El Rodeo) (Fuentes, 1998; Horgan, 2001: 106) (Fig. 9).

Years of collection: 1995-1997.

Months of collection: July and August.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 135-780 m.

Comments: reported as *Canthon cyanellis* [sic] by Fuentes (1998). Specimens were captured in baited pitfall traps in Parque Nacional El Imposible (chicken carrion) (Pablo-Cea, 2014), Tonacatepeque and Jocoaitique (cow dung) (Fuentes, 1998, Horgan, 2008), and Parque Nacional Walter Thilo Deininger (cow dung, beef carrion, fruit) (Horgan, 2008).

Canthon (*Canthon*) *deyrollei* Harold, 1868

Distribution: Guatemala, Belize, El Salvador, Nicaragua, Costa Rica, Panama, and Colombia (Solís & Kohlmann, 2002; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (MUHNES, RDCC); San Vicente: Apastepeque (Poza Azul) (MUHNES, RDCC); no specific department: no specific locality (Berry, 1959b: 15) (Fig. 9).

Years of collection: 1979.

Months of collection: June.

Topographic zone: interior valley, coastal mountains.

Elevation range: 500-780 m.

Comments: specimens from Parque Nacional El Imposible were collected in horse dung (R. D. Cave, personal observation).

Canthon (*Canthon*) *indigaceus chevrolati* Harold, 1868

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, and Colombia (Solís & Kohlmann, 2002; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Francisco Menéndez) (MUHNES, RDCC); La Libertad: Parque Nacional Walter Thilo Deininger (Fuentes, 1998: 29; Horgan, 2008: 2968); San Salvador: Tonacatepeque (Fuentes, 2009: 22); La Paz: Comalapa (MUHNES); (La Providencia) (Horgan, 2001: 106, 2002: 30, 2008: 2969); San Vicente: Apastepeque (Poza Azul) (MUHNES, RDCC); Tecoluca (Berry & Salazar-Vaquero, 1957: 44) (Fig. 9).

Years of collection: 1979, 1995-1997, 2001.

Months of collection: May-August.

Topographic zone: interior valley, coastal plain.

Elevation range: 40-625 m.

Comments: reported as *Canthon chevrolati* by Berry and Salazar-Vaquero (1957). Specimens were captured in baited pitfall traps in Parque Nacional Walter Thilo Deininger (cow and horse dung) (Fuentes, 2008; Horgan, 2008) and Tonacatepeque and Comalapa (cow dung) (Horgan, 2008; Fuentes, 2009).

Canthon (*Canthon*) *morsei* Howden, 1966

Distribution: Mexico, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, and Ecuador (Solís & Kohlmann, 2002; Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Howden & Young, 1981: 29).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Canthon (*Glaphyrocanthon*) *championi* Bates, 1887

Distribution: Mexico, Guatemala, El Salvador, Costa Rica, and Panama (Rivera-Cervantes & Halffter 1999; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Francisco Menéndez) (MUHNES); La Libertad: Parque Nacional Walter Thilo Deininger (MUHNES); no specific locality (Rivera-Cervantes & Halffter, 1999: 86) (Fig. 10).

Years of collection: 1971, 1979, 1995, 2002.

Months of collection: May and September.

Topographic zone: coastal plain.

Elevation range: 135-250 m.

Canthon (*Glaphyrocanthon*) *femoralis* (Chevrolat, 1834)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Ecuador, and Bolivia (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6); La Libertad: Los Chorros (MUHNES) (Fig. 10); no specific department: no specific locality (Morón, 2003: 32).

Years of collection: 1979, 2013.

Months of collection: June-November.

Topographic zone: coastal mountains.

Elevation range: 730-780 m.

Canthon (*Glaphyrocanthon*) *meridionalis* Martínez, Halffter, & Halffter, 1964

Distribution: El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Horgan, 2007; Schoolmeesters, 2022).

Locality records: La Libertad: Parque Nacional Walter Thilo Deininger (Fuentes, 2008: 29; Horgan, 2008: 2968) (Fig. 10).

Years of collection: 1995-1998.
Months of collection: no data.
Topographic zone: coastal plain.
Elevation range: 135 m.
Comments: reported as *Canthon viridis meridionalis* by Horgan (2007, 2008). Specimens were captured in pitfall traps baited with beef carrion, cow and horse dung, and fruit (Fuentes, 1998; Horgan, 2008).

Deltochilum Eschscholtz, 1822
Deltochilum (*Calhyboma*) *mexicanum* Burmeister, 1848
Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Ecuador, Peru, and Bolivia (Schoolmeesters, 2022).
Locality records: no specific department: no specific locality (Howden & Young, 1981: 38).
Years of collection: no data.
Months of collection: no data.
Topographic zone: no data.
Elevation range: no data.
Deltochilum (*Deltochilum*) *scabriusculum* Bates, 1887
Distribution: USA, Mexico, Belize, Guatemala, El Salvador, Nicaragua, and Costa Rica (Schoolmeesters, 2022).
Locality records: San Salvador: Tonacatepeque (Fuentes, 2009: 22) (Fig. 10).
Years of collection: 1997.
Months of collection: no data.
Topographic zone: interior valley.
Elevation range: 625 m.
Comments: reported as *Deltochilium* [sic] *scabriusculum* by Fuentes (2009).
Deltochilum (*Hybomidium*) *lobipes* Bates, 1887
Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, and Colombia (Schoolmeesters, 2022).
Locality records: La Libertad: La Libertad (González-Alvarado & Vaz-de-Mello, 2014: 445); Parque Nacional Walter Thilo Deininger (Horgan, 2008: 2968); La Paz: Comalapa (La Providencia) (Horgan, 2002: 30) (Fig. 10).
Years of collection: 1971, 1995-1998.
Months of collection: May.
Topographic zone: coastal plain.
Elevation range: 40-135 m.
Comments: specimens were captured in baited pitfall traps in Parque Nacional Walter Thilo Deininger (cow dung, beef carrion) and Comalapa (cow dung) (Horgan, 2002, 2008).
Deltochilum (*Hybomidium*) *sublaeve* Bates, 1887
Distribution: USA, Mexico, Guatemala, Belize, El Salvador, Nicaragua, Costa Rica, Panama, and Ecuador (Howden & Young, 1981; Schoolmeesters, 2022).
Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6) (Fig. 10); no specific department: no specific locality (Howden & Young, 1981: 37).
Years of collection: 2013.
Months of collection: June, and August-October.
Topographic zone: coastal mountains.
Elevation range: 780 m.
Comments: reported as *Deltochilum* (*Hybomidium*) *gibbosum panamensis* Howden by Howden & Young (1981). Reported as *D. gibbosum* by Pablo-Cea (2014) and Pablo-Cea et al. (2020).

Malagoniella Martínez, 1961
Malagoniella (*Malagoniella*) *yucateca* (Harold, 1863)
Distribution: USA, Mexico, El Salvador, Nicaragua, and Costa Rica (Horgan, 2008; Schoolmeesters, 2022).
Locality records: La Libertad: Parque Nacional Walter Thilo Deininger (Horgan, 2008: 2968) (Fig. 10).
Years of collection: 1995-1997.
Months of collection: no data.
Topographic zone: coastal plain.
Elevation range: 135 m.
Comments: reported as *Malagoniella astyanax* (Olivier) by Horgan (2008). Specimens were captured in pitfall traps baited with cow dung (Horgan, 2008).

Pseudocanthon Bates, 1887
Pseudocanthon perplexus (LeConte, 1847)
Distribution: USA, Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Brazil, and Grand Bahama Island (Schoolmeesters, 2022).
Locality records: Usulután: Nancuchiname (MUHNES) (Fig. 10); no specific department: no specific locality (Howden & Young, 1981: 35).
Years of collection: 1976.
Months of collection: May.
Topographic zone: coastal plain.
Elevation range: 15 m.
Comments: Horgan (2007) reported *Pseudocanthon* sp. 1, which probably is *P. perplexus*.

Tribe Oniticellini Kolbe, 1905
Euoniticellus Janssens, 1953
Euoniticellus intermedius (Reiche, 1848)
Distribution: USA, Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama; and Afrotropical and Palearctic regions (Solís et al., 2015; Schoolmeesters, 2022).
Locality records: Ahuachapán: Cara Sucia (Pablo-Cea et al., 2017: 527); La Libertad: Laguna Caldera (Pablo-Cea

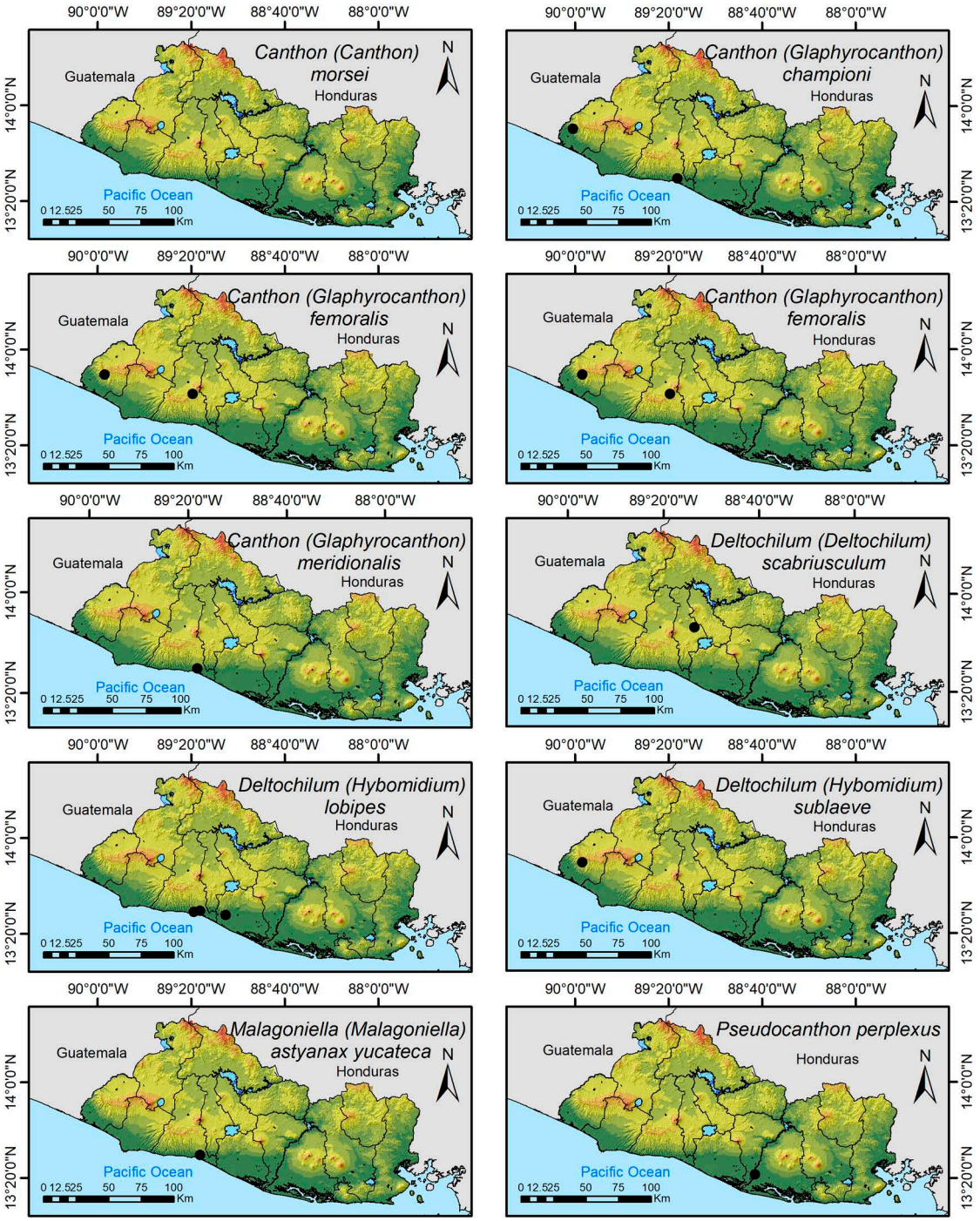

Figure 10. Distribution maps for *Canthon* (*Glaphyrocanthon*) *championi*, *C.* (*G.*) *femoralis*, *C.* (*G.*) *meridionalis*, *Deltochilum* (*Deltochilum*) *scabriusculum*, *D.* (*Hybomidium*) *lobipes*, *D.* (*H.*) *sublaeve*, *Malagoniella* (*Malagoniella*) *yucateca*, and *Pseudocanthon perplexus* in El Salvador.

et al., 2017: 527); Playa El Majahual (Pablo-Cea et al., 2017: 527); San Salvador: Tonacatepeque (Fuentes, 2008: 32; Solís & Kohlmann, 2012: 13; Pablo-Cea et al., 2017: 529); Cuscatlán: Área Natural Protegida Colima (Cerrón Grande) (Pablo-Cea et al., 2017: 527); San Vicente: Eco-Parque Tehuacán (Pablo-Cea et al., 2017: 527) (Fig. 11).

Years of collection: 2003-2008, 2012-2016.

Months of collection: July.

Topographic zone: interior valley, coastal plain.

Elevation range: 5-625 m.

Eurysternus Dalman, 1824

Eurysternus mexicanus Harold, 1869

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Trinidad and Tobago, Colombia, Venezuela, and Guyana (Horgan, 2001; Schoolmeesters, 2022).

Locality records: Morazán: Cerro Perquín (Horgan, 2001: 106) (Fig. 11).

Years of collection: no data.

Months of collection: no data.

Topographic zone: northern mountains.

Elevation range: 1,205 m.

Comments: specimens were captured in pitfall traps baited with cow dung (Horgan, 2001).

Eurysternus magnus Laporte, 1840

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6); Santa Ana: Parque Nacional Cerro Verde (Génier, 2009: 191) (Fig. 11).

Years of collection: 1971, 2013.

Months of collection: May, July-September, and November.

Topographic zone: coastal mountains.

Elevation range: 780-2,020 m.

Comments: captured in pitfall traps baited with cow dung.

Tribe Onthophagini Burmeister, 1846

Digitonthophagus Balthasar, 1959

Digitonthophagus gazella (Fabricius, 1787)

Distribution: USA, Mexico, Guatemala, El Salvador, Colombia, Brazil, Peru, Argentina, Cuba, Jamaica, Dominican Republic, and Guadeloupe; and Afrotropical region, Asia, and Australia (Noriega et al., 2015; Génier & Moretto 2017; Pablo-Cea et al., 2017; Schoolmeesters, 2022).

Locality records: Ahuachapán: Cara Sucia (Pablo-Cea et al., 2017: 527) (Fig. 11).

Years of collection: 2016.

Months of collection: July.

Topographic zone: coastal plain.

Elevation range: 5 m.

Onthophagus Latreille, 1802

Onthophagus (*Onthophagus*) *batesi* Howden & Cartwright, 1963

Distribution: USA, Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, and Martinique (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6); Sonsonate: Sonsonate (Howden & Cartwright, 1963: 23); Chalatenango: San Ignacio (RDCC); La Libertad: La Ceiba (Howden & Cartwright, 1963: 23); Parque El Bicentenario (Pablo-Cea, 2021: 20; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378); Parque Nacional Walter Thilo Deininger (Horgan, 2008: 2968); Santa Tecla (Howden & Cartwright, 1963: 23); San Salvador: Ilopango (Berry & Salazar-Vaquero, 1957: 46); Mejicanos (J. Pablo, personal observation; Parque Saburo Hirao (MUHNES, RDCC); San Salvador (Howden & Cartwright, 1963: 23); (Universidad de El Salvador) (Josué Chávez and Melissa Oviedo, personal communication); Tonacatepeque (Howden & Cartwright, 1963: 23; Fuentes, 2009: 22); Cuscatlán: El Rosario (Berry & Salazar-Vaquero, 1957: 46); La Paz: Comalapa (MUHNES); (La Providencia) (Horgan, 2001: 106, 2002: 30, 2008: 2969); San Miguel: Ciudad Barrios (Cerro Cacahuatique) (Howden & Cartwright, 1963: 23); Laguna Olomega (Howden & Cartwright, 1963: 23); Morazán: Jocoaitique (El Rodeo) (Horgan, 2001: 106); La Unión: La Unión (Howden & Cartwright, 1963: 23; Kohlmann & Solís, 2001: 175; Pulido-Herrera & Zunino, 2007: 96); Volcán de Conchagua (Howden & Cartwright, 1963: 23) (Fig. 11).

Years of collection: 1925, 1958, 1979, 1995-1998, 2013, 2018-2019.

Months of collection: All year, except March.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 30-1,405 m.

Comments: reported as *O. incensus* by Berry and Salazar-Vaquero (1957) (see *O. incensus* for more details). The species was described based on specimens from La Unión (Howden & Cartwright, 1963: 23). Reported as *Onthofagus batisi* [sic] by Fuentes (2009). Specimens were captured in baited pitfall traps in Comalapa (beef carrion, cow and horse dung) (Horgan, 2008), Parque El Bicentenario (squid carrion, human dung, decaying fruit) (Pablo-Cea, 2021), Parque Nacional Walter Thilo Deininger

(beef carrion, cow dung) (Horgan, 2008), Jocoaitique (cow and horse dung) (Horgan, 2001), Parque Nacional El Imposible (chicken carrion, human dung) (Pablo-Cea, 2014), and Tonacatepeque (cow dung) (Fuentes, 2009).

Onthophagus (*Onthophagus*) *belorhinus* (Bates, 1887)

Distribution: Mexico, Guatemala, El Salvador, Costa Rica, Colombia, and Ecuador (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6); La Libertad: Parque El Bicentenario (Pablo-Cea, 2021: 20; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378) (Fig. 11); no specific department: no specific locality (Howden & Young, 1981: 121).

*Years of collec*tion: 2013, 2018-2019.

Months of collection: All year.

Topographic zone: coastal mountains.

Elevation range: 780-870 m.

Comments: specimens were captured in baited pitfall traps in Parque El Bicentenario (squid carrion, human dung, decaying fruit) (Pablo-Cea, 2021) and Parque Nacional El Imposible (human dung, chicken carrion) (Pablo-Cea, 2014).

Onthophagus (*Onthophagus*) *championi* Bates, 1887

Distribution: México, Guatemala, El Salvador, and Costa Rica (Fuentes, 1998; Moctezuma 2021; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 20; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 378); La Libertad: Parque Nacional Walter Thilo Deininger (Fuentes, 1998: 29; Horgan, 2008: 2968) (Fig. 11).

Years of collection: 1979, 1995-1998, 2018.

Months of collection: September and November.

Topographic zone: coastal mountains, coastal plain.

Elevation range: 135-780 m.

Comments: specimens were captured in baited pitfall traps in Parque Nacional Walter Thilo Deininger (beef carrion, cow and horse dung) (Fuentes, 1998; Horgan, 2008) and Parque Nacional El Imposible (human dung) (Pablo-Cea, 2021).

Onthophagus (*Onthophagus*) *crinitus* Harold, 1869

Distribution: Mexico, Belize, El Salvador, Nicaragua, Costa Rica, and Colombia (Pulido-Herrera & Zunino, 2007; Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Pulido-Herrera & Zunino, 2007: 97).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Onthophagus (*Onthophagus*) *cyanellus* Bates, 1887

Distribution: Mexico, Guatemala, El Salvador, Nicaragua, Honduras, Costa Rica, Panama, Colombia, and Ecuador (Pulido-Herrera & Zunino, 2007; Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Pulido-Herrera & Zunino, 2007: 102).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Onthophagus (*Onthophagus*) *hoepfneri* Harold, 1869

Distribution: USA, Mexico, El Salvador, Nicaragua, and Costa Rica (Fuentes, 1998; Schoolmeesters, 2022).

Locality records: La Libertad: Parque Nacional Walter Thilo Deininger (Fuentes, 1998: 29); La Paz: Comalapa (La Providencia) (Horgan, 2001: 106, 2002: 30, 2008: 2969) (Fig. 11).

Years of collection: 1995-1998.

Months of collection: May and August.

Topographic zone: coastal plain.

Elevation range: 40-135 m.

Comments: specimens were captured in baited pitfall traps in Parque Nacional Walter Thilo Deininger (cow and horse dung) (Fuentes, 1998) and Comalapa (beef carrion, cow and horse dung) (Horgan, 2001).

Onthophagus (*Onthophagus*) *incensus* Say, 1835

Distribution: USA, Mexico, Guatemala, El Salvador, Costa Rica, Panama, Venezuela, Ecuador, Uruguay, and Dominican Republic (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo [probably Los Planes] (Howden & Cartwright, 1963: 26); Chalatenango: La Montañona (MUHNES); Morazán: Cerro Perquín (Horgan, 2001: 106) (Fig. 11).

Years of collection: 1996, 1997.

Months of collection: May and August.

Topographic zone: northern mountains.

Elevation range: 1,205-1,890 m.

Comments: Berry and Salazar-Vaquero (1957) reported the species in San Salvador: *Ilopango* and Cuscatlán: *El Rosario*, but they probably misidentified the specimens of an undescribed species later named *O. batesi*. *Onthophagus incensus* is found at elevations above 800 m (Kohlmann & Solís, 2001). Specimens were captured in pitfall traps baited with cow and horse dung in Cerro Perquín (Horgan, 2001).

Onthophagus (*Onthophagus*) *landolti* Harold, 1880

Distribution: Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, and Venezuela (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea

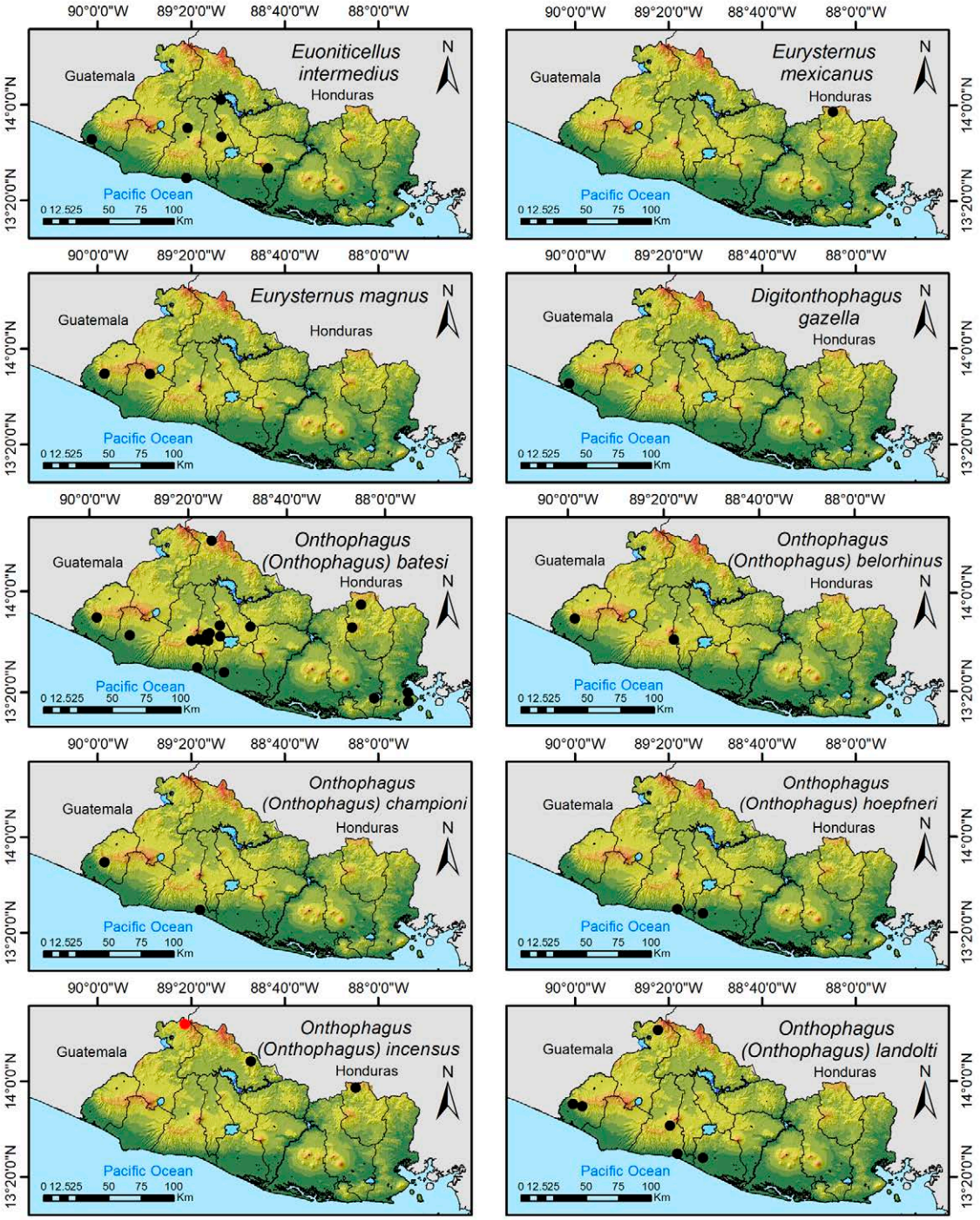

Figure 11. Distribution maps for *Euoniticellus intermedius*, *Eurysternus mexicanus*, *E. magnus*, *Digitonthophagus gazella*, *Onthophagus* (*Onthophagus*) *batesi*, *O.* (*O.*) *belorhinus*, *O.* (*O.*) *championi*, *O.* (*O.*) *hoepfneri*, *O.* (*O.*) *incensus*, and *O.* (*O.*) *landolti* in El Salvador.

et al., 2020: 6) (San Francisco Menéndez) (MUHNES, RDCC); Santa Ana: Parque Nacional Montecristo (San José Ingenio) (MUHNES, RDCC); La Libertad: Los Chorros (RDCC); Parque Nacional Walter Thilo Deininger (Fuentes, 1998: 29; Horgan, 2008: 2968); La Paz: Comalapa (La Providencia) (Fuentes, 1998: 29; Horgan, 2002: 30) (Fig. 11); no specific department: no specific locality (Howden & Young, 1981: 113).

Years of collection: 1979, 1999, 2013.

Months of collection: May-November.

Topographic zone: northern mountains, coastal mountains, coastal plain.

Elevation range: 40-810 m.

Comments: specimens were captured in baited pitfall traps in Parque Nacional Walter Thilo Deininger (beef carrion, cow and horse dung) (Horgan, 2008), Parque Nacional El Imposible (chicken carrion, human dung) (Pablo-Cea, 2014), and Comalapa (cow and horse dung) (Fuentes, 1998; Horgan, 2002).

Onthophagus (*Onthophagus*) *marginicollis* Harold, 1880

Distribution: Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guyana, Peru, and Cuba (Schoolmeesters, 2022).

Locality records: La Libertad: Parque El Bicentenario (Pablo-Cea, 2021: 20; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378); Parque Nacional Walter Thilo Deininger (Horgan, 2008: 2968); La Paz: Comalapa (MUHNES); (La Providencia) (Fuentes, 1998: 29; Horgan, 2001: 106, 2002: 30, 2008: 2969); Morazán: Jocoaitique (El Rodeo) (Fuentes, 1998: 29; Horgan, 2001: 106) (Fig. 12); no specific department: no specific locality (Howden & Young, 1981: 108).

Years of collection: 1995-1998, 2019.

Months of collection: January-May, and August.

Topographic zone: northern mountains, coastal mountains, coastal plain.

Elevation range: 40-870 m.

Comments: specimens were captured in baited pitfall traps in Comalapa (beef carrion, cow and horse dung) (Horgan, 2001, 2008), Jocoaitique (cow and horse dung) (Fuentes, 1998), Parque Nacional Walter Thilo Deininger (cow dung) (Horgan, 2008), and Parque El Bicentenario (human dung) (Pablo-Cea, 2021).

Onthophagus (*Onthophagus*) *salvadorensis* Zunino & Halffter, 1988

Distribution: El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (NE of Metapán) (Bosque Nebuloso) (Zunino & Halffter, 1988: 120; Pulido-Herrera & Zunino, 2007: 115) (Fig. 12).

Years of collection: 1971.

Months of collection: May.

Topographic zone: northern mountains.

Elevation range: 2,360 m.

Comments: the species is precinctive to El Salvador.

Tribe Phanaeini Hope, 1838

Coprophanaeus Olsoufieff, 1924

Coprophanaeus (*Coprophanaeus*) *boucardi* (Nevinson, 1891)

Distribution: El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: La Libertad: Parque El Bicentenario (Pablo-Cea, 2021: 20; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378); Santa Tecla (Edmonds & Zidek, 2010: 68); San Salvador: Lago de Ilopango (Edmonds & Zidek, 2010: 68); San Salvador (Edmonds & Zidek, 2010: 68) (Fig. 12).

Years of collection: 2018-2019.

Months of collection: March-October.

Topographic zone: interior valley, coastal mountains.

Elevation range: 510-900 m.

Comments: specimens were captured in pitfall traps baited with squid carrion (Pablo-Cea, 2021).

Coprophanaeus (*Coprophanaeus*) *corythus* (Harold, 1863)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, and Venezuela (Fuentes, 1998; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6); La Libertad: Parque El Bicentenario (Pablo-Cea, 2021: 20; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378); Parque Nacional Walter Thilo Deininger (Horgan, 2008: 2968); Morazán: Cerro Perquín (Fuentes, 1998: 29; Horgan, 2001: 106); Jocoaitique (El Rodeo) (Horgan, 2001: 106) (Fig. 12).

Years of collection: 1997, 2013, 2018-2019.

Months of collection: April-November.

Topographic zone: northern mountains, coastal mountains, coastal plain.

Elevation range: 135-1,205 m.

Comments: reported as *Coprophanaeus telamon* (Erichson) by Fuentes (1998), as *C. telemon* [sic] by Horgan (2001), and as *C. telamon telamon* by Horgan (2008). Specimens were captured in baited pitfall traps in Parque Nacional Walter Thilo Deininger (cow dung, beef carrion, and fruit) (Horgan, 2008), Parque Nacional El Imposible (carrion chicken, human dung) (Pablo-Cea, 2014), Parque El Bicentenario (squid carrion, human dung) (Pablo-Cea, 2021), and Jocoaitique and Cerro Perquín (cow dung) (Horgan, 2001).

Phanaeus MacLeay, 1819

Phanaeus (*Notiophanaeus*) *pacificus* Moctezuma & Halffter, 2021

Distribution: Mexico, Guatemala, and El Salvador (Moctezuma & Halffter, 2021).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6); La Libertad: Parque El Bicentenario (Pablo-Cea, 2021: 20; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378); Parque Nacional Walter Thilo Deininger (Fuentes, 1998: 29; Horgan, 2008: 2968; Moctezuma & Halffter, 2021: 33); San Andrés (MUHNES); Santa Tecla (Edmonds, 1994: 101); San Salvador: Tonacatepeque (Fuentes, 2009: 22); Cuscatlán: Área Natural Protegida Colima (Cerrón Grande) (J. Pablo, personal observation); Morazán: Cerro Perquín (Fuentes, 1998: 29; Horgan, 2001: 106); Jocoaitique (El Rodeo) (Horgan, 2001: 106) (Fig. 12).

Years of collection: 1976, 1995-1998, 2012-2013, 2018.

Months of collection: May-November.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 135-1,205 m.

Comments: reported as *Phanaeus endymiun* [sic] in Fuentes (2009) and as *P. endymion* Harold by Edmonds (1994), Horgan (2001, 2008), Pablo-Cea (2014), and Pablo-Cea et al. (2021). The specimens in MUHNES are labeled as *P. endymion*. Specimens were captured in baited pitfall traps in Parque Nacional Walter Thilo Deininger (beef carrion, cow dung, fruit) (Horgan, 2008), Parque Nacional El Imposible (carrion chicken, human dung) (Pablo-Cea, 2021), Comalapa, Jocoaitique, and Cerro Perquín (cow and horse dung) (Horgan, 2001), and Tonacatepeque and Colima (cow dung) (Fuentes, 2009; J. Pablo, personal observation).

Phanaeus (*Phanaeus*) *excelsus* Bates, 1889

Distribution: Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: Santa Ana: San Diego (Edmonds, 1994: 100); La Libertad: Quezaltepeque (Edmonds, 1994: 100); San Salvador: Tonacatepeque (Fuentes, 2009: 22); Cuscatlán: Área Natural Protegida Colima (Cerrón Grande) (J. Pablo, personal observation); La Paz: Comalapa (Aeropuerto) (MUHNES); (La Providencia) (Fuentes, 1998: 29; Horgan, 2001: 106, 2002: 30, 2008: 2969); Usulután: Usulután (Edmonds, 1994: 100); La Unión: Playa El Icacal (Edmonds, 1994: 100); Volcán de Conchagua (Edmonds, 1994: 100) (Fig. 12).

Years of collection: 1995-1998.

Months of collection: May and August.

Topographic zone: interior valley, coastal mountains, coastal plain.

Elevation range: 15-1,190 m.

Comments: reported as *Phanaeus demon* Laporte in all references, but this species only occurs in Mexico and Guatemala (Edmonds & Zidek 2012; V. Moctezuma, personal communication). Specimens were captured in baited pitfall traps in Comalapa (beef carrion, cow and horse dung) (Horgan, 2001, 2008) and Tonacatepeque, Colima (cow dung) (Fuentes, 2009; J. Pablo, personal observation).

Phanaeus (*Phanaeus*) *eximius* Bates, 1887

Distribution: Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6); La Libertad: Parque Nacional Walter Thilo Deininger (Fuentes, 1998: 29; Horgan, 2008: 2968); Morazán: Cerro Perquín (Horgan, 2001: 106); Jocoaitique (El Rodeo) (Fuentes, 1998: 29; Horgan, 2001: 106); no specific department: no specific locality (Berry, 1959b: 61) (Fig. 12).

Years of collection: 1995-1998, 2013.

Months of collection: May, June, and August.

Topographic zone: northern mountains, coastal mountains, coastal plain.

Elevation range: 135-1,205 m.

Comments: specimens were captured in baited pitfall traps in Parque Nacional Walter Thilo Deininger (beef carrion, cow dung, fruit) (Horgan, 2008), Cerro Perquín (cow and horse dung) (Horgan, 2001), Parque Nacional El Imposible (human dung) (Pablo-Cea, 2014), and Colima and Jocoaitique (cow dung) (Horgan, 2001; Fuentes, 2009; J. Pablo, personal observation).

Phanaeus (Phanaeus) *wagneri* Harold, 1863

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46; Pablo-Cea et al., 2020: 6); Chalatenango: La Palma (Edmonds, 1994: 105); La Libertad: Parque Nacional Walter Thilo Deininger (Fuentes, 1998: 29; Horgan, 2008: 2968); Quezaltepeque (Edmonds, 1994: 105); San Salvador: San Salvador (Edmonds, 1994: 105) (Fig. 12).

Years of collection: 1976-1979, 1995-1997, 2013.

Months of collection: May, June, August, and October.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 135-1,005 m.

Comments: specimens were captured in baited pitfall traps in Parque Nacional Walter Thilo Deininger (cow

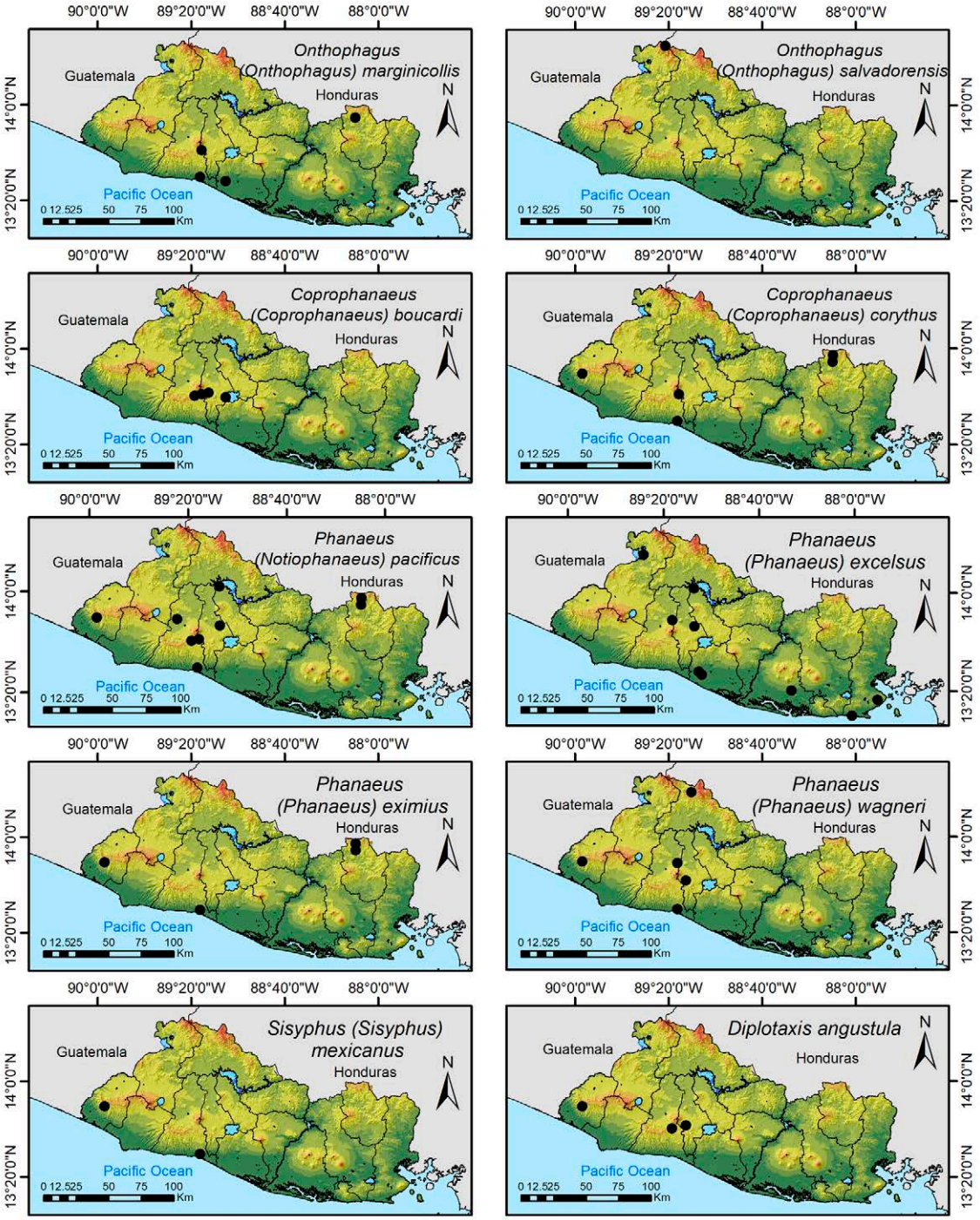

Figure 12. Distribution maps for *Onthophagus* (*Onthophagus*) *marginicollis*, *O.* (*O.*) *salvadorensis*, *Coprophanaeus* (*Coprophanaeus*) *boucardi*, *C.* (*C.*) *corythus*, *Phanaeus* (*Notiophanaeus*) *pacificus*, *P.* (*Phanaeus*) *excelsus*, *P.* (*P.*) *eximius*, *P.* (*P.*) *wagneri*, *Sisyphus* (*Sisyphus*) *mexicanus*, and *Diplotaxis angustula* in El Salvador.

dung) (Fuentes, 1998) and Parque Nacional El Imposible (human dung) (Pablo-Cea, 2014).

Tribe Sisyphini Mulsant, 1842
Sisyphus Latreille, 1807
Sisyphus (*Sisyphus*) *mexicanus* Harold, 1863

Distribution: Mexico and El Salvador (Hogan 2008; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2014: 46, 2021: 20; Pablo-Cea et al., 2020: 6); La Libertad: Parque Nacional Walter Thilo Deininger (Horgan, 2008: 2968) (Fig. 12).

Years of collection: 2013, 2019.

Months of collection: May, August, and November.

Topographic zone: coastal mountains, coastal plain.

Elevation range: 135-780 m.

Comments: this species is rare in El Salvador. Only 3 specimens have been collected in the country, all in baited pitfall traps, 1 in Parque Nacional Walter Thilo Deininger (cow dung) (Horgan, 2008) and 2 in Parque Nacional El Imposible (human dung) (Pablo-Cea, 2014, 2021).

Subfamily Melolonthinae Leach, 1819
Tribe Diplotaxini Kirby, 1837
Diplotaxis Kirby, 1837
Diplotaxis angustula Moser, 1918

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 21); La Libertad: Santa Tecla (Vaurie, 1960: 415); San Salvador: San Salvador (Vaurie, 1960: 415) (Fig. 12).

Years of collection: 2018-2019.

Months of collection: January, April-July, and September.

Topographic zone: interior valley, coastal mountains.

Elevation range: 685-900 m.

Comments: collected with UV light traps in Parque Nacional El Imposible.

Diplotaxis brevipilosa Moser, 1918

Distribution: Guatemala (Schoolmeesters, 2022) and El Salvador.

Locality records: Cabañas: Cinquera (RDCC) (Fig. 13).

Years of collection: 2001.

Months of collection: June.

Topographic zone: interior valley.

Elevation range: 385 m.

Comments: new country record.

Diplotaxis cavifrons Moser, 1918

Distribution: Mexico, Guatemala (Schoolmeesters, 2022), and El Salvador.

Locality records: Santa Ana: Parque Nacional Montecristo (Los Planes) (RDCC) (Fig. 13).

Years of collection: 1999.

Months of collection: June.

Topographic zone: northern mountains.

Elevation range: 1,890 m.

Comments: new country record.

Diplotaxis crinigera Bates, 1888

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Vaurie, 1960: 176); La Unión: Volcán de Conchagua (Vaurie, 1960: 176) (Fig. 13).

Years of collection: no data.

Months of collection: no data.

Topographic zone: interior valley, coastal mountains.

Elevation range: 685-1,190 m.

Diplotaxis denigrata Bates, 1889

Distribution: Mexico, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: La Unión: Volcán de Conchagua (Vaurie, 1960: 419) (Fig. 13).

Months of collection: no data.

Topographic zone: coastal mountains.

Elevation range: 1,190 m.

Diplotaxis macrotarsus Vaurie, 1960

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Vaurie, 1960: 422); La Unión: Volcán de Conchagua (Vaurie, 1960: 422) (Fig. 13).

Years of collection: 1957, 1958.

Months of collection: May and June.

Topographic zone: interior valley, coastal mountains.

Elevation range: 685-1,190 m.

Comments: some specimens were found in debris outside a leafcutter ant nest (Vaurie, 1960).

Diplotaxis mistura Vaurie, 1960

Distribution: Mexico, El Salvador, and Honduras (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 21; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 378); Santa Ana: Metapán (Vaurie, 1960: 401); Parque Nacional Montecristo (La Torre, Majaditas) (Serrano-Chicas, 2019: 39, 40); San Salvador: San Salvador (Vaurie, 1960: 401); Cabañas: Cinquera (RDCC); La Unión: Volcán de Conchagua (Vaurie, 1960: 423) (Fig. 13).

Years of collection: 1957-1958, 2000, 2018-2019.

Months of collection: January, April-July, and September.

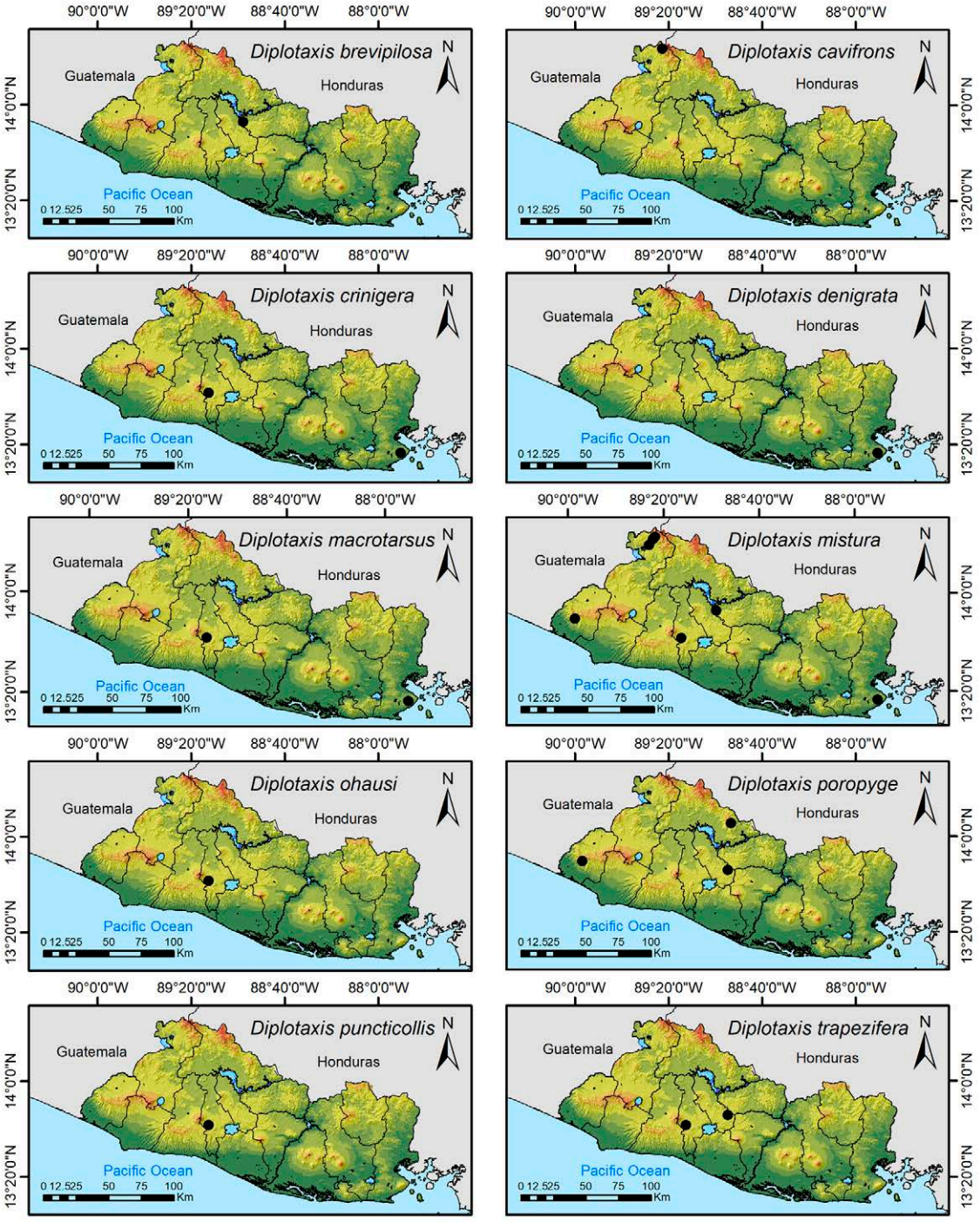

Figure 13. Distribution maps for *Diplotaxis brevipilosa*, *D. cavifrons*, *D. crinigera*, *D. denigrata*, *D. macrotarsus*, *D. mistura*, *D. ohausi*, *D. poropyge*, *D. puncticollis*, and *D. trapezifera* in El Salvador.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 385-1,450 m.

Comments: collected with UV light traps in Parque Nacional El Imposible (Pablo-Cea, 2021). The species was described from specimens collected at lights in San Salvador (Vaurie, 1960).

Diplotaxis ohausi Moser, 1921

Distribution: Mexico, Guatemala, El Salvador, and Honduras (Vaurie, 1960; Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Vaurie, 1960: 177) (Fig. 13).

Years of collection: 1957-1958.

Months of collection: May.

Topographic zone: interior valley.

Elevation range: 685 m.

Diplotaxis pacata LeConte, 1856

Distribution: USA, Mexico, and El Salvador (Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Vaurie, 1960: 176).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Diplotaxis poropyge Bates, 1887

Distribution: Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (EAPZ, RDCC); Chalatenango: Las Ceibas [probably Las Vueltas] (Vaurie, 1958: 392); Cuscatlán: El Rosario (Vaurie, 1958: 392) (Fig. 13).

Years of collection: 1955, 1999-2000.

Months of collection: May.

Topographic zone: interior valley, coastal mountains.

Elevation range: 710-780 m.

Comments: Vaurie (1958) examined 1 female collected at Servicios Técnicos Cafetalera, a locality unknown to us.

Diplotaxis puncticollis Moser, 1918

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Vaurie, 1960: 177) (Fig. 13).

Years of collection: 1957-1958.

Months of collection: May.

Topographic zone: interior valley.

Elevation range: 685 m.

Diplotaxis trapezifera Bates, 1887

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, and Costa Rica (Vaurie, 1960; Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Vaurie, 1960: 427); Cuscatlán: El Rosario (Vaurie, 1960: 427) (Fig. 13).

Years of collection: no data.

Months of collection: no data.

Topographic zone: interior valley.

Elevation range: 685-720 m.

Diplotaxis yucateca Vaurie, 1960

Distribution: Mexico, El Salvador, Honduras, and Costa Rica (Vaurie, 1960; Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Vaurie, 1960: 428); La Unión: Volcán de Conchagua (Vaurie, 1960: 428) (Fig. 14).

Years of collection: 1958.

Months of collection: no data.

Topographic zone: interior valley, coastal mountains.

Elevation range: 685-1,190 m.

Tribe Hopliini Latreille, 1829

Hoplia Illiger, 1803

Hoplia (*Hoplia*) *guatemalensis* Bates, 1887

Distribution: Mexico, Guatemala, and El Salvador (Berry, 1959b; Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Berry, 1959b: 40).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Tribe Macrodactylini Kirby, 1837

Isonychus Mannerheim, 1828

Isonychus ocellatus Burmeister, 1855

Distribution: Mexico, Guatemala, El Salvador, and Costa Rica (Serrano-Chicas, 2019; Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (La Torre, Majaditas) (Serrano-Chicas, 2019: 39, 40) (Fig. 14).

Years of collection: 2019.

Months of collection: April.

Topographic zone: northern mountains.

Elevation range: 1,070-1,450 m.

Isonychus pictus Sharp, 1877

Distribution: Nicaragua, Costa Rica, Panama (Schoolmeesters, 2022), and El Salvador.

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (RDCC) (Fig. 14).

Years of collection: 2000.

Months of collection: May.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Comments: new country record.

Macrodactylus Dejean, 1821
Macrodactylus costulatus Bates, 1887

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Chalatenango: La Palma (Arce-Pérez, 2008: 55; Arce-Pérez & Morón, 2020: 572) (Fig. 14).

Years of collection: 1955.

Months of collection: June.

Topographic zone: northern mountains.

Elevation range: 1,005 m.

Macrodactylus hondurensis Arce-Pérez & Morón, 2005

Distribution: El Salvador and Honduras (Arce-Pérez & Morón, 2020; Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Arce-Pérez & Morón, 2020: 575); Chalatenango: Cerro El Pital (EAPZ) (Fig. 14).

Years of collection: 1971, 1994.

Months of collection: May and July.

Topographic zone: northern mountains.

Elevation range: 2,360-2,660 m.

Macrodactylus lineatus Chevrolat, 1834

Distribution: Mexico and El Salvador (Berry, 1959b; Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Berry, 1959b: 47).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Macrodactylus montanus Arce-Pérez & Morón 2000

Distribution: Mexico, El Salvador, Honduras, and Nicaragua (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Cerro Verde (Arce-Pérez, 2008: 94); Parque Nacional Montecristo (Los Planes) (Serrano-Chicas, 2019: 39, 40) (Fig. 14).

Years of collection: 1971, 2019.

Months of collection: May.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 1,890-2,020 m.

Macrodactylus sericeicollis Bates, 1887

Distribution: Mexico, Guatemala, El Salvador, Honduras, and Nicaragua (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Cerro Verde (Arce-Pérez, 2008: 115) (Fig. 14).

Years of collection: 1963.

Months of collection: June.

Topographic zone: coastal mountains.

Elevation range: 2,020 m.

Macrodactylus zunilensis Bates, 1887

Distribution: Mexico, Guatemala, and El Salvador (Arce-Pérez & Morón, 2020; Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Arce-Pérez, 2008: 153).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Tribe Rhizotrogini Burmeister, 1855
Chlaenobia Blanchard, 1850
Chlaenobia aequata Bates, 1887

Distribution: USA, Mexico, Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Evans & Smith, 2009; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (EAPZ, RDCC); San Salvador: San Salvador (Morón, 2006: 37) (Fig. 14); no specific department: no specific locality (Morón, 1994: 71).

Years of collection: 1958, 1999-2000.

Months of collection: May.

Topographic zone: interior valley, coastal mountains.

Elevation range: 685-780 m.

Comments: reported as *Phyllophaga* (*Chlaenobia*) *aequata* by Morón (2006).

Chlaenobia chiapensis Chapin, 1935

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Morón, 2006: 37) (Fig. 14).

Years of collection: no data.

Months of collection: no data.

Topographic zone: interior valley.

Elevation range: 685 m.

Comments: reported as *Phyllophaga* (*Chlaenobia*) *chiapensis* by Morón (2006).

Chlaenobia instabilis (Blackwelder, 1944)

Distribution: Mexico, Guatemala, and El Salvador (Rivera-Gasperín & Morón, 2017).

Locality records: no specific department: no specific locality (Rivera-Gasperín & Morón, 2017: 606).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Chlaenobia latipes Bates, 1888

Distribution: Mexico, Guatemala, and El Salvador (Evans, 2003; Schoolmeesters, 2022).

Locality records: Ahuachapán: Turín (Mendoza, 1994: 16); Sonsonate: Izalco (Mendoza, 1994: 16); Chalatenango:

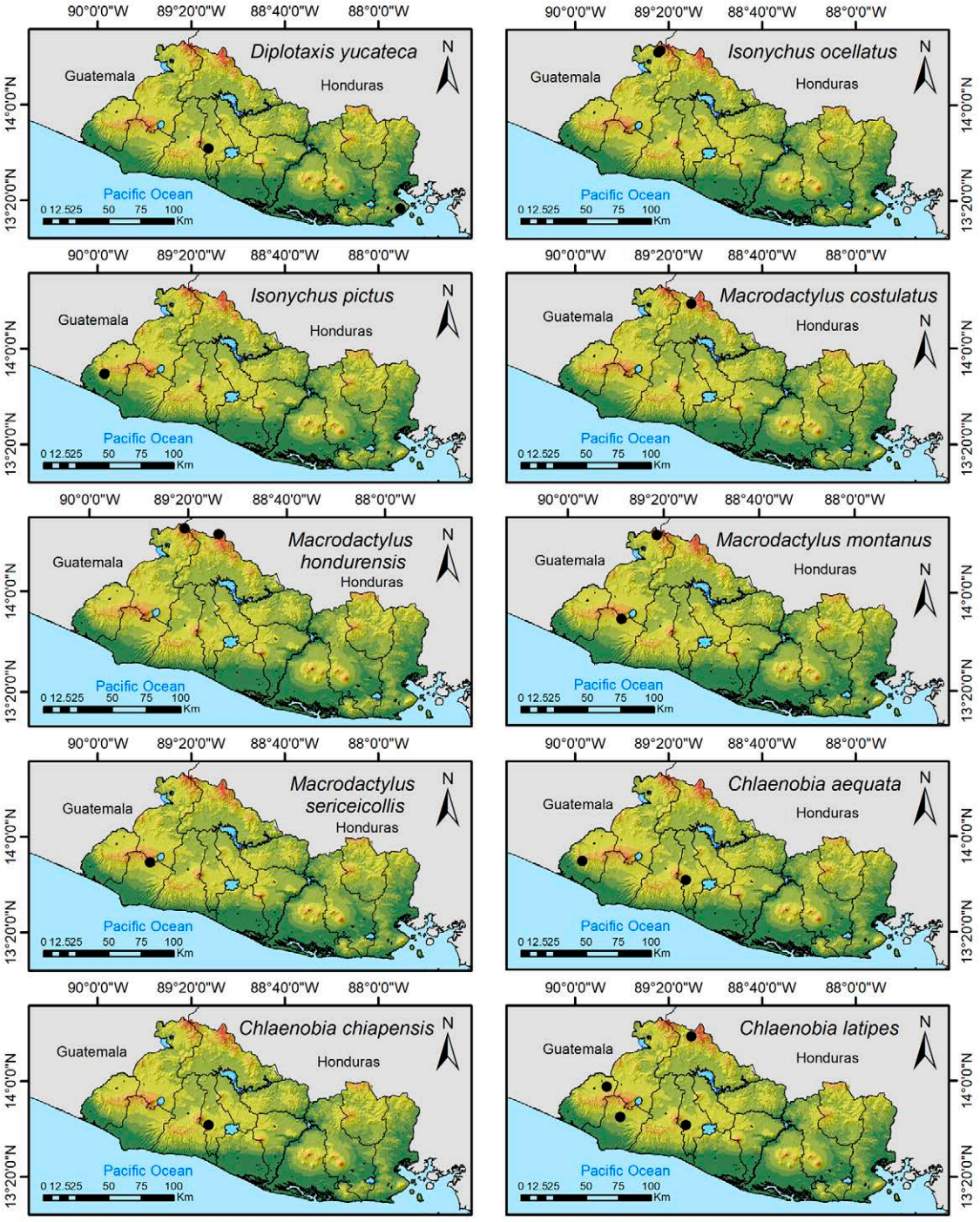

Figure 14. Distribution maps for *Diplotaxis yucateca*, *Isonychus ocellatus*, *I. pictus*, *Macrodactylus costulatus*, *M. hondurensis*, *M. montanus*, *M. sericeicollis*, *Chlaenobia aequata*, *C. chiapensis*, and *C. latipes* in El Salvador.

La Palma (Morón, 2006: 30); San Salvador: San Salvador (Morón, 2006: 37) (Fig. 14); no specific department: no specific locality (Andrews et al., 1979: 7).

Years of collection: no data.

Months of collection: June and July.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 470-1,005 m.

Comments: reported as *Phyllophaga* (*Chlaenobia*) *latipes* by Morón (2006). The species is considered a part of the "gallina ciega" complex in cultivated corn in El Salvador, and it is associated with cultivated pineapple (Mendoza, 1994).

Chlaenobia scabripyga Bates, 1888

Distribution: Mexico, Guatemala, El Salvador, and Costa Rica (Rivera-Gasperín & Morón, 2017).

Locality records: no specific department: no specific locality (Evans & Smith, 2009: 128).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Comments: reported as *Phyllophaga* (*Chlaenobia*) *scabripyga* by Evans & Smith (2009).

Chlaenobia solanophaga (Morón, 1988)

Distribution: El Salvador (Morón 1988).

Locality records: Santa Ana: Parque Nacional Montecristo (Majaditas, San José Ingenio) (Serrano-Chicas, 2019: 39, 40); Chalatenango: Las Pilas (Morón, 1988: 60) (Fig. 15).

Years of collection: 1978-1979, 1984, 1999, 2019.

Months of collection: February, March, April, May (adults), and July (immatures).

Topographic zone: northern mountains.

Elevation range: 810-1,700 m.

Comments: described as *Phyllophaga solanophaga* by Morón (1988). Reported as *Phyllophaga zunilensis* (Bates) by King (1994), but Morón (1988) pointed out this species does not occur in El Salvador. The larvae are pests in cultivated potato (Morón, 1988; King, 1994). *Chlaenobia solanophaga* is precinctive to El Salvador.

Chlaenobia tumulosa Bates, 1888

Distribution: Mexico, Belize, Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Saunders et al., 1998; Evans & Smith, 2009; Rivera-Gasperín & Morón, 2017).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 21; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 378); Santa Ana: Parque Nacional Montecristo (Los Planes) (RDCC); (Majaditas, San José Ingenio) (Serrano-Chicas, 2019: 40, 41); La Libertad: Parque El Bicentenario (Pablo-Cea, 2021: 21; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378); no specific department: no specific locality (Morón, 1994: 73) (Fig. 15).

Years of collection: 1999-2000, 2019.

Months of collection: March-July.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 780-1,890 m.

Comments: reported as *Phyllophaga* (*Chlaenobia*) *tumulosa* by King (1994), Morón (1994), Evans & Smith (2009), and Serrano-Chicas (2019).

Chlaenobia vexata (Horn, 1885)

Distribution: USA, Mexico, Guatemala (Rivera-Gasperín & Morón, 2017), and El Salvador.

Locality records: Santa Ana: Parque Nacional Montecristo (Los Planes) (RDCC) (Fig. 15).

Years of collection: 1999.

Months of collection: May.

Topographic zone: northern mountains.

Elevation range: 1,890 m.

Comments: new country record.

Phyllophaga Harris, 1826

Phyllophaga (*Phyllophaga*) *baneta* Saylor, 1943

Distribution: Guatemala, Honduras, Nicaragua (Schoolmeesters, 2022), and El Salvador.

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (RDCC) (Fig. 15).

Years of collection: 1999.

Months of collection: May.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Comments: new country record.

Phyllophaga (*Phyllophaga*) *caraga* Saylor, 1943

Distribution: El Salvador, Nicaragua, Costa Rica, and Panama (Serrano-Chicas, 2019; Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Majaditas) (Serrano-Chicas, 2019: 39, 40) (Fig. 15).

Years of collection: 2019.

Months of collection: March.

Topographic zone: northern mountains.

Elevation range: 1,070 m.

Phyllophaga (*Phyllophaga*) *colimana* (Moser, 1921)

Distribution: Mexico (Schoolmeesters, 2022) and El Salvador.

Locality records: La Libertad: Volcán de San Salvador (El Boquerón) (EAPZ) (Fig. 15).

Years of collection: 1971.

Months of collection: May.

Topographic zone: coastal mountains.

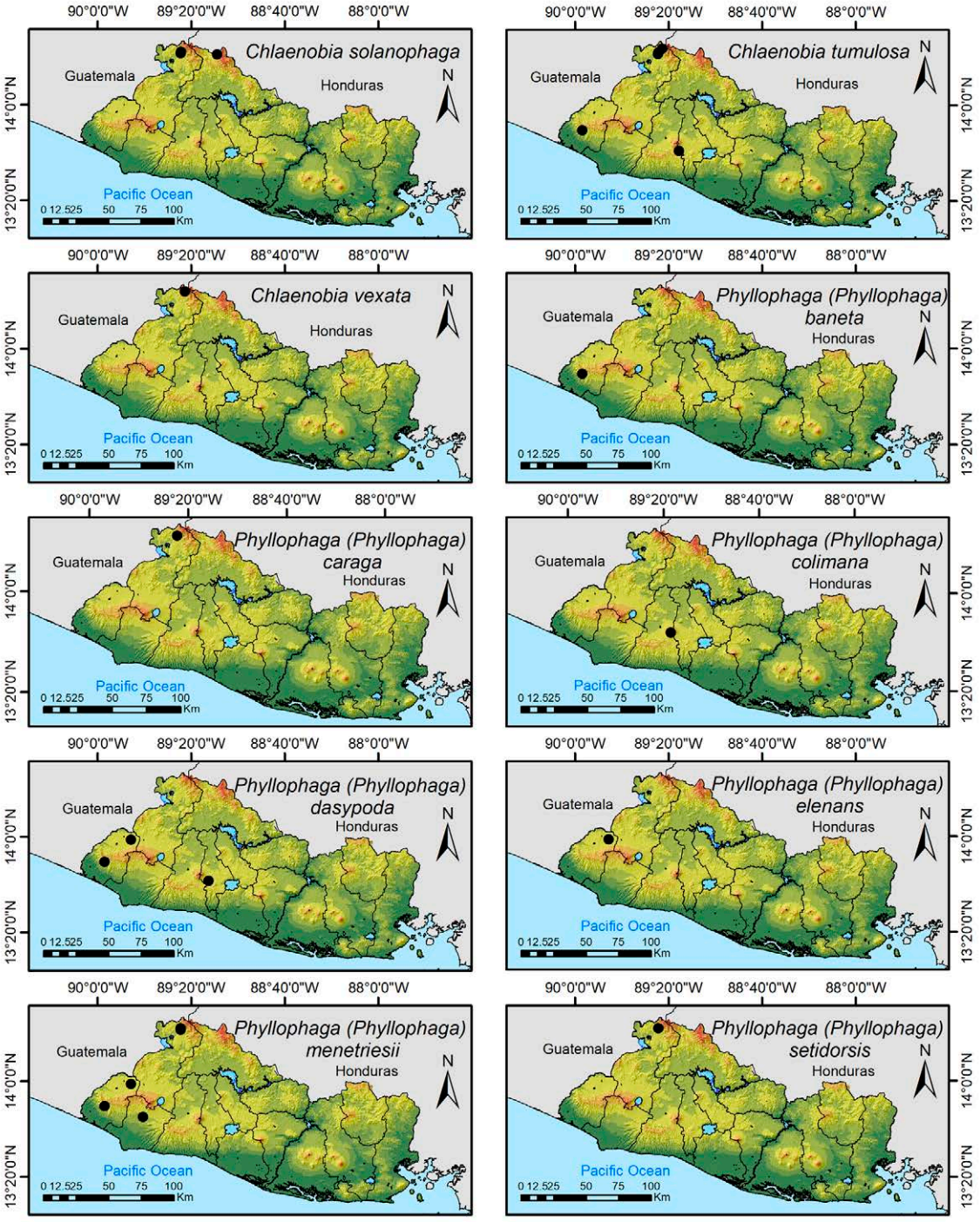

Figure 15. Distribution maps for *Chlaenobia solanophaga*, *C. tumulosa*, *C. vexata*, *Phyllophaga* (*Phyllophaga*) *baneta*, *P.* (*P.*) *caraga*, *P.* (*P.*) *colimana*, *P.* (*P.*) *dasypoda*, *P.* (*P.*) *elenans*, *P.* (*P.*) *menetriesii*, and *P.* (*P.*) *setidorsis* in El Salvador.

Elevation range: 1,845 m.

Comments: new country record.

Phyllophaga (*Phyllophaga*) *dasypoda* (Bates, 1888)

Distribution: Mexico, Guatemala, El Salvador, and Costa Rica (Schoolmeesters, 2022).

Locality records: Ahuachapán: Atiquizaya (Mendoza, 1994: 16); Parque Nacional El Imposible (San Benito) (RDCC); San Salvador: San Salvador (EAPZ) (Fig. 15).

Years of collection: 1978, 1999-2000.

Months of collection: February, and May-July.

Topographic zone: interior valley, coastal mountains.

Elevation range: 590-780 m.

Comments: the species is considered a part of the "gallina ciega" complex in cultivated corn in El Salvador (Mendoza, 1994).

Phyllophaga (*Phyllophaga*) *elenans* Saylor, 1938

Distribution: Belize, Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: Ahuachapán: Atiquizaya (Mendoza, 1994: 16) (Fig. 15).

Years of collection: no data.

Months of collection: no data.

Topographic zone: interior valley.

Elevation range: 590 m.

Comments: the species is considered a part of the "gallina ciega" complex in cultivated corn (Mendoza, 1994).

Phyllophaga (*Phyllophaga*) *fulviventris* (Moser, 1918)

Distribution: Mexico and El Salvador (King, 1994; Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (King, 1994: 37; Morón, 1994: 71).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Phyllophaga (*Phyllophaga*) *menetriesii* (Blanchard, 1851)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, and Venezuela (Schoolmeesters, 2022).

Locality records: Ahuachapán: Atiquizaya (Mendoza, 1994: 16); Parque Nacional El Imposible (San Benito) (EAPZ, RDCC); Santa Ana: Parque Nacional Montecristo (Majaditas, San José Ingenio) (Serrano-Chicas, 2019: 39, 40); Sonsonate: Izalco (Mendoza, 1994: 16); no specific department: no specific locality (Berry, 1959b: 62) (Fig. 15).

Years of collection: 1999, 2019.

Months of collection: March-May.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 470-1,070 m.

Comments: the species is considered a part of the "gallina ciega" complex in cultivated corn in El Salvador, and it is associated with cultivated pineapple (Mendoza, 1994).

Phyllophaga (*Phyllophaga*) *parvisetis* (Bates, 1888)

Distribution: Mexico, Belize, Guatemala, El Salvador, Honduras, and Nicaragua (Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Morón, 1994: 72; Saunders et al., 1998: 136).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Phyllophaga (*Phyllophaga*) *setidorsis* (Bates, 1888)

Distribution: Mexico, El Salvador, and Costa Rica (Evans, 2003; Serrano-Chicas, 2019).

Locality records: Santa Ana: Parque Nacional Montecristo (Majaditas) (Serrano-Chicas, 2019: 39, 40) (Fig. 15).

Years of collection: 2019.

Months of collection: March.

Topographic zone: northern mountains.

Elevation range: 1,070 m.

Phyllophaga (*Phyllophaga*) *valeriana* Saylor, 1934

Distribution: Guatemala, El Salvador, Nicaragua, and Costa Rica (Morón, 1994; Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Majaditas) (Serrano-Chicas, 2019: 39-40) (Fig. 16); no specific department: no specific locality (Morón, 1994: 72).

Years of collection: 2019.

Months of collection: March and April.

Topographic zone: northern mountains.

Elevation range: 1,070 m.

Comments: reported as *Phyllophaga sanjosicola* by Saunders et al. (1998), Evans (2003), and Serrano-Chicas (2019).

Phyllophaga (*Phyllophaga*) *vicina* (Moser, 1918)

Distribution: Guatemala, El Salvador, Nicaragua, Costa Rica, and Panama (Mendoza, 1994; Schoolmeesters, 2022)

Locality records: Ahuachapán: Atiquizaya (Izcaquillo) (Mendoza, 1994: 16); Turín (Mendoza, 1994: 16); San Salvador: San Salvador (Morón, 2006: 37) (Fig. 16).

Years of collection: 1958, 2019.

Months of collection: April-July.

Topographic zone: interior valley.

Elevation range: 630-700 m.

Phyllophaga (*Phyllophaga*) *yucateca* (Bates, 1889)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, and Costa Rica (Morón, 1994; Evans, 2003)

Locality records: no specific department: no specific locality (Morón, 1994: 73).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Phyllophaga (*Phytalus*) *cometes* (Bates, 1887)

Distribution: Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, and Panama (Serrano-Chicas, 2019; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (RDCC); Santa Ana: Parque Nacional Montecristo (Majaditas, San José Ingenio) (Serrano-Chicas, 2019: 39, 40) (Fig. 16).

Years of collection: 1999, 2019.

Months of collection: March-May.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 780-1,070 m.

Phyllophaga (*Phytalus*) *guatemala* Saylor, 1940

Distribution: Mexico, Guatemala, El Salvador, and Honduras (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Morón, 2006: 37) (Fig. 16).

Years of collection: 1971.

Months of collection: May.

Topographic zone: northern mountains.

Elevation range: 2,360 m.

Phyllophaga (*Phytalus) obsoleta* Blanchard, 1851

Distribution: USA, Mexico, Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, and Venezuela (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 21; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 378); Santa Ana: Metapán (Morón, 2006: 30); Parque Nacional Montecristo (Bosque Nebuloso) (Morón, 2006: 30, 37); (La Torre, Los Planes, Majaditas) (Serrano-Chicas, 2019: 39, 40); Chalatenango: La Palma (Morón, 2006: 30, 37); La Libertad: Parque El Bicentenario (Pablo-Cea, 2021: 21; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378); Santa Tecla (Morón, 2006: 30); Volcán de San Salvador (El Boquerón) (Morón, 2006: 30); San Salvador: San Salvador (Morón, 2006: 29-30, 37); no specific department: no specific locality (Morón, 1994: 72) (Fig. 16).

Years of collection: 1958-1959, 1971, 1999-2000, 2018-2019.

Months of collection: March-May.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 530-2,360 m.

Phyllophaga (*Phytalus*) *pruinosa* (Blanchard, 1851)

Distribution: México, El Salvador, Nicaragua, and Costa Rica (Morón, 2018; Schoolmeesters, 2022; Pablo-Cea, 2021).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 21; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 378) (Fig. 16).

Years of collection: 2018-2019.

Months of collection: April-September.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Phyllophaga (*Phytalus*) *punctuliceps* (Bates, 1888)

Distribution: Mexico, Guatemala, (Schoolmeesters, 2022), and El Salvador.

Locality records: Santa Ana: Parque Nacional Montecristo (Los Planes) (RDCC) (Fig. 16).

Years of collection: 1999.

Months of collection: May.

Topographic zone: northern mountains.

Elevation range: 1,890 m.

Comments: new country record.

Subfamily Rutelinae MacLeay, 1819

Tribe Anomalini Streubel, 1839

Callistethus Blanchard, 1851

Callistethus granulipygus (Bates, 1887)

Distribution: Guatemala, El Salvador, Nicaragua, Costa Rica, and Panama (Berry, 1959b; Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Los Planes) (RDCC) (Fig. 16); no specific department: no specific locality (Berry, 1959b: 6).

Years of collection: 1999.

Months of collection: May.

Topographic zone: northern mountains.

Elevation range: 1,890 m.

Comments: the species was reported as *Anomala granulipyga* by Berry (1959b).

Callistethus multiplicatus Filippini, Galante, & Micó, 2015

Distribution: El Salvador and Costa Rica (Schoolmeesters, 2022; Pablo-Cea, 2021).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 21; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 378) (Fig. 16).

Years of collection: 2018-2019.

Months of collection: May-December.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Epectinaspis Blanchard, 1850

Epectinaspis moreletiana (Blanchard, 1850)

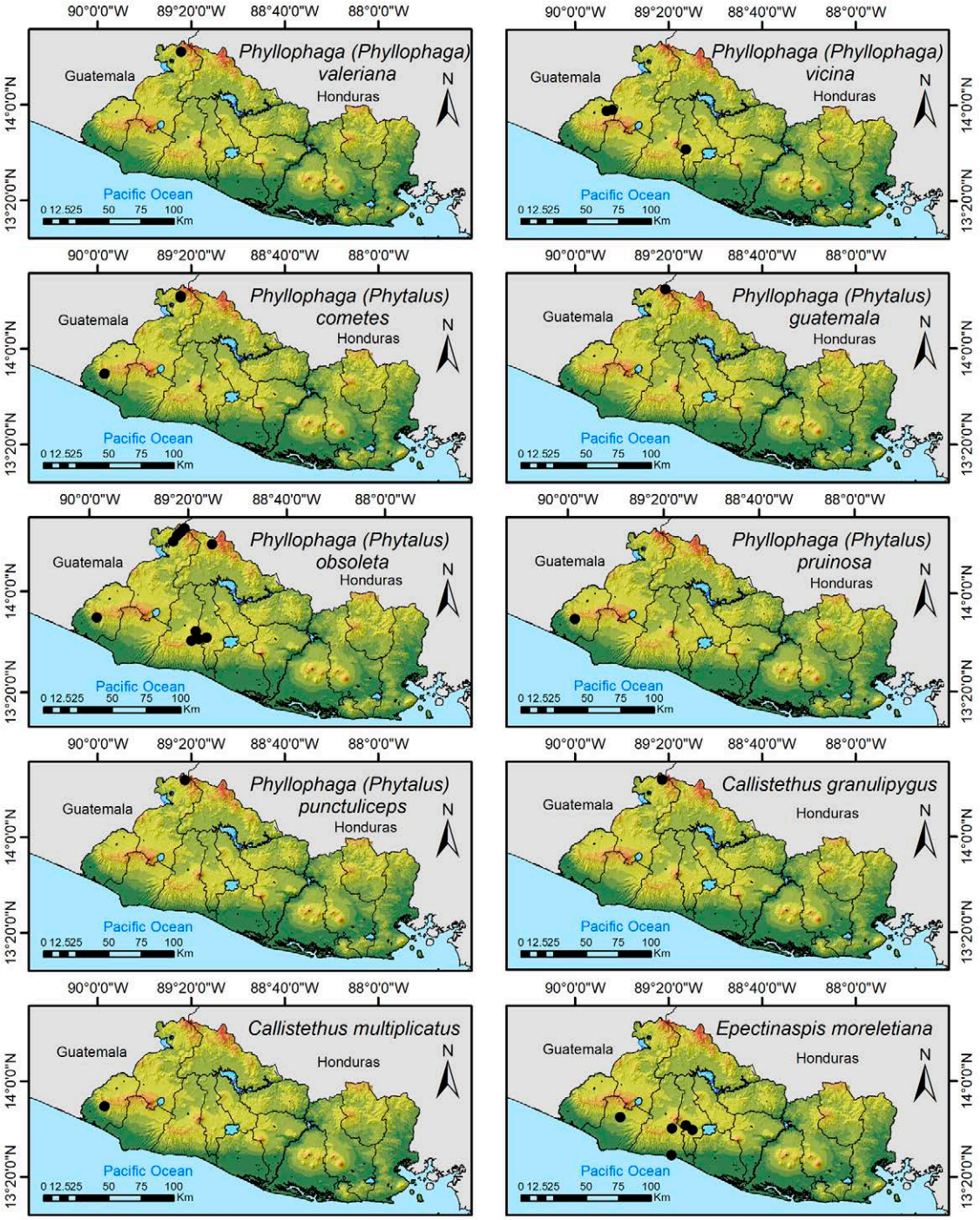

Figure 16. Distribution maps for *Phyllophaga (Phyllophaga) valeriana*, *P. (P.) vicina*, *P. (Phytalus) cometes*, *P.* (*P.*) *guatemala*, *P.* (*P.) obsoleta*, *P.* (*P.*) *pruinosa*, *P.* (*P.*) *punctuliceps*, *Callistethus granulipygus*, *C. multiplicatus*, and *Epectinaspis moreletiana* in El Salvador.

Distribution: Mexico, Guatemala, El Salvador, Nicaragua, Panama, and Colombia (Schoolmeesters, 2022).

Locality records: Sonsonate: Izalco (Los Guates Farm) (Paucar-Cabrera, 2003: 42); La Libertad: La Libertad (Paucar-Cabrera, 2003: 42); Santa Tecla (Berry & Salazar-Vaquero, 1957: 44; Paucar-Cabrera, 2003: 42); San Salvador: Cerro San Jacinto (Paucar-Cabrera, 2003: 42); San Salvador (Paucar-Cabrera, 2003: 42) (Fig. 16).

Years of collection: 1951, 1974.

Months of collection: June and November.

Topographic zone: interior valley, coastal mountains, coastal plain.

Elevation range: 70-980 m.

Comments: reported as *Epectinaspis quadripennis* Casey by Berry and Salazar-Vaquero (1957).

Moroniella Ramírez-Ponce, 2015

Moroniella nitidula nitidula (Blanchard, 1850)

Distribution: Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: Santa Ana: Hacienda Las Brumas (Franz, 1955: 206); Parque Nacional Cerro Verde (Franz, 1955: 206); Parque Nacional Montecristo (Los Planes) (Franz, 1955: 206; Serrano-Chicas, 2019: 42); Volcán de Santa Ana (Franz, 1955: 206); Chalatenango: Cerro El Pital (EAPZ); Near Lempa Bridge (Road to La Palma) (Franz, 1955: 206) (Fig. 17).

Years of collection: 1951-1952, 1979, 1994, 2018.

Months of collection: August, October, and November.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 245-2,660 m.

Comments: reported as *Anomala nitidula* by Franz (1955).

Strigoderma Burmeister, 1844

Strigoderma castor (Newman, 1838)

Distribution: Mexico, Guatemala, El Salvador, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (RDCC); La Libertad: Santa Tecla (Berry & Salazar-Vaquero, 1957: 47) (Fig. 17).

Years of collection: 1979.

Months of collection: June.

Topographic zone: coastal mountains.

Elevation range: 780-900 m.

Comments: map 3 in Bader (1992, p. 328) shows 1 point that does not correlate with either of the 2 Salvadoran locality records known for the species.

Strigoderma mexicana Blanchard, 1850

Distribution: Mexico, Guatemala, Belize, El Salvador, and Honduras (Berry, 1959b; Schoolmeesters, 2022).

Locality records: LIBERTAD: Santa Tecla (Berry & Salazar-Vaquero, 1957: 47; Bader, 1992: 327) (Fig. 17).

Years of collection: no data.

Months of collection: no data.

Topographic zone: coastal mountains.

Elevation range: 900 m.

Comments: reported as *S. mexicana* and *Strigodermella intermedia* Casey by Berry and Salazar-Vaquero (1957), and Berry (1959b). Berry and Salazar-Vaquero (1957) mentioned that the adults feed on rosebush. Map 2 in Bader (1992, p. 327) shows 2 points that do not correlate with the Salvadoran locality record known for the species.

Strigoderma sulcipennis Burmeister, 1844

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Ecuador, Bolivia, and Argentina (Schoolmeesters, 2022).

Locality records: Chalatenango: San Ignacio (1 km N Puente Julupa) (RDCC; Bader, 1992: 330); San Salvador: Parque Saburo Hirao (Río La Danta) (MUHNES; Bader, 1992: 330) (Fig. 17); no specific department: no specific locality (Berry, 1959b: 80).

Years of collection: 1976-1979.

Months of collection: April and August.

Topographic zone: northern mountains, interior valley.

Elevation range: 700-1,060 m.

Paranomala Casey, 1915

Paranomala amphicoma (Bates, 1887)

Distribution: El Salvador and Panama (Franz, 1955; Schoolmeesters, 2022).

Locality records: San Vicente: Volcán de San Vicente-Chinchontepec (Hacienda El Carmen) (Franz, 1955: 204) (Fig. 17).

Years of collection: 1951.

Months of collection: October.

Topographic zone: coastal mountains.

Elevation range: 2,000 m.

Comments: the year of collection of the specimens is specified in Hincks (1953).

Paranomala championi (Bates, 1887)

Distribution: Guatemala (Schoolmeesters, 2022) and El Salvador.

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (RDCC) (Fig. 17).

Years of collection: 1999, 2000.

Months of collection: May.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Comments: new country record.

Paranomala cincta cincta (Say, 1835)

Distribution: Mexico, Belize, Guatemala, El Salvador, and Colombia (Berry, 1959a; Schoolmeesters, 2022).

Locality records: La Libertad: Santa Tecla (Berry & Salazar-Vaquero, 1957: 43) (Fig. 17).

Years of collection: no data.

Months of collection: no data.

Topographic zone: coastal mountains.

Elevation range: 900 m.

Comments: reported in the literature as *Anomala cincta*. Berry and Salazar-Vaquero (1957) reported the adults are abundant in the first half-hour after sunset, after which they disappear. The same authors mentioned that the adults feed on rosebush and other ornamental plants. Berry (1959a) noted that host plants in El Salvador are "garden plants".

Paranomala cupricollis (Chevrolat, 1834)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, and Venezuela (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (EAPZ, RDCC); La Libertad: Santa Tecla (Berry & Salazar-Vaquero, 1957: 43); San Salvador: San Salvador (Franz, 1955: 204) (Fig. 17).

Years of collection: 1951, 1999-2000.

Months of collection: May.

Topographic zone: interior valley, coastal mountains.

Elevation range: 685-900 m.

Comments: reported in the literature as *Anomala cupricollis*. The year of collection of the specimens from San Salvador is reported in Hincks (1953). Berry and Salazar-Vaquero (1957), and Berry (1959a) mentioned that the species is common in the coffee plantations of El Salvador but is not harmful to the plants.

Paranomala denticollis (Bates, 1887)

Distribution: Guatemala (Schoolmeesters, 2022) and El Salvador.

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (RDCC) (Fig. 17).

Years of collection: 1999, 2000.

Months of collection: May.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Comments: new country record.

Paranomala donovani (Stephens, 1830)

Distribution: Mexico and El Salvador (Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Franz, 1955: 204) (Fig. 17).

Years of collection: 1951.

Months of collection: June.

Topographic zone: interior valley.

Elevation range: 685 m.

Comments: the year of collection of the specimens is specified in Hincks (1953).

Paranomala eucoma (Bates, 1887)

Distribution: Guatemala, Costa Rica (Schoolmeesters, 2022), and El Salvador.

Locality records: La Libertad: Santa Tecla (EAPZ) (Fig. 18).

Years of collection: 1976.

Months of collection: August.

Topographic zone: coastal mountains.

Elevation range: 900 m.

Comments: new country record.

Paranomala flavilla (Bates, 1888)

Distribution: Mexico and El Salvador (Andrews et al., 1979; Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Andrews et al., 1979: 7).

Years of collection: 1978.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Comments: reported as *Anomala flavilla* by Andrews et al. (1979).

Paranomala foraminosa (Bates, 1887)

Distribution: Mexico, Guatemala, Belize, El Salvador, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Franz, 1955: 204); San Vicente: Volcán de San Vicente-Chinchontepec (Hacienda El Carmen) (Franz, 1955: 204) (Fig. 18).

Years of collection: 1951.

Months of collection: April and June.

Topographic zone: interior valley, coastal mountains.

Elevation range: 685-2,000 m.

Comments: reported as *Anomala cupricollis* by Franz (1955). The year of collection of the specimens is reported in Hincks (1953).

Paranomala inconstans (Burmeister, 1844)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Brazil, Peru, St. Lucia, and St. Vincent & the Grenadines (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (EAPZ); Santa Ana: Parque Nacional Montecristo (San José Ingenio) (MUHNES); San Salvador: San Salvador (Franz, 1955: 204); Cabañas: Tejutepeque (El Tamagás) (MUHNES); Morazán: Arambala (Río Sapo) (MUHNES); La Unión: La Unión (Berry & Salazar-Vaquero, 1957: 43) (Fig. 18).

Years of collection: 1951, 1999-2001.

Months of collection: April and May.

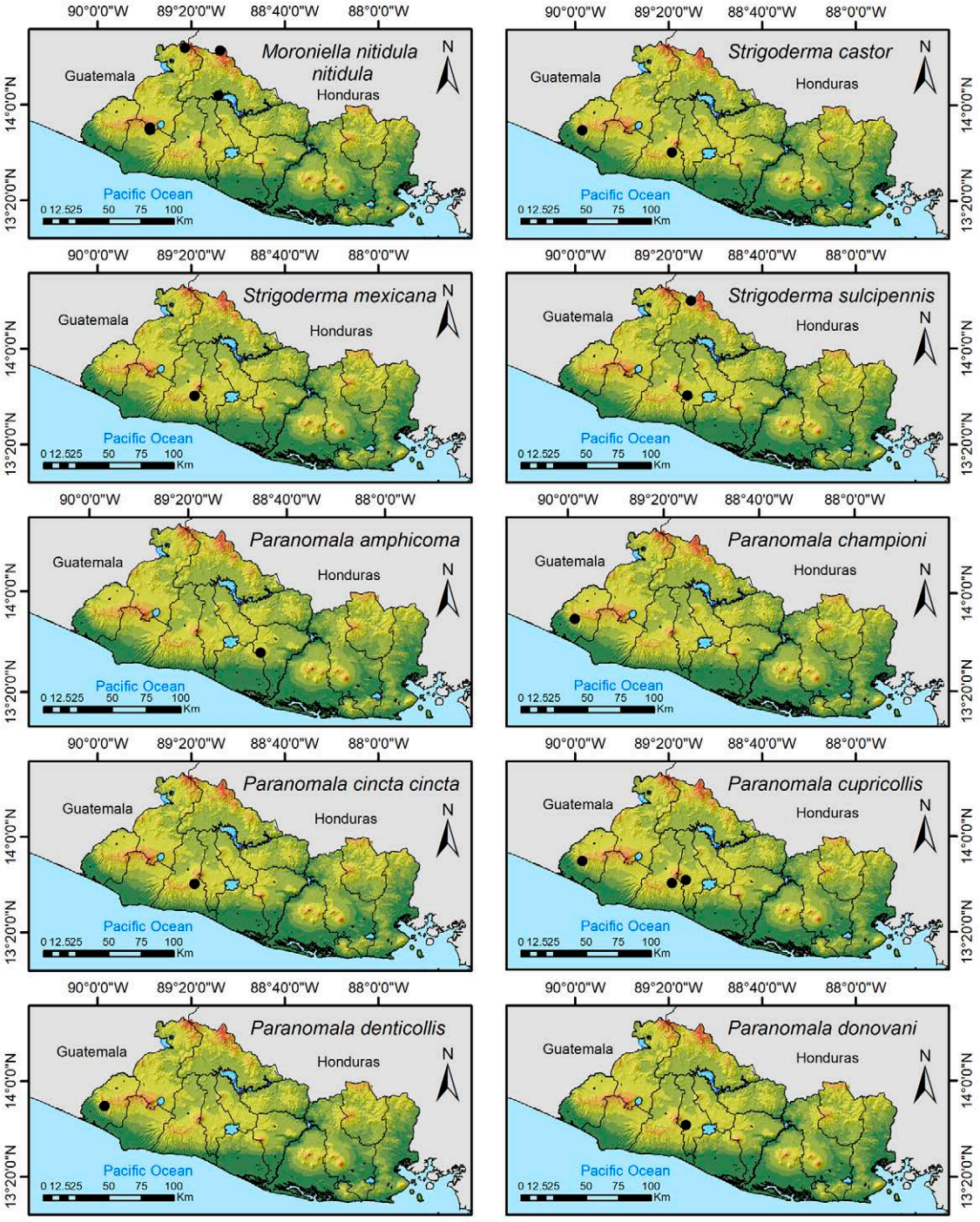

Figure 17. Distribution maps for *Moroniella nitidula nitidula*, *Strigoderma castor*, *S. mexicana*, *S. sulcipennis*, *Paranomala amphicoma*, *P. championi*, *P. cincta cincta*, *P. cupricollis*, *P. denticollis*, and *P. donovani* in El Salvador.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 30-810 m.

Comments: reported as *Anomala inconstans* by Franz (1955), Berry (1959b), and Saunders et al. (1998).

Paranomala ochrogastra (Bates, 1887)

Distribution: El Salvador, Costa Rica, and Panama (Serrano-Chicas, 2019; Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Majaditas) (Serrano-Chicas, 2019: 41, 42) (Fig. 18).

Years of collection: 2019.

Months of collection: April.

Topographic zone: northern mountains.

Elevation range: 1,070 m.

Paranomala pincelada (Filippini, Galante, & Micó, 2015)

Distribution: El Salvador and Costa Rica (Serrano-Chicas, 2019; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 21); Santa Ana: El Congo (RDCC); Parque Nacional Montecristo (San José Ingenio) (Serrano-Chicas, 2019: 41, 42); La Libertad: Parque El Bicentenario (Pablo-Cea, 2021: 21); San Salvador: San Salvador (RDCC) (Fig. 18).

Years of collection: 1979, 2000, 2019.

Months of collection: April, May, and September-November.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 685-870 m.

Paranomala plurisulcata (Bates, 1887)

Distribution: Guatemala, Nicaragua (Schoolmeesters, 2022), and El Salvador.

Locality records: Usulután: no specific locality (EAPZ) (Fig. 18).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

*Comments: new count*ry record.

Paranomala quiche (Ohaus, 1897)

Distribution: Guatemala, El Salvador, and Costa Rica (Serrano-Chicas, 2019; Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Majaditas) (Serrano-Chicas, 2019: 41, 42) (Fig. 18).

Years of collection: 2019.

Months of collection: March.

Topographic zone: northern mountains.

Elevation range: 1,070 m.

Paranomala robiginosa (Filippini, Galante, & Micó, 2015)

Distribution: El Salvador and Costa Rica (Serrano-Chicas, 2019; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021); Santa Ana: Parque Nacional Montecristo (La Torre, San José Ingenio) (Serrano-Chicas, 2019: 41, 42) (Fig. 18).

Years of collection: 2019.

Months of collection: April and May.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 780-1,450 m.

Paranomala semicincta (Bates, 1887)

Distribution: Mexico, Nicaragua, Costa Rica (Schoolmeesters, 2022), and El Salvador.

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (RDCC) (Fig. 18).

Years of collection: 2000.

Months of collection: May.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Comments: new country record.

Paranomala sticticoptera (Blanchard, 1850)

Distribution: Mexico, Guatemala, Belize, Costa Rica (Schoolmeesters, 2022), and El Salvador.

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (RDCC); Santa Ana: Parque Nacional Montecristo (Los Planes) (RDCC) (Fig. 18).

Years of collection: 1999-2000.

Months of collection: May.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 780-1,890 m.

Comments: new country record.

Paranomala testaceipennis (Blanchard, 1850)

Distribution: El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Ecuador, Bolivia, and Argentina (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Majaditas) (Serrano-Chicas, 2019: 42); La Libertad: Santa Tecla (Berry & Salazar-Vaquero, 1957: 43); San Salvador: San Salvador (Franz, 1955: 204) (Fig. 19).

Years of collection: 1952, 2019.

*Months of collection: A*pril, May, and November.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 685-1,070 m.

Comments: Berry and Salazar-Vaquero (1957) mentioned that the species is abundant at sunset. Berry (1959a) observed that the host plants in El Salvador are "garden plants" (rosebush [*Rosa* spp.] and other ornamental plants).

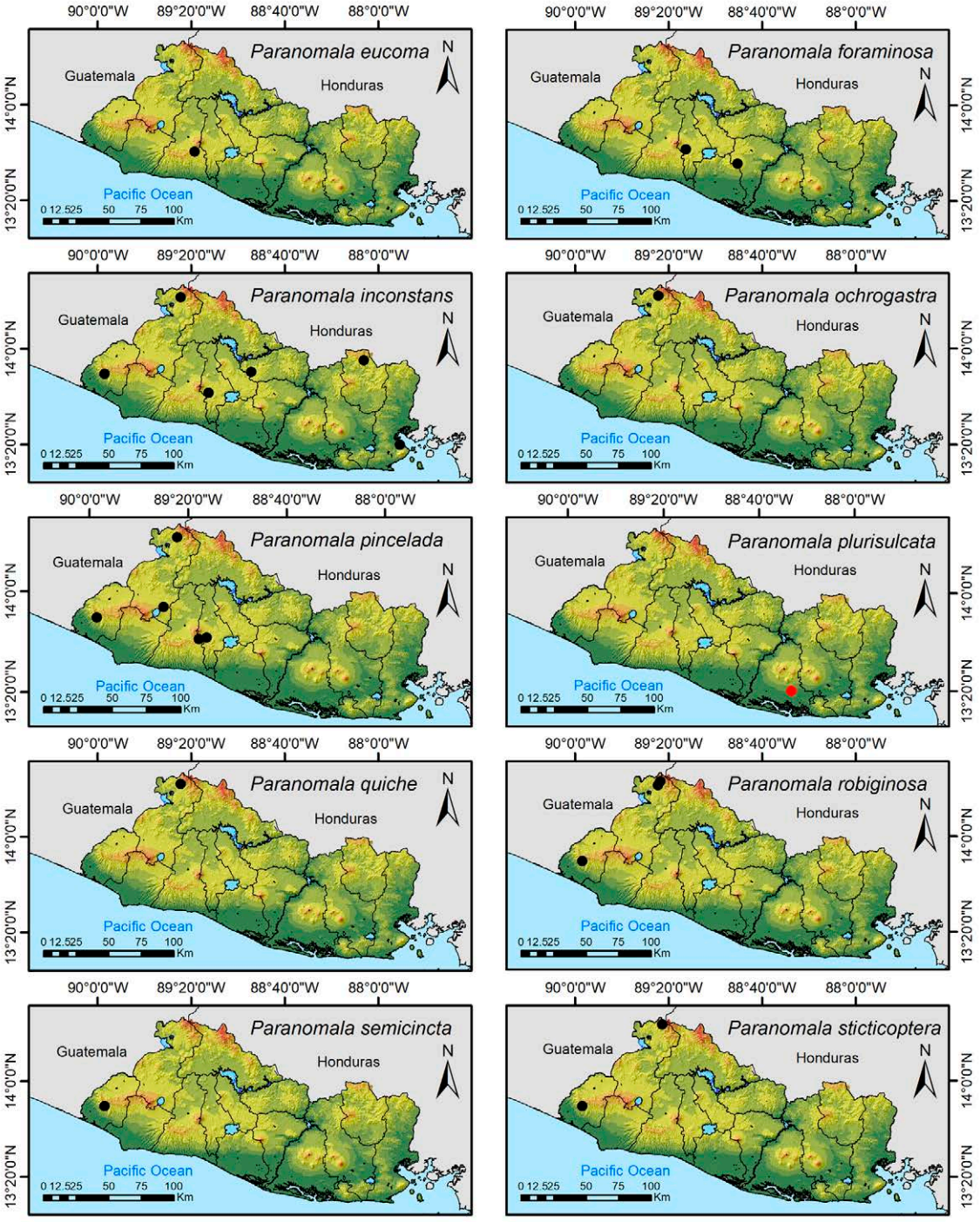

Figure 18. Distribution maps for *Paranomala eucoma*, *P. foraminosa*, *P. inconstans*, *P. ochrogastra*, *P. pincelada*, *P. plurisulcata*, *P. quiche*, *P. robiginosa*, *P. semicincta*, and *P. sticticoptera* in El Salvador.

Paranomala trapezifera (Bates, 1887)

Distribution: Mexico, El Salvador, and Costa Rica (Berry & Salazar-Vaquero, 1957; Schoolmeesters, 2022).

Locality records: San Vicente: Santa Cruz Porrillo (Berry & Salazar-Vaquero, 1957: 43) (Fig. 19).

Years of collection: no data.

Months of collection: no data.

Topographic zone: interior valley.

Elevation range: 40 m.

Paranomala undulata undulata (Melsheimer, 1845)

Distribution: Canada, USA, Mexico, Guatemala, Costa Rica (Schoolmeesters, 2022), and El Salvador.

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (RDCC) (Fig. 19).

Years of collection: 2000.

Months of collection: May.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Comments: new country record.

Paranomala veraecrucis (Bates, 1887)

Distribution: Mexico, El Salvador, and Costa Rica (Berry & Salazar-Vaquero, 1957; Schoolmeesters, 2022).

Locality records: La Libertad: Santa Tecla (Berry & Salazar-Vaquero, 1957: 43) (Fig. 19).

Years of collection: 1951.

Months of collection: June.

Topographic zone: coastal mountains.

Elevation range: 900 m.

Paranomala vicenti (Franz, 1955)

Distribution: El Salvador (Schoolmeesters, 2022).

Locality records: San Vicente: Volcán de San Vicente-Chinchontepec (Hacienda El Carmen) (Franz, 1955: 205) (Fig. 19).

Years of collection: no data.

Months of collection: coastal mountains.

Topographic zone: 2,000 m.

Comments: named after the department and Volcán San Vicente (Chinchontepec). The species is precinctive to El Salvador.

Tribe Anoplognathini MacLeay, 1819

Phalangogonia Burmeister, 1844

Phalangogonia punctata Franz, 1955

Distribution: El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Franz, 1955: 207; Smith & Morón, 2003: 333-334) (Fig. 19).

Years of collection: 1951.

Months of collection: June.

Topographic zone: northern mountains.

Elevation range: 2,360 m.

Tribe Geniatini Burmeister, 1844

Leucothyreus MacLeay, 1819

Leucothyreus femoratus Burmeister, 1844

Distribution: Mexico, Nicaragua, El Salvador, Costa Rica, Panama, Colombia, and Venezuela (Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Franz, 1955: 207; Berry & Salazar-Vaquero, 1957: 45) (Fig. 19).

Years of collection: 1951

Months of collection: February, April, and June.

Topographic zone: interior valley.

Elevation range: 685 m.

Tribe Rutelini MacLeay, 1819

Chrysina Kirby, 1828

Chrysina karschi (Nonfried, 1891)

Distribution: Guatemala, El Salvador, and Honduras (Schoolmeesters, 2022)

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (López-Sorto & Sermeño-Chicas, 2013: 54); Chalatenango: Cerro El Pital (López-Sorto & Sermeño-Chicas, 2013: 54); La Montañona (López-Sorto & Sermeño-Chicas, 2013: 54) (Fig. 19).

Years of collection: no data.

Months of collection: no data.

Topographic zone: northern mountains.

Elevation range: 1,600-2,660 m.

Chrysina pehlkei (Ohaus, 1930)

Distribution: Guatemala and El Salvador (Schoolmeesters, 2022)

Locality records: Chalatenango: La Montañona (López-Sorto & Sermeño-Chicas, 2013: 54) (Fig. 19).

Years of collection: no data.

Months of collection: no data.

Topographic zone: northern mountains.

Elevation range: 1,600 m.

Chrysina quetzalcoatli (Morón, 1990)

Distribution: Mexico, Guatemala, El Salvador, Honduras, and Nicaragua (Schoolmeesters, 2022)

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (López-Sorto & Sermeño-Chicas, 2013: 54); (Los Planes) (MUHNES); Chalatenango: Cerro El Pital (MUHNES; López-Sorto & Sermeño-Chicas, 2013: 54); La Montañona (López-Sorto & Sermeño-Chicas, 2013: 54) (Fig. 19).

Years of collection: 1976, 1999-2002.

Months of collection: May, October, and November.

Topographic zone: northern mountains.

Elevation range: 1,600-2,660 m.

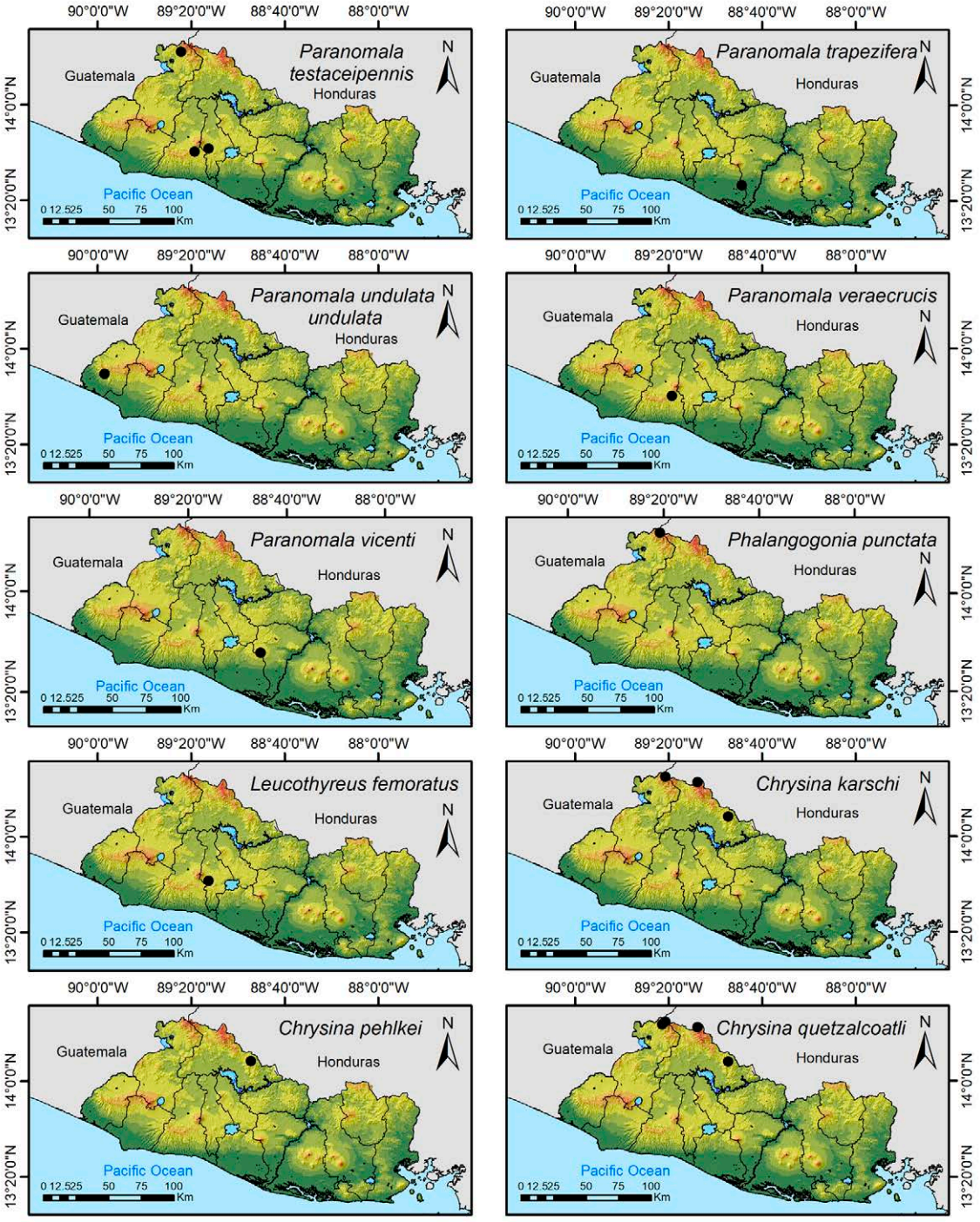

Figure 19. Distribution maps for *Paranomala testaceipennis*, *P. trapezifera*, *P. undulata undulata*, *P. veraecrucis*, *P. vicenti*, *Phalangogonia punctata*, *Leucothyreus femoratus*, *Chrysina karschi*, *C. pehlkei*, and *C. quetzalcoatli* in El Salvador.

Cnemida Kirby, 1827
Cnemida aterrima Bates, 1888

Distribution: Mexico, Guatemala, El Salvador, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (RDCC); La Libertad: Santa Tecla (Berry & Salazar-Vaquero, 1957: 44); Cuscatlán: no specific locality (Jameson, 1996: 290) (Fig. 20).

Years of collection: 1979.

Months of collection: June.

Topographic zone: coastal mountains.

Elevation range: 780-900 m.

Elcarmeniella Franz, 1955
Elcarmeniella striata Franz, 1955

Distribution: Guatemala, El Salvador, and Honduras (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (EAPZ, RDCC); San Vicente: Volcán de San Vicente-Chinchontepec (Hacienda El Carmen) (Franz, 1955: 203; Morón, 1987: 82) (Fig. 20).

Years of collection: 1951, 1999.

Months of collection: May.

Topographic zone: coastal mountains.

Elevation range: 780-2,000 m.

Comments: the specimens reported by Franz (1955) were taken in the same collection event in 1951 as the passalid specimens reported by Hincks (1953). The scientific name is based on El Carmen Farm, the type locality (Franz, 1955).

Heterosternus Dupont, 1832
Heterosternus rodriguezi Candèze, 1869

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Morón, 1983: 40); (Los Planes) (MUHNES) (Fig. 20).

Years of collection: 1971, 2002.

Months of collection: May and June.

Topographic zone: northern mountains.

Elevation range: 1,890-2,360 m.

Comments: the year 1971 and month of May are specified in Howden & Peck (1972).

Macraspis MacLeay, 1819
Macraspis aterrima (Waterhouse, 1881)

Distribution: Mexico, Guatemala, El Salvador, and Honduras (Schoolmeesters, 2022).

Locality records: no specific department: no specific locality (Morón & Paucar-Cabrera, 2003: 474).

Years of collection: no data.

Months of collection: no data.

Topographic zone: no data.

Elevation range: no data.

Mesosternus Morón, 1987
Mesosternus halffteri Morón, 1987

Distribution: Mexico, Guatemala, El Salvador, Honduras, and Nicaragua (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Morón & Howden, 1992: 18) (Fig. 20).

*Years of collec*tion: 1971.

Months of collection: May.

Topographic zone: northern mountains.

Elevation range: 2,360 m.

Comments: specimens were captured at blacklight in Parque Nacional Montecristo about 20:00 hrs in a light rain (Morón & Howden, 1992).

Parisolea Bates, 1888
Parisolea pallida (Candèze, 1869)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Ecuador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Los Planes) (Delgado et al., 2006: 95); San Salvador: San Salvador (Delgado et al., 2006: 95) (Fig. 20).

Years of collection: 1991.

Months of collection: May.

Topographic zone: northern mountains, interior valley.

Elevation range: 685-1,890 m.

Parisolea pachytarsis (Morón, 1987)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Morón & Howden, 1992: 18-19) (Bosque Nebuloso, La Torre, Los Planes, Majaditas) (Serrano-Chicas, 2019: 42); San Salvador: San Salvador (Morón, 1987: 73) (Fig. 20).

Years of collection: 1953, 1971, 1999, 2019.

Months of collection: March-May.

Topographic zone: northern mountains, interior valley.

Elevation range: 685-2,360 m.

Comments: specimens were captured at a blacklight in Parque Nacional Montecristo about 20:00 hrs in a light rain (Morón & Howden, 1992) and at a mercury vapor lamp (R. D. Cave, personal observation).

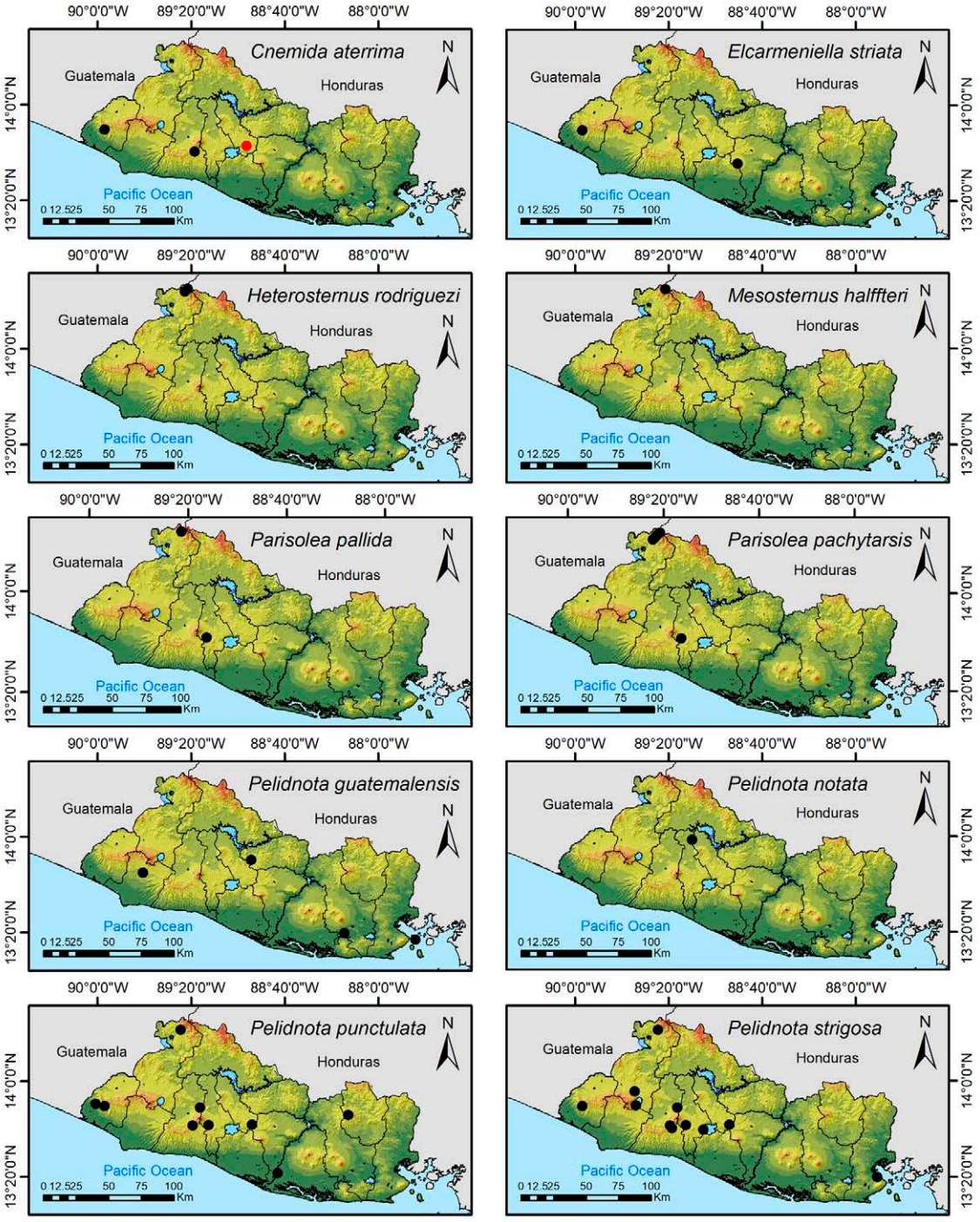

Figure 20. Distribution maps for *Cnemida aterrima*, *Elcarmeniella striata*, *Heterosternus rodriguezi*, *Mesosternus halffteri*, *Parisolea pallida*, *P. pachytarsis*, *Pelidnota guatemalensis*, *P. notata*, *P. punctulata*, and *P. strigosa* in El Salvador.

Pelidnota MacLeay, 1819
Pelidnota guatemalensis Bates, 1888

Distribution: Mexico, Guatemala, Belize, Honduras (Schoolmeesters, 2022), and El Salvador.

Locality records: Sonsonate: Izalco (Los Guates Farm) (MUHNES); Cabañas: Tejutepeque (El Tamagás) (MUHNES); San Miguel: Laguna El Jocotal (MUHNES); La Unión: Isla Martín Pérez (MUHNES) (Fig. 20).

Years of collection: 1974, 2000-2001.

Months of collection: May, August, September, and November.

Topographic zone: interior valley, coastal plain.

Elevation range: 25-700 m.

Comments: new country record.

Pelidnota notata Blanchard, 1851

Distribution: Mexico, Guatemala, Belize, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador (Schoolmeesters, 2022), and El Salvador.

Locality records: San Salvador: Ruinas de Cihuatán (MUHNES) (Fig. 20).

Years of collection: 1978.

Months of collection: September.

Topographic zone: interior Valley.

Elevation range: 325 m.

Comments: new country record.

Pelidnota punctulata Bates, 1888

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, and Ecuador (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (EAPZ, RDCC); (San Francisco Menéndez) (MUHNES); Santa Ana: Parque Nacional Montecristo (San José Ingenio) (MUHNES); La Libertad: Los Chorros (RDCC); Quezaltepeque (Hardy, 1975: 21; Moore et al., 2017: 246); San Salvador: San Salvador (Franz, 1955: 203; Hardy, 1975: 21; Moore et al., 2017: 246); Cuscatlán: San Cristóbal (Hardy, 1975: 21); Usulután: Nancuchiname (MUHNES); Morazán: Cerro Cacahuatique (MUHNES) (Fig. 20); no specific department: no specific locality (Berry, 1959b: 60).

Years of collection: 1951-1952, 1977-1979, 1999-2001.

Months of collection: April-September.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 15-1,400 m.

Comments: the specimens reported by Franz (1955) were taken in the same collection event in 1951 as the passalid specimens reported by Hincks (1953).

Pelidnota strigosa Laporte, 1840

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, and Venezuela (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (J. Pablo, personal observation); Santa Ana: Lago de Coatepeque (Hardy, 1975: 20; Moore et al., 2017: 263); Flor Amarilla (Abajo) (Berry & Salazar-Vaquero, 1957: 46; Hardy, 1975: 20; Moore et al., 2017: 263); Parque Nacional Montecristo (MUHNES); (San José Ingenio) (Serrano-Chicas, 2019: 42); La Libertad: Los Chorros (RDCC); Quezaltepeque (Hardy, 1975: 20; Moore et al., 2017: 263); Santa Tecla (Franz, 1955: 203); San Salvador: Lago de Ilopango (Hardy, 1975: 20; Moore et al., 2017: 263); San Salvador (Franz, 1955: 204); Cuscatlán: San Cristóbal (Border Station) (Hardy, 1975: 20; Moore et al., 2017: 263); La Unión: La Unión (Hardy, 1975: 20; Moore et al., 2017: 263) (Fig. 20).

Years of collection: 1950, 1976-1979, 2013, 2019.

Months of collection: April, and July-December.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 30-900 m.

Comments: the specimens reported by Franz (1955) were taken in the same collection event in 1951 as the passalid specimens reported by Hincks (1953). Hardy (1975) reported examining material from "Flor Amaysta Ana". It is assumed that the place is Flor Amarilla (Abajo), in Santa Ana ("...sta Ana" in abbreviation). Berry & Salazar (1957) reported the species in the same place. Hardy (1975) also reported specimens collected at "Lunada Beach", a locality unknown to us. Berry & Salazar (1957) and Berry (1959a) mentioned that the species is common in coffee plantations of El Salvador but is not harmful to the plants.

Pelidnota virescens Burmeister, 1844

Distribution: Mexico, El Salvador, Honduras, Nicaragua, and Costa Rica (Berry 1959a; Schoolmeesters, 2022).

Locality records: Santa Ana: Flor Amarilla (Abajo) (Berry & Salazar-Vaquero, 1957: 46); La Libertad: San Andrés (Berry & Salazar-Vaquero, 1957: 46); Santa Tecla (Berry & Salazar-Vaquero, 1957: 46) (Fig. 21).

Years of collection: no data.

Months of collection: no data.

Topographic zone: interior valley, coastal mountains.

Elevation range: 475-900 m.

Comments: Berry and Salazar-Vaquero (1957), and Berry (1959a) mentioned that the species is common in cultivated coffee and corn in El Salvador but is not harmful to the plants.

Subfamily Dynastinae MacLeay, 1819
Tribe Agaocephalini Burmeister, 1847
Spodistes Burmeister, 1847
Spodistes mniszechi (Thomson, 1860)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, and Colombia (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 353); Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (MUHNES); (Los Planes) (Ratcliffe & Cave, 2006: 354); Chalatenango: La Montañona (Ratcliffe & Cave, 2006: 353); San Ignacio (MUHNES); La Libertad: Los Chorros (Ratcliffe & Cave, 2006: 353); San Andrés (Ratcliffe & Cave, 2006: 353); Santa Tecla (Ratcliffe & Cave, 2006: 353); San Salvador: Cerro San Jacinto (Ratcliffe & Cave, 2006: 354); San Salvador (Ratcliffe & Cave, 2006: 354); La Paz: Santiago Nonualco (Ratcliffe & Cave, 2006: 353); Cabañas: Cinquera (Ratcliffe & Cave, 2006: 353) (Fig. 21).

Years of collection: 1959, 1976, 1997-2002.

Months of collection: All year.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 160-2,360 m.

Spodistes monzoni Warner, 1992

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo [probably San José Ingenio] (Ratcliffe & Cave, 2006: 355; Serrano-Chicas, 2019: 37, 38); San Salvador: San Salvador (Warner, 1992: 378; Ratcliffe & Cave, 2006: 355); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 355); La Unión: Volcán de Conchagua (Ratcliffe & Cave, 2006: 355) (Fig. 21).

Years of collection: 1960, 1997-2002.

Months of collection: April and May.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 665-1,190 m.

Tribe Cyclocephalini Laporte, 1840

Ancognatha Erichson, 1847

Ancognatha sellata Arrow, 1911

Distribution: Mexico, Guatemala, El Salvador, Honduras, and Nicaragua (Ratcliffe & Cave, 2006; Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Cerro Verde (Ratcliffe & Cave, 2006: 49); Parque Nacional Montecristo (Bosque Nebuloso) (Ratcliffe & Cave, 2006: 49; Serrano-Chicas, 2019: 37, 38) (Los Planes) (Ratcliffe & Cave, 2006: 49); Chalatenango: Cerro El Pital (Ratcliffe & Cave, 2006: 49); San Salvador: Hacienda Los Planes (UNSM) (Fig. 21).

Years of collection: 1972-1975, 1997-2002, 2019.

Months of collection: March-October, and December.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 720-2,660 m.

Aspidolea Bates, 1888

Aspidolea fuliginea (Burmeister 1847)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago, Ecuador, Brazil, Peru, and Argentina (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (La Fincona) (Ratcliffe & Cave, 2006: 53); (San Benito) (Ratcliffe & Cave, 2006: 53); Santa Ana: Parque Nacional Montecristo (Majaditas, San José Ingenio) (Serrano-Chicas, 2019: 37, 38); La Libertad: Santa Tecla (Ratcliffe & Cave, 2006: 53); Cuscatlán: Cojutepeque (Ratcliffe & Cave, 2006: 53); San José Guayabal (Ratcliffe & Cave, 2006: 53) (Fig. 21).

Years of collection: 1997-2002, 2018.

Months of collection: All year.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 560-1,070 m.

Aspidolea singularis Bates, 1888

Distribution: USA, Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Brazil, and Peru (Schoolmeesters, 2022)

Locality records: Ahuachapán: Parque Nacional El Imposible (La Fincona) (Ratcliffe & Cave, 2006: 54); (San Benito) (Ratcliffe & Cave, 2006: 54); Santa Ana: Parque Nacional Montecristo (Los Planes) (Ratcliffe & Cave, 2006: 54; Serrano-Chicas, 2019: 37, 38); La Libertad: Los Chorros (Ratcliffe & Cave, 2006: 54); Parque El Bicentenario (Pablo-Cea, 2021: 21; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378); Santa Tecla (Ratcliffe & Cave, 2006: 54); Zapotitán (Ratcliffe & Cave, 2006: 54); San Salvador: San Salvador (Ratcliffe & Cave, 2006: 54); Zacamil (Ratcliffe & Cave, 2006: 54); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 54) (Fig. 21).

*Years of col*lection: 1961, 1997-2002, 2019.

Months of collection: All year.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 480-1,890 m.

Comments: Ratcliffe and Cave (2006) reported specimens collected in San Antonio Chávez in San Salvador, but this locality is unknown to us.

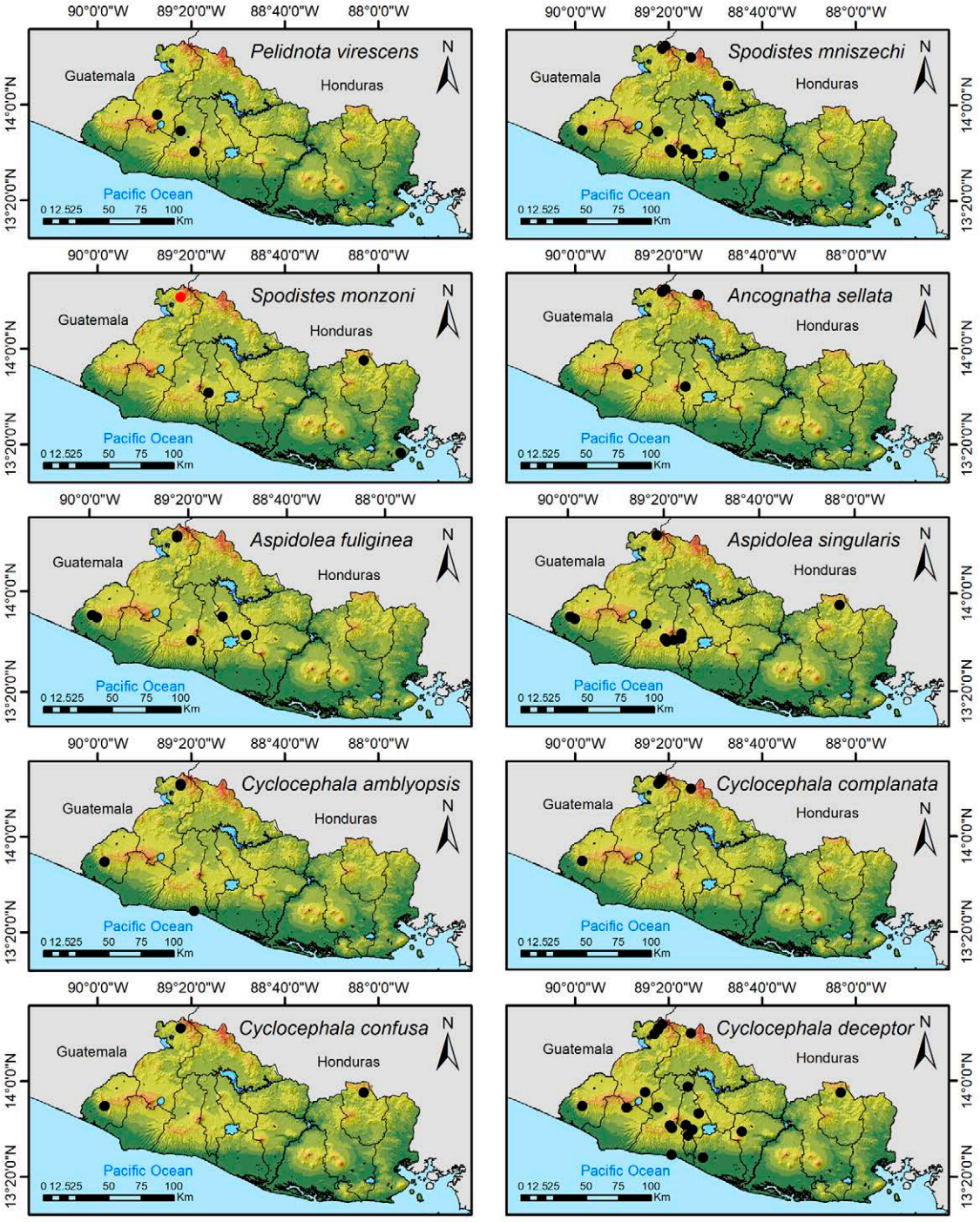

Figure 21. Distribution maps for *Pelidnota virescens*, *Spodistes mniszechi*, *S. monzoni*, *Ancognatha sellata*, *Aspidolea fuliginea*, *A. singularis*, *Cyclocephala amblyopsis*, *C. complanata*, *C. confusa*, and *C. deceptor* in El Salvador.

Cyclocephala Dejean, 1821

Cyclocephala amblyopsis Bates, 1888

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Ecuador, Brazil, Peru, and Bolivia (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 74); Santa Ana: Parque Nacional Montecristo (Majaditas, San José Ingenio) (Serrano-Chicas, 2019: 37, 38); La Libertad: Puerto de La Libertad (Romero-Nápoles, 2021) (Fig. 21).

Years of collection: 1997-2002, 2018.

Months of collection: January, and March-November.

Topographic zone: northern mountains, coastal mountains, coastal plain.

Elevation range: 30-1,070 m.

Cyclocephala complanata Burmeister, 1847

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 89); Santa Ana: Parque Nacional Montecristo (La Torre, Majaditas) (Serrano-Chicas, 2019: 37, 38); (Los Planes) (Ratcliffe & Cave, 2006: 89); Chalatenango: San Ignacio (Ratcliffe & Cave, 2006: 89) (Fig. 21); no specific department: no specific locality (Ratcliffe & Morón, 1997: 59).

Years of collection: 1979, 1997-2002, 2019.

Months of collection: April-September.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 780-1,890 m.

Cyclocephala confusa Endrödi, 1966

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, and Peru (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 94); Santa Ana: Parque Nacional Montecristo (Majaditas) (Serrano-Chicas, 2019: 37, 38); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 94) (Fig. 21).

Years of collection: 1997-2002, 2019.

Months of collection: April-September.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 665-1,070 m.

Comments: reported as *Cyclocephala confunsa* [sic] by Serrano-Chicas (2019).

Cyclocephala curta Bates, 1888

Distribution: Mexico, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022)

Locality records: no specific department: no specific locality (Ratcliffe & Cave, 2006: 99).

Years of collection: 1999.

Months of collection: March.

Topographic zone: no data.

Elevation range: no data.

Cyclocephala deceptor (Casey, 1915)

Distribution: Mexico, El Salvador, Honduras, and Nicaragua (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 100; Pablo-Cea, 2021: 21; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 378); Santa Ana: Coatepeque (Ratcliffe & Cave, 2006: 100); Metapán (Ratcliffe & Cave, 2006: 100); Parque Nacional Montecristo (Majaditas, San José Ingenio) (Serrano-Chicas, 2019: 37, 38); (Los Planes) (Ratcliffe & Cave, 2006: 100); Sonsonate: Volcán de Izalco (Ratcliffe & Cave, 2006: 100); Chalatenango: San Ignacio (MUHNES); La Libertad: La Libertad (Ratcliffe & Cave, 2006: 100); Los Chorros (Ratcliffe & Cave, 2006: 100); San Andrés (Ratcliffe & Cave, 2006: 100); Santa Tecla (Ratcliffe & Cave, 2006: 100); San Salvador: Aguilares (Ratcliffe & Cave, 2006: 100); Cerro San Jacinto (Ratcliffe & Cave, 2006: 100); Puerta del Diablo (Ratcliffe & Cave, 2006: 100); San Salvador (Alta María, Los Planes) (Ratcliffe & Cave, 2006: 100); Tonacatepeque (Ratcliffe & Cave, 2006: 100); La Paz: San Luis [Talpa] (Ratcliffe & Cave, 2006: 100); San Vicente: San Cayetano Istepeque (Ratcliffe & Cave, 2006: 100); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 100); no specific department: no specific locality (Berry, 1959b: 79) (Fig. 21).

Years of collection: 1957-1958, 1964, 1970-1979, 1997-2002, 2019.

Months of collection: January-November.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 40-1,890 m.

Comments: reported as *Stigmalia cuernavacana* Casey by Berry (1959b).

Cyclocephala freudei Endrödi, 1963

Distribution: USA, Mexico, Guatemala, El Salvador, Costa Rica, and Ecuador (Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Ratcliffe & Cave, 2006: 108); Cuscatlán: El Rosario (Ratcliffe & Cave, 2006: 108) (Fig. 22).

Years of collection: 1959, 1997-2002.

Months of collection: June and July.

Topographic zone: interior valley.

Elevation range: 685-720 m.

Cyclocephala gravis Bates, 1888

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guyana, Ecuador, Brazil, and Bolivia (Schoolmeesters, 2022).

Locality records: Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 111); Cerro Cacahuatique (Ratcliffe & Cave, 2006: 111) (Fig. 22).

Years of collection: 1997-2002.

Months of collection: January, March-October, and December.

Topographic zone: northern mountains.

Elevation range: 665-1,400 m.

Cyclocephala lunulata Burmeister, 1847

Distribution: USA, Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago, Guyana, Ecuador, Brazil, Peru, Bolivia, Paraguay, and Argentina (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (La Fincona, San Benito) (Ratcliffe & Cave, 2006: 122); Santa Ana: Parque Nacional Montecristo [probably San José Ingenio] (Ratcliffe & Cave, 2006: 122; Serrano-Chicas, 2019: 37, 38); Santa Ana (Ratcliffe & Cave, 2006: 122); La Libertad: Parque El Bicentenario (Pablo-Cea, 2021: 21; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 378); Parque Nacional Walter Thilo Deininger (Ratcliffe & Cave, 2006: 122); San Andrés (Ratcliffe & Cave, 2006: 122); Zapotitán (Ratcliffe & Cave, 2006: 122); San Salvador: Cuscatancingo (Berry & Salazar-Vaquero, 1957: 44; Ratcliffe & Cave, 2006: 122); Delgado (Ratcliffe & Cave, 2006: 122); San Salvador (Ratcliffe & Cave, 2006: 122); Cabañas: Cinquera (Ratcliffe & Cave, 2006: 122); Tejutepeque (Ratcliffe & Cave, 2006: 122); Usulután: Cerro El Tigre (Ratcliffe & Cave, 2006: 122); San Miguel: Laguna El Jocotal (Ratcliffe & Cave, 2006: 122); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 122); Cerro Cacahuatique (Ratcliffe & Cave, 2006: 122); La Unión: Playa El Icacal (Ratcliffe & Cave, 2006: 122); Volcán de Conchagua (Ratcliffe & Cave, 2006: 122) (Fig. 22).

Years of collection: 1971-1978, 1997-2002, 2018-2019.

Months of collection: All year.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 15-1,580 m.

Comments: Berry and Salazar-Vaquero (1957) mentioned that adults perforate orange fruits (*Citrus* sp.), which allows fungi to enter. The species is considered a part of the "gallina ciega" complex in cultivated corn in El Salvador (Berry, 1959b; Andrews et al., 1979; Mendoza, 1996).

Cyclocephala mafaffa Burmeister, 1847

Distribution: USA, Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago, Ecuador, Brazil, and Guadeloupe (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 127; Pablo-Cea, 2021: 21; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 378); Santa Ana: Parque Nacional Montecristo (Los Planes) (Ratcliffe & Cave, 2006: 127); (San José Ingenio) (Serrano-Chicas, 2019: 37, 38); Santa Ana (Ratcliffe & Cave, 2006: 127); Chalatenango: La Montañona (Ratcliffe & Cave, 2006: 127); San Salvador: San Salvador (Berry & Salazar-Vaquero, 1957: 44); Usulután: Cerro El Tigre (UNSM; Ratcliffe & Cave, 2006: 127); Usulután (Ratcliffe & Cave, 2006: 127); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 127); Cerro Cacahuatique (Ratcliffe & Cave, 2006: 127) (Fig. 22).

Years of collection: 1972-1979, 1997-2002, 2019.

Months of collection: All year.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 80-1,890 m.

Comments: reported as Cyclocephala mefaffa [sic] in Berry and Salazar-Vaquero (1957).

Cyclocephala melanocephala (Fabricius, 1775)

Distribution: USA, Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago, Guyana, Suriname, French Guiana, Ecuador, Brazil, Peru, Bolivia, Paraguay, Argentina, Dominican Republic, Puerto Rico, St. Kitts & Nevis, Montserrat, Guadeloupe, Dominica, Martinique, St. Lucia, St. Vincent & the Grenadines, and Grenada (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (La Fincona) (Ratcliffe & Cave, 2006: 130); (San Benito) (Ratcliffe & Cave, 2006: 130); Santa Ana: Parque Nacional Montecristo (Los Planes) (Ratcliffe & Cave, 2006: 130); Chalatenango: La Montañona (Ratcliffe & Cave, 2006: 130); La Libertad: La Libertad (CMNC); Los Chorros (CMNC); Parque Nacional Walter Thilo Deininger (Ratcliffe & Cave, 2006: 130); Río Agua Caliente (Ratcliffe & Cave, 2006: 130); Santa Tecla (Ratcliffe & Cave, 2006: 130); San Salvador: San Salvador (CMNC); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 130); Cerro Cacahuatique (Ratcliffe & Cave, 2006: 130) (Fig. 22).

Years of collection: 1959-1960, 1971-1979, 1997-2002.

Months of collection: January-November.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 70-1,890 m.

Cyclocephala melolonthida Ratcliffe & Cave, 2002

Distribution: Guatemala and El Salvador (Schoolmeesters, 2022).

Locality records: La Paz: Playa Costa del Sol (Ratcliffe & Cave, 2002: 153, 2006: 132) (Fig. 22).

Years of collection: 1976.

Months of collection: November.

Topographic zone: coastal plain.

Elevation range: 5 m.

Cyclocephala multiplex Casey, 1915

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Santa Ana: Santa Ana (Ratcliffe & Cave, 2006: 134); La Libertad: El Barillo (Ratcliffe & Cave, 2006: 134); Santa Tecla (Ratcliffe & Cave, 2006: 134); San Salvador: San Antonio Abad (Ratcliffe & Cave, 2006: 134); San Salvador (Ratcliffe & Cave, 2006: 134); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 134) (Fig. 22).

Years of collection: 1972, 1976-1979, 1997-2002.

Months of collection: All year.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 665-900 m.

Cyclocephala ovulum Bates, 1888

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Guyana, Suriname, French Guiana, Ecuador, Brazil, Paraguay, and Argentina (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 140); La Libertad: Santa Tecla (Ratcliffe & Cave, 2006: 140); Zapotitán (Ratcliffe & Cave, 2006: 140); San Miguel: Laguna El Jocotal (Ratcliffe & Cave, 2006: 140); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 140) (Fig. 22).

Years of collection: 1997-2002.

Months of collection: All year, except January and March.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 25-900 m.

Cyclocephala sexpunctata Laporte, 1840

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, French Guiana, Ecuador, Brazil, Peru, and Bolivia (Ratcliffe & Cave, 2006; Schoolmeesters, 2022).

Locality records: Morazán: Cerro Cacahuatique (Ratcliffe & Cave, 2006: 154) (Fig. 22).

Years of collection: 2001.

Months of collection: July.

Topographic zone: northern mountains.

Elevation range: 1,400 m.

Comments: although relatively common in Honduras and Nicaragua, only 1 specimen from El Salvador was reported by Ratcliffe and Cave (2006).

Cyclocephala sparsa Arrow, 1902

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 158); San Salvador: San Salvador (Ratcliffe & Cave, 2006: 158); Cabañas: Cinquera (Ratcliffe & Cave, 2006: 158); Morazán: Cerro Cacahuatique (Ratcliffe & Cave, 2006: 158) (Fig. 22).

Years of collection: 1997-2002.

Months of collection: January, April-September, and December.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 385-1,400 m.

Cyclocephala stictica Burmeister, 1847

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, French Guiana, Ecuador, Brazil, Peru, and Bolivia (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Majaditas) (Serrano-Chicas, 2019: 37, 38); Chalatenango: La Montañona (Ratcliffe & Cave, 2006: 162); La Libertad: Parque Nacional Walter Thilo Deininger (Ratcliffe & Cave, 2006: 162); Cabañas: Tejutepeque (Ratcliffe & Cave, 2006: 162); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 162) (Fig. 23).

Years of collection: 1997-2002, 2019.

Months of collection: January, and March-November.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 135-1,600 m.

Cyclocephala weidneri Endrödi, 1964

Distribution: Mexico, Guatemala, El Salvador, Honduras, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Brazil, Peru, and Bolivia (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 167) (Fig. 23).

Years of collection: 1976.

Months of collection: June.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Comments: although relatively common in Honduras and Nicaragua, only 3 specimens from El Salvador were reported by Ratcliffe and Cave (2006).

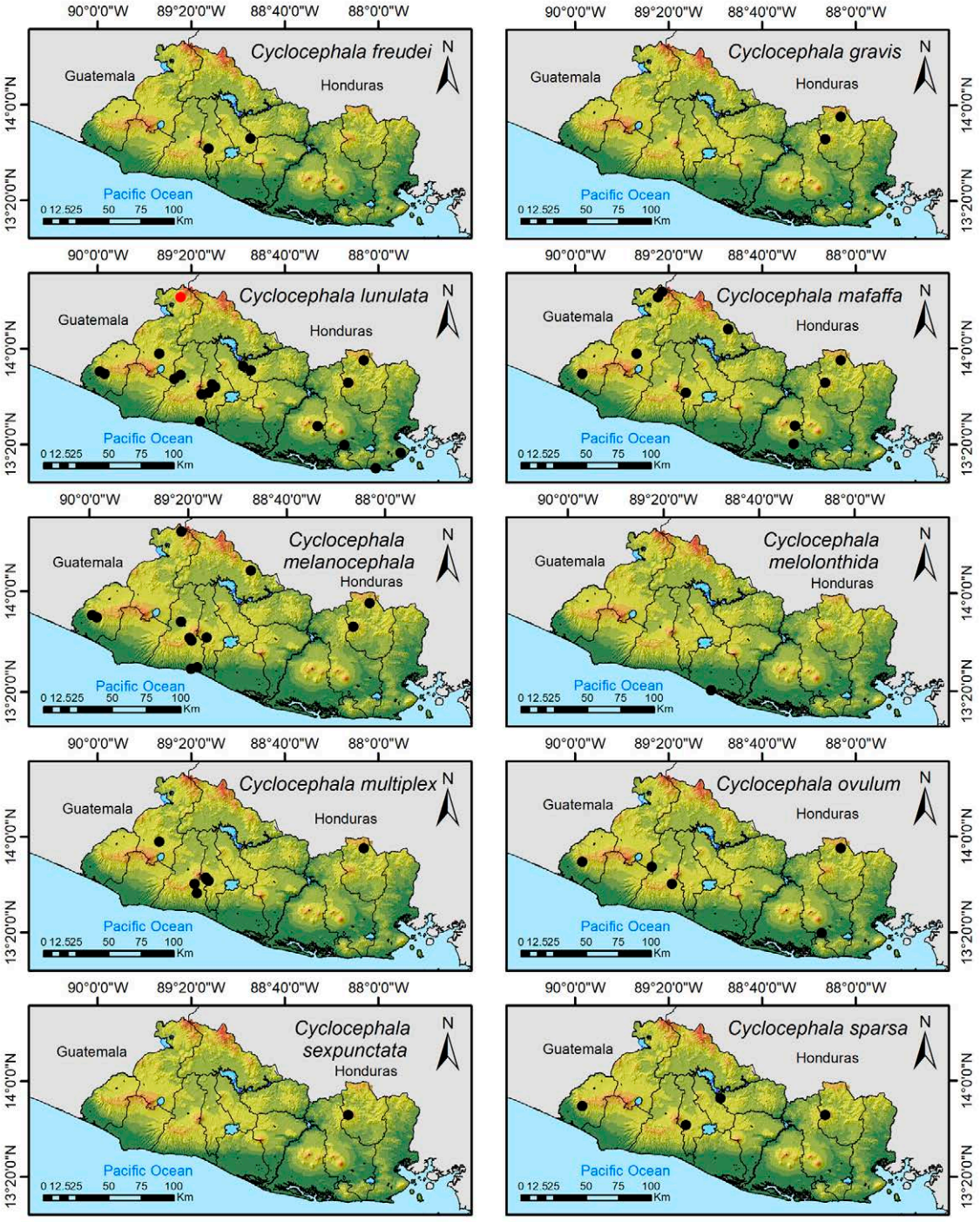

Figure 22. Distribution maps for *Cyclocephala freudei*, *C. gravis*, *C. lunulata*, *C. mafaffa*, *C. melanocephala*, *C. melolonthida*, *C. multiplex*, *C. ovulum*, *C. sexpunctata*, and *C. sparsa* in El Salvador.

Dyscinetus Harold, 1869
Dyscinetus dubius (Olivier, 1789)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago, Guyana, Suriname, French Guiana, Ecuador, Brazil, Peru, Bolivia, Paraguay, Argentina, and Cuba (Schoolmeesters, 2022).

Locality records: Ahuachapán: Ahuachapán (Ratcliffe & Cave, 2006: 171); Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 171); San Miguelito (MUHNES); Zanjón El Chino (Ratcliffe & Cave, 2006: 171); Santa Ana: Metapán (Ratcliffe & Cave, 2006: 171); Parque Nacional Güija (Ratcliffe & Cave, 2006: 171); Parque Nacional Los Andes (Ratcliffe & Cave, 2006: 171); La Libertad: El Barillo (MUHNES); Zapotitán (Ratcliffe & Cave, 2006: 171); San Salvador: San Salvador (Ratcliffe & Cave, 2006: 171); Cuscatlán: Suchitoto (Ratcliffe & Cave, 2006: 171); Cabañas: Cinquera (Ratcliffe & Cave, 2006: 171); San Miguel: Laguna El Jocotal (Ratcliffe & Cave, 2006: 171) (Fig. 23).

Years of collection: 1963-1964, 1973-1977, 1986, 1994, 1997-2002.

Months of collection: All year.

Topographic zone: interior valley, coastal mountains, coastal plain.

Elevation range: 5-805 m.

Dyscinetus laevipunctatus Bates, 1888

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, and Brazil (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 173); Zanjón El Chino (Ratcliffe & Cave, 2006: 173); La Libertad: San Andrés (Ratcliffe & Cave, 2006: 173); San Salvador: San Salvador (Ratcliffe & Cave, 2006: 173) (Fig. 23).

Years of collection: 1950, 1976-1979, 1997-2002.

Months of collection: All year, except September.

Topographic zone: interior valley, coastal mountains, coastal plain.

Elevation range: 5-1,730 m.

Stenocrates Burmeister, 1847
Stenocrates bicarinatus Robinson, 1947

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Suriname, French Guiana, Brazil, and Peru (Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Ratcliffe & Cave, 2006: 181) (Fig. 23).

Years of collection: 1963.

Months of collection: October.

Topographic zone: interior valley.

Elevation range: 685 m.

Comments: although relatively common in Honduras and Nicaragua, only 1 specimen from El Salvador was reported by Ratcliffe and Cave (2006).

Stenocrates canuli Delgado, 1991

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, and Nicaragua (Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Ratcliffe & Cave, 2006: 182) (Fig. 23).

Years of collection: no data.

Months of collection: no data.

Topographic zone: interior valley.

Elevation range: 685 m.

Comments: although relatively common in Honduras, only 1 specimen from El Salvador was reported by Ratcliffe and Cave (2006), with no specified year and month of collection.

Tribe Dynastini MacLeay, 1819
Dynastes MacLeay, 1819
Dynastes maya Hardy, 2003

Distribution: Mexico, Guatemala, El Salvador, and Honduras (López-Sorto et al., 2014; Schoolmeesters, 2022).

Locality records: Chalatenango: Cerro Malcotal (López-Sorto et al., 2014: 43) (Fig. 23).

Years of collection: 2011.

Months of collection: June.

Topographic zone: northern mountains.

Elevation range: 2,190 m.

Comments: 3 adult specimens were collected as they apparently fed on decaying wood (López-Sorto et al., 2014).

Golofa Hope, 1837
Golofa (*Mixigenus*) *tersander* Burmeister, 1847

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: La Libertad: San Andrés (Ratcliffe & Cave, 2006: 380) (Fig. 23).

Years of collection: no data.

Months of collection: no data.

Topographic zone: interior valley.

Elevation range: 475 m.

Comments: only 1 specimen is known from El Salvador, with no specified year and month of collection (Ratcliffe & Cave, 2006).

Golofa (*Golofa*) *pizarro* Hope, 1837

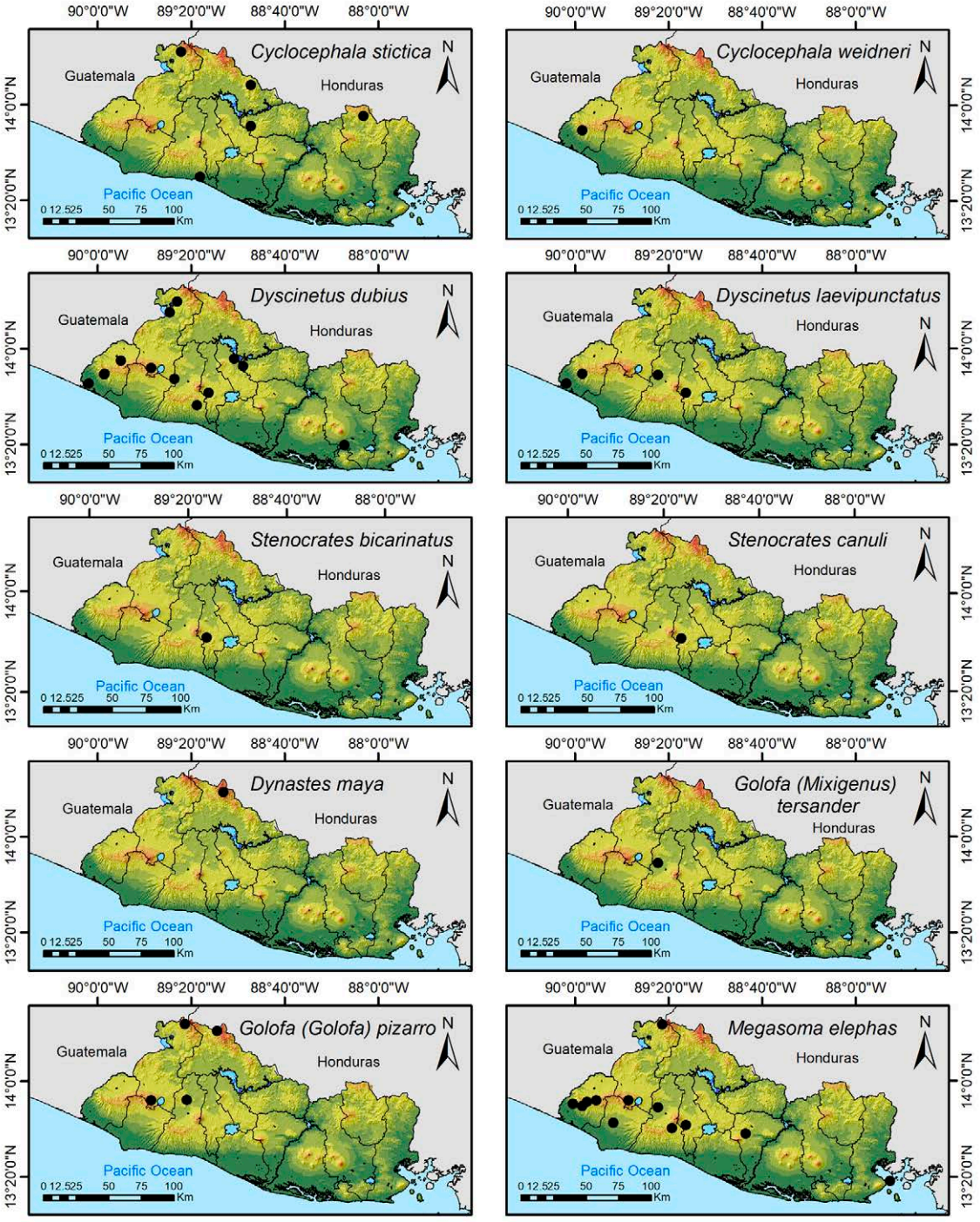

Figure 23. Distribution maps for *Cyclocephala stictica*, *C. weidneri*, *Dyscinetus dubius*, *D. laevipunctatus*, *Stenocrates bicarinatus*, *S. canuli*, *Dynastes maya*, *Golofa* (*Mixigenus*) *tersander*, *G.* (*Golofa*) *pizarro*, and *Megasoma elephas* in El Salvador.

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Los Andes (Ratcliffe & Cave, 2006: 374); Parque Nacional Montecristo (Ratcliffe & Cave, 2006: 374) (Los Planes) (MUHNES); Chalatenango: Las Pilas (Ratcliffe & Cave, 2006: 374); La Libertad: San Juan Opico (Ratcliffe & Cave, 2006: 374) (Fig. 23).

Years of collection: 1975-1979, 1988, 1999.

Months of collection: July-September.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 480-1,890 m.

Comments: although relatively common in Honduras, only 7 specimens from El Salvador were reported by Ratcliffe and Cave (2006).

Megasoma Kirby, 1825

Megasoma elephas (Fabricius, 1775)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, and Venezuela (Schoolmeesters, 2022).

Locality records: Ahuachapán: Concepción de Ataco (MUHNES); Parque Nacional El Imposible (Cerro Campana) (Ratcliffe & Cave, 2006: 381); (San Benito) (Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 379) (San Francisco Menéndez) (Ratcliffe & Cave, 2006: 381); Santa Ana: Parque Nacional Los Andés (Ratcliffe & Cave, 2006: 381); Parque Nacional Montecristo (Los Planes) (Ratcliffe & Cave, 2006: 381); Sonsonate: Sonsonate (MUHNES); La Libertad: San Andrés (Ratcliffe & Cave, 2006: 381); Santa Tecla (Ratcliffe & Cave, 2006: 381); San Salvador: San Salvador (Ratcliffe & Cave, 2006: 381); San Vicente: San Vicente (Ratcliffe & Cave, 2006: 381); La Unión: Isla Zacatillo (Ratcliffe & Cave, 2006: 381); no specific department: no specific locality (Berry, 1959b: 49) (Fig. 23).

Years of collection: 1969, 1973-1975, 1997-2002.

Months of collection: All year.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 110-1,890 m.

Tribe Oryctini Mulsant, 1842

Coelosis Hope, 1837

Coelosis (*Eucoelosis*) *biloba* (Linnaeus, 1767)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Peru, Bolivia, Chile, and Paraguay (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 245); La Libertad: Teotepeque (Ratcliffe & Cave, 2006: 245) (Fig. 24).

Years of collection: 1998-1999.

Months of collection: April and August.

Topographic zone: coastal mountains, coastal plain.

Elevation range: 520-780 m.

Comments: only 2 specimens from El Salvador were reported by Ratcliffe and Cave (2006).

Enema Hope, 1837

Enema endymion Chevrolat, 1843

Distribution: Mexico, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, French Guiana, Brazil, and Bolivia (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 248); Santa Ana: El Congo (Ratcliffe & Cave, 2006: 249); Parque Nacional Montecristo (Majaditas, San José Ingenio) (Serrano-Chicas, 2019: 37, 38); Planes del Ranchador (Ratcliffe & Cave, 2006: 249); Santa Ana (Ratcliffe & Cave, 2006: 248); La Libertad: San Andrés (Ratcliffe & Cave, 2006: 249); Santa Tecla (Berry & Salazar-Vaquero, 1957: 44; Ratcliffe & Cave, 2006: 249); Volcán de San Salvador (Ratcliffe & Cave, 2006: 249); San Salvador: Aguilares (Ratcliffe & Cave, 2006: 249); Guazapa (Ratcliffe & Cave, 2006: 249); San Salvador (Ratcliffe & Cave, 2006: 249); Cuscatlán: San José Guayabal (Ratcliffe & Cave, 2006: 248) (Fig. 24).

Years of collection: 1964, 1975-1979, 1983, 1988, 1997-2002, 2019.

Months of collection: All year, except October.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 300-1,845 m.

Heterogomphus Burmeister, 1847

Heterogomphus (*Heterogomphus*) *chevrolatii* Burmeister, 1847

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Ecuador, and Brazil (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Los Planes) (Ratcliffe & Cave, 2006: 255); Chalatenango: Cerro El Pital (MUHNES); San Salvador: San Salvador (Ratcliffe & Cave, 2006: 255); San Miguel: Moncagua (Ratcliffe & Cave, 2006: 255); Morazán: Cerro Cacahuatique (Ratcliffe & Cave, 2006: 255); Yamabal (Ratcliffe & Cave, 2006: 255) (Fig. 24).

Years of collection: 1978, 1979, 1997-2002.

Months of collection: All year, except October.

Topographic zone: northern mountains, interior valley.

Elevation range: 245-2,660 m.

Heterogomphus (*Daemonoplus*) *flohri* (Kolbe, 1906)

Distribution: Mexico, Belize, El Salvador, Guatemala, Honduras, and Nicaragua (Ratcliffe et al., 2013).

Locality records: Morazán: Cerro Cacahuatique (Ratcliffe & Cave, 2006: 258) (Fig. 24).

Years of collection: 1979.

Months of collection: July.

Topographic zone: northern mountains.

Elevation range: 1,400 m.

Comments: only 2 specimens from El Salvador were reported by Ratcliffe and Cave (2006), who misidentified them as *Heterogomphus mniszechi* (Thomson).

Irazua Ratcliffe, 2003

Irazua dilicra Ratcliffe, 2003

Distribution: El Salvador and Costa Rica (Schoolmeesters, 2022).

Locality records: La Libertad: Santa Tecla (Ratcliffe & Cave, 2006: 258) (Fig. 24).

Years of collection: no data.

Months of collection: May.

Topographic zone: coastal mountains.

Elevation range: 900 m.

Podischnus Burmeister, 1847

Podischnus agenor (Olivier, 1789)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Suriname, French Guiana, Ecuador, Brazil, and Peru (Schoolmeesters, 2022).

Locality records: Santa Ana: Chalchuapa (Ratcliffe & Cave, 2006: 269); La Libertad: Los Chorros (Ratcliffe & Cave, 2006: 269); Quezaltepeque (Ratcliffe & Cave, 2006: 269); San Andrés (Berry & Salazar-Vaquero, 1957: 47; Ratcliffe & Cave, 2006: 269); San Juan Opico (Ratcliffe & Cave, 2006: 269); Santa Tecla (Berry & Salazar-Vaquero, 1957: 47; Ratcliffe & Cave, 2006: 269); San Salvador: Aguilares (Ratcliffe & Cave, 2006: 269) (Fig. 24).

Years of collection: 1961, 1969, 1977-1978, 1986, 1997-2001.

Months of collection: April-September.

Topographic zone: interior valley, coastal mountains.

Elevation range: 300-900 m.

Comments: Berry and Salazar-Vaquero (1957), and Berry (1959a) stated that the species causes little damage to corn and sugarcane in El Salvador.

Strategus Hope, 1837

Strategus aloeus (Linnaeus, 1758)

Distribution: USA, Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago, Guyana, Suriname, French Guiana, Ecuador, Brazil, Peru, Bolivia, and Grenada (Schoolmeesters, 2022).

Locality records: Ahuachapán: Guaymango (Ratcliffe & Cave, 2006: 274); Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 274; Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 379); Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso); (Los Planes) (Ratcliffe & Cave, 2006: 274); Santa Ana (Ratcliffe & Cave, 2006: 274); Sonsonate: Sonsonate (Ratcliffe & Cave, 2006: 274); Chalatenango: La Montañona (Ratcliffe & Cave, 2006: 274); La Libertad: El Barillo (MUHNES); La Libertad (Ratcliffe & Cave, 2006: 274); Los Chorros (Ratcliffe & Cave, 2006: 274); Parque El Bicentenario (Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 379); San Andrés (Ratcliffe & Cave, 2006: 274); Santa Tecla (Berry & Salazar-Vaquero, 1957: 47; Ratcliffe & Cave, 2006: 274); Sitio del Niño (Ratcliffe & Cave, 2006: 274); San Salvador: Aguilares (Ratcliffe & Cave, 2006: 274); Cerro San Jacinto (Ratcliffe & Cave, 2006: 274); Ilopango (Ratcliffe & Cave, 2006: 274); Parque Saburo Hirao (MUHNES); Puerta del Diablo (Ratcliffe & Cave, 2006: 274); San Salvador (Berry & Salazar-Vaquero, 1957: 47; Ratcliffe & Cave, 2006: 274); Santo Tomás (Ratcliffe & Cave, 2006: 274); Zacamil (Ratcliffe & Cave, 2006: 274); Cuscatlán: Cojutepeque (Ratcliffe & Cave, 2006: 274); El Rosario (Berry & Salazar-Vaquero, 1957: 47); San José Guayabal (Ratcliffe & Cave, 2006: 274); San Pedro Perulapán (Ratcliffe & Cave, 2006: 274); La Paz: Ichanmichen (Ratcliffe & Cave, 2006: 274); San Juan Talpa (Ratcliffe & Cave, 2006: 274); Cabañas: Sensuntepeque (Ratcliffe & Cave, 2006: 274); San Vicente: San Vicente (Ratcliffe & Cave, 2006: 274); Santa Cruz Porrillo (Berry & Salazar-Vaquero, 1957: 47); Usulután: Usulután (Ratcliffe & Cave, 2006: 274); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 274) (Fig. 24).

Years of collection: 1958, 1964, 1972-1991, 1997-2002, 2019.

Months of collection: All year, except October.

Topographic zone: northern mountain, interior valley, coastal mountains, coastal plain.

Elevation range: 40-2,360 m.

Comments: reported as *Strategus julianus* Burmeister by Berry and Salazar-Vaquero (1957).

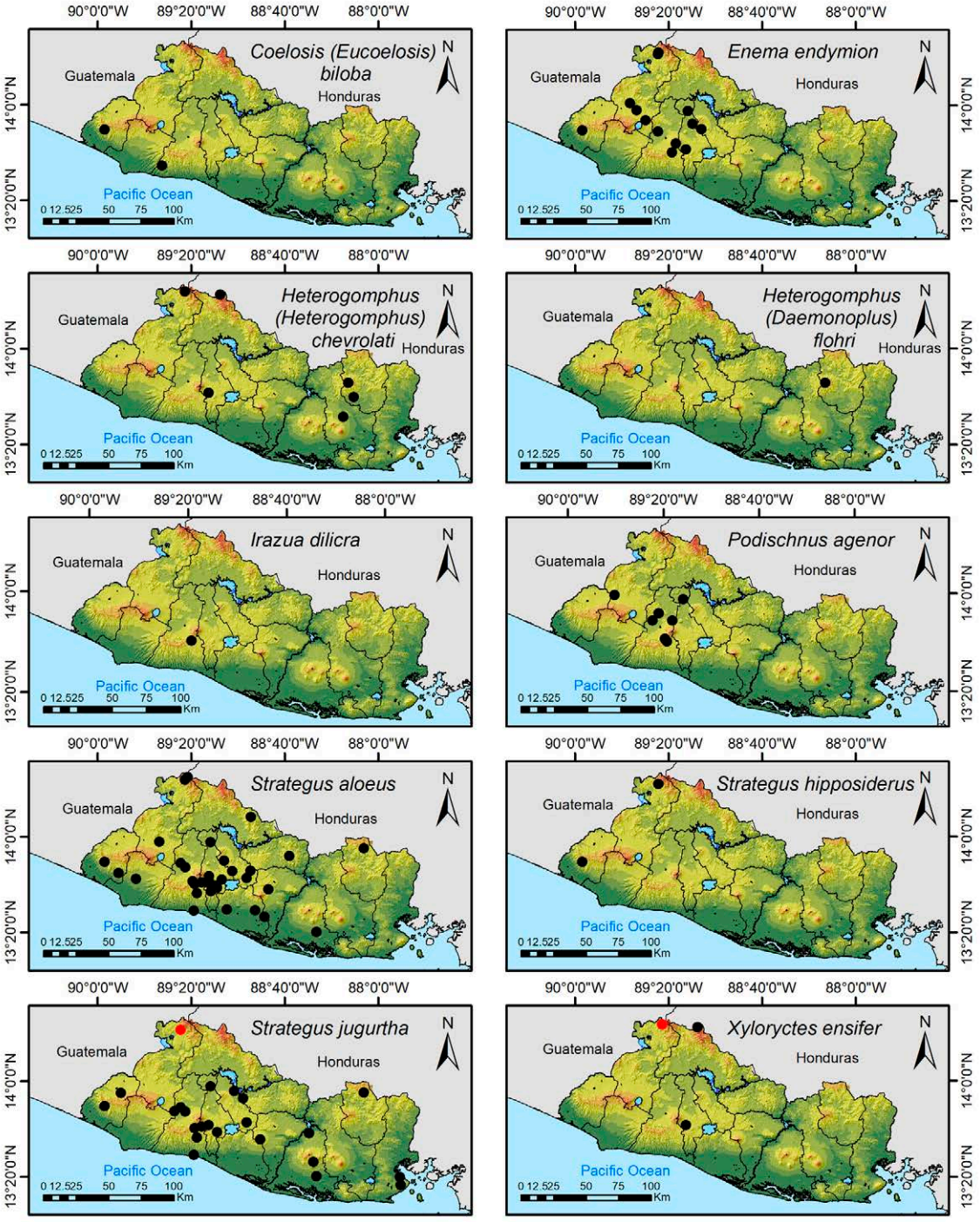

Figure 24. Distribution maps for *Coelosis* (*Eucoelosis*) *biloba*, *Enema endymion*, *Heterogomphus* (*Heterogomphus*) *chevrolatii*, *H.* (*Daemonoplus*) *flohri*, *Irazua dilicra*, *Podischnus agenor*, *Strategus aloeus*, *S. hipposiderus*, *S. jugurtha*, and *Xyloryctes ensifer* in El Salvador.

Strategus hipposiderus Ratcliffe, 1976

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, and Brazil (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 279); Santa Ana: Parque Nacional Montecristo (Majaditas) (Serrano-Chicas, 2019: 37, 38) (Fig. 24).

Years of collection: 1999, 2019.

Months of collection: April and August.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 780-1,070 m.

Comments: Ratcliffe and Cave (2006) reported only 1 specimen from El Salvador. Serrano-Chicas (2019) captured only 1 specimen, too.

Strategus jugurtha Burmeister, 1847

Distribution: Mexico, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Ecuador, and Peru (Schoolmeesters, 2022).

Locality records: Ahuachapán: Ahuachapán (Ratcliffe & Cave, 2006: 282); Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 282); Santa Ana: Parque Nacional Montecristo [probably San José Ingenio] (Ratcliffe & Cave, 2006: 282; Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 379); La Libertad: El Barillo (Ratcliffe & Cave, 2006: 282); La Libertad (Ratcliffe & Cave, 2006: 282); Parque El Bicentenario (Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 379); San Andrés (Ratcliffe & Cave, 2006: 282); Santa Tecla (Ratcliffe & Cave, 2006: 282); Sitio del Niño (Ratcliffe & Cave, 2006: 282); Zapotitán (Ratcliffe & Cave, 2006: 282); San Salvador: Aguilares (Ratcliffe & Cave, 2006: 282); San Salvador (Berry & Salazar-Vaquero, 1957: 47; Ratcliffe & Cave, 2006: 282); Santo Tomás (Ratcliffe & Cave, 2006: 282); Cuscatlán: Cojutepeque (Ratcliffe & Cave, 2006: 282); Suchitoto (Ratcliffe & Cave, 2006: 282); Cabañas: Cinquera (Ratcliffe & Cave, 2006: 282); San Vicente: Volcán de San Vicente-Chinchontepec (Ratcliffe & Cave, 2006: 282); Usulután: California (Ratcliffe & Cave, 2006: 282); Estanzuelas (Ratcliffe & Cave, 2006: 282); Usulután (Ratcliffe & Cave, 2006: 282); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 282); La Unión: La Unión (Ratcliffe & Cave, 2006: 282); Volcán de Conchagua (Ratcliffe & Cave, 2006: 282) (Fig. 24).

Years of collection: 1964, 1971-1993, 1997-2001, 2019.

Months of collection: March-September.

Topographic zone: northern mountain, interior valley, coastal mountains, coastal plain.

Elevation range: 30-2,000 m.

Xyloryctes Hope, 1837

Xyloryctes ensifer Bates, 1888

Distribution: Mexico, Guatemala, El Salvador, and Honduras (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo [probably Los Planes] (Ratcliffe & Cave, 2006: 288); Chalatenango: Cerro El Pital (MUHNES); San Salvador: San Salvador (Ratcliffe & Cave, 2006: 288) (Fig. 24).

Years of collection: 1975, 1978, 1979.

Months of collection: March and May.

Topographic zone: northern mountains, interior valley.

Elevation range: 685-2,660 m.

Comments: Ratcliffe and Cave (2006) reported only 6 specimens collected in El Salvador.

Xyloryctes lobicollis Bates, 1888

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 290); Santa Ana; Parque Nacional Los Andes (Ratcliffe & Cave, 2006: 290); Parque Nacional Montecristo (Los Planes, San José Ingenio) (Ratcliffe & Cave, 2006: 290); La Libertad: San Andrés (Ratcliffe & Cave, 2006: 290); Santa Tecla (Ratcliffe & Cave, 2006: 290); San Salvador: Cuscatancingo (Ratcliffe & Cave, 2006: 290); San Salvador (Berry & Salazar-Vaquero, 1957: 47; Ratcliffe & Cave, 2006: 290); Cabañas: Cinquera (Ratcliffe & Cave, 2006: 290); Sensuntepeque (Ratcliffe & Cave, 2006: 290); La Unión: Volcán de Conchagua (MUHNES) (Fig. 25).

Years of collection: 1973-1979, 1985, 1997-2002.

Months of collection: March-November.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 385-1,890 m.

Tribe Pentodontini Mulsant, 1842

Euetheola Bates, 1888

Euetheola bidentata (Burmeister, 1847)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago, Guyana, Suriname, French Guiana, and Brazil (Schoolmeesters, 2022).

Locality records: Ahuachapán: Atiquizaya (Ratcliffe & Cave, 2006: 197); Santa Ana: Candelaria de la Frontera (Ratcliffe & Cave, 2006: 197); La Libertad: Santa Tecla (Berry & Salazar-Vaquero, 1957: 45); San Salvador: San Salvador (Ratcliffe & Cave, 2006: 197); Cabañas: Cinquera (Ratcliffe & Cave, 2006: 197); San Vicente: Santa Cruz Porrillo (Ratcliffe & Cave, 2006: 197); Santo Domingo (FSCA); Usulután: Nancuchiname (Ratcliffe & Cave, 2006: 197) (Fig. 25).

Years of collection: 1958-1969, 1978-1979, 1997-2002.

Months of collection: All year, except February and April.

Topographic zone: interior valley, coastal mountains, coastal plain.

Elevation range: 15-900 m.

Comments: Berry and Salazar-Vaquero (1957) mentioned that adults feed on the leaves and stems of corn plants but cause little damage to the crop.

Euetheola humilis (Burmeister, 1847)

Distribution: Mexico, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Venezuela, Guyana, Suriname, French Guiana, Brazil, Bolivia, Paraguay, Argentina, and Uruguay (Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (CMNC) (Fig. 25).

Years of collection: 1959.

Months of collection: July.

Topographic zone: interior valley.

Elevation range: 685 m.

Comments: new country record.

Ligyrus Casey, 1915

Ligyrus (*Ligyrodes*) *sallaei* Bates, 1888

Distribution: USA, Mexico, Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (López-García & Deloya, 2022: 33); (San Benito) (Ratcliffe & Cave, 2006: 238; Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 379); Santa Ana: Parque Nacional Los Andes (Ratcliffe & Cave, 2006: 238); Parque Nacional Montecristo (Los Planes) (Ratcliffe & Cave, 2006: 238); Chalatenango: La Montañona (Ratcliffe & Cave, 2006: 238); La Libertad: San Andrés (Ratcliffe & Cave, 2006: 238); San Salvador: San Salvador (Ratcliffe & Cave, 2006: 238); Cabañas: Cinquera (Ratcliffe & Cave, 2006: 238; Tejutepeque (El Tamagás) (MUHNES); Morazán: Cerro Cacahuatique (Ratcliffe & Cave, 2006: 238); Yamabal (MUHNES); La Unión: Isla Martín Pérez (MUHNES); no specific department: no specific locality (Ratcliffe & Morón, 1997: 74) (Fig. 25).

Years of collection: 1963, 1977-1978, 1994, 1997-2002.

Months of collection: March-November.

Topographic zone: northern mountain, interior valley, coastal mountains, coastal plain.

Elevation range: 40-1,890 m.

Comments: reported as *Tomarus sallaei* by Ratcliffe and Cave (2006), Pablo-Cea (2021), and Pablo-Cea et al. (2022).

Ligyrus (*Ligyrus*) *allonasutus* López-García & Deloya, 2022

Distribution: USA, Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, and Jamaica (Schoolmeesters, 2022).

Locality records: Ahuachapán: Atiquizaya (Izcaquillo) (Ratcliffe & Cave, 2006: 237); Guaymango (Ratcliffe & Cave, 2006: 237); Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 237); Santa Ana: Parque Nacional Montecristo (Los Planes) (López-García & Deloya, 2022: 38); (Majaditas) (Serrano-Chicas, 2019: 37, 38); (San José Ingenio) (Ratcliffe & Cave, 2006: 237; Sonsonate: Sonsonate (Ratcliffe & Cave, 2006: 237); La Libertad: El Barillo (Ratcliffe & Cave, 2006: 237); El Playón (López-García & Deloya, 2022: 38); La Libertad (Ratcliffe & Cave, 2006: 237); Parque Nacional Walter Thilo Deininger (Ratcliffe & Cave, 2006: 237); San Andrés (Berry & Salazar-Vaquero, 1957: 45; Ratcliffe & Cave, 2006: 237); San Diego (López-García & Deloya, 2022: 38); Santa Tecla (Ratcliffe & Cave, 2006: 237); Zapotitán (Ratcliffe & Cave, 2006: 237); Zaragoza (Ratcliffe & Cave, 2006: 237); San Salvador: Parque Saburo Hirao (López-García & Deloya, 2022: 38); San Salvador (Ratcliffe & Cave, 2006: 237); Cuscatlán: Cojutepeque (Ratcliffe & Cave, 2006: 237); San Pedro Perulapán (Ratcliffe & Cave, 2006: 237); La Paz: San Luis Talpa (López-García & Deloya, 2022: 38); Zacatecoluca (Ratcliffe & Cave, 2006: 237); Cabañas: Cinquera (Ratcliffe & Cave, 2006: 237); Ilobasco (Ratcliffe & Cave, 2006: 237); San Miguel: Laguna El Jocotal (López-García & Deloya, 2022: 38); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 237); La Unión: La Unión (Ratcliffe & Cave, 2006: 237) (Fig. 25).

Years of collection: 1952, 1964, 1972-1979, 1983-1990, 1997-2002, 2019.

Months of collection: All year.

Topographic zone: northern mountain, interior valley, coastal mountains, coastal plain.

Elevation range: 15-1,890 m.

Comments: reported as *Tomarus nassutus* [sic] by Serrano-Chicas (2019) and as *Tomarus nasutus* by Berry and Salazar-Vaquero (1957), Berry (1959a), and Ratcliffe and Cave (2006). Berry and Salazar-Vaquero (1957), and Berry (1959a) mentioned that the species is harmful to cultivated lettuce in El Salvador. López-García and Deloya (2022) examined specimens from La Paz: Caprex, a locality unknown to us.

Ligyrus (*Ligyrus*) *fossor* (Latreille, 1813)

Distribution: El Salvador, Panama, Colombia, Venezuela, Ecuador, Brazil, Bolivia, Bahamas, Cuba, Jamaica, Puerto Rico, Antigua & Barbuda, and Curaçao (Schoolmeesters, 2022).

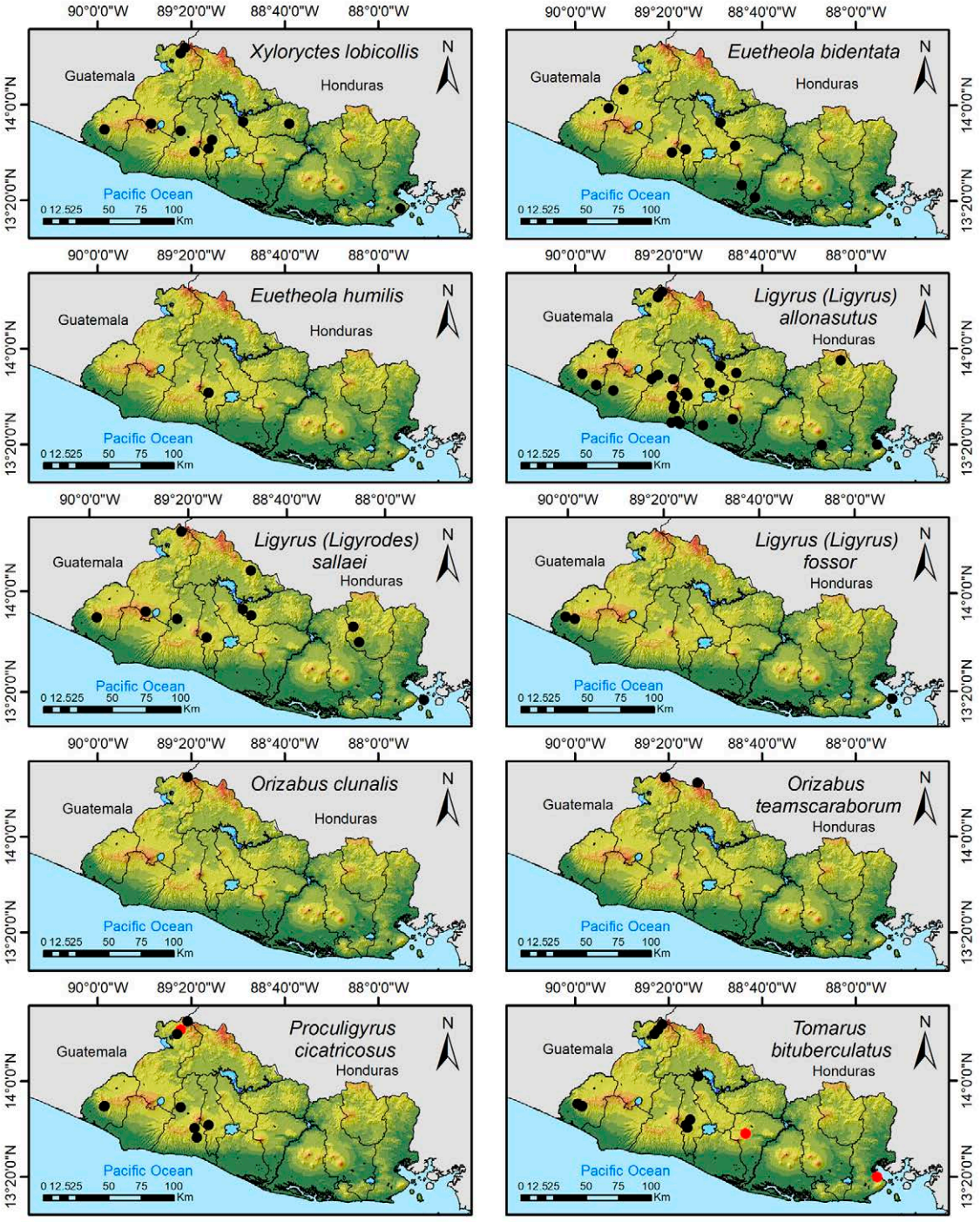

Figure 25. Distribution maps for *Xyloryctes lobicollis*, *Euetheola bidentata*, *E. humilis*, *Ligyrus (Ligyrus) allonasutus*, *L. (L.) sallaei*, *L. (L.) fossor*, *Orizabus clunalis*, *O. teamscaraborum*, *Proculigyrus cicatricosus*, and *Tomarus bituberculatus* in El Salvador.

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (MUHNES); (San Francisco Menéndez) (Ratcliffe & Cave, 2006: 228); La Unión: Isla Martín Pérez (Ratcliffe & Cave, 2006: 228) (Fig. 25).

Years of collection: 2001.

Months of collection: July and September.

Topographic zone: coastal mountains, coastal plain.

Elevation range: 40-780 m.

Comments: reported as *Tomarus fossor* in Ratcliffe and Cave (2006), who reported only 3 specimens from El Salvador.

Orizabus Fairmaire, 1878

Orizabus clunalis (LeConte, 1856)

Distribution: USA, Mexico, Guatemala, El Salvador, and Honduras (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Ratcliffe & Cave, 2006: 208; Serrano-Chicas, 2019: 37, 38) (Fig. 25).

Years of collection: 2019.

Months of collection: March and April.

Topographic zone: northern mountains.

Elevation range: 2,360 m.

Comments: reported as *Orizabus clunaris* [sic] by Serrano-Chicas (2019). Only 1 specimen from El Salvador was reported by Ratcliffe and Cave (2006), with no specified year and month of collection. Serrano-Chicas (2019) collected 4 specimens in the cloud forest of Parque Nacional Montecristo.

Orizabus teamscaraborum Ratcliffe & Cave, 2006

Distribution: El Salvador and Honduras (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (Bosque Nebuloso) (Ratcliffe & Cave, 2006: 215); Chalatenango: Cerro El Pital (Ratcliffe & Cave, 2006: 215) (Fig. 25).

Years of collection: 1960, 1971, 1997-2002.

Months of collection: February, April-July, and October.

Topographic zone: northern mountains.

Elevation range: 2,360-2,660 m.

Proculigyrus López-García & Deloya, 2022

Proculigyrus cicatricosus (Prell, 1937)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Costa Rica, and Colombia (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 225); San Miguelito (López-García & Deloya, 2022: 22); Santa Ana: Parque Nacional Montecristo (López-García & Deloya, 2022: 22) (Bosque Nebuloso, Cerro Miramundo) (López-García & Deloya, 2022: 22); [probably San José Ingenio] (Ratcliffe & Cave, 2006: 225); Metapán (López-García & Deloya, 2022: 22); La Libertad: El Barillo (Ratcliffe & Cave, 2006: 225); San Andrés (Ratcliffe & Cave, 2006: 225); Santa Tecla (Ratcliffe & Cave, 2006: 225); San Salvador: San Salvador (López-García & Deloya, 2022: 22) (Fig. 25).

Years of collection: 1952, 1975-1980, 1997-2002.

Months of collection: February, March, May-July, and September-December.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 475-2,360 m.

Comments: reported as *Tomarus cicatricosus* by Ratcliffe and Cave (2006).

Tomarus Erichson, 1847

Tomarus bituberculatus (Palisot de Beauvois, 1811)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago, Ecuador, Brazil, Peru, and Bolivia (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (La Fincona, San Benito) (MUHNES); San Miguelito (MUHNES); Santa Ana: Metapán (MUHNES); Parque Nacional Montecristo (Los Planes, San José Ingenio) (MUHNES); San Salvador: Parque Saburo Hirao (MUHNES); San Salvador (Ratcliffe & Cave, 2006: 221); (Scandia) (MUHNES); Cuscatlán: Área Natural Protegida Colima (Cerrón Grande) (MUHNES); San Vicente: no specific locality (MUHNES); La Unión: no specific locality (MUHNES) (Fig. 25).

Years of collection: 1964, 1972-1977.

Months of collection: May, June, August, and November.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 305-1,890 m.

Tomarus discrepans (Escalona & Joly, 2006)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, and Venezuela (López-García & Deloya 2022).

Locality records: Santa Ana: Santa Ana (Ratcliffe & Cave, 2006: 229); La Libertad: San Andrés (Ratcliffe & Cave, 2006: 228); Santa Tecla (Ratcliffe & Cave, 2006: 228); San Salvador: San Salvador (Ratcliffe & Cave, 2006: 228); Usulután: Usulután (Ratcliffe & Cave, 2006: 228) (Fig. 26).

Years of collection: 1952, 1975-1979.

Months of collection: April, September, October, and December.

Topographic zone: interior valley, coastal mountains, coastal plain.

Elevation range: 80-900 m.

Comments: reported as *Tomarus gyas* Erichson by Ratcliffe and Cave (2006). Although the species is common in Honduras, Ratcliffe and Cave (2006) reported only 6 specimens from El Salvador.

Tomarus laevicollis (Bates, 1888)

Distribution: Mexico, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: La Paz: Playa Costa del Sol (MUHNES); San Miguel: Laguna El Jocotal (Ratcliffe & Cave, 2006: 232) (Fig. 26).

Years of collection: 2001.

Months of collection: May.

Topographic zone: coastal plain.

Elevation range: 5-25 m.

Comments: Ratcliffe and Cave (2006) reported only 1 specimen from El Salvador.

Tribe Phileurini Burmeister, 1847

Goniophileurus Kolbe, 1910

Goniophileurus femoratus (Burmeister, 1847)

Distribution: Mexico, El Salvador, Honduras, Costa Rica, Panama, Colombia, Venezuela, French Guiana, Ecuador, and Brazil (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 308); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 308) (Fig. 26).

Years of collection: 1999, 2001.

Months of collection: May.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 665-780 m.

Comments: Ratcliffe and Cave (2006) reported only 2 specimens from El Salvador.

Hemiphileurus Kolbe, 1910

Hemiphileurus cylindroides (Bates, 1888)

Distribution: Mexico, Guatemala, Belize, El Salvador, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Cuscatlán: Suchitoto (Ratcliffe & Cave, 2006: 314) (Fig. 26).

Years of collection: 1979.

Months of collection: September.

Topographic zone: interior valley.

Elevation range: 385 m.

Comments: Ratcliffe and Cave (2006) reported only 1 specimen from El Salvador.

Hemiphileurus euniceae Ratcliffe & Cave, 2006

Distribution: Guatemala and El Salvador (Schoolmeesters, 2022).

Locality records: San Salvador: Soyapango (Ratcliffe & Cave, 2006: 317) (Fig. 26).

Years of collection: 1999.

Months of collection: June.

Topographic zone: interior valley.

Elevation range: 610 m.

Comments: only 1 specimen from El Salvador is known (Ratcliffe & Cave, 2006).

Hemiphileurus laevicauda (Bates, 1888)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (MUHNES); Santa Ana: Santa Ana (Ratcliffe & Cave, 2006: 318); Chalatenango: San Ignacio (Ratcliffe & Cave, 2006: 318); San Salvador: Parque Saburo Hirao (MUHNES); San Vicente: Apastepeque (Poza Azul) (MUHNES) (Fig. 26).

Years of collection: 1977-1979, 1998.

Months of collection: March, May, and June.

Topographic zone: northern mountains, interior valley, coastal mountains.

Elevation range: 500-1,060 m.

Homophileurus Kolbe, 1910

Homophileurus luedeckei Kolbe, 1910

Distribution: Mexico, Guatemala, and El Salvador (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 327); San Miguelito (near the ecotone of Parque Nacional El Imposible) (E. Sandoval, personal communication) (Fig. 26).

Years of collection: 1979, 2013.

Months of collection: June and November.

Topographic zone: coastal mountains.

Elevation range: 725-800 m.

Comments: Ratcliffe and Cave (2006) reported only a single specimen from El Salvador. Eliberto Sandoval collected a specimen in November 2013 (E. Sandoval, personal communication).

Homophileurus quadrituberculatus (Palisot de Beauvois, 1805)

Distribution: Mexico, Guatemala, Belize, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guyana, Suriname, French Guiana, Ecuador, Brazil, Peru, Bolivia, Haiti, Dominican Republic, Puerto Rico, Dominica, and Grenada (Schoolmeesters, 2022).

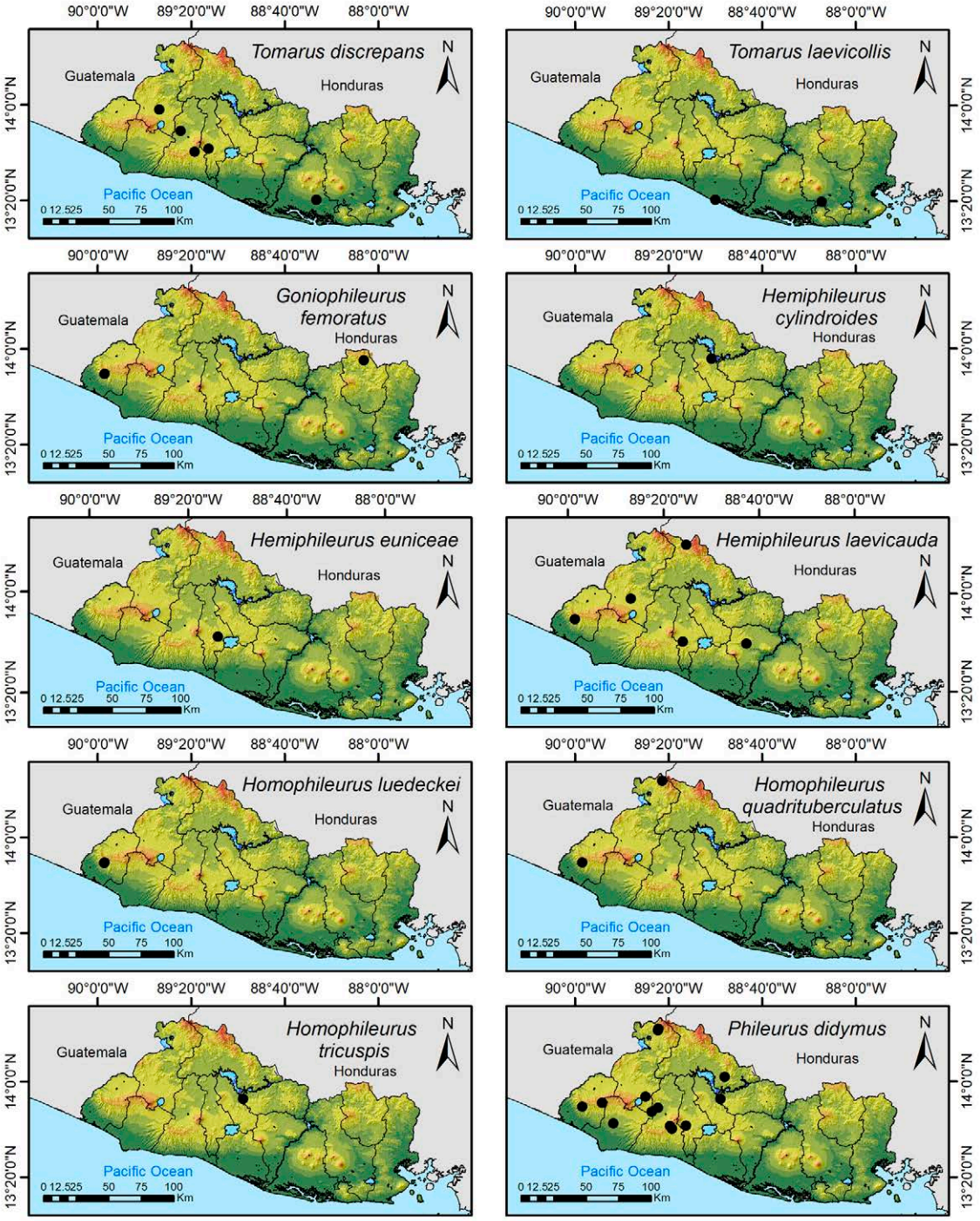

Figure 26. Distribution maps for *Tomarus discrepans*, *T. laevicollis*, *Goniophileurus femoratus*, *Hemiphileurus cylindroides*, *H. euniceae*, *H. laevicauda*, *Homophileurus luedeckei*, *H. quadrituberculatus*, *H. tricuspis*, and *Phileurus didymus* in El Salvador.

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 328); Santa Ana: Parque Nacional Montecristo (Los Planes) (MUHNES) (Fig. 26).

Years of collection: no data.

Months of collection: no data.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 780-1,890 m.

Comments: Ratcliffe and Cave (2006) reported only a single specimen from El Salvador, with no specified year and month of collection.

Homophileurus tricuspis Prell, 1914

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, and Brazil (Schoolmeesters, 2022).

Locality records: Cabañas: Cinquera (Ratcliffe & Cave, 2006: 331) (Fig. 26).

Years of collection: no data.

Months of collection: June.

Topographic zone: interior valley.

Elevation range: 385 m.

Comments: Ratcliffe and Cave (2006) reported only 1 specimen from El Salvador, with no specified year of collection.

Phileurus Latreille, 1807

Phileurus didymus (Linnaeus, 1758)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago, Guyana, Suriname, French Guiana, Ecuador, Brazil, Peru, Bolivia, Paraguay, Puerto Rico, Guadeloupe, Dominica, Martinique, St. Lucia, St. Vincent & the Grenadines, and Grenada (Schoolmeesters, 2022).

Locality records: Ahuachapán: Apaneca (Ratcliffe & Cave, 2006: 337); Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 337; Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 379); Santa Ana: El Congo (Ratcliffe & Cave, 2006: 337); Parque Nacional Montecristo (Majaditas) (Serrano-Chicas, 2019: 37, 38); (San José Ingenio) (Ratcliffe & Cave, 2006: 337; Serrano-Chicas, 2019: 37, 38); Sonsonate: Sonsonate (Ratcliffe & Cave, 2006: 337); Chalatenango: Chalatenango (Ratcliffe & Cave, 2006: 337); La Libertad: Los Chorros (Ratcliffe & Cave, 2006: 337); San Andrés (Ratcliffe & Cave, 2006: 337); Santa Tecla (Ratcliffe & Cave, 2006: 337); Zapotitán (Ratcliffe & Cave, 2006: 337); San Salvador: San Salvador (Ratcliffe & Cave, 2006: 337); Cabañas: Cinquera (Ratcliffe & Cave, 2006: 337) (Fig. 26).

Years of collection: 1959, 1969, 1974, 1987, 1994, 1997-2002, 2019.

Months of collection: All year.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 225-1,475 m.

Phileurus valgus (Olivier, 1789)

Distribution: USA, Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago, Guyana, Suriname, French Guiana, Brazil, Peru, Bolivia, Paraguay, Argentina, Bahamas, Cuba, Cayman Islands, Jamaica, Dominican Republic, Puerto Rico, US Virgin Islands, St. Kitts & Nevis, Antigua & Barbuda, Montserrat, Guadeloupe, Dominica, Martinique, St. Lucia, St. Vincent & the Grenadines, Barbados, and Grenada (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe & Cave, 2006: 342; Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 379); Santa Ana: Parque Nacional Montecristo (Los Planes) (Ratcliffe & Cave, 2006: 342); (San José Ingenio) (Serrano-Chicas, 2019: 37, 38); Santa Ana (Ratcliffe & Cave, 2006: 342); La Libertad; Parque Nacional Walther Thilo Deininger (Ratcliffe & Cave, 2006: 342); San Salvador: Ilopango (Ratcliffe & Cave, 2006: 342); San Salvador (Ratcliffe & Cave, 2006: 342); San Miguel: Laguna El Jocotal (Ratcliffe & Cave, 2006: 342); Morazán: Arambala (Río Sapo) (Ratcliffe & Cave, 2006: 342) (Fig. 27).

Years of collection: 1977, 1988, 1997-2002, 2019.

Months of collection: All year.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 25-1890 m.

Comments: reported as *Phileurus valgas* [sic] by Serrano-Chicas (2019).

Subfamily Cetoniinae Leach, 1815

Tribe Cetoniini Leach, 1815

Euphoria Burmeister, 1842

Euphoria avita Janson, 1881

Distribution: Mexico, Guatemala, El Salvador, and Honduras (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 379); Santa Ana: Parque Nacional Cerro Verde (Orozco, 2012: 62); Parque Nacional Los Andes (Orozco, 2012: 62); Chalatenango: La Palma (Orozco, 2012: 62) (Fig. 27).

Years of collection: 2019.

Months of collection: May and June.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 780-2,020 m.

Comments: in Parque Nacional El Imposible, specimens were captured with aerial traps baited with fermented fruit (Pablo-Cea, 2021).

Euphoria biguttata (Gory & Percheron, 1833)

Distribution: USA, Mexico, Guatemala, El Salvador, and Honduras (Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Orozco, 2012: 18); Cuscatlán: El Rosario (Orozco, 2012: 18) (Fig. 27).

Years of collection: no data.

Months of collection: no data.

Topographic zone: interior valley.

Elevation range: 685-720 m.

Euphoria canescens (Gory & Percheron, 1833)

Distribution: USA, Mexico, Guatemala, Belize, El Salvador, and Honduras (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible [probably San Benito] (Orozco, 2012: 19); Cuscatlán: El Rosario (Berry & Salazar-Vaquero, 1957: 45) (Fig. 27).

Years of collection: 1979.

Months of collection: November.

Topographic zone: interior valley, coastal mountains.

Elevation range: 720-780 m.

Euphoria dimidiata (Gory & Percheron, 1833)

Distribution: USA, Mexico, Guatemala, El Salvador, and Honduras (Schoolmeesters, 2022).

Locality records: Ahuachapán: 5 km NE of San Francisco Menéndez (Orozco, 2012: 21); La Libertad: Santa Tecla (Orozco, 2012: 21); San Salvador: San Salvador (TAMU); Cuscatlán: El Rosario (Berry & Salazar-Vaquero, 1957: 45; Orozco, 2012: 21); San Miguel: La Ceiba (Orozco, 2012: 21) (Fig. 27).

Years of collection: 1979.

Months of collection: November.

Topographic zone: interior valley, coastal mountains, coastal plain.

Elevation range: 170-900 m.

Euphoria geminata (Chevrolat, 1834)

Distribution: Mexico, Guatemala, El Salvador, Honduras, and Nicaragua (Schoolmeesters, 2022).

Locality records: Santa Ana: Candelaria [de la Frontera] (Orozco, 2012: 77); Parque Nacional Montecristo (Los Planes) (MUHNES); Sonsonate: Izalco (Los Guates Farm) (MUHNES); Sonsonate (Orozco, 2012: 77); La Libertad: Santa Tecla (Orozco, 2012: 77); San Salvador: Cerro San Jacinto (MUHNES); Cuscatlán: El Rosario (Berry & Salazar-Vaquero, 1957: 45; Orozco, 2012: 77); La Paz: Mercedes La Ceiba (Orozco, 2012: 77) (Fig. 27).

Years of collection: 1972, 1974-1976.

Months of collection: May and November.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 225-1,890 m.

Euphoria iridescens (Schaum, 1841)

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 379) (Fig. 27).

Years of collection: 2018, 2019.

Months of collection: February, and April-September.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Comments: adults were captured in aerial traps baited with fermented fruit, and 1 adult was found in a pitfall trap baited with human dung (Pablo-Cea, 2021).

Euphoria lesueuri (Gory & Percheron, 1833)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, and Nicaragua (Schoolmeesters, 2022).

Locality records: Santa Ana: Parque Nacional Montecristo (San José Ingenio) (Orozco, 2012: 55); La Libertad: Santa Tecla (Orozco, 2012: 55) (Fig. 27).

Years of collection: 1979.

Months of collection: April.

Topographic zone: northern mountains, coastal mountains.

Elevation range: 810-900 m.

Euphoria pulchella (Gory & Percheron, 1833)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, and Venezuela (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 379); San Salvador: San Salvador (Orozco, 2012: 91); Cuscatlán: El Rosario (Berry & Salazar-Vaquero, 1957: 45; Orozco, 2012: 91) (Fig. 27).

Years of collection: 2019.

Months of collection: May and June.

Topographic zone: interior valley, coastal mountains.

Elevation range: 685-780 m.

Euphoria yucateca Bates, 1889

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, and Venezuela (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 379); La Libertad: Santa Tecla (Berry & Salazar-Vaquero, 1957: 45; Orozco, 2012: 41); San Salvador: San Salvador (Orozco, 2012: 41); Cuscatlán: El Rosario (Berry & Salazar-Vaquero, 1957: 45; Orozco, 2012: 41); Cabañas: Cinquera (Orozco, 2012:

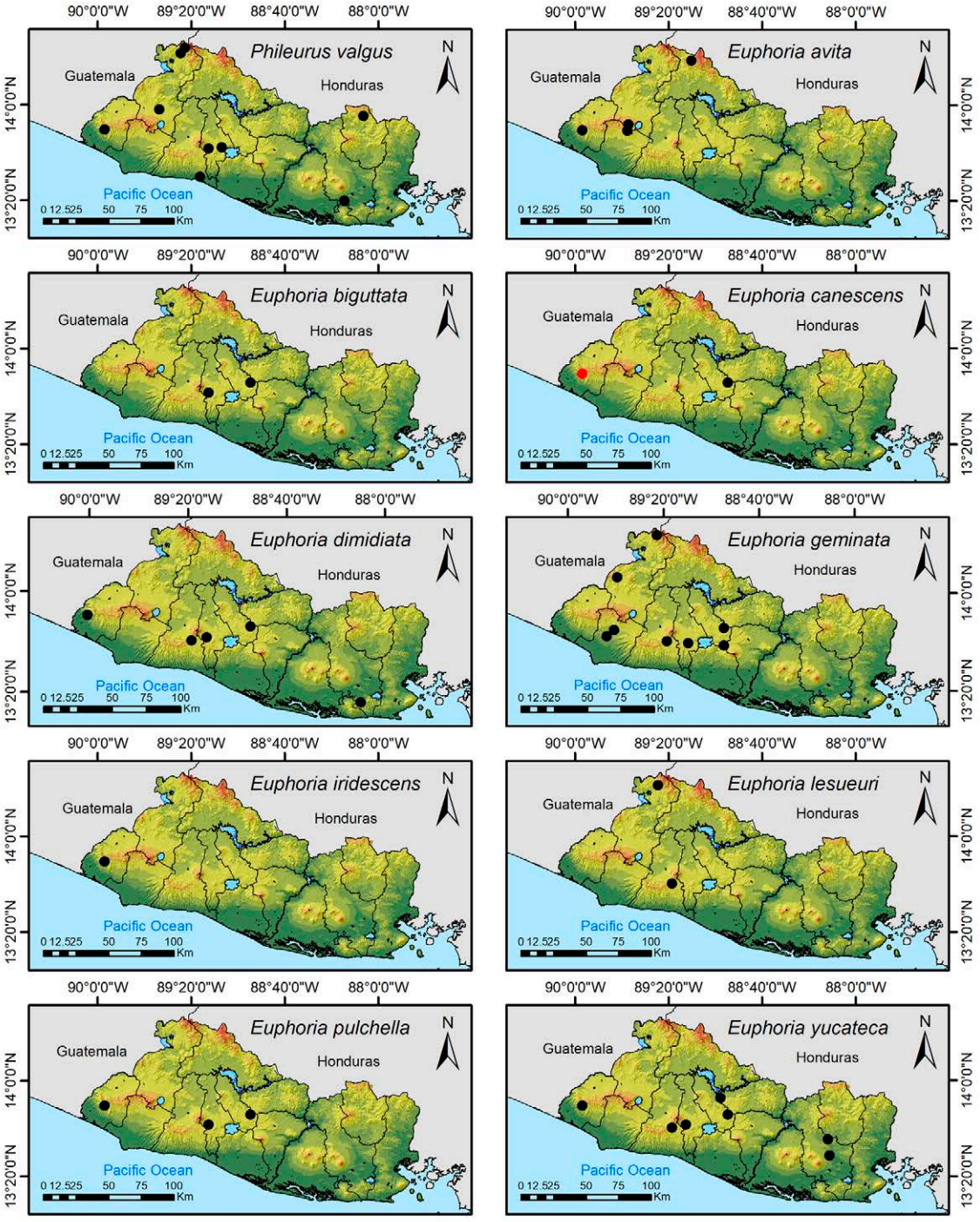

Figure 27. Distribution maps for *Phileurus valgus*, *Euphoria avita*, *E. biguttata*, *E. canescens*, *E. dimidiata*, *E. geminata*, *E. iridescens*, *E. lesueuri*, *E. pulchella*, and *E. yucateca* in El Salvador.

41); San Miguel: San Jacinto (Orozco, 2012: 41); San Miguel (Orozco, 2012: 41) (Fig. 27).

Years of collection: 1979, 2019.

Months of collection: May, June, and September.

Topographic zone: interior valley, coastal mountains.

Elevation range: 135-900 m.

Comments: reported as *Euphoria limatula* Janson and *E. yucateca* by Berry and Salazar-Vaquero (1957) and as *E. limatula* by Berry (1959b) and Solís (2004). Erroneously identified as *E. leucigrapha* [sic] by Andrews et al. (1979). Berry and Salazar-Vaquero (1957) mentioned that adults feed on rosebush and "guineo enano" (*Musa* sp). In Parque Nacional El Imposible, specimens were captured in aerial traps baited with fermented fruit (Pablo-Cea, 2021).

Tribe Gymnetini Kirby, 1827

Amithao Thomson, 1878

Amithao albopictus Neervoort van de Poll, 1886

Distribution: El Salvador, Nicaragua, Costa Rica, and Panama (Pablo-Cea & Alfaro, 2020; Schoolmeesters, 2022).

Locality records: San Salvador: Ilopango (Pablo-Cea & Alfaro, 2020: 24) (Fig. 28).

Years of collection: 2010.

Months of collection: May.

Topographic zone: interior valley.

Elevation range: 625 m.

Amithao anthracinus Ratcliffe, 2013

Distribution: El Salvador and Panama (Pablo-Cea & Alfaro, 2020; Schoolmeesters, 2022).

Locality records: San Salvador: San Salvador (Universidad de El Salvador) (Pablo-Cea & Alfaro, 2020: 24) (Fig. 28).

Years of collection: 2019.

Months of collection: May.

Topographic zone: interior valley.

Elevation range: 695 m.

Argyripa Thomson 1878

Argyripa lansbergei (Sallé, 1857)

Distribution: México, El Salvador, Nicaragua, Colombia, Ecuador, and Brazil (Pablo-Cea & Alfaro, 2020; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 379) (Fig. 28).

Years of collection: 2019.

Months of collection: December.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Cotinis Burmeister, 1842

Cotinis (*Cotinis*) *mutabilis* (Gory & Percheron, 1833)

Distribution: USA, Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, and Costa Rica (Solís, 2004; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible [probably San Benito] (RDCC); Santa Ana: Parque Nacional Montecristo (Los Planes) (MUHNES); Santa Ana (Berry & Salazar-Vaquero, 1957: 44); Sonsonate: Izalco (Los Guates Farm) (MUHNES); La Libertad: Los Chorros (MUHNES); Parque El Bicentenario (Pablo-Cea, 2021; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 379); Parque Nacional Walter Thilo Deininger (MUHNES); San Salvador: Cerro San Jacinto (J. Pablo, personal observation); Delgado (RDCC); Mejicanos (A. Pablo, personal communication); Parque Saburo Hirao (MUHNES); San Salvador (RDCC; S. Martínez, personal communication) (Fig. 28).

Years of collection: 1975-1979, 2008-2009, 2018-2019.

Months of collection: April, and June-November.

Topographic zone: northern mountains, interior valley, coastal mountains, coastal plain.

Elevation range: 135-1,890 m.

Comments: widespread in El Salvador, with surprisingly few locality records in the literature. In El Salvador, the species is known by the common name "ron ron" (Berry & Salazar-Vaquero, 1957). Children in rural zones used to play with tethered adults, making them flying pets (J. F. Pablo, personal communication). In Parque El Bicentenario, specimens were captured with aerial traps baited with fermented fruit (Pablo-Cea, 2021). Berry and Salazar-Vaquero (1957) mentioned that the species is harmful to cultivated pineapple. Berry (1959a) stated that the species is commonly found feeding on fruits in cultivated citrus in El Salvador but is not harmful to the trees. One specimen was observed feeding on a peach fruit (Berry 1959a).

Gymnetis MacLeay, 1819

Gymnetis bajula wollastoni Schaum, 1848

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Ratcliffe, 2018; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Ratcliffe, 2018: 40); La Paz: no specific locality (Ratcliffe, 2018: 40) (Fig. 28).

Years of collection: no data.

Months of collection: no data.

Topographic zone: coastal mountains.

Elevation range: 780 m.

Gymnetis ramulosa Bates, 1869

Distribution: Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Brazil, and Venezuela (Solís, 2004; Ratcliffe, 2018; Pablo-Cea & Alfaro, 2020).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 379); La Libertad: Área Natural Protegida San Andrés (J. Pablo, personal observation); Parque El Bicentenario (Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 379) (Fig. 28).

Years of collection: 2017-2019.

Months of collection: February, and May-July.

Topographic zone: interior valley, coastal mountains.

Elevation range: 475-870 m.

Comments: reported as *Gymnetis chevrolati* Gory & Percheron by Pablo-Cea & Alfaro (2020). The specimen captured in the surroundings of the Área Natural Protegida San Andrés was feeding on the fruit of a cashew tree (*Anacardium occidentale* L.) (J. Pablo, personal observation). In Parque Nacional El Imposible and Parque El Bicentenario, the specimens were captured in aerial traps baited with fruit (Pablo-Cea, 2021).

Gymnetis stellata (Latreille, 1833)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Brazil, Peru, and Dominican Republic (Schoolmeesters, 2022).

Locality records: Ahuachapán: Barra de Santiago (Ratcliffe, 2018: 205); San Salvador: San Salvador (Ratcliffe, 2018: 205) (Fig. 28).

Years of collection: 1980.

Months of collection: January.

Topographic zone: interior valley, coastal plain.

Elevation range: 5-685 m.

Comments. Label data record the specimen from Barra de Santiago was "feeding on a cut portion of botoncillo (probably Conocarpus erectus L.)" (R. D. Cave, personal observation).

Hologymnetis Martínez, 1949

Hologymnetis cinerea (Gory & Percheron, 1833)

Distribution: USA?, Mexico, Guatemala, El Salvador, Honduras, and Nicaragua (Delgado & Márquez, 2006; Maes & Ratcliffe, 2020; Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible [probably San Benito] (RDCC); La Libertad: Los Chorros (RDCC); no specific department: Cafetalera? (Ratcliffe & Deloya, 1992: 169) (Fig. 28).

Years of collection: 1979.

Months of collection: September and November.

Topographic zone: coastal mountains.

Elevation range: 730-780 m.

Hologymnetis margaritis (Bates, 1889)

Distribution: Mexico, Guatemala, and El Salvador (Ratcliffe & Deloya, 1992; Schoolmeesters, 2022).

Locality records: La Libertad: Santa Tecla (Berry & Salazar-Vaquero, 1957: 45) (Fig. 28).

Years of collection: no data.

Months of collection: no data.

Topographic zone: coastal mountains.

Elevation range: 900 m.

Comments: reported as *Gymnetis margaritis* by Berry and Salazar-Vaquero (1957), and Berry (1959a). Berry and Salazar-Vaquero (1957), and Berry (1959a) mentioned that the species is common in the coffee plantations of El Salvador, but it is not harmful to the plants.

Hologymnetis vulcanorum Ratcliffe & Deloya, 1992

Distribution: Guatemala and El Salvador (Ratcliffe & Deloya, 1992; Schoolmeesters, 2022).

Locality records: Santa Ana: Candelaria [de la Frontera] (Ratcliffe & Deloya, 1992: 179); La Libertad: Santa Tecla (Ratcliffe & Deloya, 1992: 179); Cuscatlán: El Rosario (Ratcliffe & Deloya, 1992: 179) (Fig. 28).

Years of collection: 1951-1953.

Months of collection: August and September.

Topographic zone: interior valley, coastal mountain.

Elevation range: 720-900 m.

Hoplopyga Thomson, 1880

Hoplopyga liturata (Olivier, 1789)

Distribution: Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad & Tobago, Guyana, Suriname, French Guiana, Ecuador, Brazil, Peru, Bolivia, Chile, Paraguay, and Argentina (Schoolmeesters, 2022).

Locality records: Ahuachapán: Parque Nacional El Imposible (San Benito) (Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia, & Espinosa-de los Monteros, 2022: 379); La Libertad: Parque El Bicentenario (Pablo-Cea, 2021: 22; Pablo-Cea, Deloya, MacGregor-Fors, & Navarrete-Heredia, 2022: 277; Pablo-Cea, Deloya, MacGregor-Fors, Navarrete-Heredia et al., 2022: 379); Santa Tecla (Berry & Salazar-Vaquero, 1957: 45); San Salvador: Los Planes de Renderos (Shaughney & Ratcliffe, 2015: 608); San Miguel: no specific locality (Shaughney & Ratcliffe, 2015: 608) (Fig. 29).

Years of collection: 2019.

Months of collection: January, April-September, November, and December.

Topographic zone: coastal mountains.

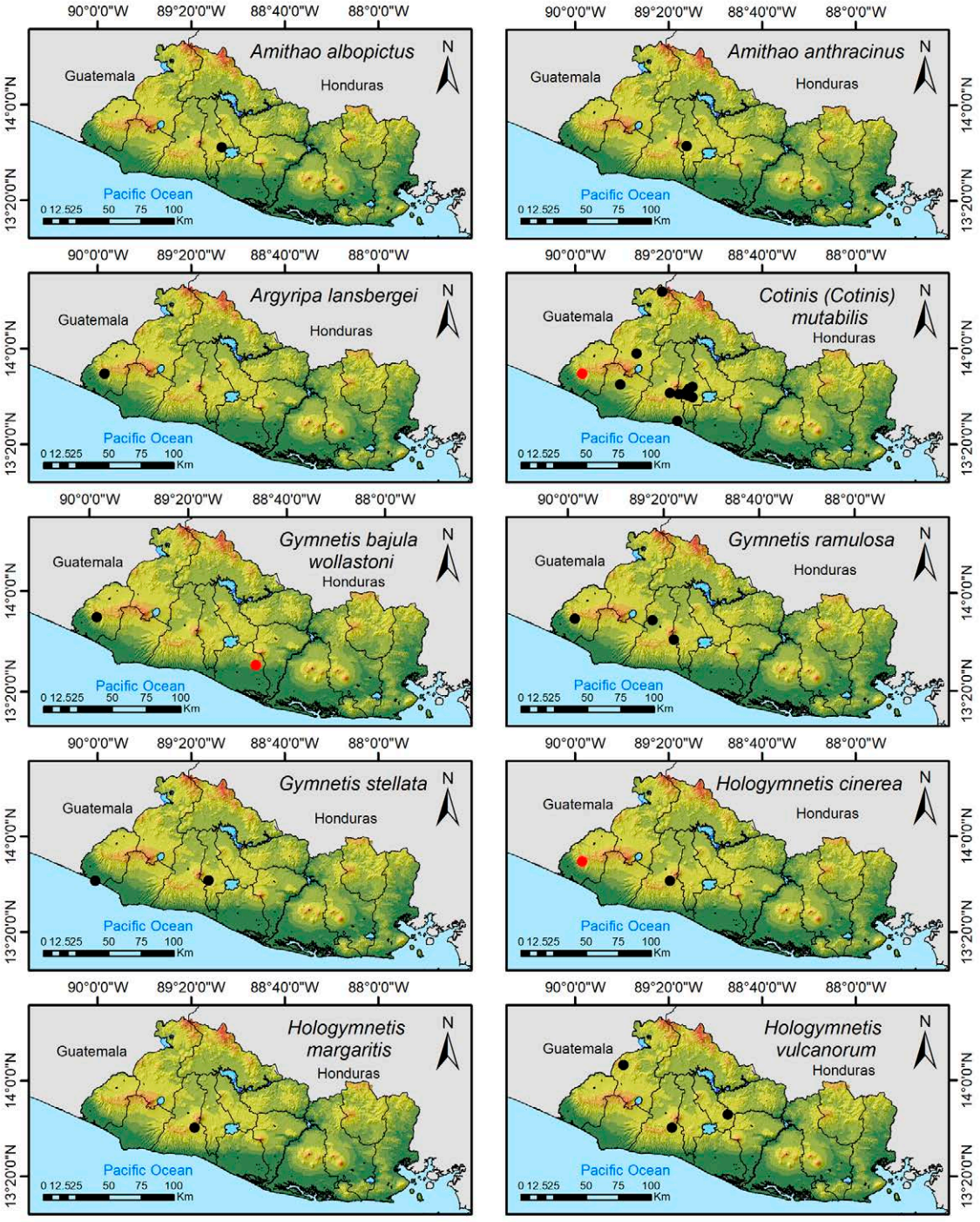

Figure 28. Distribution maps for *Amithao albopictus*, *A. anthracinus*, *Argyripa lansbergei*, *Cotinis* (*Cotinis*) *mutabilis*, *Gymnetis bajula wollastoni*, *G. ramulosa*, *G. stellata*, *Hologymnetis cinerea*, *H. margaritis*, and *H. vulcanorum* in El Salvador.

Elevation range: 780-1,005 m.

Comments: reported as *Hoplopyga literata* [sic] by Berry and Salazar-Vaquero (1957), and as *Gymnatis* [sic] *liturata* in Andrews et al. (1979). The specimens from Parque Nacional El Imposible and Parque El Bicentenario were captured in aerial traps baited with fruit (Pablo-Cea, 2021).

Tribe Trichiini Fleming, 1821

Trigonopeltastes Burmeister & Schaum, 1840

Trigonopeltastes archimedes Schaum *in* Burmeister & Schaum, 1841

Distribution: Mexico, Guatemala, El Salvador, and Costa Rica (Smith, 2016; Schoolmeesters, 2022).

Locality records: La Unión: Volcán de Conchagua (Howden, 1968: 48) (Fig. 29).

Years of collection: 1958.

Months of collection: May.

Topographic zone: coastal mountains.

Elevation range: 1,190 m.

Comments: it is likely that the year and month of collection for the specimen from La Unión is the same (May 1958) as that of *Trigonopeltastes variabilis* Howden, since both species are reported in the same paper (Howden, 1968).

Trigonopeltastes frontalis Bates, 1889

Distribution: Mexico, Belize, Guatemala, El Salvador, Nicaragua, and Honduras (Smith, 2016).

Locality records: Ahuachapán: Parque Nacional El Imposible (Cerro de Loma de Paja, Puerta Mayor [Sector San Francisco Menéndez]) (Cave, 1983: 152) (Fig. 29).

Years of collection: 1979.

Months of collection: June.

Topographic zone: coastal plain.

Elevation range: 250 m.

Comments: adults were found on or flying around the flowers of *Casearia aculeata* Jacq. (Cave, 1983).

Trigonopeltastes geometricus Schaum *in* Burmeister & Schaum, 1841

Distribution: Mexico, Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Venezuela, Colombia, Ecuador, and Bolivia (Smith, 2016).

Locality records: Ahuachapán: Parque Nacional El Imposible (Puerta Mayor [Sector San Francisco Menéndez]) (Cave, 1983: 152) (Fig. 29).

Years of collection: 1979.

Months of collection: June.

Topographic zone: coastal plain.

Elevation range: 250 m.

Comments: adults were found on or flying around the flowers of *C. aculeata* (Cave, 1983).

Trigonopeltastes sallaei sallaei Bates, 1889

Distribution: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica (Smith, 2016).

Locality records: Ahuachapán: Parque Nacional El Imposible (Cerro de Loma de Paja [Sector San Francisco Menéndez]) (Cave, 1983: 152); La Unión: Volcán de Conchagua (Howden, 1968: 38) (Fig. 29).

Years of collection: 1979.

Months of collection: June.

Topographic zone: coastal mountains, coastal plain.

Elevation range: 250-1,190 m.

Comments: it is likely that the year and month of collection for the specimen from La Unión is the same (May 1958) as that of *Trigonopeltastes variabilis* Howden, since both species are reported in the same paper (Howden, 1968). Adults were found on or flying around the flowers of *C. aculeata* (Cave, 1983).

Trigonopeltastes variabilis Howden, 1968

Distribution: Mexico, Guatemala, El Salvador, and Honduras (Smith, 2016).

Locality records: La Unión: Volcán de Conchagua (Howden, 1968: 49) (Fig. 29).

Years of collection: 1958.

Months of collection: May.

Topographic zone: coastal mountains.

Elevation range: 1,190 m.

Discussion

Species erroneously recorded from El Salvador

Twenty-two species of Scarabaeoidea are reported in the literature as occurring in El Salvador, but for which no convincing evidence exists of their presence in the country. We consider these as erroneous records, and they are not included in the catalog.

Kuwert (1896, 1897, 1898) recorded 9 species of Passalidae that are erroneous records (J. Schuster, personal comunication): *Odontotaenius haberi* Kuwert, 1897 (precinctive to El Salvador), which probably was a misidentification of *O. striatopunctatus*; *Popilius haagi* (Kaup, 1868); *P. scutellopunctatus* Kuwert, 1897, also cited in Gillogly (2005); *Passalus interruptus* (Linnaeus, 1758), which was probably confused with *P. punctiger*, since *Passalus interruptus* does not occur in Central America (Schuster, 1978); *P. manlioides* (Kuwert, 1898); *P. perparvulus* (Kuwert, 1898), also cited in Hincks (1953); *Petrejoides tau* (Kaup, 1869), described as *Soranus intergeneus* by Kuwert (1896); *Undulifer incisus* (Truqui, 1857); and *U. salvadoris* Kuwert, 1897, which is currently not considered a valid species (J. Schuster, personal communication).

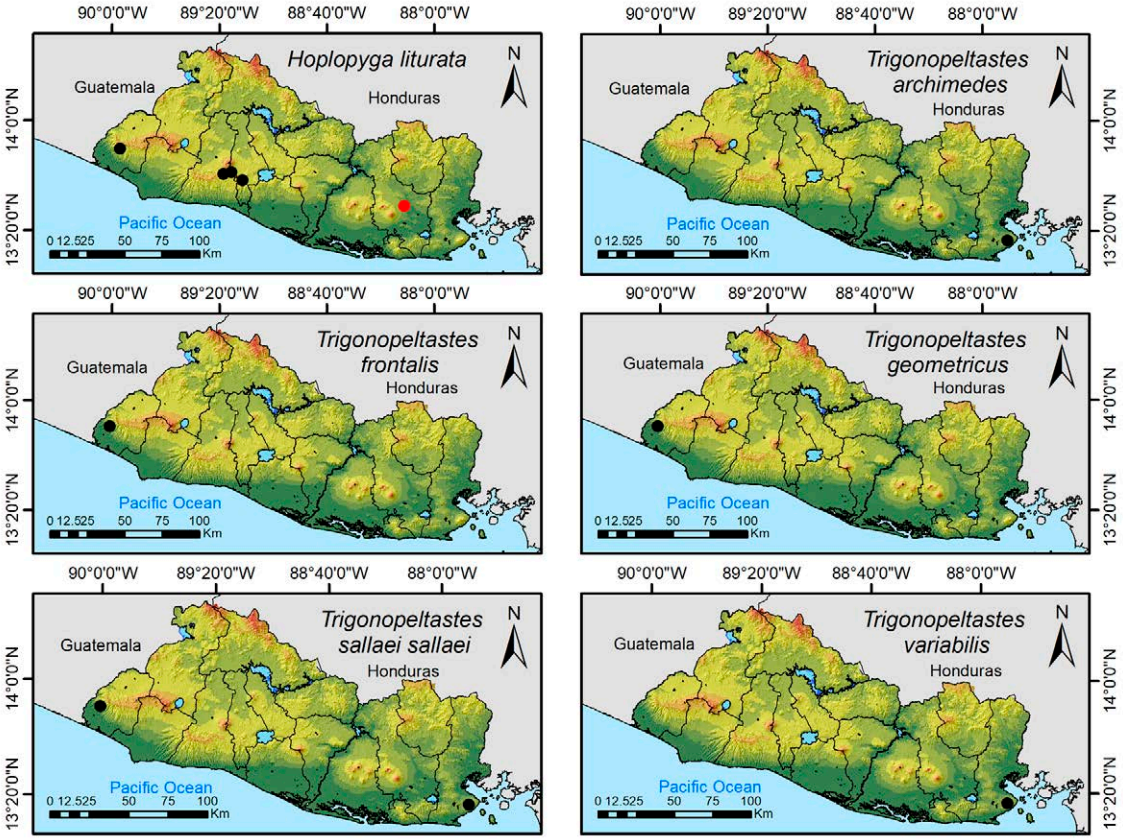

Figure 29. Distribution maps for *Hoplopyga liturata*, *Trigonopeltastes archimedes*, *T. frontalis*, *T. geometricus*, *T. sallaei sallaei*, and *T. variabilis* in El Salvador.

Berry and Salazar-Vaquero (1957) cited 9 species of Scarabaeidae whose known distributions do not extend into El Salvador and/or that have not been reported in the country by any subsequent author. They possibly were misidentifications of other species, this is the list. *Copris incertus* Say, 1835, also cited in Howden and Young (1981), a species known only to occur in the Atlantic zone of Mexico (Darling & Génier, 2018). *Dichotomius* (*Dichotomius*) *carolinus* (Linnaeus, 1767), recorded as *Pinotus carolina* [sic], also cited in Howden and Young (1981) and Fuentes (1998). This species is restricted to eastern USA (Kohlmann & Solis 1997). The correct identification could be *D. annae* or might be a range extension of *D. colonicus* (Say), but the specimens must be examined (B. Gill, personal communication). *Onthophagus rufescens* Bates, 1887, a species restricted to Mexico (Moctezuma, 2021). *Phanaeus* (*Phanaeus*) *sallei* Harold, 1863, which has not been recorded from El Salvador in subsequent years. Therefore, it is likely an erroneous record (V. Moctezuma, personal communication). *Phanaeus lunaris* Taschenberg, 1870, a species known only from Ecuador and Peru (Edmonds & Zidek, 2012; Figueroa et al., 2014). *Macraspis melanaria* (Blanchard, 1850), a species in South America and the West Indies (Schoolmeesters, 2022), whose northernmost distribution is Panama (Ratcliffe, 2002). *Cyclocephala fulgurata* Burmeister, 1847, reported as *C. fulgorata* [sic], which has a broad distribution in Central and South America (Schoolmeesters, 2022), but was not found in El Salvador by Ratcliffe and Cave (2006). *Cyclocephala amazona* (Linnaeus, 1767), reported as *Cyclocephala signata* (Fabricius) in Berry and Salazar-Vaquero (1957) and likely misidentified specimens of *C. multiplex*. *Cyclocephala amazona* occurs from Costa Rica to Paraguay and in the West Indies (Ratcliffe, 2003; Ratcliffe & Cave, 2015). *Dyscinetus morator* (Fabricius, 1798), reported as *Dyscinetus trachypygus* Casey, is a species that occurs in the USA, Bahamas, and Mexico (Ratcliffe & Cave, 2015).

Berry (1959a) reported a species of Ochodaeidae, *Ochodaeus pollicaris* Bates, 1887 (= *Neochodaeus pollicaris* [Bates]), which is known only from Costa Rica and Panama (Paulsen 2012). This species might possibly occur in El Salvador, but no specimens confirming its presence in the country have been reported in the past 65 years.

Ratcliffe and Morón (1997) cited 1 species of Dynastinae, *Ancognatha falsa* Arrow from El Salvador. Ratcliffe and Cave (2006) did not include the species in their inventory. The distribution of the species is restricted to Mexico (Ratcliffe et al., 2013).

Fuentes (1998) and Horgan (2001) reported 1 species of Scarabaeinae, *Phanaeus* (*Phanaeus*) *guatemalensis* Harold, 1871, a species that occurs from Mexico to central Guatemala. Its recorded presence in El Salvador is possibly in error (V. Moctezuma, personal communication). The specimens from El Salvador require examination to verify their species determination.

Cupello (2018) reported the occurrence of 1 species of Scarabaeinae, *Canthidium pseudoperceptibile* Kohlmann & Solís, 2006, based mistakenly on Pablo-Cea et al. (2016) who actually reported *C. pseudopuncticolle* Solís & Kohlmann as new to El Salvador, not *C. pseudoperceptibile*. Capello and Halffter (2019) repeated the erroneous record, based on Cupello (2018).

Our catalog herein is the latest approach to documenting the species richness of the Scarabaeoidea in El Salvador. The specimens recorded in non-peer-reviewed works, such as theses, should be carefully re-examined, as there is the possibility that some misidentifications may have occurred. In the future, it will be important to study newly collected material, record data from unexamined museum specimens, and develop illustrated keys to accurately identify the species in the country.

Acknowledgments

We are grateful to the specialists who kindly checked the initial lists of the species reported in El Salvador: Jack Schuster and Larry Jiménez-Ferbans (Passalidae), Paul Skelley (Aphodiinae), Victor Moctezuma and Bruce Gill (Scarabaeinae), Mario Cupello (Scarabaeinae: *Ateuchus*), Brett Ratcliffe (Dynastinae, Cetoniinae), and Andrew Smith and Andrés Ramírez-Ponce (Melolonthinae and Rutelinae). Mario Cupello is thanked for providing important information about the distribution of *Ateuchus* species. We are indebted to Héctor Gasca Álvarez, Jorge Arias-Buriticá, Víctor Moctezuma, Carlos Aguilar Julio, Mario Zunino, José Luis Navarrete-Heredia, Rodolfo Araya, MJ Paulsen, Gil Taylor, and Martijn Van Roie for facilitating literature hard to find. The following websites are acknowledged: Biodiversity Heritage Library, Catalogue of Life, and Smithsonian Libraries for being free sources of invaluable information. We are grateful to MUHNES collection managers for allowing JDPC to review their specimens, especially to Eunice Echeverría and Ana María Rivera. Ana Pablo, Sofia Martínez and Humberto García are acknowledged for their invaluable help in the editing of the paper. The Facultad de Ciencias Naturales y Matemática and Escuela de Biología of the Universidad de El Salvador are acknowledged for the support given. JDPC acknowledges the scholarship provided by the Consejo Nacional de Ciencia y Tecnología de México (No. 753462) and the Master of Science program of the Instituto de Ecología, A.C. We thank 2 anonymous reviewers for their valuable comments, which improved a previous version of the manuscript. We are grateful to the editorial team of Revista Mexicana de Biodiversidad for their invaluable help in the edition of the manuscript. JDPC dedicates this work to the memory of Juan Francisco Pablo and the long life of Ana Virginia Cea.

References

Andrews, K. L., Huezo de Mira, A., Habeck, D. H., & Lainez, A. (1979). Gallina ciega en El Salvador: identificación de especies y determinación de la relación entre densidad y daño en el cultivo de maíz. In *XXV Reunión Anual: Programa Cooperativo Centroamericano para el mejoramiento de cultivos alimenticios*. Tegucigalpa.

Arce-Pérez, R. (2008). *Taxonomía y biogeografía de las especies centroamericanas de* Macrodactylus *Dejean, 1821 (Coleoptera: Melolonthidae)* (*Tesis doctoral*), Instituto de Ciencias Básicas e Ingeniería, Universidad Autónoma del Estado de Hidalgo, México.

Arce-Pérez, R., & Morón, M. A. (2000). Taxonomía y distribución de las especies de *Macrodactylus* Latreille en México y Estados Unidos de América. *Acta Zoológica Mexicana* (*Nueva Serie*), *79*, 123–239. https://doi.org/10.21829/azm.2000.79791913

Arce-Pérez, R., & Morón, M. Á. (2005). New species and new records of species of *Macrodactylus* Dejean (Coleoptera: Scarabaeidae: Melolonthinae: Macrodactylini) from Honduras and Nicaragua. *Zootaxa*, *1012*, 23–27. https://doi.org/10.11646/zootaxa.1012.1.3

Arce-Pérez, R., & Morón, M. Á. (2020). Review of the species of *Macrodactylus* Dejean (Coleoptera: Scarabaeidae: Melolonthinae) from the Central American Nucleus. *Zootaxa*, *4772*, 567–584. https://doi.org/10.11646/zootaxa.4772.3.7

Asenjo, A., Imler, U., Klimaszewski, J., Herman, L. H., & Chandler, D. S. (2013). A complete checklist with new records and geographical distribution of the rove beetles (Coleoptera, Staphylinidae) of Brazil. *Insecta Mundi*, *277*, 1–419.

Berry, P. A. (1959a). *Entomología Económica de El Salvador*. Santa Tecla, Servicio Cooperativo Agrícola Salvadoreño Americano, M.A.G. Informe técnico No. 24.

Berry, P. A. (1959b). *Segunda lista de insectos clasificados de El Salvador*. Santa Tecla, Servicio Cooperativo Agrícola Salvadoreño Americano, M.A.G. Informe técnico No. 23.

Berry, P. A., & Salazar-Vaquero, M. (1957). *Lista de insectos clasificados de El Salvador*. Santa Tecla, Servicio Cooperativo Agrícola Salvadoreño Americano, M.A.G. Informe técnico No. 21.

Bouchard, P., Bousquet, Y., Davies, A. E., Alonso-Zarazaga, M. A., Lawrence, J. F., Lyal, C. H. C. et al. (2011). Family-group names in Coleoptera (Insecta). *Zookeys*, *88*, 1–972. https://doi.org/10.3897/zookeys.88.807

Bouchard, P., Smith, A. B. T., Douglas, H., Gimmel, M. L., Brunke, A. J., & Kanda, K. (2017). Biodiversity of Coleoptera. In R. G. Foottit, & P. H. Adler (Eds.), *Insect biodiversity. Volume 1* (pp. 337–417). New Jersey: John Wiley & Sons.

Boucher, S. (2005). Évolution et phylogénie des Coléoptères Passalidae (Scarabaeoidea). *Annales de la Société Entomologique de France*, *41*, 239–604. https://doi.org/10.1080/00379271.2005.10697444

Cano, E. B. (2017). Redescripción del género *Ogyges* Kaup (Coleoptera: Passalidae) con una lista comentada de los tipos primarios. *Insecta Mundi*, *598*, 1–38.

Cano, E. B., Schuster, J. C., & Morrone, J. J. (2018). Phylogenetics of *Ogyges* Kaup and the biogeography of Nuclear Central America (Coleoptera, Passalidae). *Zookeys*, *737*, 81–111. https://doi.org/10.3897/zookeys.737.20741

Capello, V., & Halffter, G. (2019). Listado ilustrado de las especies de Scarabaeinae (Coleoptera: Scarabaeidae) de la Reserva de la Biósfera de Calakmul, Campeche, México. *Dugesiana*, *26*, 103–131. https://doi.org/10.32870/dugesiana.v26i2.7080

Castillo, C., & Reyes-Castillo, P. (1984). Biosistemática del género *Petrejoides* Kuwert (Coleoptera, Lamellicornia, Passalidae). *Acta Zoológica Mexicana* (*Nueva Serie*), *4*, 1–84. https://doi.org/10.21829/azm.1984.142053

Cartwright, O. L. (1967). Two new species of *Cartwrightia* from Central and South America (Coleoptera: Scarabaeidae: Aphodiinae). *Proceeding of the United States National Museum Washington*, *124*, 1–8. https://doi.org/10.5479/si.00963801.124-3632.1

Cave, R. D. (1983). New records of *Trigonopeltastes* in El Salvador (Coleoptera: Scarabaeidae). *The Coleopterists Bulletin*, *37*, 152.

Cupello, M. (2018). On the types species of the New World dung beetle genus *Canthidium* Erichson, 1847 (Coleoptera: Scarabaeidae: Scarabaeinae), with an annotated checklist of species. *Zootaxa*, *4388*, 451–486. https://doi.org/10.11646/zootaxa.4388.4.1

Darling, J. D. G., & Génier, F. (2018). Revision of the taxonomy and distribution of the Neotropical *Copris incertus* species complex (Coleoptera: Scarabaeidae: Scarabaeinae). *The Canadian Entomologist*, *150*, 539–577. https://doi.org/10.4039/tce.2018.32

Daugherty, H. E. (1969). *Man-induced ecological change in El Salvador geography*. Los Angeles: University of California.

Delgado, L., Blackwaller-Bages, J., & Gómez, B. (2006). Una nueva especie de *Parisolea* y nueva sinonimia genérica en Heterosternina (Coleoptera: Scarabaeidae, Rutelinae, Rutelini). *Folia Entomológica Mexicana*, *45*, 91–96.

Delgado, L., & Kohlmann, B. (2001). A new species and two subspecies of *Copris* from Mexico and Central America (Coleoptera: Scarabaeidae; Scarabaeinae). *Journal of the New York Entomological Society*, *109*, 344–353.

Delgado, L., & Márquez, J. (2006). Estado del conocimiento y conservación de los coleópteros Scarabaeoidea (Insecta) del estado de Hidalgo, México. *Acta Zoológica Mexicana* (*Nueva Serie*), *22*, 57–108.

Dellacasa, M., Dellacasa, G., & Gordon, R. D. (2008). *Agrilinellus*, new genus and four new species of Mexican Aphodiini (Scarabaeoidea: Scarabaeidae: Aphodiinae). *Insecta Mundi*, *53*, 1–16.

Dellacasa, M., Dellacasa, G., & Gordon, R. D. (2012). Systematic revision of *Gonaphodiellus* taxa, with description of two new genera and fourteen new species (Coleoptera: Scarabaeidae: Aphodiinae). *Insecta Mundi*, *230*, 1–41.

Dellacasa, M., Dellacasa, G., & Gordon, R. D. (2013). *Gonaphodioides cartwrighti* new species from El Salvador (Coleoptera: Scarabaeidae: Aphodiinae). *Insecta Mundi*, *286*, 1–3.

Dellacasa, M., Gordon, R. D., & Dellacasa, G. (2002). Aphodiinae described or recorded by Bates in Biologia Centrali-Americana (Coleoptera Scarabaeoidea: Aphodiidae). *Acta Zoológica Mexicana* (*Nueva Serie*), *86*, 155–223. https://doi.org/10.21829/azm.2002.0862505

Deloya, C., Calvo-Gatica, H., García-Díaz, O. J., Rendón-Sosa, M., González-Hilario, S., & Aguirre-León, G. (2014). Familia Scarabaeidae Latreille, 1802. In C. Deloya, & D. Covarrubias (Eds.), *Escarabajos del estado de Guerrero (Coleoptera: Scarabaeoidea)*. México D.F.: S y G editores.

Deloya, C., & Morón, M.Á. (1997). Cetoniinae. In M. Á. Morón, B. C. Ratcliffe, & C. Deloya (Eds.), *Atlas de los escarabajos de México. Coleoptera: Lamellicornia. Vol I: Familia Melolonthidae* (pp. 177–199). Veracruz: Sociedad Mexicana de Entomología, A.C.

Deloya, C., Parra-Tabla, V., & Delfín-González, H. (2007). Fauna de Coleópteros Scarabaeidae Laparosticti y Trogidae (Coleoptera: Scarabaeoidea) asociados al bosque mesófilo de montaña, cafetales bajo sombra y comunidades derivadas en el centro de Veracruz, México. *Neotropical Entomology*, *36*, 005–021. http://dx.doi.org/10.1590/S1519-566X2007000100002

Deloya, C., Ratcliffe, B. C., Gasca-Álvarez, H. J., & Aguirre-León, G. (2018). Escarabajos Cetoniinae (Coleoptera: Scarabaeidae) de América. In C. Deloya, & H. J. Gasca-Álvarez (Eds.), *Escarabajos del neotrópico (Insecta: Coleoptera)* (pp. 129–152). Bogotá, México D.F.: Corporación Sentido Natural/ S y G editores.

Dickey, D. R., & Van Rossem, A. J. (1938). *The birds of El Salvador*. Chicago: Field Museum of Natural History. https://doi.org/10.5962/bhl.title.3068

Edmonds, W. (1994). Revision of *Phanaeus* Macleay, a New World genus of scarabaeine dung beetles (Coleoptera: Scarabaeidae, Scarabaeinae). *Contributions in Science*, *443*, 1–105.

Edmonds, W. D., & Zidek, J. (2010). A taxonomic review of the Neotropical genus *Coprophanaeus* Olsoufieff, 1924 (Coleoptera: Scarabaeidae, Scarabaeinae). *Insecta Mundi*, *129*, 1–111. https://doi.org/10.5962/p.208079

Edmonds, W. D., & Zidek, J. (2012). Taxonomy of *Phanaeus* revisited: revised keys to and comments on species of the New World dung beetle genus *Phanaeus* MacLeay, 1819 (Coleoptera: Scarabaeidae: Scarabaeinae: Phanaeini). *Insecta Mundi*, *274*, 1–108.

Evans, A. V. (2003). A checklist of the New World chafers (Coleoptera: Scarabaeidae: Melolonthinae). *Zootaxa*, *211*, 1–458. https://doi.org/10.11646/zootaxa.211.1.1

Evans, A. V., & Smith, A. B. T. (2009). An electronic checklist of the New World chafers (Coleoptera: Scarabaeidae: Melolonthinae). Version 3. Electronically published, Ottawa, Canada. http://unsm-ento.unl.edu/SSSA/nwmelos.htm

Figueroa, L., Edmonds, W. D., & Martínez-Luján, N. (2014). La tribu Phanaeini (Coleoptera, Scarabaeidae, Scarabaeinae) en el Perú. *Revista Peruana de Biología*, *21*, 125–138. http://dx.doi.org/10.15381/rpb.v21i2.9815

Franz, E. (1955). Scarabaeidae Rutelinae aus El Salvador. *Senckenbergiana Biologica*, *36*, 201–207.

Fuentes, R. (1998). *Competencia interespecífica como factor determinante de la distribución y abundancia de Dichotomius carolinus colonicus (Say, 1835) en El* Salvador (*Bachelor Thesis*), Universidad de El Salvador, San Salvador.

Fuentes, R. (2008). Abundancia y estacionalidad del escarabajo *Euoniticellus intermedius* (Reiche, 1849) Coleoptera: Scarabaeidae, Tonacatepeque, San Salvador, El Salvador. In *Libro de resúmenes XXXV Congreso, Sociedad Colombiana de Entomología*. 16–18-07-2008. Cali, Colombia.

Fuentes, R. (2009). *Evaluación de la composición y estructura de la biodiversidad de escarabajos coprófagos en dos cafetales, del municipio de Tonacatepeque, departamento de San Salvador* (*M. Sc. Thesis*). Universidad de El Salvador, San Salvador.

Galante, E., Stebnicka, Z., & Verdú, J. R. (2003). The Aphodiinae and Rhyparinae (Coleoptera: Scarabaeidae) in southern states of Mexico (Chiapas, Oaxaca, Puebla and Veracruz). *Acta Zoologica Cracoviensia*, *46*, 283–312.

Gallo, M. (2005). *Estado del conocimiento de la biodiversidad en El Salvador*. San Salvador: El Salvador. Ministerio de Medio Ambiente y Recursos Naturales. http://rcc.marn.gob.sv/handle/123456789/258

Génier, F. (2009). *Le genre* Eurysternus *Dalman, 1824 (Scarabaeidae: Scarabaeinae: Oniticellini), révision taxonomique et clés de détermination illustrées*. Sofia: Pensoft Series Faunistica No. 85.

Génier, F., & Moretto, P. (2017). *Digitonthophagus* Balthasar, 1959: taxonomy, systematics, and morphological phylogeny of the genus revealing an African species complex (Coleoptera: Scarabaeidae: Scarabaeinae). *Zootaxa*, *4248*, 1–110. https://doi.org/10.11646/zootaxa.4248.1.1

Gillogly, A. L. (2005). *Review of the genus* Popilius *and preliminary phylogeny of Passalidae (Coleoptera) (Ph. D. Thesis)*. College Station, Texas: Texas A&M University.

González-Alvarado, A., & Vaz-de-Mello, F. Z. (2014). Taxonomic review of the subgenus *Hybomidium* Shipp 1897 (Coleoptera: Scarabaeidae: Scarabaeinae: *Deltochilum*). *Annales de la Société Entomologique de France* (*Nouvelle Série*), *50*, 431–476. https://doi.org/10.1080/00379271.2014.989178

González-Murcia, S., Álvarez-Calderón, F. S., Alvarado-Larios, R., Marín-Martínez, C. M., & Angulo, A. (2019). The ichthyology collection at the Natural History Museum of El Salvador (MUHNES): Species checklist and new country records. *Zootaxa*, *4559*, 281–313. https://doi.org/10.11646/zootaxa.4559.2.4

Gordon, R. D., & Cartwright, O. L. (1980). The Western Hemisphere species of *Rhyssemus* and *Trichiorhyssemus* (Coleoptera: Scarabaeidae). *Smithsonian Contributions to Zoology*, *317*, 1–29. https://doi.org/10.5479/si.00810282.317

Gordon, R. D., & Skelley, P. E. (2022). A third species of *Haroldiellus* Gordon and Skelley, 2007 from Mexico and Central America (Coleoptera: Scarabaeidae: Aphodiinae: Aphodiini). *Insecta Mundi*, *916*, 1–11.

Hardy, A. R. (1975). A revision of the genus *Pelidnota* of America north of Panama (Coleoptera: Scarabaeidae: Rutelinae). *University of California Publications in Entomology*, *78*, 1–43.

Hincks, W. D. (1953). The Passalidae (Ins. Col.) of El Salvador. *Senckenbergiana*, *34*, 29–35.

Hincks, W. D., & Dibb, J. R. (1935). *Coleopterorum Catalogus, Pars 142: Passalidae. W. Junk's-Gravenhage*, The Hague.

Horgan, F. (2001). Burial of bovine dung by coprophagous beetles (Coleoptera: Scarabaeidae) from horse and cow grazing sites in El Salvador. *European Journal of Soil Biology*, *37*, 103–111. https://doi.org/10.1016/S1164-5563(01)01073-1

Horgan, F. (2002). Shady field boundaries and the colonization of dung by coprophagous beetles in Central American pastures. *Agriculture, Ecosystems and Environment*, *91*, 25–36. https://doi.org/10.1016/S0167-8809(01)00261-4

Horgan, F. (2007). Dung beetles in pasture landscapes of Central America: proliferation of synanthropogenic species and decline of forest specialists. *Biodiversity Conservation*, *16*, 2149–2165. https://doi.org/10.1007/s10531-006-9145-3

Horgan, F. (2008). Dung beetle assemblages in forests and pastures of El Salvador: a functional comparison. *Biodiversity and Conservation*, *17*, 2961–2978. https://doi.org/10.1007/s10531-008-9408-2

Howden, H. F. (1964). The Geotrupinae of North America and Central America. *Memoirs of the Entomological Society of Canada*, *39*, 1–91. https://doi.org/10.4039/entm9639fv

Howden, H. F. (1968). A review of the Trichiinae of North and Central America (Coleoptera: Scarabaeidae). *Memoirs of the Entomological Society of Canada*, *54*, 1–77. https://doi.org/10.4039/entm10054fv

Howden, H. F. (1974). Additional records and descriptions of North and Central American Geotrupinae (Coleoptera, Scarabaeidae). *Canadian Journal of Zoology*, *52*, 567–573. https://doi.org/10.1139/z74-073

Howden, H. F., & Cartwright, O. L. (1963). Scarab beetles of genus *Onthophagus* Latreille North of Mexico (Coleoptera: Scarabaeidae). *Proceedings of the United States National Museum*, *114*, 1–133. https://doi.org/10.5479/si.00963801.114-3467.1

Howden, H. F., & Peck, S. B. (1972). Collecting in El Salvador, with particular reference to Scarabaeoidea and Silphoidea (Coleoptera). *The Coleopterists Bulletin*, *26*, 63–72.

Howden, H. F., & Young, O. P. (1981). Panamian Scarabaeinae: taxonomy, distribution, and habits (Coleoptera, Scarabaeidae). *Contributions of the American Entomological Institute*, *18*, 1–204.

Ibarra-Portillo, R. (2013). Aves de El Salvador: estado actual del conocimiento e iniciativas de conservación. *Bioma*, *1*, 12–91.

Jameson, M. L. (1996). Revision and phylogeny of the Neotropical genus *Cnemida* (Coleoptera: Scarabaeidae: Rutelinae). *Insecta Mundi*, *10*, 285–315.

Jiménez-Ferbans, L., Reyes-Castillo, P., & Schuster, J. C. (2015). Passalidae (Coleoptera: Scarabaeoidea) of the Greater and Lesser Antilles. *Zootaxa*, *3956*, 491–512. http://dx.doi.org/10.11646/zootaxa.3956.4.3

Jolivet, P. (1988). Food habits and food selection of Chrysomelidae. Bionomic and evolutionary perspectives. In P. Jolivet, E. Petitpierre, & T. H. Hsiao (Eds.), *Biology of Chrysomelidae* (pp. 1–24). Series Entomologica, Springer Nature. https://doi.org/10.1007/978-94-009-3105-3

King, A. B. S. (1994). Biología e identificación de (*Phyllophaga* spp.) de importancia económica en América Central. In P. J. Shannon & M. Carballo (Eds.), *Biología y control de* Phyllophaga spp*: memoria* (pp. 33–43). Turrialba, CATIE, Informe técnico No. 277.

Köhler, G., Vesely, M., & Greenbaum, E. (2006). *The amphibians and reptiles of El Salvador*. Malabar, Florida: Krieger Publishing.

Kohlmann, B. (1996). The Costa Rican species of *Ateuchus* (Coleoptera: Scarabaeidae). *Revista de Biología Tropical*, *44/45*, 177–192.

Kohlmann, B. (2000). New species and distribution records of Mesoamerican *Ateuchus* (Coleoptera: Scarabaeidae). *Revista Biología Tropical*, *48*, 235–246.

Kohlmann, B., Cano, E. B., & Delgado, L. (2003). New species and records of *Copris* (Coleoptera: Scarabaeidae: Scarabaeinae) from Central America. *Zootaxa*, *167*, 1–16. https://doi.org/10.11646/zootaxa.167.1.1

Kohlmann, B., & Solís, A. (1997). El género *Dichotomius* (Coleoptera: Scarabaeidae) en Costa Rica. *Giornale Italiano di Entomologia*, *8*, 343–382.

Kohlmann, B., & Solís, A. (2001). El género *Onthophagus* (Coleoptera: Scarabaeidae) en Costa Rica. *Giornale Italiano di Entomologia*, *9*, 159–261.

Kohlmann, B., & Solís, A. (2004). El género *Canthidium* (Coleoptera: Scarabaeidae) en Costa Rica. *Giornale Italiano di Entomologia*, *11*, 1–73.

Kohlmann, B., & Solís, A. (2006). El género *Canthidium* en Norteamérica. *Giornale Italiano di Entomologia*, *11*, 235–295.

Kuwert, A. F. (1896). Die Passaliden Dichotomisch Bearbeitet. *Novitates Zoologicae*, *3*, 209–230. https://doi.org/10.5962/bhl.part.1649

Kuwert, A. F. (1897). Die Passaliden Dichotomisch bearbeitet. *Novitates Zoologicae*, *4*, 274–306. https://doi.org/10.5962/bhl.part.21180

Kuwert, A. F. (1898). Die Passaliden Dichotomisch Bearbeitet. *Novitates Zoologicae*, *5*, 137–349. https://doi.org/10.5962/bhl.part.1649

López-García, M. M., & Deloya, C. (2022). Cladistic analysis reveals polyphyly of *Tomarus* (Coleoptera: Scarabaeidae: Dynastinae): new classification and taxonomic revision. *Zootaxa*, *5211*, 1–119. https://doi.org/10.11646/zootaxa.5211.1.1

López-Sorto, R. E., & Sermeño-Chicas, J. M. (2013) Los escarabajos *Chrysina* (Coleoptera: Scarabaeidae) en El Salvador. *Bioma*, *5*, 53–56.

López-Sorto, R. E., Sermeño-Chicas J. M., Serrano-Cervantes, L., & Loza-Galdames, S. E. (2014). Nuevo registro de *Dinastes* [*Dynastes*] *maya* (Hardy 2003) (Coleoptera: Scarabaeidae: Dynastinae: Dynastini) para El Salvador. *Bioma*, *20*, 39–46.

Maes, J. M., & Ratcliffe, B. (2020). Catálogo ilustrado de los Cetoniinae y Trichiinae (Coleoptera: Scarabaeidae) de Nicaragua. *Revista Nicaragüense de Entomología*, *120*, 1–118.

McMahan, C. D, Matamoros, W. D., Álvarez-Calderón, F. S., Henríquez, W. Y., Recinos, H. M., Chakrabarty, P. et al. (2013). Checklist of the Inland Fishes of El Salvador. *Zootaxa*, *3608*, 440–456. http://dx.doi.org/10.11646/zootaxa.3608.6.2

Marshall, S., Gill, B., & Smith, A. (2018). Superfamily Scarabaeoidea. The "Lamellicorn" Beetles. In S. A. Marshall (Ed.), *Beetles. The natural history and diversity of Coleoptera*. Ontario: Firefly Books.

Mendoza, H. E. (1994). Problemática de *Phyllophaga* spp. en El Salvador. In P. J. Shannon, & M. Carballo (Eds.), *Biología y control de* Phyllophaga *spp*. (pp. 50–61). Turrialba, CATIE, Informe técnico No. 277.

Moctezuma, V., & Halffter, G. (2021). Taxonomic revision of the *Phanaeus endymion* species group (Coleoptera: Scarabaeidae), with the descriptions of five new species. *European Journal of Taxonomy*, *747*, 1–71. https://doi.org/10.5852/ejt.2021.747.1333

Moctezuma, V., Sánchez-Huerta, J. L., & Halffter, G. (2018). Two new species of *Ateuchus* with remarks on ecology, distributions, and evolutionary relationships. *Zookeys*, *747*, 71–86. https://doi.org/10.3897/zookeys.747.22731

Moore, M. R., Jameson, M. L., Garner, B. H., Audibert, C., Smith, A. B. T., & Seidel, M. (2017). Synopsis of the pelidnotine scarabs (Coleoptera, Scarabaeidae, Rutelinae, Rutelini) and annotated catalog of the species and subspecies. *Zookeys*, *666*, 1–349. https://doi.org/10.3897/zookeys.666.9191

Morón, M. Á. (1983). A revision of the subtribe Heterosternina (Coleoptera, Melolonthidae, Rutelinae). *Folia Entomológica Mexicana*, *55*, 31–101.

Morón, M. Á. (1987). Adiciones a los Heterosternina (Coleoptera, Melolonthidae, Rutelinae). *Folia Entomológica Mexicana*, *73*, 69–87.

Morón, M. Á. (1988). Notas sobre *Phyllophaga* (II). Una nueva especie de *P*. (*Chlaenobia*) (Coleoptera; Melolonthidae) en El Salvador, C.A. *Folia Entomológica Mexicana*, *75*, 55–61.

Morón, M. Á. (1994). Diagnóstico y taxonomía de *Phyllophaga* spp. (Coleoptera: Melolonthidae) en Centroamérica. In P. J. Shannon, & M. Carballo (Eds.), *Biología y control de* Phyllophaga spp: *Memoria* (pp. 62–73). Turrialba, CATIE, Informe técnico No. 277.

Morón, M. Á. (2003). Familia Scarabaeidae (*sensu stricto*). In M. Á. Morón (Ed.), *Atlas de los escarabajos de México. Coleoptera: Lamellicornia. Vol II: Familias Scarabaeidae, Trogidae, Passalidae y Lucanidae*. Veracruz: Sociedad Mexicana de Entomología, A.C.

Morón, M. Á. (2006). Revisión de las especies de *Phyllophaga* (*Phytalus*) grupos *obsoleta* y *pallida* (Coleoptera: Melolonthidae: Melolonthinae). *Folia Entomológica Mexicana*, *45*, 1–104.

Morón, M. Á. (2018) Revisión del grupo de especies "pruinosa" de *Phyllophaga* (*Phytalus*) (Coleoptera: Melolonthidae: Melolonthinae). *Dugesiana*, *25*, 37–59. https://doi.org/10.32870/dugesiana.v25i1.6999

Morón, M. Á., & Howden, H. F. (1992). A second species of *Plesiosternus* Morón with notes on other Heterosternina (Coleoptera: Scarabaeidae: Rutelinae). *The Coleopterists Bulletin*, *46*, 15–19.

Morón, M. Á., & Paucar-Cabrera, A. (2003). Larvae and pupae of species of the genus *Macraspis* (Coleoptera: Scarabaeidae: Rutelinae: Rutelini). *The Canadian Entomologist*, *135*, 467–491. https://doi.org/10.4039/n02-091

Morrone, J. J. (2014). Biogeographical regionalisation of the Neotropical region. *Zootaxa*, *3782*, 001–110. https://doi.org/10.11646/zootaxa.3782.1.1

Navarrete-Heredia, J. L., Newton A. F., Thayer, M. K., Ashe, J. S., & Chandler, D. S. (2002). *Guía ilustrada para los géneros de Staphylinidae (Coleoptera) de México*. Guadalajara: Universidad de Guadalajara/ Comisión Nacional para el Conocimiento y Uso de la Biodiversidad.

Noriega, J. A., Horgan, F. G., Larsen, T. H., & Valencia, G. (2015). Records of an invasive dung beetle species, *Digitonthophagus gazella* (Fabricius, 1787) (Coleoptera: Scarabaeidae), in Peru. *Acta Zoológica Mexicana* (*Nueva Serie*), *26*, 451–456.

Ocampo, F. (2006). Phylogenetic analysis of the scarab family Hybosoridae and monographic revision of the New World subfamily Anaidinae (Coleoptera: Scarabaeoidea). *Bulletin of the University of Nebraska State Museum*, *19*, 1–177.

Orozco, J. (2012). Monographic revision of the American genus *Euphoria* Burmeister, 1842 (Coleoptera: Scarabaeidae: Cetoniinae). *The Coleopterists Society Monograph*, *11*, 1–182. http://dx.doi.org/10.1649/0010-066X-66.mo4.1

Owen, J., & Girón, L. (2012). Revised checklist and distributions of land mammals of El Salvador. *Museum of Texas Tech University*, *310*, 1–32.

Pablo-Cea, J. D. (2014). *Comparación del ensamblaje de escarabajos necro-coprófagos (Coleoptera: Scarabaeidae: Scarabaeinae) en cuatro zonas con diferente grado de perturbación, en el Parque Nacional El Imposible, Ahuachapán, El Salvador* (*Bachelor Thesis*). Universidad de El Salvador, San Salvador.

Pablo-Cea, J. D. (2021). *Diversidad de escarabajos fitófagos, saprofitófagos y degradadores (Insecta: Coleoptera: Scarabaeidae) en dos Áreas Naturales Protegidas en El Salvador, América Central* (*M. Sc. Thesis*), Veracruz, Instituto de Ecología de México.

Pablo-Cea, J. D., & Alfaro, E. (2020). First records of the genus *Amithao* (Scarabaeidae: Cetoniinae) in El Salvador. *The Coleopterist Bulletin*, *74*, 24–26. https://doi.org/10.1649/0010-065X-74.1.24

Pablo-Cea, J. D., Asenjo, A., Navarrete-Heredia, J. L & Newton, A. (2021). Checklist of Staphylinidae (Coleoptera) of El Salvador. *Zootaxa*, *4951*, 080–106. https://doi.org/10.11646/zootaxa.4951.1.3

Pablo-Cea, J. D., Deloya, C., MacGregor-Fors, I., & Navarrete-Heredia, J. L. (2022). The scarab beetles (Coleoptera: Scarabaeidae) of Parque Bicentenario, El Salvador. *The Coleopterists Bulletin*, *76*, 273–281. https://doi.org/10.1649/0010-065X-76.2.273

Pablo-Cea, J. D., Deloya, C., MacGregor-Fors, I., Navarrete-Heredia, J. L., & Espinosa-de los Monteros, A. (2022). Functional-group approach with scarab beetles (Coleoptera: Scarabaeidae): a low-cost alternative for monitoring biodiversity in El Salvador. *Annales de la Société Entomologique de France* (*N.S.*), *58*, 373–386. https://doi.org/10.1080/00379271.2022.2125071

Pablo-Cea, J. D., Velado-Cano, M. A., Fuentes, R., Cruz, M., & Noriega, J. A. (2017). First report of *Digitonthophagus gazella* (Fabricius, 1787) and new records for *Euoniticellus intermedius* (Reiche, 1849) (Coleoptera: Scarabaeidae Latreille, 1802) in El Salvador. *Acta Zoológica Mexicana* (*Nueva Serie*), *33*, 527–531. https://doi.org/10.21829/azm.2017.3331154

Pablo-Cea, J. D., Velado-Cano, M. A., & Noriega J. A. (2020). A first step to evaluate the impact of ecotourism on biodiversity in El Salvador: A study case using dung beetles in a national park. *Journal of Ecotourism*, *19*, 51–69. https://doi.org/10.1080/14724049.2020.1772798

Pablo-Cea, J. D., Velado-Cano, M. A., & Solís, Á. (2016). Primer reporte de cuatro especies de escarabajos coprófagos (Coleoptera: Scarabaeinae) en El Salvador. *Acta Zoológica*

Mexicana (*Nueva Serie*), *32*, 218–221. https://doi.org/10.21829/azm.2016.322956

Paucar-Cabrera, A. (2003). Systematics and phylogeny of the genus *Epectinaspis* Blanchard (Coleoptera: Scarabaeidae: Rutelinae) and description of a new genus of Anomalini from Mexico. *The Coleopterists Bulletin*, *57*, 3–60. https://doi.org/10.1649/0010-065X(2003)57[3:SAPOTG]2.0.CO;2

Paulsen, M. J. (2012). Ochodaeidae of Guatemala. *Biodiversidad de Guatemala*, *2*, 175–179.

Paulsen, M. J. (2013). A new genus for the Neotropical species of *Aesalus* Fabricius, with descriptions of eight new species (Coleoptera: Lucanidae: Aesalinae). *Insecta Mundi*, *325*, 1–25.

Pulido-Herrera, L. A., & Zunino, M. (2007). Catálogo preliminar de los Onthophagini de América (Coleoptera: Scarabaeinae). *Sociedad Entomológica Aragonesa (S.E.A.), Monografías Tercer Milenio*, *7*, 93–129.

Ratcliffe, B. C. (1978). A new species of *Trox* from the Amazon basin with new distributional records for Central American *Trox*. *Acta Amazonica*, *8*, 299–302. https://doi.org/10.1590/1809-43921978082299

Ratcliffe, B. C. (2018). A monographic revision of the genus *Gymnetis* MacLeay, 1819 (Coleoptera: Scarabaeidae: Cetoniinae). *Bulletin of the University of Nebraska State Museum*, *31*, 1–250.

Ratcliffe, B. C., & Cave, R. D. (2002). New species of *Cyclocephala* from Honduras and El Salvador (Coleoptera: Scarabaeidae: Dynastinae: Cyclocephalini). *The Coleopterists Bulletin*, *56*, 152–157. https://doi.org/10.1649/0010-065X(2002)056[0152:NSOCFH]2.0.CO;2

Ratcliffe, B. C., & Cave, R. D. (2006). The dynastine scarab beetles of Honduras, Nicaragua, and El Salvador (Coleoptera: Scarabaeidae: Dynastinae). *Bulletin of the University of Nebraska State Museum*, *21*, 1–424.

Ratcliffe, B. C., Cave, R. D., & Cano, E. B. (2013). The dynastine scarab beetles of Mexico, Guatemala, and Belize (Coleoptera: Scarabaeidae: Dynastinae). *Bulletin of the University of Nebraska State Museum*, *27*, 1–666.

Ratcliffe, B. C., & Deloya, C. (1992). The biogeography and phylogeny of *Hologymnetis* (Coleoptera: Scarabaeidae: Cetoniinae) with a revision of the genus. *The Coleopterists Bulletin*, *46*, 161–202.

Ratcliffe, B. C., & Morón, M. Á. (1997). Dynastinae. In M. Á. Morón, B. C. Ratcliffe, & C. Deloya (Eds.), *Atlas de los escarabajos de México. Coleoptera: Lamellicornia. Vol I: Familia Melolonthidae*. Veracruz: Sociedad Mexicana de Entomología, A.C.

Reyes-Castillo, P. (1970). Coleoptera, Passalidae: Morfología y división en grandes grupos: géneros americanos. *Folia Entomológica Mexicana*, *20–22*, 1–240.

Reyes-Castillo, P. (1973). Passalidae de la Guayana Francesa (Coleoptera, Lamellicornia). *Bulletin du Muséum National d'Histoire Naturelle, Zoologie*, *197*, 1541–1587.

Reyes-Castillo, P. (2003). Familia Passalidae. In M. Á. Morón (Ed.), *Atlas de los escarabajos de México. Volumen II. Familias Scarabaeidae, Trogidae, Passalidae y Lucanidae*. Barcelona: Argania Editions.

Rivera-Cervantes, L. E., & Halffter, G. (1999). Monografía de las especies mexicanas de *Canthon* del subgénero *Glaphyrocanthon* (Coleoptera: Scarabaeidae; Scarabaeinae). *Acta Zoológica Mexicana* (*Nueva Serie*), *7*, 23–150. https://doi.org/10.21829/azm.1999.77771693

Rivera-Gasperín, S. L., & Morón, M. Á. (2017). Relaciones filogenéticas de las especies de *Chlaenobia* con otros miembros de *Phyllophaga* s. lato (Coleoptera: Melolonthidae: Melolonthinae). *Revista Mexicana de Biodiversidad*, *88*, 592–607. http://dx.doi.org/10.1016/j.rmb.2017.07.011

Romero-Nápoles, J. (2021). *Catálogo de insectos de la colección del Centro de Entomología*. Comisión Nacional para el Conocimiento y uso de la Biodiversidad (Conabio). https://doi.org/10.15468/ksnkfh

Saunders, J. L., Coto, D. T., & King, A. B. S. (1998). *Plagas invertebradas de cultivos anuales alimenticios en América Central*. Turrialba, CATIE, Informe técnico No. 29.

Scholtz, C. H., & Grebennikov, V. V. (2005): Scarabaeiformia. In R.G. Beutel, & A.B. Leschen (Eds.), *Handbook of Zoology Memoria* (pp. 345–425). Berlin: Walter de Gruyter.

Schoolmeesters, P. (2022). *Scarabs: World Scarabaeidae Database (version 2020-10-06)*. https://www.catalogueoflife.org/data/dataset/1027

Schuster, J. C. (1978). Biogeographical and ecological limits of New World Passalidae (Coleoptera). *The Coleopterists Bulletin*, *32*, 21–28.

Schuster, J. C. (1989). *Petrejoides salvadorae* sp. Nov. (Coleoptera: Passalidae) from El Salvador. *The Florida Entomologist*, *72*, 693–699. https://doi.org/10.2307/3495047

Schuster, J. C., & Cano, E. B. (2005). La distribución mesoamericana de montaña: Síntesis de Passalidae (Coleoptera: Scarabaeoidea) para Mesoamérica Nuclear. In J. Llorente Bousquets, & J. J. Morrone (Eds.), *Regionalización biogeográfica en Iberoamérica y tópicos afines: Primeras Jornadas Biogeográficas de la Red Iberoamericana de Biogeografía y Entomología Sistemática (RIBES XII.I-CYTED) Memoria* (pp. 257–268). México D.F.: Ciencia y Tecnología para el Desarrollo, Facultad de Ciencias, UNAM.

Schuster, J. C., Cano, E. B., & Boucher, S. (2005). *Ogyges* and *Veturius* (Coleoptera: Passalidae) in Central America: synonymies, range extensions and new species. *Acta Zoológica Mexicana*, *21*, 115–132. https://doi.org/10.21829/azm.2005.2121990

Schuster, J. C., & Reyes-Castillo, P. (1990). Coleoptera, Passalidae: *Ogyges* Kaup, revisión de un género mesoamericano de montaña. *Acta Zoológica Mexicana*, *40*, 1–49. https://doi.org/10.21829/azm.1990.37401645

Serrano-Chicas, K. A. (2019). *Diversidad y distribución altitudinal de las subfamilias: Melolonthinae Leach, 1819, Rutelinae Macleay, 1819 y Dynastinae Macleay, 1819 (Scarabaeidae Latreille, 1802) en el Parque Nacional Montecristo, Santa Ana, El Salvador* (*Bachelor Thesis*). Universidad de El Salvador, San Salvador.

Serrano-Peraza, F. A. (2017). *Composición, diversidad y estructura de la comunidad de pasálidos (Coleoptera: Passalidae) del Parque Nacional Montecristo, Santa Ana, El Salvador* (*Bachelor Thesis*). Universidad de El Salvador, San Salvador.

Serrano-Peraza, F. A., Serrano Cervantes, L., & Chaves, L. F. (2022). Bess beetle (Coleoptera: Passalidae) species composition across the altitudinal gradient of Montecristo National Park, El Salvador. *Environmental Entomology*, *51*, 557–563. https://doi.org/10.1093/ee/nvac017

Shaughney, J. M., & Ratcliffe, B. C. (2015). A monographic revision of the genus *Hoplopyga* Thomson, 1880 (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). *The Coleopterists Bulletin*, *69*, 579–638. https://doi.org/10.1649/0010-065X-69.4.579

Skelley, P. E., & Keller, O. (2022). A third species of *Haroldiellus* Gordon and Skelley, 2007 from Mexico and Central America (Coleoptera: Scarabaeidae: Aphodiinae: Aphodiini). *Insecta Mundi*, *916*, 1–11.

Smith, A. (2016). Five new species of *Trigonopeltastes* Burmeister and Schaum from Central America with new country records for other New World Trichiini (Coleoptera, Scarabaeidae, Cetoniinae). *Zookeys*, *619*, 91–127. https://doi.org/10.3897/zookeys.617.9178

Smith, A., & Morón, M. Á. (2003). Revision and phylogenetic analysis of the Central American endemic genus *Phalangogonia* Burmeister (Coleoptera: Scarabaeidae: Rutelinae: Anoplognathini). *Systematic Entomology*, *28*, 323–338. https://doi.org/10.1046/j.1365-3113.2003.00213.x

Solís, Á. (2004). *Escarabajos fruteros de Costa Rica (Cetoniinae).* Santo Domingo de Heredia, InBio.

Solís, Á., Cambra, R. A., & González, M. (2015) Primer registro para Panamá de la especie invasiva *Euoniticellus intermedius* (Reiche, 1849) (Coleoptera: Scarabaeidae, Scarabaeinae). *Tecnociencia*, *17*, 51–55.

Solís, A., & Kohlmann, B. (2004). El género *Canthidium* (Coleoptera: Scarabaeidae) en Costa Rica. *Giornale Italiano di Entomologia*, *52*, 1–73.

Solís, Á., & Kohlmann, B. (2012). Checklist and distribution atlas of the Scarabaeinae (Coleoptera: Scarabaeidae) of Costa Rica. *Zootaxa*, *3482*, 1–32. https://doi.org/10.11646/zootaxa.3482.1.1

Solís, Á., & Kohlmann, B. (2013). El género *Uroxys* (Coleoptera: Scarabaeidae) en Costa Rica. *Giornale Italiano di Entomologia*, *58*, 289–340.

Stebnicka, Z. T. (2001). The New World species of *Ataenius* Harold, 1867. I. Revision of the *A. crenator*-group, *A. nugator*-group and *A. perforatus*-group (Coleoptera: Scarabaeidae: Aphodiinae: Eupariini). *Acta Zoologica Cracoviense*, *44*, 253–283. https://doi.org/10.3409/000000007783995138

Stebnicka, Z. T. (2002). The New World Eupariini. Revision of the genus *Auperia* Chevrolat, 1864 (= *Phalangochaeta* Martínez, 1952) (Coleoptera: Scarabaeidae: Aphodiinae). *Revue Suisse de Zoologie*, *109*, 741–775. https://doi.org/10.5962/bhl.part.79568

Stebnicka, Z. T. (2003). The New World species of *Ataenius* Harold, 1867. III. Revision of the *A. imbricatus*-group *sensu lato* (Coleoptera: Scarabaeidae: Aphodiinae: Eupariini). *Acta Zoologica Cracoviense*, *46*, 219–249. https://doi.org/10.3409/173491504783995834

Stebnicka, Z. T. (2005). The New World species of *Ataenius* Harold, 1867. VI. Revision of the *A. aequalis-platensis* group (Coleoptera: Scarabaeidae: Aphodiinae: Eupariini). *Acta Zoologica Cracoviensia*, *48B*, 99–138. https://doi.org/10.3409/173491505783995653

Stebnicka, Z. T. (2006). The New World species of *Ataenius* Harold, 1867. VII. Revision of the *A. complicatus*-group (Scarabaeidae: Aphodiinae: Eupariini). *Acta Zoologica Cracoviensia*, *49B*, 89–114. https://doi.org/10.3409/000000006783995364

Stebnicka, Z. T. (2007). *The genus* Ataenius *Harold, 1867 (Coleoptera: Scarabaeidae) of New World. Iconography*. Kraków: Institute of Systematics and Evolution of Animals Polish Academy of Sciences.

Stebnicka, Z. T., & Lago, P. K. (2005). The New World species of *Ataenius* Harold, 1867. V. Revision of the *A. strigatus* group (Scarabaeidae: Aphodiinae: Eupariini). *Insecta Mundi*, *19*, 55–83.

Stebnicka, Z. T., & Skelley, P. (2007). A revision of the genus *Haroldiataenius* Chalumeau (Scarabaeidae: Aphodiinae: Eupariini). *Insecta Mundi*, *62*, 1–16.

Van Roie, M., De Wint, F., Güngor, A., Huyghe, C., Dekoninck, W., & Sekerka, L. (2019). An annotated checklist of the leaf beetles (Coleoptera, Chrysomelidae) from El Salvador, with additions from the Bechyné collection in the Royal Belgian Institute of Natural Sciences. *Zookeys*, *856*, 137–196. https://doi.org/10.3897/zookeys.856.32017

Vaurie, P. (1958). A revision of the genus *Diplotaxis* (Coleoptera, Scarabaeidae, Melolonthinae) Part I. *Bulletin of the American Museum of Natural History*, *115*, 263–396.

Vaurie, P. (1960). A revision of the genus *Diplotaxis* (Coleoptera, Scarabaeidae, Melolonthinae) Part II. *Bulletin of the American Museum of Natural History*, 120, 166–433.

Warner, W. B. (1992). A new North American *Spodistes* Burmesiter (Coleoptera: Scarabaeidae). *The Coleopterists Bulletin*, *46*, 378–383.

Zunino, M., & Halffter, G. (1988). Análisis taxonómico, ecológico y biogeográfico de un grupo americano de *Onthophagus* (Coleoptera, Scarabaeidae). *Museo Regionale di Scienze Naturale Torino Monografia*, *9*, 1–211.