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UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO



POSGRADO EN CIENCIAS BIOLÓGICAS

FACULTAD DE CIENCIAS

“SISTEMÁTICA DEL SUBGÉNERO *LAMPETIS* (*SPINTHOPTERA*)
(*COLEOPTERA: BUPRESTIDAE*) PARA AMÉRICA CENTRAL, DEL
NORTE Y LAS ANTILLAS”

TESIS

QUE PARA OBTENER EL GRADO ACÁDEMICO DE
DOCTORA EN CIENCIAS

P R E S E N T A

ANGÉLICA MARÍA CORONA LÓPEZ

DIRECTOR DE TESIS: DR. JUAN JOSÉ MORRONE LUPI

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- Presidente: Dr. Harry Urad Brailovsky Alperowitz
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Sin otro particular, quedo de usted.

Atentamente
"POR MI RAZA HABLARA EL ESPIRITU"
Cd. Universitaria, D.F., a 9 de junio del 2005.

Dr. Juan José Morrone Lupi
Coordinador del Programa

c.c.p. Expediente del interesado

DEDICATORIA

A mis padres Taurino y Martha

Gracias por darme la vida y por brindarme todo su amor, apoyo y comprensión en cada etapa de mi vida.

A mis hermanos David y Cecilia

Por todos los momentos que hemos pasado juntos y por todo el apoyo que me han brindado siempre.

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RESUMEN

El presente trabajo se enfoca al estudio taxonómico, filogenético y biogeográfico del subgénero *Lampetis* (*Spinthoptera*) Casey, 1909, para América del Norte, Central y las Antillas, con el objeto de contribuir a su clasificación, al conocimiento de las relaciones filogenéticas y de los patrones de distribución de las especies que lo componen. Los resultados se presentan en tres capítulos, el primero incluye una clave dicotómica para el reconocimiento de las especies, diagnosis, redescripciones, descripciones de las especies nuevas y aspectos biológicos; el segundo un análisis filogenético, y el tercero un análisis biogeográfico.

Se revisaron taxonómicamente 2434 ejemplares del subgénero *Lampetis* (*Spinthoptera*) Casey, 1909 de América del Norte, Central y las Antillas. Se reconocieron un total de 31 especies, de las cuales, se redescribieron 20 especies [*L. aurata* (Saunders, 1871), *L. aurifera* (Olivier, 1790), *L. auropunctata* (Kerremans, 1893) (nuevo registro para EEUU), *L. bahamica* (Fisher, 1925), *L. chalconota* (Waterhouse, 1882), *L. christophi* Théry, 1923, *L. cortesi* (Laporte & Gory, 1837), *L. dilaticollis* (Waterhouse, 1882), *L. geniculata* (Waterhouse, 1889), *L. granulifera* (Laporte & Gory 1837), *L. guildini* (Laporte & Gory 1836); *L. hirtomaculata* (Herbst, 1891), *L. lesnei* (Kerremans, 1910), *L. mexicana* Théry, 1923, *L. monilis* (Chevrolat, 1834), *L. obscura* Thomson, 1879, *L. simplex* (Waterhouse, 1882), *L. srdinkoana* (Obenberger, 1924), *L. straba* (Chevrolat, 1867), y *L. torquata* (Dalman, 1823)] y se describieron siete especies nuevas para la ciencia (*L. chamela*, *L. colima*, *L. cyanitarsis*, *L. hondurensis*, *L. tigrina*, *L. viridicolor* y *L. viridimarginalis*). Tres especies de México y Estados Unidos de América [*L. cupreopunctata* (Schaeffer, 1905), *L. drummondi* (Laporte & Gory, 1836), y *L. webbii* (LeConte, 1858)], y una especie de México (*L. chiapaneca* Corona, 2004), no fueron redescritas aquí, ya que fueron estudiadas recientemente (Nelson, 1986; Corona, 2004). Además se reunió toda la información sobre distribución, plantas huéspedes y fenología contenida en la

literatura y etiquetas de cada uno de los ejemplares.

Posteriormente, fueron analizadas las relaciones filogenéticas de las especies de *Lampetis* (*Spinthoptera*) de Norteamérica, Centroamérica y las Antillas por medio de la cladística, con base en 65 caracteres obtenidos de la morfología externa y genitalia masculinos. Once especies de diferentes grupos genéricos pertenecientes a la subtribu Dicercina fueron consideradas como grupos externos, así como también especies de *Lampetis* (*Lampetis*). Se obtuvieron dos cladogramas donde la monofilia del subgénero es sustentada por dos sinapomorfías. También se observó que *Lampetis* (*Spinthoptera*) está más cercanamente relacionado con las especies de *Psiloptera* que con las especies de *Lampetis* (*Lampetis*), lo que sugiere que el subgénero en estudio es un género diferente. Además, el análisis mostró que las especies del subgénero en estudio no constituyen un taxón monofilético, ya que *Lampetis* (*Spinthoptera*) *tucumana* (grupo externo sudamericano) está más cercanamente relacionado con *L. srdinkoana* (grupo interno centroamericano).

Por último, se procedió al análisis de los patrones de distribución de las especies de *Lampetis* (*Spinthoptera*) del Norte y Centroamérica y de las Antillas por medio de un análisis de trazos (panbiogeografía). A partir de 555 registros, fueron dibujados 29 trazos individuales, ya que dos especies fueron excluidas del análisis debido a que sólo se encontraron en pocas localidades (una o dos). A partir de la comparación de 29 trazos individuales, se encontraron 15 trazos generalizados y seis nodos. Tres trazos generalizados fueron encontrados en la región Neártica y 12 en la región Neotropical (zona de transición Mexicana, dominio Antillano y dominio Mesoamericano). Los nodos se localizaron en la zona de transición Mexicana (provincias biogeográficas de la Sierra Madre del Sur y Eje Volcánico Transmexicano) y en la región Neotropical (provincias biogeográficas del Golfo de México y Costa del Pacífico Mexicano). Dos nodos fueron localizados en el Istmo de Tehuantepec, que representa un área clave para el entendimiento de la evolución biótica de Mesoamérica.

ABSTRACT

A taxonomic, phylogenetic and biogeographic study of the subgenera *Lampetis* (*Spinthoptera*) Casey, 1909 of North America, Central America and the West Indies was carried out in order to contribute to the classification, to the knowledge of the phylogenetic relationships and to analyze the geographical distribution of the North and Central American, and West Indian species of *Lampetis* (*Spinthoptera*). The results are presented in three chapters, the first includes a key for the identification at the level of species, diagnoses, taxonomic redescriptions and descriptions of the recognized taxa, and biological aspects, the second includes a phylogenetic analysis; and the third includes a biogeographic analysis.

A total of 2434 specimens of the subgenus *Lampetis* (*Spinthoptera*) Casey, 1909 of North America, Central America and the West Indies were revised and 31 species are recognized. Twenty species (*L. aurata* [Saunders, 1871], *L. aurifera* [Olivier, 1790], *L. auropunctata* [Kerremans, 1893] [new record for the USA], *L. bahamica* [Fisher, 1925], *L. chalconota* [Waterhouse, 1882], *L. christophi* Théry, 1923, *L. cortesi* [Laporte & Gory, 1837], *L. dilaticollis* [Waterhouse, 1882], *L. geniculata* [Waterhouse, 1889], *L. granulifera* [Laporte & Gory 1837], *L. guildini* [Laporte & Gory 1836], *L. hirtomaculata* [Herbst, 1891] = *L. insularis* [Casey, 1909] syn. n., *L. lesnei* [Kerremans, 1910], *L. mexicana* Théry, 1923, *L. monilis* [Chevrolat, 1834], *L. obscura* Thomson, 1879, *L. simplex* [Waterhouse, 1882], *L. srdinkoana* [Obenberger, 1924], *L. straba* [Chevrolat, 1867], and *L. torquata* [Dalman, 1823]) were redescribed. Seven new species (*L. chamela* sp. n., *L. colima* sp. n., *L. cyanitarsis* sp. n., *L. hondurensis* sp. n., *L. tigrina* sp. n., *L. viridicolor* sp. n., and *L. viridimarginalis* sp. n.) were described. Three species from Mexico and the United States of America [*L. cupreopunctata* (Schaeffer, 1905), *L. drummondi* (Laporte & Gory, 1836), and *L. webbii* (LeConte, 1858b)], and one species from Mexico (*L. chiapaneca* Corona, 2004) were not described here, because they were re-described

recently. Information on variation, distribution, host plants and phenology are given for each species.

Phylogenetic relationships of the species of *Lampetis* (*Spinthoptera*) of North and Central America and the West Indies were analyzed by cladistic methods based on 65 characters from the external morphology and male genitalia. Eleven species of different generic groups of the subtribe Dicercina were considered as outgroups, including also species of *Lampetis* (*Lampetis*) and one South American species of *Lampetis* (*Spinthoptera*). Two cladograms were obtained, where the monophyly of the subgenus is supported by two synapomorphies. *Lampetis* (*Spinthoptera*), however, is more closely related to species of *Psiloptera* than to species of *Lampetis* (*Lampetis*), which suggests that it represents a different genus. In addition, the analysis showed that the species of the subgenus of North and Central America and the West Indies are not monophyletic, because *Lampetis* (*Spinthoptera*) *tucumana* (South American outgroup) is related with *L. srdinkoana* (Central American ingroup).

Distributional patterns of the species of *Lampetis* (*Spinthoptera*) of North and Central America and the West Indies were analyzed by a track analysis. With 555 records obtained, 29 individual tracks were drawn because two species with few localities (one or two) were excluded from the analysis. Based on the comparison of 29 individual tracks, fifteen generalized tracks and six nodes were found. Three generalized tracks were found in the Nearctic region and 12 in the Neotropical region (Mexican transition zone, Antillean dominion and Mesoamerican dominion). Nodes were located in the Mexican transition zone (Sierra Madre del Sur and Transmexican Volcanic Belt biogeographic provinces) and the Neotropical region (Mexican Gulf and Mexican Pacific Coast biogeographic provinces). Two nodes were located in the Isthmus of Tehuantepec, which represents a key area for the understanding of the biotic evolution of Mesoamerica.

INTRODUCCIÓN

Las especies de la familia Buprestidae son comúnmente conocidas como “escarabajos joyas” o “escarabajos metálicos barrenadores de madera”, debido a que los adultos son generalmente de un negro, azul, verde o cobre metálico, principalmente en la parte ventral del cuerpo y en la superficie dorsal del abdomen, y además sus larvas barrenan la madera, raíces o tallos formando túneles en los tejidos de árboles y arbustos, y otros son minadores de hojas (Hespenheide, 1996; Triplehorn & Jonson, 2005).

En el mundo, las Buprestidae presentan una elevada riqueza, con aproximadamente 15,000 especies, correspondiendo a la séptima familia más diversa del orden Coleoptera, siendo las seis anteriores, Curculionidae (65,000 especies), Chrysomelidae (36,500 especies), Cerambycidae (35,000 especies), Staphylinidae (35,000 especies), Scarabaeidae (25,000 especies) y Tenebrionidae (18,000 especies) (Costa, 2000; Bellamy, 2003). En México se han descrito poco más de 800 especies, pero de acuerdo con Hespenheide (1996) pueden existir 1300 o más.

El género *Lampetis* Dejean, 1833 se encuentra entre los géneros más diversos de la subtribu Dicercina de acuerdo con Bellamy (2003). *Lampetis* comprende dos subgéneros, *Lampetis* y *Spinthoptera* Casey, 1909, y 251 especies aproximadamente, las cuales se distribuyen en las regiones Andina, Afrotropical, Neártica, Neotropical, Oriental y Paleártica. Kurosawa (1993) reconoció más de 100 especies del Nuevo Mundo para *Lampetis* (*Spinthoptera*) y asignó el resto de las especies pertenecientes al Viejo Mundo a *Lampetis* (*Lampetis*).

De acuerdo con la literatura (Blackwelder, 1944; Bellamy, 1985), la mayor diversidad de *Lampetis* (*Spinthoptera*) se encuentra en América del Sur, que cuentan con unas 100 especies. Para América del Norte, Central y las Antillas, el grupo en estudio, se han citado 25 especies, de las cuales, ocho están registradas para

México: *L. chalconota* (Waterhouse, 1882), *L. christophi* Théry, 1923, *L. dilaticollis* (Waterhouse, 1882), *L. famula* Chevrolat, 1838, *L. geniculata* (Waterhouse, 1889), *L. mexicana* Théry, 1923, *L. obscura* Thomson, 1879 y *L. variolosa* (Fabricius, 1801); seis para las Antillas: *L. aurata* (Saunders, 1871), *L. aurifera* (Olivier, 1790), *L. bahamica* (Fisher, 1925), *L. guildini* (Laporte & Gory, 1836), *L. straba* (Chevrolat, 1867) y *L. torquata* (Dalman, 1823); cuatro para México y Centroamérica: *L. cortesi* (Laporte & Gory, 1837), *L. granulifera* (Laporte & Gory, 1837), *L. monilis* (Chevrolat, 1834) y *L. simplex* (Waterhouse, 1882); tres para México y EEUU: *L. cupreopunctata* (Schaeffer, 1905), *L. drummondi* (Laporte & Gory, 1836) y *L. webbii* (LeConte, 1858); y cuatro para Centroamérica: *L. hirtomaculata* (Herbst, 1801), *L. insularis* (Casey, 1909), *L. lesnei* (Kerremans, 1910) y *L. srdinkoana* (Obenberger, 1924). Posteriormente, Nelson (1986) revisó taxonómicamente tres especies de *Lampetis* (*Spinthoptera*) de los Estados Unidos de América (*L. cupreopunctata* [Schaeffer, 1905], *L. drummondi* [Laporte & Gory, 1836] y *L. webbii* [LeConte, 1858]), y Corona (2004) publicó una especie nueva para México (*L. chiapaneca*).

La información taxonómica que existe sobre *Lampetis* (*Spinthoptera*) de América del Norte, Central y las Antillas se restringe a los trabajos en donde se han descrito las especies válidas hasta este momento o a revisiones parciales, pero actualmente no se cuenta con un trabajo taxonómico en el cual se incluyan todas las especies de *Lampetis* (*Spinthoptera*) desde Kerremans (1910), ni mucho menos un análisis cladístico para probar la monofilia o determinar las relaciones filogenéticas del grupo. Además, se conoce muy poco sobre la biología de las especies de este subgénero en particular, habiéndose señalado que sus especies son diurnas, como la gran mayoría de las especies de la familia Buprestidae, y se caracterizan por ser descortezadores o barrenadores de madera, jugando un papel muy importante en la degradación de la materia muerta.

Por lo anterior, este trabajo pretende realizar un estudio taxonómico de las especies de *Lampetis* (*Spinthoptera*) de Centroamérica, Norteamérica y las Antillas,

elaborar redescrpciones de las especies conocidas, descripciones de las especies nuevas para la ciencia y una clave dicotómica para el reconocimiento de las especies, además de hacer disponible toda la información que sea recabada sobre aspectos de distribución, fenología y plantas huéspedes. Asimismo, se llevará a cabo un análisis cladístico preliminar, para determinar sus relaciones filogenéticas y un análisis biogeográfico para conocer los patrones de distribución de estas especies.

HIPÓTESIS

1. El subgénero *Lampetis* (*Spinthoptera*) es monofilético.
2. El conjunto de las especies de *Lampetis* (*Spinthoptera*) para Norte, Centroamérica y las Antillas forma un grupo monofilético, en relación con las especies pertenecientes a otras regiones geográficas.
3. Dentro del grupo en estudio, existen subgrupos más restringidos en cuanto al número de especies y a su distribución geográfica (por ejemplo, en México, en las Antillas).
4. Existen varias especies nuevas para la ciencia.

OBJETIVOS

Objetivo general

Elaborar un análisis sistemático del subgénero *Lampetis* (*Spinthoptera*) para Centro, Norteamérica, y las Antillas.

Objetivos particulares

1. Revisar taxonómicamente las especies del subgénero *Lampetis* (*Spinthoptera*) de Centro, Norteamérica y las Antillas.
2. Elaborar una clave dicotómica para la identificación de esas especies.
3. Redescribir las especies conocidas y describir las especies nuevas para la ciencia.
4. Reunir información sobre aspectos de distribución, fenología y plantas huéspedes.
5. Establecer las relaciones filogenéticas de las especies del subgénero *Lampetis* (*Spinthoptera*) de Centro, Norteamérica y las Antillas.
6. Determinar los patrones de distribución de las especies del subgénero *Lampetis* (*Spinthoptera*) de Centro, Norteamérica y las Antillas, por medio de un análisis de trazos.

CAPÍTULO I. REVISIÓN TAXONÓMICA

Corona, A. M. 2005. A revision of the subgenus *Lampetis* (*Spinthoptera*) Casey, 1909 (Coleoptera: Buprestidae) of North and Central America, and the West Indies. *European Journal of Entomology* 102(4).

Date: Thu, 10 Feb 2005 14:41:03 +0100
From: Entomology <entomologie@volny.cz>
To: amcl@minervaux2.fciencias.unam.mx
Subject: manuscript

Dear Dr. Corona,

I received in order the revised version of your paper, which is now accepted for publication in European Journal of Entomology. With the best regards,

Yours sincerely,

Josef Jelinek

A revision of the subgenus *Lampetis* (*Spinthoptera*) Casey, 1909 (Coleoptera: Buprestidae) of North and Central America, and the West Indies

ANGÉLICA Ma. CORONA

Museo de Zoología "Alfonso L. Herrera"

Facultad de Ciencias, UNAM,

Apartado Postal 70-399,

04510 México, D. F.

MÉXICO.

Tel. 5622-4825

Fax number: 5622-4828

E-mail: amcl@minervaux2.fciencias.unam.mx

Key words. Coleoptera, Buprestidae, *Lampetis* (*Spinthoptera*), taxonomy, new species, new synonymy, North America, Central America, West Indies.

Abstract. The species of *Lampetis* (*Spinthoptera*) Casey, 1909 of Central America, North America and the West Indies are revised and 31 species are recognized. Six species from the West Indies [*L. aurata* (Saunders, 1871), *L. aurifera* (Olivier, 1790), *L. bahamica* (Fisher, 1925), *L. guildini* (Laporte & Gory, 1836), *L. straba* (Chevrolat, 1867), and *L. torquata* (Dalman, 1823)], eight species from Mexico [*L. auropunctata* (Kerremans, 1893) (*new record for the U.S.A.*), *L. chalconota* (Waterhouse, 1882), *L. christophi* Théry, 1923, *L. dilaticollis* (Waterhouse, 1882), *L. geniculata* (Waterhouse, 1889), *L. granulifera* (Laporte & Gory, 1837), *L. mexicana* Théry, 1923, and *L. obscura* Thomson, 1879], three species from Mexico and Central America [*L. cortesi* (Laporte & Gory, 1837), *L. monilis* (Chevrolat, 1834), *L. simplex* (Waterhouse, 1882)], and three from Central America [*L. hirtomaculata* (Herbst, 1801) = *L. insularis* (Casey, 1909) syn. n.; *L. lesnei* (Kerremans, 1910); and *L. srdinkoana* (Obenberger, 1924a)] are redescribed. Seven **new species** (*L. chamela* sp. n., *L. colima* sp. n., *L.*

cyanitarsis sp. n., *L. hondurensis* sp. n., *L. tigrina* sp. n., *L. viridicolor* sp. n., and *L. vindimarginalis* sp. n.) are described. Three species from Mexico and the United States [*L. cupreopunctata* (Schaeffer, 1905), *L. drummondi* (Laporte & Gory, 1836), and *L. webbii* (LeConte, 1858b)], and one species from Mexico (*L. chiapaneca* Corona, 2004) are not described here, because they were (re)described recently. The diagnosis, distribution, host plants and phenology data of *L. chiapaneca*, *L. cupreopunctata*, *L. drummondi*, and *L. webbii* are given. *Lampetis famula* Chevrolat, 1838 and *L. variolosa* (Fabricius, 1801) are not recognized here as Mexican species, because they are from South America according to the literature and specimens studied. Information on variation, distribution, and host plants are given for each species. Photographs of dorsal habitus and male genitalia are included.

INTRODUCTION

The genus *Lampetis* Dejean, 1833 (Coleoptera: Buprestidae) was formerly considered a subgenus of *Psiloptera* Dejean, 1833, until Kurosawa (1993) divided *Psiloptera* into six genera, one being *Lampetis*. Bellamy (1998a) clarified the authorship of certain buprestid genera, accepting *Psiloptera* Dejean, 1833 and *Lampetis* Dejean, 1833. *Lampetis* is one of the most speciose genera in the subtribe Dicercina according to Bellamy (2003), with approximately 251 species widely distributed in the Andean, Afrotropical, Nearctic, Neotropical, Oriental and Palearctic regions. According to Kurosawa (1993), all species in the New World belong to the subgenus *Spinthoptera* Casey, 1909.

According to the literature (Blackwelder, 1944; Bellamy, 1985), 10 species of *Lampetis* (*Spinthoptera*) are known from North America [*L. auropunctata* (Kerremans, 1893), *L. chalconota* (Waterhouse, 1882), *L. christophi* Théry, 1923, *L. cupreopunctata* (Schaeffer, 1905), *L. dilaticollis* (Waterhouse, 1882), *L. drummondi* (Laporte & Gory, 1836), *L. geniculata* (Waterhouse, 1889), *L. mexicana* Théry, 1923, *L. obscura* Thomson, 1879, and *L. webbii* (LeConte, 1858b)], four species are from

Mexico and Central America [*L. cortesi* (Laporte & Gory, 1837), *L. granulifera* (Laporte & Gory, 1837), *L. monilis* (Chevrolat, 1834), and *L. simplex* (Waterhouse, 1882)], three species are known only from Central America [*L. hirtomaculata* (Herbst, 1801), *L. lesnei* (Kerremans, 1910), and *L. srdinkoana* (Obenberger, 1924a)], and six species are known from the West Indies [*L. aurata* (Saunders, 1871), *L. aunifera* (Olivier, 1790), *L. bahamica* (Fisher, 1925), *L. guildini* (Laporte & Gory, 1836), *L. straba* (Chevrolat, 1867), and *L. torquata* (Dalman, 1823)]. Recently, Nelson (1986) reviewed three species of *Lampetis* from the United States [*L. cupreopunctata* (Schaeffer, 1905), *L. drummondi* (Laporte & Gory, 1836), and *L. webbia* (LeConte, 1858b)], and Corona (2004) published a new species from Mexico (*L. chiapaneca*), but nobody has undertaken a complete taxonomic study of all species of *Lampetis* (*Spinthoptera*) since Kerremans (1910).

I worked with this group during my PhD thesis and my objective was: a) to undertake the taxonomic analysis of the species of the *Lampetis* (*Spinthoptera*); b) to redescribe the known species from Mexico, Central America, and the West Indies; c) to describe new species; and d) to present information about variation, distribution, and host plants.

MATERIAL AND METHODS

Altogether 2434 specimens of *Lampetis* (*Spinthoptera*) from North and Central America, and the West Indies, as well as type specimens of all the species were provided by 31 institutions and 10 private collections. These collections are abbreviated as in Arnett *et al.* (1993), except CNIN = Colección Nacional de Insectos, Instituto de Biología, UNAM, MEXICO; UAQC = Colección de Insectos, Universidad Autónoma de Querétaro, Querétaro, MEXICO, Mexico; and MZFC = Colección Entomológica, Museo de Zoología, Facultad de Ciencias, UNAM. Abbreviations are given as follow:

AMNH American Museum of Natural History, New York, New York, U.S.A.

BMNH	The Natural History Museum, London, U. K.
CASC	California Academy of Sciences, San Francisco, California, U.S.A.
CEAM	Colección Entomológica, Instituto de Fitosanidad, Colegio de Posgraduados, Mexico
CLBC	Charles L. Bellamy collection, Sacramento, California, U.S.A.
CUIC	Cornell University Insect Collection, Ithaca, New York, U.S.A.
DSVC	David S. Verity collection, Los Angeles, California, U.S.A.
EAPZ	Escuela Agrícola Panamericana (El Zamorano), Tegucigalpa, Honduras
EBCC	Estación de Biología "Chamela", UNAM, San Patricio, Jalisco, Mexico
EMEC	Essig Museum of Entomology, University of California, Berkeley, U.S.A.
EMUS	Entomological Museum, Department of Biology, Utah State University, Logan, Utah, U.S.A.
FMNH	Field Museum of Natural History Chicago, Illinois, U.S.A.
FSCA	Collection of Arthropods University of Florida Florida State, Gainesville Florida, U.S.A.
FTHC	Frank Hovore collection, Santa Clarita, California, U.S.A.
GHNC	Gayle H. Nelson collection, Blue Springs, Missouri, U.S.A.
ICIS	Idaho State University, Idaho Museum of Natural History, Pocatello, Idaho, USA
INBC	Instituto Nacional de Biodiversidad (INBio), Santo Domingo de Heredia, Costa Rica
INIA	Colección de Insectos, Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Guanajuato, Mexico
ISNB	Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium
JEWC	James E. Wappes collection, Bulverde, Texas, U.S.A.
JMCC	John McCarty collection, San Pablo, California, U.S.A.
LACM	Los Angeles County Museum of Natural History, Los Angeles, California, U.S.A.

MAIC	Michael A. Ivie collection, Bozeman, Montana, U.S.A.
MCZC	Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, U.S.A.
MHND	Museo Nacional de Historia Natural, Santo Domingo, Dominican Republic
MIZA	Universidad Central de Venezuela, Maracay, Venezuela
MZHF	Finnish Museum of Natural History, Helsinki, Finland
NMPC	National Museum, Prague, Czech Republic
RHCP	Roman B. Holynski collection, Milanówek, Poland
RLWE	Richard L. Westcott collection, Oregon, U.S.A.
RMCF	Roy F. Morris collection, Lakeland, Florida, U.S.A.
SEAN	Museo Entomológico, León, Nicaragua
SEMC	Snow Entomological Museum, University of Kansas, Lawrence, Kansas, U.S.A.
TCMC	Ted C. MacRae collection, St. Louis, Missouri, U.S.A.
UCDC	R. M. Bohart Museum of Entomology, University of California Davis, California, U.S.A.
UCRC	University of California, Riverside, Department of Entomology, Riverside, California, U.S.A.
UGZM	Colección Zoológica, Universidad de Guadalajara, Guadalajara, Mexico
UMO	Hope Entomological Collections, Oxford University Museum of Natural History, Oxford, U.K.
USNM	National Museum of Natural History, Smithsonian Institution, Washington D.C., U.S.A.
ZMHB	Museum für Naturkunde der Humboldt Universität zu Berlin, Berlin, Germany
ZMUC	Zoological Museum, University of Copenhagen, Copenhagen, Denmark

External morphological characters were examined using a stereoscopic microscope and measurements were taken using an ocular micrometer. Length

measurements were made from the front of the head to the elytral apex and width across the widest part of the body. Type data are indicated as they appear on the original labels. Separate labels are indicated by brackets ([]), each separate line by a slash (/). Localities for distribution under each species are listed alphabetically.

RESULTS

Taxonomy

Family BUPRESTIDAE

Genus *Lampetis* Dejean, 1833

Lampetis Dejean, 1833:76; Gistel, 1834:10; Dejean, 1836:86; Mannerheim, 1837:39; Spinola, 1837:113; Gistel, 1848:128; Lacordaire, 1857:27 (syn. of *Psiloptera*); Gemminger & Harold, 1869:1364 (syn. of *Psiloptera*); Saunders, 1871:22; Thomson, 1878:29; 1879b:163; Kerremans, 1892:56; 1893:106; 1903:92; Théry, 1905:39 (as *Psiloptera*); Obenberger, 1926:163; Théry, 1946:54; Obenberger, 1958:225; Nelson, 1982:445; Bellamy, 1985:416; Kurosawa, 1993:580; Akiyama & Ohmomo, 1994:17 (Asian spp. key); Bellamy, 1998a:369. Type species: *Buprestis bioculata* Olivier, 1790 (subsequent designation: Lacordaire, 1857:30).

Damarsila sensu Kerremans, 1892:56; 1893:106; 1903:95; 1910:193; Obenberger, 1924b:9; 1926:173; Théry, 1948:5; Bellamy, 1985:416; Kurosawa, 1993:580.

Buprestodes Carter, 1924:23; Carter, 1929:283; Obenberger, 1930:419; Bellamy, 1985:420; Bellamy & Peterson, 2000:82 (syn. of *Lampetis*). Type species: *Buprestodes corruscans* Carter, 1924 (subs. design. by Bellamy, 1998b).

Subgenus *Spinthoptera* Casey, 1909

Spinthoptera Casey, 1909:71; Kerremans, 1910:3; Obenberger, 1926:163; Nelson, 1982:445; Bellamy, 1985:416; Nelson, 1986:274; Kurosawa, 1993:580. **Type species.** *Psiloptera valens* LeConte, 1858a (orig. design.).

Lampetis sensu Kerremans, 1903:92; Obenberger, 1958:225; Nelson, 1986:274; Kurosawa, 1993:580.

Diagnosis. Head rugose, front feebly excavated; clypeus broadly, shallowly emarginate, not separated from front by carina; antennal cavities large, triangular, with strong oblique ridge above; mandibles apices black without punctures. Antennae: short, segment 1 robust, elongate; segments 2 and 3 subglobular, 3 longer than 2; segments 4 and 5 elongate, subequal in length; segment 5 weakly triangular; segments 6-11 serrate, obliquely truncate on toothed border except segment 6 in female, border narrowed more abruptly basally; with sensory pores along serrate border, in fossae on dorsal and ventral surfaces and at apex ventrally; apical segment without terminal process in either sex. Pronotum: transverse, convex; without raised basal margin; punctuations coarse; with two small perforate ante-scutellar discal punctures, with weak depression at base near each posterior angles. Elytra: convex; wider at base than pronotum; lateral margins sinuate to middle, then converging apically; apices narrowly truncate and usually bidentate; disc with rows of distinct punctuations. Prosternum: with anterior margin truncate or weakly bisinuate, without median projection or teeth; prosternal process: obtusely angulated behind procoxae, largely impunctate and bisulcate. Mesosternum: divided, meso- and metasternum suture obsolete. Metepimeron: triangular, uncovered. Metacoxal plates: dilated medially. Abdomen: with first ventrite flattened or sulcate along midline; apex of last visible ventrite rounded, truncate or feebly emarginate. Legs: with femora only moderately robust; tibiae slender, subcylindrical and straight or weakly arcuate; tarsi robust, first 4 tarsomeres slightly diminishing in length; claws simple. The female differs generally from male as follows: slightly more robust in body shape; antenna with segment 6 triangular and not truncate on toothed border; apex of last visible ventrite rounded.

**Key to Central, North American and West Indies species of *Lampetis*
(*Spinthoptera*)**

- 1a. Pronotum with slight or strong, coarsely and densely punctate, transverse depression along anterior margin; in some species interrupted at middle (Figs. 62, 63, 64, 65, 66) 2
- 1b. Pronotum without previous combination of characteristics; uniformly punctate, some species with few or abundant punctures or without punctures medially (Figs. 67, 68, 69, 70) 6
- 2a. Pronotum with coarsely, densely punctate, transverse depression along posterior margin (in some species interrupted medially) (Figs. 65, 66) 3
- 2b. Pronotum without previous combination of characteristics, without entire transverse depression along posterior margin, but with other smaller coarsely, densely punctate impressions (Figs. 62, 63, 64) 4
- 3a. Pronotum with two longitudinal impressions at sides of midline from anterior to posterior margins; pronotum dark brown with cupreous tints; elytra cupreous sometimes with bluish tints at apices, callosities reddish, without depression along lateral margins; ventral surface cupreous; punctures red-coppery margined with brassy-green or brassy... (Cuba) *L. straba* (Chevrolat, 1867) (Figs. 25, 65)
- 3b. Pronotum with two transverse arcuate impressions, one along anterior margin, rather broadly interrupted at the middle, the other near posterior margin; each elytron with a depression along lateral margins; entire dorsal surface dark green, punctures and impressions golden-green margined with purple; ventral surface olive-green on median portions, becoming purple toward the sides, punctures golden-green... (Cuba, Haiti, Jamaica) *L. torquata* (Dalman, 1823) (Figs. 28, 66)

- 4a. Pronotal surface with longitudinal median depression (Figs. 1, 62) 5
- 4b. Pronotal surface without longitudinal median depression and with weak depression along posterior margin near each lateroposterior angle; pronotum and elytra with shining-bluish-purplish-cupreous tints at light; ventral surface dark brown with cupreous and blue tints, punctures olive-green... (Bahamas)
 *L. bahamica* (Fisher, 1925) (Figs. 4, 64)
- 5a. Pronotum black with slight bluish-purplish tints, impressions golden-green; anterior and lateral margins each with entire premarginal depression; elytra reddish dark brown, sometimes red-coppery laterally, punctures cupreous, some callosities with blue or violet tints; surface with many groups of few, small, deep punctures between striae; lateral portion of disc with small callosities and bright green tints... (Dominican Republic, Haiti) *L. aurata* (Saunders, 1871)
 (Figs. 1, 62)
- 5b. Entire dorsal surface dark green, sometimes with purplish tints; ventral surface with strong purple with dark-green and golden-green tints; dorsal surface impressions and punctures golden-green; impressions with short recurved setae, covered with pale yellow pulverulence in fresh specimens; pronotum with longitudinal median depression sometimes feebly interrupted at middle; another narrow depression along lateral margin but not reaching posterior angles, and one transversely oblique depression behind the middle on each side... (Dominican Republic, Haiti, Cuba) *L. aurifera* (Olivier, 1790) (Figs. 2, 63)
- 6a. Abdomen with slender processus intercoxalis of the first ventrite flattened at middle (Fig. 75) 7
- 6b. Abdomen with slender processus intercoxalis of the first ventrite slightly concave at middle (Fig. 74) 9

- 7a. Elytra with numerous finely punctate interstitial impressions, commonly confluent in transverse groupings; pronotum with or without punctures medially (Figs. 13, 14, 80) 8
- 7b. Elytra with few finely punctate interstitial impressions, usually isolated from each other; elytral apices usually dark blue; pronotum heavily punctate medially, with lateral margins obliquely converging anteriorly; dorsal surface dark bluish-black with brassy-green punctures, ventral surface dark blue... (U.S.A., Mexico) *L. webbia* (LeConte, 1858b) (Figs. 31, 81)
- 8a. Dorsal surface black with blue and violet tints; ventral surface bluish black; punctures and impressions brassy green or brassy-cupreous; pronotal surface smooth, without punctures medially; pronotal disc with impressed median channel extending from posterior margin to near anterior margin and with strong, broad depression at midline near posterior margin with blue and violet tints... (Mexico: Chihuahua-Oaxaca) *L. dilaticollis* (Waterhouse, 1882) (Fig. 13)
- 8b. Dorsal and ventral surfaces brassy-green, brassy-cupreous, or blue, elytral apices generally brassy-green or brassy-cupreous; pronotum heavily punctate medially, with lateral margins roundly converging anteriorly and disc convex with distinct broad concave depression in midline at posterior margin in some specimens... (U.S.A., northern Mexico) *L. drummondi* (Laporte & Gory, 1836) (Fig. 14, 70, 80)
- 9a. Pronotum with a strong line of punctures like a bead along anterior margin to middle (Figs. 3, 24, 69) 10
- 9b. Pronotum without that characteristic, uniformly punctate (Figs. 67, 70) 20
- 10a. Pronotum with longitudinal concavity along midline (Figs. 11, 26, 68) 11
- 10b. Pronotum flattened along midline (Fig. 19, 67, 69, 70) 12

- 11a. General dorsal coloration black with impressions and punctures cupreous, ventral surface cupreous; elytral disc with striae moderately impressed... (U.S.A., northern Mexico) *L. cupreopunctata* (Schaeffer, 1905) (Fig. 11, 68)
- 11b. Dorsal coloration shining black with brassy tints; ventral surface shining black with purple tints; punctures and impressions brassy; pronotum constricted near posterior margin; elytral disc with slightly impressed punctate striae, four striae visible at anterior margin... (Mexico) *L. obscura* Thomson, 1879a (Fig. 26, 74)
- 12a. Elytra with clearly visible, large impressions along lateral margins, such as figs. 78, 79 13
- 12b. Elytra without that characteristic, only with few or numerous interstitial impressions 14
- 13a. Pronotum black with punctures aeneous margined with bright green, lateral margins slightly concave before posterior margin, expanded at middle, and rounded to anterior angles; elytral surface dark brown with some purple tints, lateral margin with six or eight large brassy-green, bright green or cupreous impressions, or ten small impressions, the size of the impressions diminishing toward apices, these impressions are formed by numerous, small, confluent punctures; apices with purple or bluish-green tints... (Mexico, U.S.A.) *L. auropunctata* (Kerremans, 1893) (Fig. 3, 69, 78)
- 13b. Pronotum dark bronze with metallic reddish tints, along anterior margin to midline with a slight depression; elytra dark bronze with pink and brassy-green tints, with four transverse impressions extending from lateral margin to middle, the last one is smaller than the others; ventral surface metallic red with dark bronze tints; punctures and impressions bright green... (Panama, Venezuela) *L. hirtomaculata* (Herbst, 1801) (Fig. 20, 79)

14a. Elytral surface with groups of interstitial punctures surrounding callosities (Fig. 16)	15
14b. Elytral surface without callosities (Figs. 5, 18, 22)	16
15a. Elytral surface with sparse confluent punctures at middle (Figs. 12, 15)	17
15b. Elytral surface with abundant confluent punctures at middle (Figs. 16, 21)	18
16a. Elytral surface with two colors, from the suture to the fourth striae red-coppery, then toward lateral margin bright green; apices bright green with blue tints; ventral surface bright red-coppery; pronotal lateral margins slightly concave, expanded at middle, then obliquely converging to lateroanterior angles... (Guatemala, Mexico)	<i>L. chalconota</i> (Waterhouse, 1882) (Fig. 5)
16b. Elytral surface without previous combination of characteristics	19
17a. Dorsal surface bright green with reddish tints medially and laterally, punctures bright green margined with blue or violet; ventral surface red-coppery medially, bright green with reddish and brassy tints laterally, punctures bright green; pronotal lateral margins subparallel before base, slightly expanded at middle and obliquely converging to anterior angles... (Mexico)	<i>L. cyanitarsis</i> sp. n. (Fig. 12)
17b. Dorsal surface greenish and bluish black; ventral surface red-coppery with brassy tints; punctures cupreous margined with red-coppery; pronotum along lateral margins and anterior margin toward middle each with a slight depression, both impressions converge, surface with impunctate areas, and large, deep, sparse punctures... (Guatemala, Honduras, Mexico)	<i>L. geniculata</i> (Waterhouse, 1889) (Fig. 15)

- 18a. Dorsal and ventral surfaces bright green laterally, bright green with reddish and yellowish tints medially; punctures and impressions bright green; pronotum slightly flattened in midline toward base; elytral disc with strongly impressed punctate striae and after the second striae with many finely punctate interstitial impressions... (Brazil, Guatemala, Mexico) *L. granulifera* (Laporte & Gory, 1837) (Fig. 16)
- 18b. Pronotum dark bluish-green; elytra dark bluish-green with violet tints, disc with slightly impressed punctate striae, first three striae clearly visible; apices dark bluish-green with violet tints; ventral surface metallic green medially, bluish-green laterally; dorsal and ventral punctures metallic green... (Mexico)
..... *L. mexicana* Théry, 1923 (Fig. 21)
- 19a. Dorsal surface lead-green with dark blue tints; ventral surface lead-green, with dark blue and purple tints; dorsal and ventral punctures purple; pronotal surface irregularly punctate, with abundant, large, deep, confluent punctures, premarginal area with vague longitudinal depression formed by confluent punctures laterally; elytral surface with strongly impressed punctate striae; along lateral margin with narrow, longitudinal depression... (Costa Rica) *L. lesnei* (Kerremans, 1910) (Fig. 18)
- 19b. Ventral surface bright green medially, red-coppery laterally; dorsal and ventral punctures and impressions bright green; pronotum bright green; elytra bright green with reddish tints medially, with strongly impressed punctate striae, generally after fourth striae to lateral margins with few, finely punctate, interstitial impressions... (Costa Rica, Guatemala, Honduras, Mexico) *L. monilis* (Chevrolat, 1834) (Fig. 22)
- 20a. Prosternal process with punctures at middle (Fig. 73); dorsal surface bluish-green, sometimes dark-green, impressions blue, green or violet; ventral surface

dark green or bluish-green, some punctures blue; pronotal lateral margins subparallel at base, slightly expanded before base, then obliquely converging to anterior angles... (Grenada, Grenadines)	<i>L. guildini</i> (Laporte & Gory, 1836) (Figs. 17, 67, 73)	
20b. Prosternal process without punctures at middle		21
21a. Head with frontovertex sinuate, when viewed from above (Fig. 71)		22
21b. Head with frontovertex flattened, when viewed from above (Fig. 72)		23
22a. Front with abundant, confluent punctures (Fig. 71)		24
22b. Front with few, confluent punctures (Fig. 72)		25
23a. Elytral apices with angles usually not produced (Fig. 76)		26
23b. Elytral apices obliquely truncate with angles variously produced (Fig. 77)		27
24a. Body slender; ventral surface purple with greenish tints; dorsal and ventral punctures dark green with bright green marginally; pronotum purple with greenish tints, flattened in midline toward base and with strong, broad depression at midline near posterior margin; elytra bright green with reliefs purple medially, bright green with reliefs purple and bluish green laterally, apices purple... (Mexico)	<i>L. tigrina</i> sp. n. (Fig. 27, 71)	
24b. Body moderately robust; dorsal surface dark green with bluish and violet tints, impressions bright green, punctures bright green margined with blue; ventral surface bright green medially, bright green with brassy-green and reddish tints laterally, punctures bright green; elytral disc with slightly impressed punctate striae, surface with few, small, finely punctate, interstitial non-confluent impressions... (Honduras, Mexico)	<i>L. viridicolor</i> sp. n. (Fig. 29)	

- 25a. Dorsal surface black; ventral surface bright red medially, black with red tints laterally; dorsal and ventral punctures cupreous margined with red; pronotal surface with numerous, small, deep, sparse punctures medially; elytral disc with strongly impressed punctate striae, sixth interval with few, small punctures, becoming deeper, more numerous laterally, surrounding a few, vague callosities toward lateral margins... (Costa Rica, El Salvador, Honduras, Mexico, Nicaragua) *L. simplex* (Waterhouse, 1882) (Fig. 23, 72)
- 25b. Entire surface reddish brown with golden green tints; frontovertex with ocular depression along inner margin of eyes; pronotum slightly flattened in midline toward posterior margin; pronotum and elytra with premarginal impressions laterally, these impressions formed by abundant, small, deep, very confluent punctures; first and second ventrites slightly concave along midline... (Costa Rica) *L. srdinkoana* (Obenberger, 1924a) (Fig. 24)
- 26a. Ventral surface metallic red with greenish and brassy tints, punctures bright green; dorsal punctures bright green margined with dark green; pronotum metallic red medially, metallic red with greenish tints laterally; elytra metallic red medially, bright green laterally, apices reddish, disc with slightly impressed punctate striae, and with sparse, small, finely punctate, interstitial impressions; tarsi metallic red with purple and green tints... (Guatemala, Honduras) *L. viridimarginalis* sp. n. (Fig. 30)
- 26b. Dorsal and ventral surfaces dark brown with olive-green tints medially, purple tints laterally; dorsal punctures olive green margined with purple; ventral punctures and impressions purple; pronotal disc flattened in midline toward posterior margin with sparse punctures; elytral disc slightly convex, surface with slightly impressed punctate striae, first three striae clearly visible, and with many finely punctate, small interstitial impressions... (Mexico, Nicaragua) *L. christophi* Théry, 1923 (Fig. 8, 76)

- 27a. Elytral apices with outer angle produced and sutural angle not or slightly produced, ventral surface red-cupreous; punctures and impressions aeneocupreous; pronotum black with reddish tints; elytra black, four striae visible, surface with many finely punctate, interstitial impressions, commonly confluent in transverse groupings, with few, small callosities laterally; processus intercoxalis of the first ventrite slightly concave at middle, ventrite 2 slightly concave at anterior margin... (Honduras, Mexico) *L. cortesi* (Laporte & Gory, 1837) (Fig. 10)
- 27b. Elytral apices with outer and sutural angles produced (Figs. 6, 7, 19, 77) 28
- 28a. Elytra usually with 7-9 small impressions along lateral margins, the impressions more numerous and larger than interstitial impressions medially; entire surface dark brown with bronze and purplish tints; punctures brassy margined with purple; scutellum rounded; processus intercoxalis of the first ventrite slightly concave at middle, ventrite 2 flattened... (Honduras) *L. hondurensis* sp. n. (Fig. 19)
- 28b. Elytra with slightly impressed punctate striae, without impressions along lateral margins; scutellum transversely oval (Figs. 6, 7, 9) 29
- 29a. Elytral surface with punctate interstitial impressions, commonly confluent in transverse groupings; dorsal and ventral surfaces metallic red with punctures bright green; elytral margins and apices bright green; prosternum bright green with reddish tints; tarsi bright dark blue; ventrites metallic red with olive green tints; first ventrite with median longitudinal depression bordered on either side by smooth carina... (Mexico) *L. chiapaneca* Corona, 2004 (Fig. 7)
- 29b. Elytral surface with punctate interstitial impressions, commonly isolated from each other 30

- 30a. Dorsal surface metallic red with brassy green tints; ventral surface metallic red; dorsal and ventral punctures and impressions bright green; pronotal disc slightly flattened; scutellum metallic red with bright green tints; tarsi metallic red with bluish and greenish tints; processus intercoxalis of the first ventrite slightly concave at middle, ventrite 2 flattened along midline... (Mexico) *L. chamela* sp. n. (Fig. 6, 77)
- 30b. Dorsal and ventral surfaces black with reddish tints, punctures and impressions cupreous; elytral disc moderately convex with slightly impressed punctate striae, four striae visible, surface with many, small interstitial impressions; processus intercoxalis of the first ventrite weakly concave at middle; second ventrite flattened at midline... (Mexico) *L. colima* sp. n. (Fig. 9)

***Lampetis (Spinthoptera) aurata* (Saunders, 1871) (Figs. 1, 32, 62)**

Buprestis aurifera Laporte & Gory, 1837 (preoccupied name: Fabricius, 1801).

Psiloptera aurata Saunders, 1871:23; Kerremans, 1885:132; 1892:57; 1903:93; 1910:56.

Psiloptera (Lampetis) aurata; Fisher, 1925:56; Obenberger, 1926:163; 1934:54; Blackwelder, 1944:310.

Psiloptera aurata var. *domingoensis* Fisher, 1930:126.

Lampetis (Spinthoptera) aurata; Kurosawa, 1993:580.

Diagnosis. Punctures and impressions golden-green, with short, recumbent, white setae; pronotum black with slight bluish and purplish tints, surface with impressed median channel with numerous, fine, confluent punctures, along lateral margins and anterior margin near border with a depression formed by abundant, small, deep, confluent punctures, depression with few, small callosities; elytra reddish dark brown, sometimes red-coppery at sides, punctures cupreous, some callosities with blue or violet tints; prosternum black with green or purple tints; metasternal and abdominal surface black with green and purple tints; abdomen with first ventrite broadly and

largely concave along midline; ventrite 2 slightly concave along midline.

Male redescription. Length 21.5 mm - 19.8 mm; width 8.0 mm - 7.4 mm. Head. Labrum dark green, with abundant, shallow, confluent punctures, with numerous setae; clypeus dark green with golden-green tints, with scarce, small, deep punctures along anterior margin; front flattened with numerous, small, deep, confluent punctures and frontal callosities dark-green; these punctures forming numerous and large callosities; along margin of the eyes with abundant setae; vertex surface black with dark green and purple tints; with few, small punctures; mandibles blue with violet tints; with numerous, small, deep, confluent punctures, punctures bright green or blue; maxillary palp blue with violet tints; antennal segment 1 bright green, rest of segments black. Pronotum: 1.6 times wider than long; lateral margins slightly concave near base, slightly expanded at middle and rounded to anterior angles, slightly narrowest apically; lateral margins discontinuously carinate on base toward middle; anterior and posterior margins bisinuate, each with median lobe; posterior angles acute; disc convex; surface with impunctate areas extensive, these areas with green and violet tints. Scutellum: large, black with greenish, bluish or purplish tints, transversely oval. Elytra: apices oblique and weakly emarginate; outer and sutural angles weakly dentiform; disc convex, with strongly impressed punctate striae, five striae visible; the striae with small, deep punctures, with abundant setae; surface transversely impressed basally, and many groups of few, small, deep, punctures between striae; along lateral margins with small callosities and bright green tints. Prosternum: disc moderately convex; with numerous, small, deep, not confluent punctures laterally; without punctures at midline; prosternal process: strong purple, slightly convex, apex bluntly rounded. Mesosternum: divided, surface without punctures medially, but with small, deep, confluent punctures laterally. Mesepimeron and mesepisternum: strong purple; surface with abundant, small, shallow, not confluent punctures. Metasternum: surface flattened, finely punctate and clothed with fine setae medially; laterally with abundant, small, shallow, very confluent punctures. Metacoxae: surface golden-green

with red-coppery tints; external lateral margin to middle rugosely punctate with abundant, small, deep, confluent punctures; toward internal lateral margin with scarce, small, shallow punctures; along posterior margin to middle with fine, shallow, confluent punctures. Femora: strong purple with dark-green tints at sides, punctures golden-green; with small, shallow, sparse punctures. Tibiae: strong purple with blue tints at sides, punctures dark-green; surface with abundant, small, shallow, confluent punctures, with abundant setae. Tarsi: blue and violet. Abdomen: first ventrite concave along midline, wide and large concavity, with few, fine punctures, and this concavity is bordered by impunctate carina; ventrite 2 slightly concave along midline; ventrites 3-5 convex; apex of last visible ventrite feebly rounded, with weak emargination at middle; abdominal surface densely punctate, with abundant, small, shallow, confluent punctures, and with impunctate areas. Male genitalia as in figure 32.

Female. Length 26.3 mm - 17.2 mm; width 10.4 mm - 6.5 mm.

Type material studied. *Buprestis aurifera*: Female Holotype: [Aurifera/ Fabr./ s. Domingue Type Gory] (MNHN). *Psiloptera aurata* var. *domingoensis*: Female Holotype: [Romana/ SDomingo] [H.E.Box/ July, 25] [Type No./ 43132/ U.S.N.M.] [Psiloptera/ var. Domingoensis/ Fisher] (USNM).

Variation. The 33 males and 33 females examined revealed that some of the specimens collected on Boca Chica, Dominican Republic differ from the rest as follows: striae of elytra feebly impressed, these are formed by large and not confluent punctures, and with numerous finely punctate, reddish-cupreous interstitial impressions, these commonly confluent in transverse and oblique groupings and densely clothed with recumbent, yellowish setae, laterally the striae more confluent forming numerous callosities; along lateral margins with reddish-cupreous color.

Distribution. This species has been found in **Dominican Republic** as follows: Distrito Nacional: Boca Chica; La Altagracia: Guaraguao; La Vega: 10km W Jima;

Monte Cristi: Carbonera, 8.2km N Villa Elisa, 2.9km N Villa García; San Cristóbal: San Cristóbal; Santiago de los Caballeros; Santiago Rodríguez: Gurabo, Sabaneta; Santo Domingo; Valverde: Potrero; Valverde. In Haiti as follows: Nord-Ouest: Cayenne; Port-au-Prince.

Fenology. Collected from March to October.

Differential diagnosis. *Lampetis aurata* is closely related to *L. aurifera* Olivier. *Lampetis aurifera* dorsal surface is dark green, sometimes with purplish tints; ventral surface strong purple with dark-green and golden-green tints, punctures golden-green; pronotum: the longitudinal median depression is feebly interrupted in front of middle, and with transversely oblique depression; elytra with many transverse irregular golden-green interstitial impressions.

***Lampetis (Spinthoptera) aurifera* (Olivier, 1790) (Figs. 2, 33, 63)**

Buprestis aurifer Olivier, 1790:13; Herbst, 1801:185.

Buprestis aurifera Fabricius, 1801:191; Schönherr, 1817:219; Laporte & Gory, 1836:35; Jacquelin du Val, 1857:58.

Buprestis amethystipes Laporte & Gory, 1836:37; Gemminger & Harold, 1869:1364; Saunders, 1871:23; Kerremans, 1892:57; 1903:93; 1910:57; Fisher, 1925:54; Obenberger, 1926:164; Blackwelder, 1944:310.

Psiloptera wurtembergi Mannerheim, 1837:49; Gemminger & Harold, 1869:1369; Saunders, 1871:23; Kerremans, 1892:66; 1903:93; 1910:57; Fisher, 1925:54; Obenberger, 1926:164; Blackwelder, 1944:310; Nelson, 1976:167.

Psiloptera aurifera; Chevrolat, 1867:575; Gemminger & Harold, 1869:1364; Gundlach, 1891:158.

Psiloptera aurifer, Saunders, 1871:23; Kerremans, 1892:57; 1903:93; 1910:57.

Psiloptera (Lampetis) aurifer, Fisher, 1925:54; Blackwelder, 1944:310; Obenberger, 1926:164; Théry, 1927:254.

Lampetis (Spinthoptera) aurifer, Kurosawa, 1993:580.

Diagnosis. Dorsal surface dark green, sometimes with purplish tints; ventral surface strong purple with dark-green and golden-green tints; impressions and punctures golden-green; impressions are also usually covered with a pale yellow pulverulence; punctures with short, white setae; pronotal surface with a longitudinal median depression, broader posteriorly and feebly interrupted at middle, a broad depression on each side along anterior margin, another narrow depression along lateral margins but not reaching to the posterior angles, and a transversely oblique depression behind the middle on each sides, these impressions coarsely and densely punctate; abdomen with first ventrite slightly concave along midline, ventrite 2 flattened in midline.

Male redescription. Length 22.2 mm – 16.0 mm; width 8.6 mm - 5.5 mm. Head with short, semierect, white setae. Labrum golden-green, sometimes with dark green areas, with numerous, small, shallow, confluent punctures; clypeus dark green with golden-green areas, anterior margin slightly concave and with few, small, deep, confluent punctures along anterior margin; front flat, dark green with golden-green tints, surface with numerous, small, deep, confluent punctures with few, large, strong callosities, along margin of the eyes with abundant, fine, confluent punctures, with abundant setae; vertex dark green; bases of mandibles golden-green, with few, large, deep, not confluent punctures, with few setae; maxillary palp blue with violet tints; antennae first segment dark-green, the rest dark-brown with golden-green tints. Pronotum: dark green, with strong purplish tints; 1.6 times wider than long, widest at base; lateral margins slight concave before base, weakly expanded at middle, then obliquely converging to anterior angles; narrowest anteriorly; lateral margins slightly carinate at middle to base; anterior margin slightly bisinuate with weak median lobe; posterior margin slightly bisinuate with broad median lobe; posterior angles acute; disc moderately convex; areas without impressions finely granulose with scarce punctures. Scutellum: dark green with strong purplish tints, transversely oval, slightly depressed at middle and surface finely granulose. Elytra: dark green with strong

purple tints; apices obliquely and slightly emarginate, outer and sutural angles weakly dentiform; disc moderately convex with weakly impressed punctate striae, with fine, not confluent punctures; surface with many, small impressions along base and many transverse irregular interstitial impressions, these with numerous, fine punctures, usually isolated from each other, and densely clothed with setae; laterally with slight callosities. Prosternum: strong purple with dark-green tints, anterior margin slightly concave, disc moderately convex, surface with few, small, deep, punctures laterally, some in groups of two or three, without punctures medially, along anterior margin with abundant, small, deep, confluent punctures; prosternal process: strong purple with dark-green tints; slightly convex; sulci with abundant, fine, deep, confluent punctures; apex bluntly rounded. Mesosternum: strong purple and dark-green; divided, surface with numerous, small, deep, confluent punctures laterally, without punctures medially. Mesepisternum and Mesepimeron: with numerous, small, shallow, not confluent punctures, with abundant setae, and with impunctate areas; both strong purple with dark-green and golden-green tints. Metasternum: strong purple with dark-green, punctures golden-green margined with dark-green; flattened with scarce, small, shallow punctures medially; laterally with abundant, small, deep, confluent punctures. Metacoxae: strong purple with some dark-green areas; surface with numerous, large, deep, confluent punctures at middle toward external lateral margin; along border of posterior margin with abundant, small, deep, confluent punctures, with abundant setae; scarce, small, deep punctures at internal lateral margin; along border of internal lateral margin with numerous, small, deep, confluent punctures. Femora: strong purple with some dark-green tints at sides, punctures dark-green; with numerous, small, deep, punctures, surface with some impunctate areas. Tibiae: strong purple, punctures dark-green margined with blue; surface with numerous, small, shallow, not confluent punctures, with fine setae. Tarsi: violet with some blue areas. Abdomen: strong purple with dark-green and golden-green tints; with first ventrite slightly concave along midline, this concavity with numerous, small, shallow,

confluent punctures, and bordered by slight impunctate carina; ventrite 2 flattened in midline; ventrites 3-5 convex; apex of last visible ventrite subtruncate and feebly sinuate at middle; abdominal surface sparsely and irregularly punctate. Male genitalia as in figure 33.

Female. Length 26.8 mm - 18.1 mm; width 10.5 mm – 7.0 mm.

Type material studied. *Buprestis amethystipes*: Female Holotype: [Amellyistipes/ Gory/ wurternbergi/ Dej./ s. Domingue/ Types] (MNHN). *Psiloptera wurtembergi*: Female Lectotype: [Hummel.] [St. Domingo] [LECTOTYPE/ Psiloptera/ wurtembergii/ Det. Mannerheim/ G.H. Nelson] [Mus. Zool. Hifors/ Spec. typ. No. 15179/ Psiloptera/ wurtembergii Mannh. 1337/ design. Volkovitsh 05. 993] (ZMUC).

Variation. This species (32 males and 38 females examined) varies in the coloration; dorsal surface with the usual bright green with purple tints to purple with bright green tints; elytra from bright green to yellowish-green at middle.

Distribution. This species has been collected in **Cuba**, **Dominican Republic**, and **Haiti**. Province, Department or county records include the following: in Dominican Republic: Azua: Azua de Compostela; Barahona: 4.5km S Barahona, 11km S Barahona; Pedernales: Larimar Mine, P.N. Jaragua, 12.2km N Oviedo; Peravia: 13km W Bani, Cueva Jimagosa, 6km SE Pedernales, 6km NW Cabo Rojo Rd.; San Juan: Sabana Alta; Santo Domingo. In Haiti: Ouest: Petionville; Port-au-Prince; Artibonite: Santiago.

Adult host plants. On *Acacia lutea*, *Prosopis juliflora* (Fabaceae), *Piper nigrum* (Piperaceae), and flowers of tropical almond.

Phenology. Collected from May to December.

Differential diagnosis. *Lampetis aurifera* is closely related to *L. aurata* and *L. torquata*. *Lampetis aurata* is bluish black with strong greenish or violaceous tints below; pronotum black with a slight bluish tints, without transversely oblique depression behind the middle; scutellum black with greenish and bluish tints; elytra

reddish dark brown with bluish and purplish tints, sometimes red-coppery at sides, punctures cupreous, some callosities with blue or violet tints. *Lampetis torquata* is olive green at middle, becoming purplish toward the sides; pronotum with two arcuate impressions, one along the anterior margin, the other near the base; scutellum bronzy-green; elytra with a longitudinal groove along the lateral margins, reliefs dark green and impressions bronzy-green margined with purple.

***Lampetis (Spinthoptera) auropunctata* (Kerremans, 1893) (Figs. 3, 34, 69)**

Psiloptera (Lampetis) auropunctata Kerremans, 1893:507; 1903:94; 1910:156; Obenberger, 1926:164; Blackwelder, 1944:310; Westcott, *et al.* 1990:230.

Lampetis (Spinthoptera) auropunctata; Kurosawa, 1993:580.

Diagnosis. Head cupreous with brassy, bright or dark green tints; punctures with short, recumbent, white setae; impressions brassy-green; ventral surface with punctures bright green; antennae black with blue, green and violet tints; pronotum black with punctures brassy margined with bright green, flattened in midline toward base; elytra dark brown, disc with feebly impressed punctate striae, along lateral margin with ten or more small, deep, brassy-green impressions with abundant, fine setae, the size of impressions is diminishing toward apex, apices with purple or bluish green tints; first ventrite concave along midline emarginate by blunt impunctate carina.

Female holotype redescription. Total body length 30.4 mm, width 10.8 mm. Head. Labrum brassy with cupreous and dark green tints at midline and with abundant, shallow punctures, and abundant setae; clypeus black, with brassy and dark green tints, anterior margin concave, with abundant, shallow, brassy punctures laterally, without punctures medially; front black, callosities black with violet and dark green tints, flattened, with abundant, small, deep, confluent and bright green punctures, with many, small callosities; vertex surface black, punctures dark green and violet; mandibles with violet and dark green tints on bases, with few, small, deep, brassy

punctures, becoming denser and confluent to apex. Pronotum: 1.7 times wider than long, widest at middle; lateral margins concave before base, expanded at middle, and rounded to anterior angles, lateral margins slightly carinate; anterior and posterior margins slightly bisinuate, each with weak median lobe, posterior angles slightly acute; disc moderately convex, flattened in midline toward base; along anterior margin with a depression like a bead from lateral margin to midline; surface with few, small, deep and confluent punctures forming groups, with some impunctate areas medially, more numerous and confluent punctures laterally with numerous, small callosities. Scutellum: black, oval. Elytra: apices with purple or bluish green tints, slightly oblique and weakly emarginate, outer and sutural angles not dentiform; disc convex, with feebly impressed punctate striae, punctures fine, shallow, not confluent, surface with few impressions basally and few, small, interstitial impressions, these formed with fine punctures, these impressions are isolated from each other and scarcely clothed with setae; along lateral margins with ten or more, small, deep impressions with abundant, fine setae, the size of impressions is diminishing toward apex; punctures bright green margined with purplish along lateral margins. Prosternum: surface red-coppery, with bright green tints; disc convex, densely punctate laterally; with few, small, deep punctures medially, more confluent punctures along anterior margin; prosternal process: red-coppery, with bright green tints; flattened; apex bluntly rounded. Mesosternum: surface red-coppery; divided, without punctures medially, but with numerous, small, deep, confluent punctures laterally. Mesepisternum and mesepimeron: red-coppery with greenish and purplish tints, with few, small, shallow, sparse punctures. Metasternum: surface red-coppery, reliefs black, with green and purple tints; surface flattened medially with few, fine, sparse punctures medially; abundant, small, deep, confluent punctures laterally. Metacoxae: red-coppery, reliefs black with green and purple tints; along basal margin toward middle with abundant, small, deep, confluent punctures; toward external lateral margin with few, small, deep, sparse punctures; medially with abundant, small, deep,

confluent punctures and posterior margin with smaller and confluent punctures; internal lateral margin with scarce, small, fine, sparse punctures. Femora: surface black with green and violet tints, with numerous, small, deep punctures; punctures brassy-green or bright green. Tibiae: surface black with purple and green tints, with more abundant, small, confluent punctures than punctures of femora; punctures blue. Tarsi: black with violet and blue tints. Abdomen: surface red-coppery, reliefs black with green and purple tints; first ventrite concave along midline, concavity is wide, with few, small, shallow punctures and this is bordered by impunctate carina; other ventrites convex; apex of last visible ventrite rounded; abdominal surface with abundant, small, shallow, confluent, irregular punctures.

Male. Length 27.8 mm – 21.0 mm; width 10.0 mm - 7.4 mm. Differs from female as follows: antenna with segments 6-11 serrate, each truncate on toothed border; apex of last visible ventrite feebly rounded with weak emargination at middle. Male genitalia as in figure 34.

Type material studied. Female Holotype: [HOLO-/TYPE] [Mexique/ Heyne] [aeropunctata/ Kerr./ Type] (BMNH).

Variation. Total body female length 31.7 mm - 22.5 mm; width 12.2 mm - 7.8 mm. This species (26 males and 39 females examined) varies in the number, size and shape of depression along lateral margins as follow: from ten or more small, deep impressions to six or eight large, deep impressions, the first of these near basal margin larger than the other, the size of the rest is diminishing toward apex, these impressions rounded to oval; scutellum oval to rounded; punctures and impressions from brassy-green or bright green to cupreous; clypeus black to cupreous; callosities of the front and vertex black with violet and dark green tints to black with purplish, bluish, greenish and brassy tints; bases of mandibles with violet and dark green tints to with cupreous and blue tints; pronotum from black to bluish black, some specimens with some purplish tints; scutellum black to black with greenish or reddish tints; elytra

from dark brown to dark brown with some purplish and greenish tints; prosternum red-coppery, with bright green tints to red-coppery with greenish tints medially, bright green with brassy and reddish tints laterally; mesosternum red-coppery to red-coppery with brassy tints; femora from black with green and violet tints to purple with greenish and bluish tints or red-coppery with green and blue tints; tarsi black with violet and blue tints to black with violet and green tints.

Distribution. This species is found in the **U.S.A.** (*new record*) from Arizona: Tucson and Texas: Brownsville, and in **MEXICO**: Aguascalientes: 18Km W Aguascalientes; Chihuahua: Temoris, 2mi N Temoris; Durango: Ventanas; Jalisco: N Ajijic, 20km N Autlán; Hwy. 80, 7.3mi S Cocula; 14km SW Cocula, Chapala, Guadalajara; Cerro García at 32mi S Guadalajara; 19mi S Guadalajara; Huejotitan; La Huerta; NW Villa Hidalgo; 18km NW Los Volcanes; 20.9km N St. Gabriel; 15km NE St. Gabriel; Nayarit: San Blas, Vol. Ceboruco.

Adult host plants. On Compositae, *Acacia* sp. and *Mimosa* sp. (Fabaceae), and *Sida* sp. (Malvaceae).

Phenology. Collected from June to December.

Differential diagnosis. *Lampetis auropunctata* is similar to *L. webbii*. *Lampetis webbii* is robust; dorsal surface dark bluish-black, punctures brassy-green; ventral surface dark blue; elytral apices generally dark blue; pronotum with lateral margins obliquely converging anteriorly; elytral disc with punctate interstitial impressions usually isolated from each other, striae feebly impressed, without impressions along lateral margins; first ventrite concave along midline usually emarginate by smooth, broad carina.

***Lampetis (Spinthoptera) bahamica* (Fisher, 1925) (Figs. 4, 35, 64)**

Gyascutus carolinensis: Wickham, 1895:295 (misidentification); Fisher, 1925:60 (syn. of *bahamica*).

Psiloptera (Lampetis) bahamica Fisher, 1925:60; Obenberger, 1926:164; Théry, 1927:254; Blackwelder, 1944:310; Cazier, 1951a:6.

Lampetis (Spinthoptera) bahamica; Kurosawa, 1993:580.

Diagnosis. Punctures with short, recumbent, white setae; head dark brown with cupreous tints, impressions and punctures olive-green; pronotum and elytra with shining, bluish, purplish, cupreous tints at light; ventral surface dark brown with cupreous and blue tints, punctures olive-green; pronotal impressions olive-green or red-coppery; elytral disc convex with weakly impressed punctate striae, with many interstitial impressions, usually isolated from each other; abdomen with first ventrite weakly concave along midline, this concavity not bordered by carina, other ventrites convex.

Male redescription. Length 23.1 mm - 15.4 mm; width 8.5 mm - 5.2 mm. Head. Labrum with numerous, small, shallow, confluent punctures, surface granulose; clypeus anterior margin concave with few, small, deep, confluent punctures, without punctures medially; front slightly sinuate, surface with abundant, small, deep, confluent punctures, with many, strong callosities, punctures with more large setae than labrum, along margin of the eyes with abundant, small, deep, confluent punctures and with abundant setae; vertex with few, small, shallow, sparse punctures; bases of mandibles cupreous with blue tints, rugosely punctate, with abundant, small, deep, confluent punctures, with abundant setae; maxillary palps cupreous, sometimes with blue tints, with abundant setae; antennal first segment cupreous, the rest dark brown with red-coppery and blue tints. Pronotum: 1.6 times wider than long, widest at middle; lateral margins subparallel at base, slightly expanded at middle and rounded to anterior angles; narrowest anteriorly; lateral margins carinate at middle to posterior margin; anterior margin slightly bisinuate with weak median lobe; posterior margin slightly bisinuate with broad median lobe; posterior angles acute; disc moderately convex, slightly flattened in midline toward base, surface with two slight transverse arcuate impressions, these formed by

numerous, small, deep, confluent punctures, the impressions are interrupted at the middle by some impunctate areas; along lateral margins with numerous, small, deep, confluent punctures, converging with the transverse impressions; the rest of surface without punctures. Scutellum: dark brown, with red-cupreous and olive-green tints; transversely oval and finely granulose. Elytra: apices slightly and obliquely emarginate, outer and sutural angles slightly dentiform; disc convex with weakly impressed punctate striae, punctures fine and shallow; surface with few, small impressions along anterior margin, and many interstitial groups of fine punctures, usually isolated from each other, with few setae; punctures deeper and more confluent, with slight callosities laterally. Prosternum: disc moderately convex; surface with abundant, small, deep, not confluent punctures laterally; with few, small, deep punctures medially; prosternal process: slightly convex, apex bluntly rounded. Mesosternum: divided, surface with numerous, small, shallow, not confluent punctures laterally, without punctures medially. Mesepisternum and Mesepimeron: surface with numerous small, shallow punctures, with abundant setae. Metasternum: flattened with few, fine punctures medially, with fine setae; numerous, small, deep, not confluent punctures laterally. Metacoxae: surface with abundant, small, deep, confluent punctures at middle to external lateral margin with abundant setae; few, small, deep, sparse punctures at internal lateral margin, with few setae. Femora: cupreous with blue tints; with numerous, large, deep, not confluent punctures. Tibiae: cupreous with blue tints; surface with numerous, fine, shallow, not confluent punctures with fine, semierect setae. Tarsi: cupreous with blue tints. Abdomen: with first ventrite weakly concave along midline, this concavity with scarce, fine punctures with fine setae and not bordered by carina; other ventrites convex; apex of last visible ventrite feebly rounded with weak emargination at middle; surface of each ventrite sparsely and irregularly punctate medially, punctures smaller, shallow, confluent laterally, and with abundant setae. Male genitalia as in figure 35.

Female. Length 27.7 mm - 15.2 mm; width 10.5 mm - 5.4 mm. Differs from male as follows: more robust in body shape.

Type material studied. Male Holotype: [Eleuthera Bahamas/ July 9-15, Wickham.] [Type No./ 26806/ U.S.N.M.] [Psiloptera/ bahamica/ Fisher] (USNM).

Variation. This species (34 males and 36 females examined) varies in the coloration; pronotum the usual dark brown to reddish cupreous.

Distribution. This species has been collected only in **Bahamas** from the following District and localities: Andros Islands; East Bimini Island; Eleuthera: Rainbow Bay; Exuma: Wanderick Wells Cay; Ragged Island: Buena Vista Cay; South Bimini Island; Long Island: Clarence Town.

Fenology. Collected from January to November.

Differential diagnosis. Similar to *Lampetis torquata* and *L. aurata*. *Lampetis torquata* ventral surface is olive green at middle, becoming purplish toward the sides; head and pronotum; scutellum bronzy green; elytra with a longitudinal groove along the lateral margins, reliefs dark green, and impressions bronzy green margined with purple. *L. aurata* ventral surface is bluish black with strong greenish or violaceous tints, impressions golden-green; head golden green; pronotum black with a slight bluish tints, impressions golden green, with a deep longitudinal groove at middle, and a rather broad depression on each side along the anterior margin; scutellum bluish black.

***Lampetis (Spinthoptera) chalconota* (Waterhouse, 1882) (Figs. 5, 36)**

Psiloptera chalconota Waterhouse, 1882:9; 1889:173; Kerremans, 1885:132; 1892:58; 1903:94; 1910:155.

Psiloptera (Lampetis) chalconota; Obenberger, 1926:164; Blackwelder, 1944:310.

Lampetis (Spinthoptera) chalconota; Kurosawa, 1993:580.

Diagnosis. Dorsal surface red-coppery medially, bright green laterally, impressions

bright green; ventral surface bright red-coppery; punctures bright green with short, recumbent, white setae; antennae first segment bright green, the rest dark brown with bright green and violet or blue tints; pronotum flattened in midline toward base, along anterior margin to middle a strong line formed by small punctures like a bead; elytral surface as far as the fourth striae red-coppery, toward lateral margins bright green, apices bright green with blue tints, disc with feebly impressed punctate striae; first ventrite slightly concave along midline, ventrite 2 slightly flattened along midline.

Male redescription. Length 25.5 mm - 16.1 mm; width 9.0 mm - 5.5 mm. Head. Punctures bright green or bluish-green. Labrum bright green with brassy and red-coppery tints, with few, small, shallow, confluent punctures; clypeus bright green with brassy or cupreous tints with abundant, larger, deeper, confluent punctures that labrum, punctures bluish-green; front bright green, callosities with red-coppery tints, flattened, with abundant, large, deep, confluent punctures, with callosities; vertex surface bright green with red-coppery tints, with few, small, deep, sparse punctures; mandibles bright green with bluish tints on bases, with numerous, large, deep, confluent punctures; palps bright green with bluish tints. Pronotum: 1.5 times wider than long, widest at middle, lateral margins slightly concave, expanded at middle, then obliquely converging to anterior angles; narrowest anteriorly; lateral margin slightly carinate in the middle; anterior and posterior margins slightly bisinuate, each with weak, broad median lobe; posterior angles slightly acute; disc moderately convex, flattened in midline toward base; surface with large, deep, sparse punctures, forming groups in certain areas medially, punctures more confluent toward lateral margins, with numerous, slight callosities; along anterior margin with a strong line formed by small, confluent punctures like a bead, and this is interrupted medially. Scutellum: bright green with cupreous or blue tints, small, slightly transversally oval. Elytra: color as far as the fourth striae red-coppery, toward lateral margins bright green, apices bright green with blue tints; apices obliquely and weakly emarginate, outer and sutural angles slightly dentiform; disc moderately convex, with feebly

impressed punctate striae; surface transversely impressed basally; intervals with small, confluent punctures, and finely punctate interstitial impressions, usually isolated from each other, toward lateral margins these impressions are more confluent, with numerous, small, dark green or bright green callosities. Prosternum: anterior margin weakly emarginate at middle; disc moderately convex, rugosely punctate laterally, with few, sparse punctures medially; prosternal process: red-coppery with greenish tints; flattened; sulci with small, shallow, confluent punctures with few, large setae, apex bluntly rounded. Mesosternum: red-coppery medially; bright green with red-coppery tints laterally; with numerous, small, deep punctures laterally; without punctures medially. Mesepisternum and Mesepimeron: red-coppery; with few, large, shallow, sparse punctures. Metasternum: red-coppery with greenish tints medially; flattened with fine, sparse punctures medially; large, deep, not confluent punctures laterally. Metacoxae: along posterior margin with a line of small, shallow punctures with scarce setae; toward external lateral margin with few, large, deep, sparse punctures; internal lateral margin with scarce, fine punctures; numerous, small, deep, confluent punctures medially. Femora: surface bright red-coppery with green and blue tints, punctures bright green, with numerous, large, shallow punctures. Tibiae: surface bright green internally, violet externally, with numerous, small, not confluent punctures. Tarsi: violet with bluish tints. Abdomen: surface red-coppery with brassy and bluish tints; first ventrite slightly concave along midline, concavity narrow with numerous, small, shallow punctures, and this is bordered by impunctate carina; ventrite 2 slightly flattened along midline; ventrites 3-5 convex; apex of last visible ventrite feebly rounded with weak emargination at middle; abdominal surface with numerous, shallow, confluent punctures with abundant setae. Male genitalia as in figure 36.

Female. Length 29.8 mm - 18.9 mm; width 10.7 mm - 6.5 mm. Differs from male as follows: more robust in body shape.

Type material studied. Male Lectotype: [SYN-/TYPE] [Cuernavaca] [Mexico/Salle coll./525] [Mexico/ B./B./ chriso/ cincta./Mihi.] [Mexico/ B./ Lampe,/tis/ chalco,/ nota./ Ver. Mus.] [B.C.A., III./ Psiloptera/ chalconota] [Lectotype/ A.M. Corona des./ 2004] (BMNH). Female Paralectotype: [SYN-/TYPE] [Puebla/ Mexico./ Salle Coll.] [525] [Psiloptera/ chalconota/ Klug./ = chrysocincta, Steum/ afund Sallé.] [B.C.A., III./ Psiloptera/ chalconota.] [Paralectotype/ A.M. Corona des./ 2004] (BMNH).

Variation. This species (40 males and 47 females examined) varies in the coloration; dorsal surface with the usual bright green to bluish green laterally; ventral surface red-coppery to red-coppery with reliefs dark green or bluish green sometimes; labrum from bright green with brassy and red-coppery tints to bright green with brassy, red-coppery and blue tints; clypeus bright green with brassy or cupreous tints to cupreous or dark green; front bright green to brassy, callosities with red-coppery tints to cupreous or dark green tints; vertex bright green to cupreous or dark green; mandibles bright green with bluish tints to dark green or bright green with cupreous tints; antennae from dark brown with bright green and violet or blue tints to dark brown with brassy green and cupreous tints; scutellum bright green with cupreous or blue tints to cupreous or dark green.

Distribution. Known from **Guatemala** and **Mexico**. In Guatemala: Zacapa: 12-14km S San Lorenzo. In Mexico it has been found from the following states: Estado de Mexico: Malinalco; Temascaltepec de González; Guerrero: Amula; 3.3km NE Cacahuamilpa; 4mi N Chilpancingo; 3mi N Chilpancingo; 9km NW Chilpancingo, on road to Chichihualco; 9.3km NW Chilpancingo on road to Chichihualco; Michapa; 22km E Chichihualco; 38km W Iguala; 10km N Iguala; 10.5km N Iguala; 40km W Iguala; 9-10km S Ixcateopan; 5-7km NW Taxco; 2.5km S Taxco; 12km E Telolapan; 10km SW Xochipala; Xochicalco; Michoacan: Hwy. 15 5mi S Tuxpan; 4mi S Tuxpan; 8mi SW Tuxpan; Morelos: Cuautla; Cuernavaca; 12mi E Cuernavaca; Cañón del Lobo, 20km E Cuernavaca; Xochicalco; Yautepec; Yecapixtla; Oaxaca: 3-5km N Huajuapán de León; Puebla: 33.8mi SE Acatlán; Temascal.

Adult host plants. *Acacia farnesiana*, *Acacia* sp., *Mimosa* sp., and *Sumacrhus* sp. (Fabaceae).

Phenology. Collected from June to November.

Differential diagnosis. *Lampetis chalconota* is similar to *L. viridimarginalis* sp. n. *Lampetis viridimarginalis* sp. n. ventral surface is metallic red with greenish and brassy tints, punctures bright green; dorsal surface with punctures bright green margined with dark green; front sinuate; antennal first segment metallic red with greenish tints, the rest black with reddish and greenish or bluish tints; pronotum metallic red medially, metallic red with green tints laterally, surface with few, small, deep punctures, with impunctate areas medially; elytra metallic red medially, bright green laterally, apices reddish, disc slightly impressed punctate striae, surface with few, small, finely punctate interstitial impressions, and intervals with scarce, fine, shallow, confluent punctures; abdomen first ventrite slightly concave along midline, concavity wide, other ventrites convex.

***Lampetis (Spinthoptera) chamela* sp. n. (Figs. 6, 37, 77)**

Diagnosis. Dorsal surface metallic red with brassy green tints; ventral surface metallic red; punctures and impressions bright green, punctures with short, recumbent, white setae; antennal first segment metallic red with greenish tints, the other dark brown; elytra with slightly impressed punctate striae, three striae visible, surface with many finely punctate interstitial impressions, usually isolated from each other medially, these impressions confluent in transverse and oblique groupings laterally; first ventrite slightly concave along midline, bordered by impunctate carina, ventrite 2 flattened along midline.

Male redescription. Length 27.2 mm – 21.5 mm; width 9.8 mm – 7.5 mm. Head. Metallic red with brassy green tints. Labrum metallic red with small, shallow, confluent punctures; clypeus with anterior margin emarginate in the middle, with few, shallow punctures in different size along anterior and posterior margins; front flattened, with

numerous, deep, small, confluent punctures with many, strong callosities; vertex with numerous, confluent punctures; mandibles with small, deep, not confluent punctures on bases; maxillary palps metallic red with brassy green tints. Pronotum: 1.6 times wider than long, widest at base and middle; lateral margins subparallel at base, weakly expanded at middle, and weakly converging to anterior angles; narrowest apically; lateral margins discontinuously carinate medially to posterior margin; anterior and posterior margins slightly bisinuate, each with weak, extend median lobe; posterior angles slightly acute; disc moderately convex, flattened in the midline toward base; surface with small, deep, sparse punctures medially, with irregular impunctate areas; abundant, confluent punctures, with slight, few callosities laterally. Scutellum: metallic red with bright green tints, small, rounded or slightly oval. Elytra: apices obliquely emarginate and bidentate; disc moderately convex, with slightly impressed punctate striae, three striae visible, these finely punctate; surface with few transversal impressions basally and many finely punctate interstitial impressions, usually isolated from each other medially, toward lateral margins these impressions confluent in transverse and oblique, with numerous, small callosities. Prosternum: anterior margin weakly sinuate at middle; disc moderately convex, with numerous, small, deep, confluent punctures, with few setae; scarce punctures medially; prosternal process: flattened; sulci with fine punctures and with few setae, apex bluntly rounded. Mesosternum: with numerous, small, shallow punctures laterally, without punctures medially. Mesepimeron and Mesepisternum: with numerous, small, shallow, sparse punctures. Metasternum: flattened medially, with scarce, fine punctures; large, deep, confluent punctures laterally. Metacoxae: along posterior margin to middle with a line of small, deep, confluent punctures with few setae; large, deep, punctures in groups of three or four medially to external lateral margin, with some impunctate areas; toward internal lateral margin with scarce, fine punctures. Femora: surface metallic red with punctures bright green, with numerous, deep, not confluent punctures, larger than punctures of tibiae. Tibiae: surface metallic red with

punctures bright green; with abundant, small, shallow, confluent punctures. Tarsi: metallic red with bluish and greenish tints; with few setae. Abdomen: first ventrite slightly concave along midline, concavity broad with small, shallow punctures and this is bordered by impunctate carina; ventrite 2 flattened along midline; ventrites 3-5 convex; apex of last visible ventrite truncate with weak emargination at middle; abdominal surface with numerous, small, irregular punctures laterally, with impunctate areas medially. Male genitalia as in figure 37.

Female. Length 30.4 mm – 18.4 mm; width 10.9 mm – 6.4 mm.

Type material. Male Holotype: [MEXICO:JALISCO Estacion/ de Biología Chamela/ 26-IX-85/ F.A.Noguera M.] (EBCC). 26(6M, 20F) Paratypes: [MEXICO, Jalisco/ Est. Biol. Chamela/ 12-VII-1993/ R.L. Westcott] (1M, RLWE); [H. Brailovsky A./ Estación de Biología/ Chamela-Jalisco/ 22-VIII-76/ Mexico] (1F, CNIN); [MEXICO:JALISCO Estación/ de Biología Chamela/ 25-IX-85/ F.A.Noguera M.] (1F, RLWE); [MEXICO:JALISCO Estacion/ de Biología Chamela/ M Sánchez 25-IX-85] (1F, EBCC); [MEXICO:JALISCO Estacion/ de Biología Chamela/ M Sanchez 3-XI-85] (1F, EBCC); [MEXICO: JALISCO: ESTACION DE/ BIOLOGIA CHAMELA 25-VIII-86/ M. Sánchez] (1F, EBCC); [MEXICO:JALISCO: ESTACION DE/ BIOLOGIA CHAMELA/ 30-VIII-1986 FANM 397] [COLECT: FELIPE A. NOGUERA M.] (2F, EBCC); [MEXICO: JALISCO: ESTACION DE/ BIOLOGIA CHAMELA/ 22-IX-86 FANM 410] [COLECT: FELIPE A. NOGUERA M.] (1F, EBCC); [MEXICO: Jalisco/ Chamela FANM 415/ 29-IX-1986/ Coll.F.A.Noguera] (1F, EBCC); [MEXICO: JALISCO: ESTACION DE/ BIOLOGIA CHAMELA/ 16-X-86 FANM 420] [COLECT: FELIPE A. NOGUERA M.] (1F, EBCC); [Estacion de Biología,/ Chamela, Jalisco,/ Mex. 18-X-1986/ Coll. J.D. McCarty] (1M, JMCC); [MEXICO: Jalisco/ Chamela/ 25-IX-1987/ Coll. E.A.Noguera] (1F, EBCC); [MEXICO, Jalisco/ Est. Biol. Chamela/ 9/10-X-1988/

Westcott & Mudge] (1F, RLWE); [MEXICO: JALISCO: ESTACION DE/ BIOLOGIA CHAMELA/ 28-XI-1988/ E.Ramírez R.A.] (1F, EBCC); [Estacion de Biologia,/ Chamela, Jalisco,/ Mex. 6-XII-1988/ Coll. J.D. McCarty] (1M, JMCC); [MEXICO: JALISCO: ESTACION DE/ BIOLOGIA CHAMELA/ 27-X-1989/ A. Chema's] (1M, EBCC); [MEXICO, Jalisco/ Est. Biol. Chamela/ 27-29/VII/1990/ R.L. Westcott] (1F, RLWE); [México: Jalisco/ Est. Biol. Chamela/ 8-I-1991/ Col. F.A. Noguera] (1F, EBCC); [MEXICO, Jalisco/ Cuitzmala, vic./ Est. Biol. Chamela/ 10-X-1988/ R.L. Westcott] (1F, RLWE); [13km. WNW Barra de Navidad/ (Bahia Tenacatita) Palm grove/ VIII-20-64 Wm. L. Nutting] (1F, GHNC); [MEXICO: JALISCO: CARR. BARRA/ NAVIDAD-PTO. VALLARTA KM.17/ 26-VIII-86] [COLECT: T. H. ATKINSON] (1M, RLWE); [MEXICO, Jalisco/ 22 km SW Llano/ Grande 270 m/ 28-VI-1995/ R. L. Westcott] (1M, RLWE); [MEX:Jal./ Tapaixtes/ 5-IX-86 RA. Usela] (1F, EBCC); [MEXICO: Jalisco/ 34 km E Tomatlán/ 3-VIII-1994/ Col. F. A. Noguera] (1F, EMEC); [MEX. VII-1-62/ Nayarit 12mi.,/ E San Blas] [E.Sleeper, R.An-/ derson, A. Hardy,/ R. Somerby Collr.] (1F, DSVC).

Etymology. The name of this species, a noun in apposition, refers to the Mexican locality where the specimens were collected.

Distribution. This species has been collected only in two states in **Mexico**: Jalisco: Estación de Biología Chamela; Cuitzmala, vic. Est. Biol. Chamela; 13km WNW Barra de Navidad, Bahia Tenacatita, Palm grove; km 17 carr. Barra de Navidad-Pto. Vallarta; 22km SW Llano; Tapaixtes; 34 km E Tomatlán; Nayarit: 12mi E San Blas.

Differential diagnosis. *Lampetis chamela* sp. n. is similar to *L. cortesi*. *Lampetis cortesi* is ventral surface red-cupreous; punctures aeneocupreous; antennae first segment red-cupreous, the rest black with bronze tints at light; pronotum black with reddish tints; elytra black, with slightly impressed punctate striae, four striae visible; apices obliquely emarginate, outer angle dentiform; first abdominal ventrite slightly concave along midline, ventrite 2 slightly concave at anterior margin.

***Lampetis (Spinthoptera) chiapaneca* Corona, 2004 (Figs. 7, 38).**

Lampetis (Spinthoptera) chiapaneca Corona, 2004:159.

Diagnosis. Dorsal and ventral surface metallic red, punctures bright green; antennae dark brown; prosternal and mesosternal surface metallic red with greenish tints; pronotum slightly wider than long, lateral margins subparallel at posterior margin, weakly expanded at middle, then obliquely converging to anterior angles, punctures closer in the middle and becoming sparse to base with impunctate areas extensive, punctures moderately coarse, more confluent laterally and with slight rugosities; elytral margins and apices bright green, disc with moderately impressed punctate striae, and few finely punctate small interstitial impressions, these commonly confluent in transverse and oblique groupings; first ventrite with midline concavity margined by smooth carina, sternum 2 slightly concave near anterior margin; sterna 3-5 convex.

Distribution. From 12 males and 8 females examined, this species has been collected only in one state in **Mexico**: Chiapas: 19km S La Trinitaria; 2mi N Suchiapa; 5km S Tuxtla Gutiérrez; 17km W Tuxtla Gutiérrez; 18km W Tuxtla Gutiérrez.

Adult host plant. Larval habits are unknown. Adults resting on branches of *Acacia* sp. (Corona, 2004).

Fenology. Collected from July to October.

***Lampetis (Spinthoptera) christphi* (Théry, 1923) (Figs. 8, 39, 76)**

Lampetis christphi Théry, 1923:251.

Psiloptera (Lampetis) christphi; Obenberger, 1926:164; Blackwelder, 1944:310.

Lampetis (Spinthoptera) christphi; Kurosawa, 1993:580.

Diagnosis. Dorsal and ventral surfaces dark brown with olive-green and purple tints, punctures with short, recumbent, white setae; dorsal surface with punctures olive green margined with purple; ventral surface with punctures purple; pronotum lateral

margins slightly concave at base, slightly expanded at middle, then obliquely converging to anterior angles; elytra with purple tints laterally, apices purple, disc slightly convex, with slightly impressed punctate striae, first three striae clearly visible, impressions purple; first ventrite slightly concave along midline, ventrites 2-5 convex.

Male holotype redescription. Length 22.0 mm; width 7.0 mm. Head. Punctures purple, with short, recumbent, white setae. Labrum dark brown with purple tints, with small, shallow, confluent punctures; clypeus dark brown with purple tints, with anterior margin sinuate in the middle, with scarce, small, shallow punctures near to base; front dark brown with purple and olive-green tints, flattened, with numerous, small, deep, confluent punctures, with abundant setae, and numerous, small callosities; vertex dark brown with olive-green tints, with small, deep punctures; mandibles dark brown with purple tints, with numerous, small, deep, confluent punctures on bases; maxillary palps dark brown with purple tints, with abundant setae; antennal first segment purple, the rest dark brown, with olive-green tints. Pronotum: 1.7 times wider than long, widest at middle; lateral margins slightly concave at base, slightly expanded at middle, then obliquely converging to anterior angles; narrowest apically; lateral margins discontinuously and slightly carinate medially to base; anterior margin weakly bisinuate with weak median lobe; posterior margin slightly bisinuate, with broad median lobe; posterior angles slightly acute; disc moderately convex, flattened in the midline toward base with scarce punctures; at both sides of midline with numerous, small, deep, confluent punctures; most abundant and confluent punctures, with few, small, slight callosities laterally. Scutellum: dark brown with purple and olive-green tints, small, rounded. Elytra: dark brown with olive-green tints medially, purple tints laterally; apices purple, obliquely emarginate, bidentate; disc slightly convex, with slightly impressed punctate striae, these finely punctate, first three striae clearly visible; surface with few impressions basally; and many finely punctate small interstitial impressions, these usually confluent in transverse and oblique groupings, these are more abundant and confluent toward lateral margins; numerous, small,

slight callosities laterally. Prosternum: disc moderately convex, with numerous, small, deep confluent punctures medially, more abundant and confluent laterally, with slight callosities; prosternal process: convex; sulci with two or three lines of brassy-green, small, deep punctures, and abundant setae; apex bluntly rounded. Mesosternum: with numerous, small, deep, confluent punctures laterally, and abundant setae; without punctures medially. Mesepimeron and Mesepisternum: with numerous, small, shallow, sparse punctures. Metasternum: purple medially; dark brown with purple tints laterally; surface flattened, with few, fine punctures, not confluent, and clothed with fine setae medially; laterally with numerous, small, shallow, confluent punctures, with some impunctate areas. Metacoxae: numerous, small, deep, confluent punctures medially; toward internal lateral margin, with scarce, fine punctures; toward external lateral margin with few, small, deep, sparse punctures; a line of small, deep, confluent punctures at posterior margin to middle. Femora: surface dark brown with purple tints; with few, small, shallow, punctures, and impunctate areas medially; laterally with abundant, small, shallow punctures. Tibiae: surface dark brown, with purple tints; with abundant, small, shallow, confluent punctures. Tarsi: dark brown, olive-green tints. Abdomen: first ventrite slightly concave along midline, with numerous, small, shallow, confluent punctures, and abundant setae, this concavity narrow and bordered by impunctate and smooth carina; ventrites 2-5 convex; apex of last visible ventrite feebly rounded with weak emargination at middle; abdominal surface densely and irregularly punctate, with abundant, small, shallow, confluent punctures. Male genitalia as in figure 39.

Female. Length 19.7 mm - 16.1 mm; width 7.0 mm - 5.7 mm.

Type material studied. Male Holotype: [MEXICO] [christophi/ Théry/ Type] [MUSÉUM PARIS/ 1935/ Coll. A. THÉRY] (MNHN).

Variation. This species (2 males and 2 females examined) varies in the coloration; punctures and tints from purple to red-coppery.

Distribution. This species has been found only in **southern Mexico** from the following locality: Chiapas: 9mi NW El Ocotal.

Phenology. Collected on August.

Differential diagnosis. *Lampetis christophi* is similar to *L. simplex*. *Lampetis simplex* dorsal surface is black; ventral surface bright red medially, black with red tints laterally; punctures cupreous margined with red; antennal first segment red, the rest black with reddish tints; pronotum surface with numerous, small, deep, sparse punctures medially; elytra disc with strongly impressed punctate striae, surface next fifth striae intervals with few, small punctures; and first ventrite feebly concave along midline.

***Lampetis (Spinthoptera) colima* sp. n. (Figs. 9, 40)**

Diagnosis. Dorsal and ventral surfaces black with reddish tints, punctures and impressions cupreous; punctures with short, recumbent, white setae; pronotal surface with sparse, small punctures medially; punctures more numerous, bigger, confluent laterally, with few, weak callosities; elytral disc moderately convex with slightly impressed punctate striae, four striae visible; surface with many, small interstitial impressions, commonly are isolated from each other; first ventrite weakly concave along midline, concavity bordered with weak carina; second ventrite flattened at midline.

Male description. Length 26.9 mm – 23.7 mm; width 9.6 mm – 8.1 mm. Head. Punctures cupreous. Labrum black with reddish tints, with numerous, shallow, confluent punctures with numerous setae; clypeus black with cupreous tints, anterior margin concave, with scarce punctures; front flattened, black with reddish tints, with numerous, large, deep punctures with few setae, and with strong callosities; vertex black, with few punctures; bases of mandibles black with reddish tints, with numerous, small, not confluent punctures, with few setae; maxillary palps black with reddish tints; antennae black with cupreous tints. Pronotum: 1.6 times wider than

long, widest at middle and posterior margin; lateral margins subparallel at base, scarcely expanded at middle, then scarcely obliquely converging to anterior angles, narrowest anteriorly; lateral margins carinate; anterior and posterior margins weakly bisinuate; posterior margin with broad, weak median lobe; posterior angles slightly acute; disc moderately convex, flattened in midline toward posterior margin; surface with sparse, small punctures medially; laterally with numerous, confluent punctures, and few, weak callosities. Scutelum: black with reddish tints, rounded. Elytra: apices obliquely emarginate, bidentate; disc moderately convex with slightly impressed punctate striae, four striae visible; surface with numerous impressions along base and with many, small interstrial impressions, commonly isolated from each other and these are bigger laterally, and with numerous, small, weak callosities laterally. Prosternum: anterior margin slightly sinuate; disc moderately convex; surface without punctures midline, numerous, small, confluent punctures with few setae laterally, with few, weak callosities; prosternal process: flattened, sulci with fine punctures, and few setae, apex bluntly rounded. Mesosternum: surface with numerous, confluent punctures laterally, without punctures medially. Mesepimeron and mesepisternum: with few, sparse punctures. Metasternum: flattened with numerous, fine punctures medially; with numerous, not confluent punctures laterally. Metacoxae: surface with abundant, small, deep, confluent punctures medially toward external lateral margin; toward internal lateral margin with numerous, fine punctures; along posterior margin with small, deep, confluent punctures; punctures with few setae. Femora: black with reddish tints, punctures cupreous; with abundant, not confluent punctures, with numerous setae. Tibiae: black with reddish tints, punctures cupreous; densely punctate, with small, shallow punctures, with numerous setae. Tarsi: bright green with reddish and cupreous tints, with numerous setae. Abdomen: with first ventrite slightly concave along midline, this concavity with few, fine punctures and bordered with weak carina; second ventrite flattened at midline, other ventrites convex; apex of last visible ventrite truncate with weak emargination at middle; abdominal surface

densely, coarsely punctate and with few setae. Male genitalia as in figure 40.

Female. Length 28.9 mm – 27.9 mm; width 10.4 mm – 9.6 mm.

Type material. Male Holotype: [MEX., Colima vic/ El Terrero 4-6000'/ 30 sept 1991/ JE Wappes] (JEWG). 6(4M, 2F) Paratypes: [MEXICO: Colima/ vic. El Terreo/ 2000'-4000' 1-X-91/ Morris,/ Wappes, Giesbert] (3M, RMCF); [MEXICO: COL, Minatitlán,/ El Salto, BTC-BTSC, 750M,/ 26.XI.1996, J.L. Navarrete col.] (1F, CZUG); [MEXICO: Colima/ vic. El Terreo/ 2000' - 4000' 1-X-91/ Morris,/ Wappes, Giesbert] (1M, 1F, RLWE).

Etymology. The name of this species, a noun in apposition, refers to the Mexican locality where the specimens were collected.

Variation. This species varies in the coloration. Dorsal and ventral surfaces, and tibiae from black with reddish tints to black with greenish and reddish tints.

Distribution. This species has been found only in **Mexico** from the following state and county records: Colima: El Terreo; Minatitlán, El Salto; Guerrero: Chilpancingo, Palo Blanco, Sierra del Alquitrán.

Differential diagnosis. *Lampetis colima* sp. n. is similar to *L. chamela* sp. n. and *L. hondurensis* sp. n. *Lampetis chamela* sp. n. dorsal surface is metallic red tints; ventral surface metallic red with brassy green; punctures and impressions bright green; antennal first segment metallic red with greenish tints, the other dark brown; elytra with slightly impressed punctate striae, three striae visible; first ventrite slightly concave along midline. *L. hondurensis* is entire surface dark brown with bronze and purplish tints, punctures brassy margined with purple; antennae black with bronze tints; elytral disc with moderately impressed punctate striae, with scarce impressions along base and few punctate interstitial impressions; abdomen first ventrite slightly concave along midline.

***Lampetis (Spinthoptera) cortesi* (Laporte & Gory, 1837) (Figs. 10, 41)**

Buprestis cortesi Laporte & Gory, 1837:81.

***Psiloptera (Lampetis) cortesi*; Obenberger, 1926:165; Blackwelder, 1944:310.**

Lampetis polymita Chevrolat, 1838:59; Lacordaire, 1857:29; Gemminger & Harold, 1869:1366; Saunders, 1871:25; Waterhouse, 1882:8; 1889:10, 172; Kerremans, 1892:59; 1903:94; 1910:140; Obenberger, 1926:165; Blackwelder, 1944:310; Holynski, 1988:52.

Psiloptera cortesi; Gemminger & Harold, 1869:1366; Saunders, 1871:25; Waterhouse, 1882:10; Kerremans, 1892:59; 1903:94; 1910:140.

Psiloptera severissima Thomson, 1879a:11; Waterhouse, 1889:172; Kerremans, 1892:59; 1903:94; 1910:140; Obenberger, 1926:165; Blackwelder, 1944:310.

Lampetis (Spinthoptera) cortesi; Kurosawa, 1993:580.

Diagnosis. Ventral surface red-cupreous; punctures and impressions aeneocupreous with short, recumbent, white setae; antennae first segment red-cupreous, the rest black with bronze tints at light; pronotum black with reddish tints; elytra black, with slightly impressed punctate striae, four striae visible, surface with many finely punctate, interstitial impressions, commonly confluent in transverse groupings, with few, small callosities; first ventrite slightly concave along midline, ventrite 2 slightly concave at anterior margin.

Male redescription. Length 22.8 mm - 13.9 mm; width 8.1 mm – 4.6 mm. Head. Labrum red-cupreous, with few, shallow, not confluent punctures with numerous white setae; clypeus red-cupreous, slightly concave at anterior margin, with few punctures; front sinuate, black with red-cupreous tints, with red-cupreous punctures, with abundant, small, deep punctures, with scarce, weak callosities, punctures with abundant setae; vertex black with red-cupreous tints; bases of mandibles red-cupreous, with numerous, small punctures, and with abundant setae; maxillary palps red-cupreous. Pronotum: 1.6 times wider than long, widest at middle; lateral margins slightly concave at base, expanded and rounded at middle, then slightly obliquely converging to anterior angles, narrowest anteriorly; lateral margins carinate on middle

to posterior margin; anterior and posterior margins slightly bisinuate; posterior margin with broad, weak median lobe; posterior angles slightly acute; disc moderately convex, flattened in midline toward posterior margin, along midline with deep, sparse punctures simulating a weak depression; surface with sparse punctures with impunctate areas medially; laterally with abundant, confluent punctures, and with few, weak callosities. Scutelum: black with reddish tints, oval. Elytra: apices obliquely emarginate, outer angle dentiform; disc moderately convex with slightly impressed punctate striae, four striae visible, surface with few impressions along anterior margin, with many interstitial impressions, commonly confluent in transverse groupings, and with few, small callosities. Prosternum: anterior margin slightly sinuate; disc moderately convex; surface with scarce, small, deep punctures medially, numerous, confluent punctures laterally, punctures with few setae; prosternal process: flattened, sulci with small, deep, confluent punctures with few setae, apex bluntly rounded. Mesosternum: surface with numerous, not confluent punctures laterally, without punctures medially. Mesepimeron and Mesepisternum: with few, sparse punctures. Metasternum: flattened with few, fine punctures medially; laterally with numerous, not confluent punctures. Metacoxae: surface with abundant, small, deep, confluent punctures medially; few, small punctures laterally; along posterior margin with small, deep, confluent punctures, with numerous setae; posterior margin with two rounded lobes. Femora: red-cupreous, punctures aeneocupreous; with abundant, not confluent punctures, with numerous setae. Tibiae: red-cupreous, punctures aeneocupreous; densely punctate, punctures small, shallow with numerous setae. Tarsi: red-cupreous, with numerous setae. Abdomen: with first ventrite slightly concave along midline, this concavity narrow with abundant, fine punctures and bordered by weak impunctate carinae; ventrite 2 slightly concave at anterior margin, other ventrites convex; apex of last visible ventrite feebly rounded with weak emargination at middle; abdominal surface densely, coarsely punctate and with abundant setae. Male genitalia as in figure 41.

Female. Length 24.8 mm – 13.6 mm; width 8.9 mm – 4.5 mm.

Type material studied. *Psiloptera severissima*: Female Holotype: [Th./ Type] [Severissima/ Th. Type/ Ap. I, II./ Mex] (MNHN). *Lampetis polymita*: Male Holotype: [Holo-/type] [Polymita/ Chevr.] (BMNH).

Variation. This species (46 males and 44 females examined) varies in the coloration. Maxillary pals, tibiae and tarsi red-cupreous to red-cupreous with greenish tints.

Distribution. This species has been collected in the following localities of **Honduras** and **Mexico**. Honduras: Comayagua: 4mi SW Comayagua. Mexico: Guerrero: Acapulco; La Garita; Hwy. 200, 41km NE Ixtapa; Oaxaca: 6.7mi SW El Camarón; 3mi W El Camarón; 3m E Juchitán; 5mi N La Ventosa; 5km E La Ventosa; 7.5km E La Ventosa; 10.5km WSW Salina Cruz; 56mi NW Santo Domingo Tehuantepec; 16km NE Santo Domingo Tehuantepec; 12mi S Chivela; 30mi NE Santo Domingo Tehuantepec; 7mi W Santo Domingo Tehuantepec; 13km W Santo Domingo Tehuantepec; 16km NE Santo Domingo Tehuantepec; 7km SSE Santo Domingo Tehuantepec; Hwy. 190, 12km E Santo Domingo Tehuantepec; Hwy. 190, 15km E Santo Domingo Tehuantepec; Hwy. 190, 16km E Santo Domingo Tehuantepec; Yucatán: SW Yucatán.

Adult host plant. On *Combretum* sp. (Combretaceae).

Phenology. Collected from June to December.

Differential diagnosis. *Lampetis cortesi* is similar to *L. cupreopunctata* and *L. simplex*. *Lampetis cupreopunctata* is black above with impressions and punctures cupreous, ventral surface cupreous; pronotum with weak midline impression extending from base almost to anterior margin; elytral disc with moderately impressed striae. *Lampetis simplex* is black above; ventral surface bright red medially, black with red tints laterally; punctures cupreous margined with red; elytral disc with strongly impressed punctate striae, surface next fifth striae intervals with few, small punctures; abdomen with first ventrite feebly concave along midline.

***Lampetis (Spinthoptera) cupreopunctata* (Shaeffer, 1905) (Figs. 11, 42, 68)**

Psiloptera cupreopunctata Shaeffer, 1905:147; Kerremans, 1910:141; Vogt, 1949:196.

Spinthoptera cupreopunctata; Casey, 1909:74.

Psiloptera (Lampetis)cupreopunctata; Nelson, 1986:275.

Diagnosis. Dorsal surface black with cupreous punctures and impressions; ventral surface cupreous; front, clypeus and labrum cupreous, vertex black; front slightly sinuate; antennae cupreous at bases, black with cupreous tints distally, pronotum with slight midline impression extending from posterior margin to anterior margin, surface coarsely punctate becoming denser laterally; elytral surface moderately impressed punctate striae and with many small cupreous impressions, apices obliquely truncate, outer angles dentiform; first ventrite concave along midline, ventrite 2 with weak midline concavity toward anterior margin. Male genitalia as in figure 42.

Distribution. From 29 males and 31 females examined, this species has been collected in **northern México** and the **U.S.A.** (*new records*). In northern Mexico, state and county records include the following: Nuevo León: Apodaca; Monterrey; 10mi W Linares; Villa Juárez; San Luis Potosí (*new record for Mexico*): 7mi E.N.E. Tamuin; El Salto; Tamaulipas: 14mi S Antigua Morelos; 15mi NE Jaumave; Matamoros; Naranjo; 5mi E Nuevo Morelos; Veracruz (*new record for Mexico*): 26mi E Cordoba; 1mi N Rinconada; 5mi NE Tinajas; Xalapa; 14mi SE Xalapa. In the U.S.A. county records include the following: Texas: Hidalgo; Anzalduas; Cameron.

Adult host plants. On *Acacia farnesiana*, *Acacia* sp., *Mimosa* sp. and *Prosopis juliflora* (Fabaceae). According to Nelson (1986) adults are reported on *Acacia farnesiana* (Fabaceae), occasionally on *Bumelia celastrina* (Sapotaceae), and *Sorghum* sp. (Poaceae).

Fenology. Collected from July to November.

***Lampetis (Spinthoptera) cyanitarsis*, sp. n. (Figs. 12, 43)**

Diagnosis. Dorsal surface bright green with reddish tints medially and laterally, punctures bright green margined with blue or violet; ventral surface red-coppery medially, bright green with reddish and brassy tints laterally, punctures bright green; punctures with short, recumbent, white setae; antennal first segment bright green with brassy tints, the rest black with greenish tints; elytral disc moderately convex, with slightly impressed punctate striae, surface with few impressions along base and many, finely punctate, interstrial impressions; first ventrite slightly concave along midline; other ventrites convex.

Male description. Length 26.5 mm - 19.4 mm; width 9.1 mm - 6.5 mm. Head. Labrum bright green with brassy and cupreous tints, with numerous, small, shallow punctures; clypeus bright green with dark green and brassy tints, punctures bright green, slightly sinuate at anterior margin, without punctures medially, with numerous, small, deep, confluent punctures laterally; front bright green, punctures bright green margined with blue or violet, flattened, coarsely and rugosely punctate with abundant, small, deep, confluent punctures and numerous, small callosities; vertex bright green, with few, small, shallow, sparse punctures; bases of mandibles bright green, punctures bright green margined with blue or violet, with abundant, small, deep, confluent punctures; maxillary palps bright green with some brassy tints. Pronotum: 1.5 times wider than long; widest at middle; lateral margins subparallel before base, slightly expanded at middle and obliquely converging to anterior angles; narrowest anteriorly; lateral margins carinate at middle to base; anterior margin slightly bisinuate with weak median lobe; posterior margin slightly bisinuate with slight, broad median lobe; posterior angles slightly acute; disc moderately convex, flattened in midline toward base; surface with few, small, confluent punctures, forming groups, with impunctate areas medially; laterally with numerous, small, deep, confluent punctures, and few, slight callosities. Scutellum: bright green with brassy tints, small, punctiform.

Elytra: apices obliquely emarginate, outer and sutural angles dentiform; disc moderately convex, with slightly impressed punctate striae, these striae with fine punctures; surface with few impressions along anterior margin, and many, small, finely punctate, interstitial impressions; usually isolated from each other medially; these impressions are more confluent laterally; small, slight callosities laterally. Prosternum: disc moderately convex; surface with numerous, small, deep, confluent punctures laterally; without punctures at midline; prosternal process: flattened, sulci with fine, confluent punctures, apex bluntly rounded. Mesosternum: red-coppery medially, red-coppery with bright green tints laterally; surface with numerous, small, shallow, confluent punctures laterally, without punctures medially. Mesepisternum and mesepimeron: bright green with brassy tints; with few, small, shallow, sparse punctures. Metasternum: flattened; with few, fine punctures medially, with fine setae; numerous, small, deep, confluent punctures, forming groups of three or four, and with some impunctate areas laterally. Metacoxae: with few, small, shallow, sparse punctures at external lateral margin; abundant and confluent at middle; few, fine, sparse punctures at internal lateral margin. Femora: bright green with reddish-coppery tints; with numerous, small, deep, confluent punctures. Tibiae: bright green with reddish-coppery tints; densely punctate, with abundant, small, shallow, confluent punctures. Tarsi: bluish-green with violet tints. Abdomen: first ventrite slightly concave along midline, this concavity is wide and bordered with slight, impunctate carina, and with numerous, fine punctures; other ventrites convex; apex of last visible ventrite feebly rounded with weak emargination at middle; abdominal surface with abundant, small, shallow, confluent, irregular in shape punctures. Male genitalia as in figure 43.

Female. Length 30.7 mm - 22.2 mm; width 10.8 mm - 7.6 mm.

Type material. Male Holotype: [MEXICO: Morelos/ 2.5km N, 4km O Huautla/ Estación CEAMISH/ 5-IX-1996 Alt. 940m/ 18°27'.671 N 99°02'.475 O/ s/ *Conzattia multiflora*/ Col. F. A. Noguera] (EBCC). 32(12M, 20F) Paratypes: [COLIMA, Campo

Cuatro/ 19°21'13", 103°51'41" / ±18 km (air) NW/ Colima, 1300-1375 m/ 7-X-1999, R.L. Westcott] (2F, RLWE); [MEXICO: Gro./ Iguala/ VIII-17-1981] [JA Chemsak/ A.M Michelbacher] (1F, EMEC); [MEX: Guerrero,/ 16 km NW Iguala/ IX-12/15-1982/ elev. 1160m] [J.A. Powell/ J.A. Chemsak/ collectors] (1M, EMEC); [MEX: Guerrero,/ 13 km NW Iguala/ IX-12-1982/ elev. 1220m] [J.A. Powell/ J.A. Chemsak/ collectors] (1F, EMEC); [CACAHUAMILPA, GRO. V-9-48/ C. Bolivar] (1F, CNIN); [MICHAPA, GRO./ 2-IX-49/ C. Bolivar] (1M, CNIN); [MEXICO Guerrero/ 40 . 7 mi . N . Zumpango/ del Río, 3,375 ft./ 2 August 1962/ U.Kans.Mex.Exped.] (1F, KSBC); [MEXICO Guer/ 1 km S Taxco/ 15.X.1994/ FTHovore] (1F, CLBC); [NEAR AUTLAN/ JALISCO, MEX./ Y. DAWSON/ 27 DEC. 46] (1M, LACM); [MEXICO, Jalisco/ 7km NNE, 2km SW/ Autlán, 885m/ 4.X.91. R.L. Westcott] (1M, RLWE); [MEXICO, Jalisco/ Autlán/ 21-III-2001/ A. Rodríguez. col.] [Cerrito la capilla/ Matorral/ Alt. 1,100m/ Colecta directa] (1M, EBCC); [MEXICO: Jalisco/ 4km SE Cuautla/ 16-VII-1993 Alt. 1570m/ Cols. A. Rodríguez/ y F.A. Noguera] (1M, RLWE); [JALISCO, 8km NW/ Ayutla 1570m/ mixed oak-acacia/ 16-VII-1993/ R.L. Westcott] (1M, RLWE); [MEXICO: Jalisco/ 4km SO San Buenaventura/ 6-XI-1996 Alt. 740 m/ 19°45'.72 N 104°02'.87 O/ Col. M.E. Guardado 1 SBV] (1F, EBCC); [MEXICO: Jalisco/ 6.6kmSO San Buenaventura/ 3-XII-1996 Alt. 840 m/ 19°45'.06 N 104°03'.55 O/ Col. B. Rodríguez] (1M, EBCC); [MEXICO: Jalisco/ San Buenaventura/ 5-VII-1997 Alt. 720 m/ 19°47'.61 N 104°03'.32 O/ Col. M. Sarmiento] (1F, EBCC); [Mexico, Jalisco/ 15km NE Sañ Gabriel/ 19°45'55.6", 103°42'20.9" / 1900m 29-XI-2001] [trans. bosque/ encino-selva baja/ en *Mimosa* sp./ R.L. Westcott] (1F, EBCC); [Mexico: Jalisco/ 15km NE San Gabriel/ 19°45'55.6" / 103°42'20.9" 1900m/ 29-XI-2001] [Ecotono bosq. encino-/ selva baja/ col. F.A. Noguera] (1M, EBCC); [MEX: JALISCO,/ 12-19km NW of/ Hwy Jct 427-80/ 17-X-1996/ J.D. McCarty] (1M JMCC); [MEXICO: Morelos/ 4 km O Ajuchitlán/ 19-XI-1995/ Alt. 940 m/ 18°27'.632 N 99°00'.125 O/ Col. F.A. Noguera] (1F, EBCC); [MEX. 5mi. S./ Amacuzac, Mor./ IX-28-64] [E.G. Linsley/ Collector] [A.E. Michelbacher] (1M, IF, GHNC); [MEX. 5 mi. S./ Amacuzac, Mor./ IX-28-64] [E.G. Linsley/ Collector] [A.E.

Michelbacher/ Collector] (2F, EMEC); [Cuernavaca/ Mexico/ XI-3, 1902] [Koebele/ Collection] (1M, CASC); [Cuernavaca/ Mexico/ XII-4, 1902] [Koebele/ Collection] (1F, CASC); [MORELOS, 2.5 km N, 4 km W Huautla, Est./ CEAMISH, 18°28' N/ 98°02' W, 940 m, 7- vii.96 R.L. Westcott] [Beaten from/ ACACIA sp.] (1F, RLWE); [MEXICO: Morelos/ 2.5 km N, 4 km O Huautla/ Est. CEAMISH Alt. 940 m/ 9-VIII-1996 s/troncos/ 18°27'.671 N 99°02'.475 O/ Col. F.A. Noguera] (1F, EBCC); [MEXICO: Morelos/ 2.5 km N, 4 km O Huautla/ Estación CEAMISH/ 10-VIII-1996 Alt. 940 m/ 18°27'.671 N 99°02'.475 O/ Col. C.A. Uribe] (1F, EBCC); [MEXICO: Morelos/ 2.5 km N, 4 km O Huautla/ Estación CEAMISH/ 7-IX-1996 Alt. 940 m/ 18°27'.671 N 99°02'.475 O/ Col. F.A. Noguera] (1F, EBCC); [MEXICO: Morelos/ 2.5 km N, 4 km O Huautla/ Estación CEAMISH/ 7-IX-1996 Alt. 940 m/ 18°27'.671 N 99°02'.475 O/ Col. E. Ramírez] (1F, EBCC).

Etymology. The specific epithet used for this new species is derived from the Greek adjective *cyaneos* (blue) to denote the coloration of the tarsi.

Variation. This species varies in the coloration: dorsal surface with the usual bright green with reddish tints medially and laterally to red-coppery medially and bright green laterally or red coppery with greenish tints or dark green with violet tints or metallic green; ventral surface red-coppery to dark green medially, bright green with reddish-coppery and brassy tints to red-coppery with dark green laterally; punctures from bright green to brassy green; femora and tibiae from bright green with reddish-coppery tints to red-coppery with dark green tints or bright green with brassy tints.

Distribution. This species has been collected only from **Mexico**, the state and county records include the following: Colima: Campo Cuatro, ±18 km (air) NW Colima; Guerrero: Iguala; 16 km NW Iguala; 13km NW Iguala; Cacahuamilpa; Michapa; 40.7mi N Zumpango del Río; 1km S Taxco; Jalisco: Autlán, Cerrito la capilla; 7km NNE, 2km SW Autlán; 4km SE Cuautla; 8km NW Ayutla; 6.6km SO San Buenaventura; San Buenaventura; 4km SO San Buenaventura; 15km NE San Gabriel; Morelos: 5mi S Ámacuzac; 4 km O Ajuchitlán; Cuernavaca; 2.5km N, 4 km W

Huautla, Estación CEAMISH.

Adult host plants. On *Acacia* sp., *Conzattia multiflora*, and *Mimosa* sp. (Fabaceae).

Differential diagnosis. *Lampetis cyanitarsis* sp. n. is similar to *L. monilis* and *L. granulifera*. *Lampetis monilis* ventral surface is reddish-green medially, red-coppery laterally; impressions and punctures bright green; pronotum bright green, lateral margins subparallel at base, slightly expanded at middle, then obliquely converging to anterior angles; elytral surface bright green with reddish tints at middle, reliefs reddish and greenish, with strongly impressed punctate striae, generally next the four striae toward lateral margins with scarce finely punctate; interstitial impressions; first ventrite slightly concave along midline; ventrite 2 flattened along midline. *Lampetis granulifera* dorsal surface is bright green laterally, bright green with reddish and yellowish tints medially; ventral surface reddish-green medially, red-coppery with yellowish tints laterally; punctures bright green; impressions yellowish; pronotal lateral margins slightly concave at base, slightly expanded at middle, then obliquely converging to anterior angles; elytral disc with strongly impressed punctate striae and next the second striae with many finely punctate interstitial impressions; first ventrite slightly concave along midline, ventrite 2 flattened along midline.

***Lampetis (Spinthoptera) dilaticollis* (Waterhouse, 1882) (Figs. 13, 44)**

Psiloptera dilaticollis Waterhouse, 1882:11; Kerremans, 1885:133; Waterhouse, 1889:173; Dugés, 1891:5; Kerremans, 1892:60; 1903:94; 1910:124; Kempers, 1923:90 (wing venation); Cazier, 1951b:43.

Psiloptera (Lampetis) dilaticollis; Obenberger, 1926:165; Blackwelder, 1944:310; Westcott, et al. 1990:230.

Lampetis (Spinthoptera) dilaticollis; Kurosawa, 1993:580.

Diagnosis. Robust; ventral surface bluish black; punctures and impressions brassy-green or brassy-cupreous with short, recumbent, white setae; antennae black with violet and blue tints; pronotum black with blue and violet tints, along anterior margin to

middle with a strong longitudinal depression like a bead, disc with impressed median channel extending from posterior margin to near anterior margin and with strong, broad depression at middle of posterior margin with blue and violet tints, surface without punctures medially; elytra black, along lateral margins to apices with violet tints, disc scarcely impressed punctate striae; first ventrite feebly concave along midline, other ventrites convex.

Male redescription. Length 30.9 mm - 20.9 mm; width 11.9 mm - 7.5 mm. Head. Labrum black with brassy and blue tints, with abundant, small, shallow, confluent punctures; clypeus black with blue and brassy tints, anterior margin concave, with scarce, large, deep, confluent punctures toward margins; front flattened, callosities with violet or blue tints, surface with numerous, large, deep, confluent punctures and strong callosities; vertex black with violet tints, with few, small, shallow, not confluent punctures; bases of mandibles black with violet tints, with numerous, large, deep, confluent punctures; maxillary palps black with violet tints. Pronotum: 2.0 times wider than long, widest near anterior margin; lateral margins moderately concave at base, expanded after middle and rounded to anterior angles, narrowest anteriorly; lateral margins carinate two-thirds; along anterior margin to middle with a strong longitudinal depression like a bead; anterior and posterior margins slightly bisinuate with weak and broad median lobe; posterior angles slightly acute; disc convex, with impressed median channel extending from posterior margin to near anterior margin and with strong, broad depression at middle of posterior margin with blue and violet tints; surface without punctures medially; laterally with abundant, large, deep, confluent punctures, and few, slight callosities. Scutellum: black, small, oval. Elytra: apices weakly emarginate, outer and sutural angles slightly dentiform; disc convex with weakly impressed punctate striae; surface with a strong longitudinal impression along anterior margin, and many, large, finely punctate interstitial impressions, these commonly confluent in transverse and oblique groupings and densely clothed with setae. Prosternum: disc convex; surface with abundant, small, deep, confluent

punctures laterally, with scarce punctures medially; prosternal process: slightly convex, sulci with small, shallow, confluent punctures, apex bluntly rounded. Mesosternum: surface with numerous, small, shallow, confluent punctures laterally, without punctures medially. Mesepisternum and mesepimeron: with few, large, shallow punctures, sparse toward margins. Metasternum: flattened with numerous, fine punctures medially, with fine setae; numerous, large, deep, not confluent punctures laterally. Metacoxae: surface clothed with dense setae along posterior and external lateral margin; with abundant, small, deep, confluent punctures at external lateral margin to middle, fewer punctures at middle; few, fine, sparse punctures toward internal lateral margin. Femora: black, with violet tints; with abundant, small, not confluent punctures. Tibiae: violet with some blue tints; with densely punctate, with small, shallow, confluent punctures. Tarsi: with violet and blue tints. Abdomen: first ventrite flattened along midline; other ventrites convex; apex of last visible ventrite feebly rounded with a emargination at middle; abdominal surface irregularly punctate with abundant, small, shallow, confluent punctures. Male genitalia as in figure 44.

Female. Length 31.8 mm - 21.4 mm; width 12.7 mm - 7.9 mm. Differs from male as follows: apex of last visible ventrite rounded, some specimens rounded with weak emargination at middle.

Type material studied. Male Lectotype designated here: [Coll.R.I.Sc.N.B./ Mexique Villa Lerdo,/ Durango./ Höge.] [Biol. C. Amer./ Don/ Godman et Salvin] [Syntype] [Lectotype/ A.M. Corona des./ 2004] (ISNB). Paralectotypes: [Coll.R.I.Sc.N.B./ Mexique Villa Lerdo,/ Durango./ Höge.] [Biol. C. Amer./ Don/ Godman et Salvin] [Syntype] [Paralectotype/ A.M. Corona des./ 2004] (1F, ISNB); [Coll.R.I.Sc.N.B./ Mexique Koll.Dr.Frh.v.Hoscheck/ Villa Lerdo,/ Durango./ Höge.] [Syntype] [Paralectotype/ A.M. Corona des./ 2004] (1F, ISNB); [Coll.R.I.Sc.N.B./ Mexique Villa Lerdo,/ Durango.] [Syntype] [Paralectotype/ A.M. Corona des./ 2004] (1F, ISNB);

[SYN-/ TYPE] [Sa. de/ S. Miguelito./ Dr. Palmer.] [Psiloptera/ dilaticollis/ (Type) Waterh.] [B.C.A., III./ Psiloptera/ dilaticollis] [Paralectotype/ A.M. Corona des./ 2004] (1F, BMNH); [SYN-/TYPE] [Sa. de/ S. Miguelito./ Dr. Palmer.] [B.C.A., III./ Psiloptera/ dilaticollis.] [Paralectotype/ A.M. Corona des./ 2004] (1M, 1F, BMNH); [SYN-/TYPE] [Hacienda de/ Bledos/ S. Luis Potosí./ Dr. Palmer.] [Psiloptera/ dilaticollis./ (Type) Waterh.] [Paralectotype/ A.M. Corona des./ 2004] (1F, BMNH).

Variation. This species (50 males and 52 females examined) varies in the coloration; anterior margin and callosities of pronotum the usual violet to black; scutellum from black to black with blue tints; setae white to white-yellowish.

Distribution. This species is widespread in **Mexico**. State and county records include the following: Aguascalientes: 5mi N Rincón de Romos; 18.8km E Troncoso, carr. Zacatecas-S.L.P.; Chihuahua: Conchos; 10mi N Cd. Jiménez; 18mi W Jiménez; 18mi N, 7mi E Parral; Salaices; Coahuila: La Gloria, Monclova; 32mi E Paila; 14mi S Paila; 37.5mi W Paila; 7mi N Parras; Oasis, NE Murilla, Hwy. 37; 77mi W Saltillo; Durango: Reserva de la Biosfera, 65km E Ceballos; Cuencamé; Yerbanís; Hwy. 45, 25mi S Durango; 6mi NE El Salto; 49mi N La Zarca; 10mi S La Zarca; Villa Lerdo; Guanajuato: San Diego de la Unión; San Luis de la Paz; Hidalgo: 15mi NW Ixmiquilpan; 12km S Ixmiquilpan; 2km N Ixmiquilpan; Jalisco: 29km NE Lagos de Moreno; Morelos: Malezas; Nuevo León: Hwy. 40, 14.3mi W Saltillo; Oaxaca: Miahuatlán; Querétaro: El Marqués Aztlán; Peña Blanca; Peñuelas; Tolimán, km 46 carr. Bernal-Tolimán; San Luis Potosí: Hacienda de Bledos; 29mi SW San Luis Potosí; 12km W Río Verde; Zacatecas: Zacatecas.

Adult host plants. On *Acacia* sp. (Fabaceae), *Ephedra* sp. (Gnetaceae), flower of *Maytenus phyllantoides* (Celastraceae), and *Opuntia imbricata* (Cactaceae).

Fenology. Collected from January to November.

Differential diagnosis. *Lampetis dilaticollis* is similar to *L. drummondi* and *L. webbii*. *Lampetis drummondi* is entire surface brassy-green, brassy-cupreous, or blue; elytral apices generally brassy-green or brassy-cupreous; pronotal lateral margins roundly

converging anteriorly; elytral disc with punctate interstitial impressions commonly confluent in transverse or oblique groupings, striae feebly impressed; first ventrite without carina. *Lampetis webbii* is dorsal surface dark bluish-black with brassy-green punctures; ventral surface dark blue; elytral apices generally dark blue; pronotal lateral margins obliquely converging at anterior margin, disc moderately convex; elytral disc with punctate interstitial impressions usually isolated from each other, striae feebly impressed; first ventrite with midline concavity usually emarginate by smooth, broad carina.

***Lampetis (Spinthoptera) drummondi* (Laporte & Gory, 1836) (Figs. 14, 45, 70, 75, 80)**

Buprestis drummondi Laporte & Gory, 1836:37.

Psiloptera drummondi Waterhouse, 1882:10; Kerremans, 1910:130.

Dicerca woodhousei LeConte, 1852:68.

Psiloptera woodhousei LeConte, 1860:193; Kerremans, 1910:130.

Spinthoptera woodhousei Casey, 1909:74.

Psiloptera valens LeConte, 1858a:66; Kerremans, 1910:128.

Spinthoptera valens Casey, 1909:73.

Spinthoptera convexa Casey, 1909:72 (preoccupied Laporte & Gory, 1837).

Spinthoptera ocularis Casey, 1909:73.

Psiloptera ocularis Kerremans, 1910:125.

Spinthoptera parva Casey, 1909:73.

Psiloptera caseyi Kerremans, 1910:126 (replacement name for *convexa* Casey, 1909).

Psiloptera (Lampetis) drummondi Nelson, 1986:276; Nelson, et al. 1996:188.

Diagnosis. Dorsal and ventral surfaces brassy-green, brassy-cupreous, or blue, elytra apices generally brassy-green or brassy-cupreous; head and labrum brassy-green, blue callosities on vertex and brassy callosities on front; antennae black with

blue tints basally; pronotum with lateral margins roundly converging anteriorly, surface with moderately coarsely and rugosely punctate laterally; elytral apices weakly dentiform, disc convex with punctate impressions commonly confluent in transverse or oblique groupings, striae feebly impressed; first ventrite feebly concave along midline without carina. Male genitalia as in figure 45.

Distribution. From 418 males and 368 females examined, this species has been collected in **Mexico** and the **U.S.A.** State and county records in Mexico include the following: Chihuahua: 85mi SE Juárez at Banderas; 8mi S Gallege; 12mi S Villa Ahumada; Coahuila: Nueva Rosita; Tamaulipas: Reynosa; Nuevo León: Campo Apodaca, 19km NE de Monterrey; Monterrey; 5mi NE Villa García; Vallecillo; V. de Santiago; Rancho Presa. In the U.S.A.: Arizona: Cochise; Maricopa; Colorado: Lincoln; Kansas: Barber; Ford; Gove; Meade; Riley; Louisiana: Alexandria; Forest Hill; Rapides Parish; Missouri: South West City; Nuevo Mexico: Chaves; Doña Ana; Eddy; Las Cruces; Luna; Roosevelt; Valencia; Oklahoma: Davis; Fort Sill; Grady; McClain; Murray; Texas: Archer; Brewster; Crosby; Edwards; Erath; Floyd; Hars; Hidalgo; Jeff Davis; Kinney; Oklahoma; Pecos; Presidio; Reeves; Terrell; Valverde; Ward; Wilbarger; Zapata.

Adult host plants. On *Acacia farnesiana*, *A. greggii*, *A. sp.*, *Eysenhardtia texana*, and *Mimosa biuncifera* (Fabaceae), *Bumelia sp.* (Sapotaceae), *Celtis laevigata var. texana* (Ulmaceae), *Chilopsis linearis* (Bignoniaceae), *Diospyros texana* (Ebenaceae), *Erigonum effusum* (Polygonaceae), *Karwinskia humboldtiana* (Rhamnaceae), *Quercus gravesii* (Fagaceae), *Rhus virens* (Anacardiaceae), *Salix sp.* (Salicaceae), *Tamarix sp.* and *Tamarix gallica* (Tamaricaceae), *Zea mays* (Gramineae), and cultivated cotton.

Fenology. Collected from February to December.

***Lampetis (Spinthoptera) geniculata* Waterhouse, 1889 (Figs. 15, 46)**

Psiloptera geniculata Waterhouse, 1889:172; Kerremans, 1892:61; 1903:94; Obenberger, 1926:166; Blackwelder, 1944:311; Holyński, 1988:52.

Lampetis (Spinthoptera) geniculata; Kurosawa, 1993:580.

Diagnosis. Dorsal surface greenish and bluish black, punctures cupreous margined with red-coppery; ventral surface red-coppery with brassy tints; punctures with short, recumbent, white setae; antennal first segment red-coppery, the rest of segments black with greenish tints; pronotal surface with impunctate areas, and scarce, large deep, sparse punctures, along lateral margins with a weak longitudinal depression, this with abundant, small, confluent punctures; elytral disc with weakly impressed punctate striae; and first ventrite concave along midline, ventrite-2 slightly concave.

Male redescription. Length 22.3 mm - 11.9 mm; width 8.5 mm – 4.0 mm. Head. Labrum bright red-coppery, with few, shallow, not confluent punctures; clypeus bright red-coppery, anterior margin concave, with scarce, small, shallow punctures; front red-coppery, callosities with greenish tints, flattened, with few, large, deep punctures, with few callosities, along margin of the eyes with abundant, small punctures with abundant setae; vertex red-coppery laterally, greenish black medially, with few, small, deep punctures; mandibles red-coppery with greenish tints on bases, with large, deep, confluent punctures; maxillary palps bright green with cupreous tints. Pronotum: 1.6 times wider than long; widest at middle; lateral margins slightly concave near base, slightly expanded at middle, then obliquely converging to anterior angles, narrowest anteriorly; lateral margins discontinuously carinate at middle toward base; anterior margin scarcely bisinuate with weak lobe and posterior margin slightly bisinuate, with weak, broad median lobe; posterior angles slightly acute; disc moderately convex; flattened in midline toward base; surface with large, deep, sparse punctures medially, with impunctate areas, toward lateral margins with few, more confluent punctures; along lateral margins with a slight longitudinal depression, this with abundant, small, confluent punctures; along anterior margin toward middle with a line of small, deep, confluent punctures like a bead. Scutellum: red-coppery with

greenish tints, slightly transversely oval. Elytra: apices obliquely emarginate, with abundant setae; outer angle slightly more dentiform than sutural angle; disc moderately convex, with weakly impressed punctate striae; surface with few impressions at anterior margin, and many small interstitial impressions, these finely punctate, usually isolated from each other, and clothed with setae; toward lateral margins these impressions more numerous and commonly confluent in transverse and oblique groupings, and with few, small callosities. Prosternum: disc moderately convex, with numerous, small, deep punctures laterally, scarce punctures medially, and small, deep, confluent punctures along anterior margin; prosternal process: slightly convex; sulci with few, small, shallow punctures; apex bluntly rounded. Mesosternum: without punctures medially, but with few, small, deep, confluent punctures laterally. Metasternum: surface flattened, finely punctate and clothed with fine setae medially; with numerous, large, deep, not confluent punctures laterally. Metacoxae: surface with abundant, large, deep, confluent punctures medially; toward external lateral margin with abundant, small, confluent punctures; but toward internal lateral margin with scarce, small, shallow, not confluent punctures. Femora: red-coppery with greenish and bluish tints at base, with small, shallow, sparse punctures. Tibiae: surface black with violet tints, punctures brassy margined with bright green tints. Tarsi: bright green with bluish and violet tints. Abdomen: surface red-coppery with brassy tints, some reliefs greenish black; first ventrite concave along midline, wide concavity finely punctate and this is bordered by slight, impunctate carina; ventrite 2 slightly concave; ventrites 3-5 convex; apex of last visible ventrite feebly rounded and emarginate at middle; abdominal surface irregularly punctate, with abundant, small, shallow, confluent punctures. Male genitalia as in figure 46.

Female. Length 27.3 mm - 13.9 mm; width 10.4 mm - 4.6 mm.

Type material studied. Male Lectotype designated here: [SYN-/ TYPE] [Temax,/ N. Yucatan,/ Gaumer.] [B.C.A., III./ Psiloptera/ geniculata.] [Lectotype/ A.M. Corona des./

2004] (BMNH). Paralectotypes: same label as male lectotype [Paralectotype/ A.M. Corona des./ 2004] (1M, 4F, BMNH); [SYN-/ TYPE] [Temax,/ N. Yucatan,/ Gaumer.] [Psiloptera/ geniculata,/ (Type) Waterh.] [Paralectotype/ A.M. Corona des./ 2004] (1F, BMNH); [Coll.R.I.Sc.N.B./ Mexique Temax,/ N. Yucatan/ Gaumer.] [Paratype] [Paralectotype/ A.M. Corona des./ 2004] (1F, ISNB).

Variation. This species (35 males and 57 females examined) varies in the coloration; dorsal surface with the usual greenish and bluish black with punctures cupreous margined with red-coppery to black with punctures bright green margined with brassy; ventral surface red-coppery with brassy tints to cupreous or black; maxillary palps bright green with blue tints to bright green with brassy tints; scutellum red-coppery with greenish tints to black with reddish-coppery and greenish tints; tibiae black with violet tints to black with violet and cupreous tints.

Distribution. This species has been collected in southern **Guatemala, Honduras and Mexico**. State and county records in Guatemala include the following: Petén: Tikal Mayan Ruins. In Mexico: Chiapas: Musté; Quintana Roo: Cancún; 20km SW Cancún; 20km N Carrillo Puerto; 17km NW Felipe Carrillo Puerto; 19km N Carrillo Puerto; 39km NW Felipe Carrillo Puerto; 17km N Felipe Carrillo Puerto; 17km NE Felipe Carrillo Puerto; 60km N Felipe Carrillo Puerto; Chetumal; 1km S José Pino Suárez; 15km S Morocoy; Playa del Carmen; 20km W Puerto Morelos; 26km SE Valle Hermoso; Yucatán: Chichén Itza; Temax, N Yucatán; Tinum, Pisté; Pisté, 120km E Mérida, nr. Chichén Itza; 22km NE Pisté; 13mi E Valladolid; 1km S Xcalacoop; 0.3km E Xcalacoop; X-Can; Nuevo X-Can.

Fenology. Collected from May to October.

Differential diagnosis. *Lampetis geniculata* is similar to *L. cupreopunctata*. *Lampetis cupreopunctata* is black above, impressions and punctures cupreous, ventral surface cupreous; pronotum with weak midline impression extending from base almost to anterior margin; elytra widest at base, narrowing rather gradually to apex, disc with striae moderately impressed.

***Lampetis (Spinthoptera) granulifera* (Laporte & Gory, 1837) (Figs. 16, 47)**

Buprestis granulifera Laporte & Gory, 1837:83.

Psiloptera granulifera; Gemminger & Harold, 1869:1367; Saunders, 1871:24; Waterhouse, 1882:8; Kerremans, 1892:61; 1903:94.

Psiloptera (Lampetis) granulifera; Obenberger, 1926:166; Blackwelder, 1944:311.

Lampetis (Spinthoptera) granulifera; Kurosawa, 1993:580.

Diagnosis. Dorsal surface bright green with reddish and yellowish tints medially, bright green laterally; ventral surface reddish-green medially, red-coppery with yellowish tints laterally; punctures bright green with short, recumbent, white setae; antennal first segment bright green, the rest segments dark-brown with bright green basally; elytral disc with slightly impressed punctate striae and next the second striae with many, large, punctate, yellowish interstitial impressions; first ventrite slightly concave along midline, ventrite 2 flattened along midline.

Male redescription. Length 22.9 mm - 16.5 mm; width 8.1 mm - 5.7 mm. Head. Labrum bright green with yellowish tints, with few, small, shallow, confluent punctures, with few setae; clypeus bright green with yellowish and cupreous tints, anterior margin emarginate at midline, with numerous, small, deep, confluent punctures at margins, without punctures medially; front bright green with brassy and cupreous tints, punctures bluish-green, sinuate with abundant, small, deep, confluent punctures and small callosities; vertex bright green with yellowish and cupreous tints; mandibles bright green, with numerous, small, deep, confluent punctures on bases; maxillary palps bright green. Pronotum: 1.5 times wider than long; lateral margins slightly concave before base, slightly expanded and rounded at middle, then slightly obliquely converging to anterior angles; narrowest anteriorly; lateral margins slightly carinate at middle; anterior margin weakly bisinuate with weak median lobe; posterior margin slightly bisinuate with slight, broad median lobe; posterior angles slightly acute; disc moderately convex, slightly flattened in midline toward base; surface with

few, small, deep, not confluent punctures medially, laterally with abundant, confluent punctures, and few, slight callosities. Scutellum: reddish-green, small, rounded. Elytra: apices obliquely emarginate, outer and sutural angles dentiform; disc moderately convex, with slightly impressed punctate striae; surface with few, small impressions and next the second striae with many, large finely punctate, yellowish interstitial impressions, more numerous toward lateral margins, these isolated each other and with numerous, fine setae; numerous, small callosities laterally. Prosternum: disc moderately convex, with numerous, small, deep, confluent punctures laterally, scarce, small, deep punctures medially; prosternal process: flattened; sulci with small, deep punctures; apex bluntly rounded. Mesosternum: without punctures medially, but with few, small, deep punctures laterally. Mesepisternum and mesepimeron: with few, shallow, sparse punctures. Metasternum: surface flattened, with few, fine punctures, with fine setae medially; abundant, small, deep, confluent punctures laterally. Metacoxae: at middle toward external lateral margin with numerous, small, confluent punctures and slight callosities, with few setae; toward internal lateral margin with scarce, fine, sparse punctures. Femora: surface reddish-green with yellowish tints medially, dark green at base; with few, small, deep, not confluent punctures. Tibiae: surface bright green, with yellowish tints; abundant, shallow, confluent punctures. Tarsi: dark green, with bluish tints. Abdomen: first ventrite slightly concave along midline, wide concavity with numerous, small, shallow punctures and this is bordered by slight, impunctate carina; ventrite 2 flattened along midline; ventrites 3-5 convex; apex of last visible ventrite feebly rounded with emargination at middle; abdominal surface moderately and irregularly punctate. Male genitalia as in figure 47.

Female. Length 27.4 mm - 17.8 mm; width 10.1 mm - 6.4 mm.

Type material studied. Female Lectotype designated here: [Granulifera/ Gory/ Brésil/ Type] [Lectotype/ A.M. Corona des./ 2004] (MNHN). Female Paralectotype: same label as female lectotype [Paralectotype/ A.M. Corona des./ 2004] (MNHN).

Variation. This species (32 males and 48 females examined) varies in the coloration; the usual reddish-green medially, red-coppery with yellowish tints laterally to bright green with reddish and yellowish tints or red-coppery with yellowish tints below; punctures bright green to bluish green; antennal first segment bright green to cupreous; labrum and clypeus bright green with yellowish tints to bright green or cupreous; front bright green to bright green with yellowish and cupreous tints; bases of mandibles bright green to red-coppery; scutellum reddish-green to bright green; pronotum bright green laterally, bright green with reddish and yellowish tints medially to red-coppery; elytra impressions bright green margined with brassy to bright green margined with cupreous; femora reddish-green with yellowish tints to bright green with yellowish tints to cupreous with yellowish tints; tibiae bright green with yellowish tints to bright green, or bright green with yellowish and cupreous tints; tarsi dark green with bluish tints to bluish green, or bright green with yellowish tints.

Distribution. This species has been found in **Brazil** (type specimens without more detailed data), **Guatemala** and **Mexico**. State and county records include the following: in Guatemala: Quetzaltenango: Hacienda El Reposo. In Mexico: Chiapas: 10mi NW Arriaga, nr. Río Las Arenas, Chiapa; 20km E Cintalapa; 2mi E Rizo-de Oro; Oaxaca: 48mi E La Ventosa; 10mi SE Tapanatepec; Istmo de Tehuantepec; Puebla: Atlixco; San Luis Potosí: 15mi N Ciudad Valles; Veracruz: vic. Barranca de Coyoapa, Tejería, Teocelo; 3km S Carrizal; Catemaco Lake; Santa Cotaxtla; 14mi Cuitláhuac; 8mi W Palma Sola; 6mi N Rinconada; Volcán San Martín; San Pedro de Sotepan; Hwy. 145, 8mi S Tinaja; 41km SE Xalapa.

Adult host plant. On *Mimosa* sp. (Fabaceae).

Fenology. Collected from July to November.

Differential diagnosis. *Lampetis granulifera* is similar to *L. monilis*. *Lampetis monilis* is slender; ventral surface reddish-green medially, laterally red-coppery; punctures and impressions bright green; pronotum bright green, lateral margins subparallel at base, slightly expanded at middle, then obliquely converging to anterior angles; elytral surface bright green with reddish tints at middle, reliefs reddish and greenish, with strongly impressed punctate striae, generally next the four striae toward lateral margins with few finely punctate, interstitial impressions.

***Lampetis (Spinthoptera) guildini* (Laporte & Gory, 1836) (Figs. 17, 48, 67, 73)**

Buprestis guildini Laporte & Gory, 1836:41.

Psiloptera guildingi; Gremminger & Harold, 1869:1367; Kerremans, 1892:61.

Psiloptera guildingii; Saunders, 1871:24; Waterhouse, 1896:104.

Psiloptera guildini; Kerremans, 1903:101; 1910:144; Fisher, 1925:50.

Psiloptera (Lampetis) guildini; Obenberger, 1926:166; Blackwelder, 1944:311.

Lampetis (Spinthoptera) guildini; Kurosawa, 1993:580.

Diagnosis. Dorsal surface bluish-green, sometimes dark-green, impressions blue or violet; ventral surface dark green or bluish-green, some punctures blue; punctures with short, recumbent, white setae; antennae bluish-green; elytral disc moderately convex with weakly impressed punctate striae, surface with few, small impressions along base and many finely punctate, interstitial impressions, usually isolated from each other; abdomen with first ventrite concave along midline, this concavity bordered by slight and impunctate carina, ventrite 2 flattened in midline, ventrites 3-5 convex.

Male redescription. Length 18.4 mm - 14.2 mm; width 6.8 mm - 4.9 mm. Head. Labrum dark green, with few, small, shallow, not confluent punctures, surface granulate; clypeus dark green, with blue tints, anterior margin slightly concave, with numerous, small, deep, confluent punctures; front blue or bluish-green, flattened, surface with numerous, large, deep, confluent punctures forming many, strong callosities, along margins of eyes with few, large, deep, confluent punctures; vertex

bluish-green or sometimes dark green, with large, deep, sparse punctures; bases of mandibles dark green and bluish-green, rugosely punctate, with abundant, large, deep, confluent punctures; maxillary palps dark green and bluish-green, with abundant setae. Pronotum: 1.5 times wider than long, widest before posterior margin; lateral margins subparallel at base, slightly expanded before middle, then obliquely converging to anterior angles, narrowest anteriorly; lateral margins slightly carinate at middle to base; anterior margin slightly bisinuate with weak median lobe; posterior margin bisinuate with weak, broad median lobe; posterior angles acute; disc moderately convex, slightly flattened in midline toward posterior margin; along midline with scarce, small, deep punctures, with few, small, deep punctures medially, being more abundant laterally with some callosities. Scutellum: blue or bluish-green, rounded and finely granulate. Elytra: apices obliquely emarginate, outer angle dentiform; disc moderately convex with feebly impressed punctate striae; surface with few, small impressions along anterior margin and many finely punctate, interstitial impressions, usually isolated from each other, and with few setae; laterally with punctures deeper and more confluent, and slight callosities. Prosternum: disc convex, surface with abundant, large, deep, confluent punctures laterally, becoming sparse medially, along anterior margin with abundant, small, deep, confluent punctures; prosternal process: slightly convex, with a line of small, deep punctures medially; sulci with abundant, fine, confluent punctures; apex slightly rounded. Mesosternum: surface with few, small, deep, confluent punctures laterally, without punctures medially. Mesepisternum and Mesepimeron: dark green or bluish-green; with numerous, small, shallow, not confluent punctures, with abundant setae. Metasternum: some punctures blue; flattened with scarce, small, shallow punctures medially; laterally numerous, large, deep, not confluent punctures. Metacoxae: some punctures blue; surface with numerous, large, deep, confluent punctures at middle; toward external lateral margin with abundant, small, shallow, confluent punctures; scarce, small, deep punctures at internal lateral margin. Femora: dark green or bluish

green; with numerous, large, deep punctures. Tibiae: dark green or bluish green; surface with numerous, small, shallow, not confluent punctures. Tarsi: dark green or bluish-green, sometimes with violet tints. Abdomen: with first ventrite concave along midline, this concavity with few, small, shallow punctures, and bordered by slight, impunctate carina; ventrite 2 flattened in midline; ventrites 3-5 convex; apex of last visible ventrite subtruncate; abdominal surface coarsely and irregularly punctate laterally, punctures small, shallow, confluent, and irregular in shape; medially with few, small, shallow, not confluent punctures. Male genitalia as in figure 48.

Female. Length 27.7 mm - 15.3 mm; width 10.9 mm - 5.6 mm. Female are more robust in body shape than male.

Variation. This species (8 males and 13 females examined) varies in the coloration; dorsal and ventral surfaces with the usual bluish-green to dark or bright green; impressions blue or violet to bright green.

Distribution. This species has been collected only in **Grenada** and **Grenadines**. State and county records include the following: in Grenada: Saint George: Grand Anse; Mount Hartman National Park; Point Salines; Airport; Saint Andrew: Pearls; Airport. In Grenadines: Prune Island; St. Vincent; Tobago Cays.

Adult host plant. *Bauhinia aculeata* (Leguminosae).

Fenology. Collected from January to December.

Differential diagnosis. This species can be readily distinguished from any other species of this genus by the uniform blue or bluish green above and by the absence of longitudinal and transverse impressions on the pronotum; elytral lateral margins without longitudinal depression; prosternal process bisulcate laterally and sulcate at middle.

***Lampetis (Spinthoptera) hirtomaculata* (Herbst, 1801) (Fig. 20, 49, 79)**

Buprestis hirtomaculata Herbst, 1801:84; Laporte & Gory, 1836:38.

Psiloptera hirtomaculata Schönherr, 1817:216; Dejean, 1833:76; 1836:86; Mannerheim, 1837:49; Lacordaire, 1857:28; Gemminger & Harold, 1869:1366; Saunders, 1871:24; Waterhouse, 1882:10; 1889:173; Kerremans, 1892:61; 1896:23; 1903:94; Casey, 1909:77; Kerremans, 1910:123; Obenberger, 1937:100.

Lampetis (Spinthoptera) insularis Casey, 1909:76 (new synonymy).

Psiloptera insularis; Kerremans, 1910:138.

Psiloptera (Lampetis) hirtomaculata; Obenberger, 1926:166; Blackwelder, 1944:311.

Psiloptera (Lampetis) insularis; Obenberger, 1926:167; Blackwelder, 1944:311.

Lampetis (Spinthoptera) insularis; Kurosawa, 1993:580.

Diagnosis. Punctures and impressions bright green; punctures with short, recumbent, yellowish-white setae; head dark bronze with olive and purple tints; antennae black with olive and purple tints; pronotum dark bronze with metallic reddish tints, along anterior margin to midline with a slight depression with abundant, small, confluent punctures; elytra dark bronze with purple and brassy-green tints, with four transversal impressions from lateral margins to middle, the last one is smaller than the rest; metasternum and metacoxae with reddish tints laterally; abdomen metallic red with dark bronze tints.

Female holotype redescription. Total body length 22.7 mm; width 8.7 mm. Head. Labrum bright green, with numerous, small, shallow, confluent punctures; clypeus bright green, anterior margin slightly concave, with numerous, small, deep, confluent punctures; front slightly sinuate, with numerous, small, deep, confluent punctures and numerous, small callosities, surface with few setae, along margin of eyes densely punctate and with abundant setae; vertex with few, small, shallow, sparse punctures; bases of mandibles bright green with reddish tints at margins, with numerous, small, deep, confluent punctures; maxillary palps reddish-brown. Pronotum: 2.0 times wider than long, widest at base and before middle; lateral margins slightly concave before base, expanded before middle and then obliquely converging to anterior angles; narrowest anteriorly; lateral margins carinate at middle to base; anterior and posterior

margins slightly bisinuate with weak and broad median lobe; posterior angles slightly acute; disc moderately convex, flattened in midline toward posterior margin; surface with numerous, small, confluent punctures near anterior margin, less confluent at posterior margin medially; abundant punctures laterally, forming few and slight callosities; along anterior margin to midline with a slight line of abundant punctures. Scutellum: dark bronze with olive and purple tints, small, transversely oval at base. Elytra: apices obliquely emarginate, outer angles dentiform; disc convex, with strongly impressed punctate striae, these striae with fine punctures at middle; small, deep, confluent punctures basally and laterally; surface with numerous impressions along anterior margin, and with four transversal impressions from lateral margins to middle, the last one is smaller than the rest; without interstitial impressions; impressions clothed with setae. Prosternum: metallic red medially, bronze laterally; disc convex; surface with numerous, small, deep, not confluent punctures laterally, with scarce punctures at middle; prosternal process: metallic red, flattened, sulci with fine, confluent punctures, with few setae; apex bluntly rounded. Mesosternum: metallic red; surface with few, small, deep punctures laterally, without punctures medially. Mesepisternum and mesepimeron: dark bronze with reddish tints; with numerous, small, shallow, sparse punctures. Metasternum: flattened, with few, fine punctures medially, with fine, setae; laterally with numerous, small, deep, confluent punctures. Metacoxae: with scarce, small, shallow punctures at internal lateral margin; abundant, confluent punctures at middle to external lateral margin. Femora: dark bronze with reddish tints; punctures bright green; with numerous, small, deep punctures. Tibiae: dark bronze with purple tints, punctures bright green; with numerous, small, shallow, not confluent punctures. Tarsi: dark bronze with purple tints. Abdomen: first ventrite concave along midline, this concavity is narrow and bordered with wide, impunctate carina, and with few, fine, sparse punctures, with fine setae; other ventrites convex; apex of last visible ventrite rounded; abdominal surface with abundant, small, shallow, confluent, irregular punctures.

Male. Length 28.5 mm – 15.7 mm; width 10.4 mm – 5.5 mm. Male genitalia as in figure 49.

Type material studied. *Buprestis hirtomaculata*: Female Holotype: [13606] [hirtomacula-/ ta/ Hbst./ Am. meridional] (ZMHB). *Lampetis (Spinthoptera) insularis*: Female Holotype: [Taboga Is./ B y Panama] [CASEY/ hequest/ 1925] [TYPE USNM/ 35730] [insularis/ Cas.] (USNM).

Variation. Female body shape: length 34.0 mm – 19.7 mm; width 14.2 mm – 7.5 mm. This species varies in the size of elytral transversal impressions, in some specimens these impressions with or without yellowish pulverulence; and coloration: elytral surface the usual dark bronze with purple and brassy-green tints to bright green medially and purple laterally; femora and tibiae from dark bronze with purplish tints to bright green with reddish or purplish tints.

Distribution. From 15 males and 20 females examined, this species has been collected in **Panama** and **Venezuela**. State and county records include the following: in Panama: Pearl Island: San José; Province Panamá: Ancon; Barro Colorado; Old Panama; Taboga Island. In Venezuela: Aragua: Casa Blanca; Cata; El Limón; La Victoria; Maracay; Carabobo: Valencia; Cojedes: Pilancones; Distrito Federal: Caracas; Falcón: San Juan de los Cayos; Santa María; Guarico: Chaguaramal; Las Mercedes; Lara: Humocaro; Miranda: Machurucuto; Monagas: Bolivar; Tachira: Bramon; Zulia: Las Palmeras.

Adult host plants. *Citrus sinensis* (Rutaceae), *Coffea* sp. (Rubiaceae), *Psidium guajava* (Myrtaceae), and *Zea mays* (Gramineae).

Fenology. Collected from January to December.

Differential diagnosis. *Lampetis hirtomaculata* looks like to *L. srdinkoana*. *Lampetis srdinkoana* entire surface is reddish brown with golden green tints; punctures bright green margined with golden green; antennae dark brown with golden green tints;

pronotum and elytra with a depression along lateral margins; first and second ventrite slightly concave along midline.

***Lampetis (Spinthoptera) hondurensis*, sp. n. (Figs. 19, 50)**

Diagnosis. Entire surface dark brown with bronze and purplish tints, punctures brassy margined with purple; punctures with short, recumbent, white setae; antennae black with bronze tints; elytra disc moderately convex, with moderately impressed punctate striae, with scarce impressions along anterior margin and few punctate interstitial impressions, along lateral margins these impressions are more numerous and larger than medially, usually 7-9 impressions; first ventrite slightly concave along midline, ventrite 2 flattened.

Male description. Length 24.9 mm - 18.1 mm; width 9.0 mm - 6.1 mm. Head: dark brown with bronze and purplish tints; punctures brassy; labrum granulose, dark brown with brassy and purplish tints, with few, small, shallow punctures; clypeus anterior margin concave, without punctures medially, with numerous, small, deep, confluent punctures laterally; front slightly sinuate, coarsely and rugosely punctate with abundant, small, deep, confluent punctures and numerous, small callosities; vertex with numerous, small, shallow, not confluent punctures; bases of mandibles with numerous, small, deep, confluent punctures; maxillary palps dark brown with purplish and bronze tints. Pronotum: 1.5 times wider than long, widest near base; lateral margins subparallel before base, slightly expanded and rounded before middle and then slightly obliquely converging to anterior angles; narrowest anteriorly; lateral margins carinate at middle to base; along anterior margin to midline with a slight line of fine, deep, confluent punctures; anterior and posterior margins weakly bisinuate with weak median lobe; posterior angles slightly acute; disc convex, flattened in midline toward base; surface with numerous, small, deep, sparse punctures, with impunctate areas medially; more numerous, confluent punctures laterally, with few, slight callosities. Scutellum: dark brown with purplish and bronze tints, small,

punctiform. Elytra: apices obliquely emarginate, outer and sutural angles dentiform; disc moderately convex, with moderately impressed punctate striae, these striae with small, shallow, confluent punctures, larger basally than apically, five striae visible; surface with scarce impressions along base and few, small, finely punctate, interstitial impressions, these isolated from each other; along lateral margins these impressions are more numerous and larger than medially, usually 7-9 impressions. Prosternum: disc moderately convex; anterior margin weakly bisinuate; surface with abundant, small, deep, confluent punctures laterally, with slight callosities; with scarce punctures medially; prosternal process: flattened; sulci with small, deep, confluent punctures with numerous, semierect setae, apex bluntly rounded. Mesosternum: surface with numerous, small, deep, confluent punctures laterally, without punctures medially. Mesepisternum and mesepimeron: with few, small, shallow, sparse punctures. Metasternum: flattened; with few, fine punctures medially, with fine setae; numerous, small, deep, not confluent punctures laterally. Metacoxae: with small, shallow, sparse punctures at internal lateral margin; numerous, confluent at middle to external lateral margin. Femora: dark brown with bronze and purplish tints; with numerous, small, deep, confluent punctures. Tibiae: dark brown with bronze and purplish tints; densely punctate, with small, shallow, confluent punctures. Tarsi: bronze with purplish tints. Abdomen: first ventrite slightly concave along midline, this concavity is narrow and bordered with slight, impunctate carina, and with numerous, fine punctures; ventrite 2 flattened; other ventrites convex; apex of last visible ventrite feebly rounded with an emargination at middle; abdominal surface with abundant, small, shallow, confluent, irregular in shape punctures. Male genitalia as in figure 50.

Female. Length 22.5 mm - 18.3 mm; width 7.8 mm - 6.3 mm.

Type material. Male Holotype: [HONDURAS, Cho. 982m./ 1kmW. San Marcos de/ Colon, July23, 1977/ O'Briens&Marshall] (RLWE). 13(9M, 4F) Paratypes: [HONDURAS, Cho. 982m./ 1kmW. San Marcos de/ Colon, July23, 1977/

O'Briens&Marshall] (3M, 1F, RLWE); [HONDURAS, El Par./ El Zamorano/ 27-VII-1977/ C.W. O'BRIEN] (1M, RLWE); [HONDURAS - Escuela/ Agricola Panamericana/ June 20 1967/ J. S. Packer] (1M, EMUS); [HONDURAS, Comay./ 1kmW San Marcos/ de Colon, 24-VII-77/ O'Brien & Marshall] (2M, RLWE); [HONDURAS/ Zamorano] [Jan. 19 19??/ Adam/ Oseguera] (1M, USNM); [HOND. El Paraiso/ 17 km. NW Jacaleapa/ 12 Oct. 1993/ R. Turnbow] (2F, GHNC); [San Agustin/ San Salvador/ S. Calderon] [On/ Albizzia/ molucana] (1F, USNM); [Poza Azul/ 1 km W El Panameño/ Depto. San Vicente/ El Salvador VI 6 1979] [RD Cave/ colr] (1M, CLBC).

Etymology. This species is named after the country of Honduras, where the specimens were collected.

Variation. This species varies in the coloration: the usual dark brown with bronze and purplish tints to bronze with purplish tints below; punctures from brassy margined with purple to brassy margined with bronze; tarsi from bronze with purplish tints to dark brown with purplish and bluish tints.

Distribution. This species has been found from **El Salvador** and **Honduras**. State and county include the following: in El Salvador: San Vicente: Poza Azul, 1km W El Panameño; San Salvador: San Agustin. In Honduras: Choluteca: 1km W San Marcos de Colon; El Paraíso: El Zamorano; 17 km NW Jacaleapa.

Adult host plant. *Albizzia molucana* (Fabaceae).

Differential diagnosis. *Lampetis hondurensis* sp. n. is similar to *L. simplex*. *Lampetis simplex* dorsal is surface black; ventral surface bright red medially, black with red tints laterally; punctures cupreous margined with red; antennal first segment red, the rest black with reddish tints; pronotal lateral margins subparallel at base, weakly expanded and rounded at middle, then slightly and obliquely converging to anterior angles; elytral disc with strongly impressed punctate striae, fifth interval toward lateral margins with few, small punctures; first ventrite feebly concave along midline.

***Lampetis (Spinthoptera) lesnei* (Kerremans, 1910) (Fig. 18)**

Psiloptera lesnei Kerremans, 1910:84.

Psiloptera (Lampetis) lesnei; Obenberger, 1926:167; Blackwelder, 1944:311.

Lampetis (Spinthoptera) lesnei; Kurosawa, 1993:580.

Diagnosis. Dorsal surface lead-green with dark blue tints; ventral surface lead-green, with dark blue and purple tints; punctures with short, recumbent, white setae; antennae dark-blue; pronotal surface lead-green with purple tints, punctures lead-green, and irregularly punctate; elytral surface strongly impressed punctate striae, along lateral margins with narrow, longitudinal depression; first ventrite slightly concave along midline, this concavity is bordered by narrow and impunctate carina, ventrites 2-5 convex.

Female holotype redescription. Total body length 24.0 mm; width 8.0 mm. Head. Punctures purple with few setae. Labrum lead-green, with few, small, shallow punctures; clypeus lead-green with purple tints, anterior margin emarginate, with few punctures at margins, scarce punctures medially; front lead-green with purple tints, sinuate, with numerous, small, deep, confluent punctures and numerous and small callosities; vertex lead-green with purple tints, with numerous, small, shallow, not confluent punctures; bases of mandibles dark-blue, with few, large, deep punctures; maxillary palps dark-blue. Pronotum: 1.6 times wider than long; widest at base; lateral margins subparallel at base, slightly expanded at middle and rounded to anterior angles, narrowest apically; lateral margins discontinuously carinate at middle to base; anterior and posterior margins slightly bisinuate, with weak median lobe; posterior angles rounded; disc moderately convex, slightly flattened along midline toward base; surface irregularly punctate, with abundant, large, deep, confluent punctures, but more confluent laterally with callosities; along lateral margins with a depression, this with numerous, small, confluent punctures. Scutellum: lead-green with blue and purple tints, punctiform. Elytra: apices weakly and obliquely emarginate; outer angle dentiform; disc moderately convex, with strongly impressed punctate striae; the striae formed by large, deep, confluent punctures; surface with few transverse impressions

basally, and without punctures between striae; along lateral margins with a narrow, longitudinal depression, this with small, confluent punctures. Prosternum: disc moderately convex, with numerous, large, deep, confluent punctures laterally, with slight callosities; numerous, small, confluent punctures medially; prosternal process: flattened; sulci with large, deep, confluent punctures, and numerous setae, apex bluntly rounded. Mesosternum: surface without punctures medially, but with few, large, deep punctures laterally. Mesepimeron and mesepisternum: with scarce, large, shallow punctures, and scarce setae. Metasternum: surface flattened, with few, fine, not confluent punctures, and clothed with fine setae medially; laterally with numerous, large, deep, not confluent punctures, with some impunctate areas. Metacoxae: with numerous, large, not confluent punctures and slight callosities medially; toward external and internal lateral margins with few, small, shallow punctures; along posterior margin to middle with numerous, small, confluent punctures and numerous setae. Femora: surface lead-green, with dark blue and purple tints. Tibiae: surface lead-green, with dark blue and purple tints. Tarsi: lead-green with blue and purple tints. Abdomen: first ventrite slightly concave along midline, with numerous, small, confluent punctures, and numerous setae, and this concavity bordered by narrow and impunctate carina; ventrites 2-5 convex; apex of last visible ventrite rounded; abdominal surface densely and discontinuously punctate, with abundant, small, shallow, confluent punctures.

Male. Unknown.

Type material studied. Female Holotype: [MUSEUM PARIS/ COSTA-RICA/ DE LAFON 1884] [PSILOPTERA/ LESNEI/ Kerrem. TYPE] (MNHN).

Distribution. Known only from the type locality: **Costa Rica.**

Differential diagnosis. *Lampetis lesnei* looks like to *L. mexicana*. *Lampetis mexicana* is moderately robust; pronotum dark bluish-green, punctures metallic green; elytra dark bluish-green with violet tints, punctures bright green; disc with

slightly impressed punctate striae, first three striae clearly visible, surface with many finely punctate, large interstitial impressions; first ventrite slightly concave along midline, concavity is bordered by weak, impunctate carina.

***Lampetis (Spinthoptera) mexicana* Théry, 1923 (Figs. 21, 51)**

Lampetis mexicana Théry, 1923:250.

Psiloptera (Lampetis) mexicana; Obenberger, 1926:167; Blackwelder, 1944:311.

Lampetis (Spinthoptera) mexicana; Kurosawa, 1993:580.

Diagnosis. Ventral surface metallic green medially, bluish-green laterally; punctures and impressions bright green; punctures with short, recumbent, white—setae; pronotum dark bluish-green, disc moderately convex, surface with abundant, small, deep, confluent punctures, and some impunctate areas; elytra dark bluish-green with violet tints, punctures bright green, disc with slightly impressed punctate striae, first three striae visible, surface with many finely punctate, large, interstitial impressions; first ventrite slightly concave along midline, concavity is bordered by weak, impunctate carina, ventrites 2-5 convex.

Female holotype redescription. Total body length 27.0 mm; width 10.0 mm. Head. Labrum bright green, with few, small, shallow, punctures, and few setae; clypeus dark bluish-green, with bright green tints, anterior margin slightly concave, with scarce, small, deep punctures at margins; front slightly sinuate, dark bluish-green, with bright green tints, surface with numerous, deep, confluent punctures, larger than punctures of clypeus, and many strong callosities, some callosities with violet tints; vertex dark bluish-green with violet tints, punctures bright green, with few, small, shallow, not confluent punctures; bases of mandibles dark green with blue tints, with numerous, small, deep, not confluent punctures and few callosities; maxillary palps dark green basally, dark blue distally; antennae dark bluish-green with bright green tints. Pronotum: 1.5 times wider than long; widest at base; lateral margins slightly concave at base, expanded at middle and rounded to anterior angles; narrowest apically;

lateral margins discontinuously and slightly carinate on middle toward base; anterior margin scarcely bisinuate, with weak median lobe; posterior margin slightly bisinuate, with broad median lobe; posterior angles slightly acute; disc moderately convex, slightly flattened along midline toward base; surface with abundant, small, deep, confluent punctures, and some impunctate areas medially; more confluent punctures and with slight callosities laterally. Scutellum: dark bluish-green, small, rounded. Elytra: apices dark bluish-green with violet tints, weakly obliquely emarginate; outer and sutural angles not dentiform; disc moderately convex, with slightly impressed punctate striae, with fine, confluent punctures medially, but laterally with large, deep punctures; first three striae clearly visible; surface with small, transverse impressions basally, and with many, large, finely punctate interstrial impressions, these commonly confluent in transverse groupings and densely clothed with setae; laterally with large and more confluent punctures and slight callosities. Prosternum: disc moderately convex, with numerous, small, deep, confluent punctures and slight callosities laterally; few, small, deep, not confluent punctures medially; along anterior margin with small, very confluent punctures; prosternal process: metallic green, slightly convex, sulci with fine, confluent punctures, and few setae, apex bluntly rounded. Mesosternum: metallic green; surface without punctures medially; but with few, small, deep, not confluent punctures laterally. Mesepimeron and Mesepisternum: dark bluish-green; with small, shallow, sparse punctures; and with few setae. Metasternum: surface flattened, with scarce, fine punctures and clothed with fine setae medially; laterally with numerous, small, shallow, confluent punctures. Metacoxae: with numerous, small, confluent punctures, and slight callosities at middle to external lateral margin; at middle to internal lateral margin with fine, sparse punctures, and few setae. Femora: surface dark green, with blue tints, punctures bright green, dark blue at base. Tibiae: surface dark green, with blue tints, punctures bright green. Tarsi: bluish-green, with some purple tints. Abdomen: first ventrite slightly concave along midline, with few, small, shallow, not confluent punctures, and

few setae, this concavity is bordered by weak, impunctate carina; ventrites 2-5 convex; apex of last visible ventrite rounded; abdominal surface densely and discontinuously punctate, with abundant, small, shallow, confluent punctures.

Male. Male genitalia as in figure 51.

Type material studied. Female Holotype: [Tasco] [Mexicana/ Théry/ Théry det.] [museum paris/ 1935/ Coll. A. THÉRY] (MNHN).

Variation. This species (one male and one female examined) varies in the coloration; dorsal surface dark bluish-green with violet tints to dark green medially and dark blue with violet tints laterally; ventral surface metallic green to bluish-green or dark green; front dark bluish-green to dark green; antennae dark bluish-green to olive green and first segment dark green; maxillary palps dark blue to dark green; pronotal posterior angles dark bluish-green to bluish-violet and callosities dark bluish-green to dark green; elytral impressions bright green to bluish-violet, apices dark bluish-green with violet tints to dark green; prosternum metallic green to dark green medially; tarsi bluish-green, with some purple tints to dark green.

Distribution. This species has been collected only in two localities from **Mexico**: Guerrero: Acapulco, Taxco.

Differential diagnosis. *Lampetis mexicana* is similar to *L. viridicolor* sp. n. *Lampetis viridicolor* sp. n. dorsal surface is dark green with bluish and violet tints, impressions bright green, punctures bright green margined with blue; ventral surface bright green medially and bright green with brassy-green and reddish tints laterally, punctures bright green; antennae first segment dark green, the rest dark green with bluish tints; elytral disc with slightly impressed punctate striae, surface with few, small, finely punctate interstitial impressions, these isolated from each other.

***Lampetis (Spinthoptera) monilis* (Chevrolat, 1834) (Figs. 22, 52)**

Lampetis monilis Chevrolat, 1834:No. 3.

Psiloptera monilis; Gemminger & Harold, 1869:1367; Saunders, 1871:25; Waterhouse, 1882:8; Kerremans, 1892:62; 1900:288; 1903:94; 1910:146; Obenberger, 1926:167; Blackwelder, 1944:311; Westcott, *et al.* 1990:230.

Lampetis guatemalensis Thomson, 1879a:12.

Psiloptera guatemalensis Waterhouse, 1889:173; Kerremans, 1892:62 (syn. of *monilis*); 1900:288; 1903:94; 1910:146; Obenberger, 1926:167 (var. of *monilis*); Blackwelder, 1944:311.

Lampetis (Spinthoptera) monilis; Kurosawa, 1993:580.

Diagnosis. Slender; ventral surface reddish-green medially, red-coppery laterally; punctures and impressions bright green with short, recumbent, white setae; antennal first segment red-coppery, the rest dark brown, with brassy tints; pronotum bright green; elytral surface bright green with reddish tints at middle, reliefs reddish and greenish, with strongly impressed punctate striae, generally next four striae toward lateral margins with few, small, punctate, bright green interstitial impressions; first ventrite slightly concave along midline, concavity narrow, ventrite 2 flattened along midline.

Male redescription. Length 24.8 mm - 13.9 mm; width 9.0 mm - 4.7 mm. Head. Labrum bright green with brassy and redish tints, with few, small, shallow, not confluent punctures; clypeus bright green with some brassy and cupreous tints, anterior margin slightly emarginate at middle, with few, small, deep punctures at margins; front bright green, callosities reddish-green, slightly sinuate, with abundant, small, deep, confluent punctures, and few, small callosities, punctures bluish-green with scarce setae; vertex surface reddish-green; bases of mandibles bright green, with few, small, deep, confluent punctures; maxillary palps reddish-green. Pronotum: 1.6 times wider than long; widest at middle; lateral margins subparallel at base, slightly expanded at middle, then slightly obliquely converging to anterior angles; narrowest apically; lateral margins slightly carinate at middle to base; anterior and posterior margins weakly bisinuate, each with weak median lobe; posterior angles

slightly acute; disc moderately convex, flattened in midline toward base, surface with small, deep, sparse punctures, some in groups of three or four punctures medially; laterally with more confluent punctures and few, slight callosities. Scutellum: bright green with cupreous tints, small, transversely oval. Elytra: apices obliquely emarginate, outer and sutural angles dentiform; disc moderately convex, with strongly impressed punctate striae; surface slightly transversely impressed at base, and generally next the four striae toward lateral margins with few, small, punctate interstitial impressions; these with scarce setae. Prosternum: disc moderately convex, with numerous, small, deep, confluent punctures laterally, few small, deep punctures medially, but with numerous, confluent punctures along anterior margin; prosternal process: slightly convex; sulci with small, deep punctures; apex bluntly rounded. Mesosternum: without punctures medially, but with small, shallow, sparse punctures laterally. Mesepisternum and mesepimeron: with few, small, shallow, sparse punctures. Metasternum: flattened, with scarce, fine punctures, with fine setae medially; small, shallow, sparse punctures laterally. Metacoxae: along posterior margin with small, confluent punctures; at middle with small, deep, sparse punctures with scarce setae; toward internal lateral margin with scarce, fine punctures; toward external lateral margin with scarce, small, shallow punctures. Femora: surface reddish-green; with few, small, shallow punctures. Tibiae: reddish-green, with abundant, small, shallow, confluent punctures. Tarsi: bright green with reddish tints. Abdomen: first ventrite slightly concave along midline, concavity narrow, with few, fine punctures and bordered by slight, impunctate carina; ventrite 2 flattened along midline; ventrites 3-5 convex; apex of last visible ventrite feebly rounded with emargination at middle; abdominal surface with few, small, shallow punctures medially, abundant punctures laterally. Male genitalia as in figure 52.

Female. Length 28.5 mm - 17.2 mm; width 10.8 mm – 6.0 mm. Differs from male as follows: more robust in body shape; apex of last visible abdominal ventrite rounded with weak emargination at middle.

Type material studied. Male Lectotype designated here: [SYN-/ TYPE] [Mexique/ Sallé] [monilis/ Chevrolat/ TYPE] [Lectotype/ A.M. Corona des./ 2004] (BMNH). Males Paralectotypes: [SYN-/ TYPE] [monilis/ Chevr.] [Paralectotype/ A.M. Corona des./ 2004] (1, BMNH) (I consider that this specimen is *Lampetis (Spinthoptera) granulifera* [Laporte & Gory, 1837]); [SYN-/ TYPE] [Guatém./ Chevrolat] [monilis/ Chevrolat] [Paralectotype/ A.M. Corona des./ 2004] (1, BMNH). *Lampetis guatemalensis*: Female Holotype: [Gua.] [Type] [Guatemalensis/ Thoms. Type/ App. 1,12. Guatem] (MNHN).

Variation. This species (50 males and 70 females examined) varies in the coloration; dorsal surface bright green with reddish tints to bright green with reddish and yellowish tints or bluish green with yellowish tints; ventral surface reddish-green medially, red-coppery laterally to bright green or cupreous; punctures bright green to blue; clypeus and front bright green to bluish green or bright green with yellowish tints; vertex reddish-green to bright or dark green with reddish and cupreous tints; bases of mandibles bright green to bluish green; antennal first segment red-coppery to cupreous, the rest dark brown with brassy tints to dark brown with bright green and cupreous tints; pronotum bright green to bright green with reddish tints; scutellum bright green with cupreous tints to bright green with reddish tints, or cupreous; elytra impressions bright green to bright green margined with blue; femora and tibiae bright green with yellowish and reddish tints to bright green with bluish tints, or cupreous; tarsi bright green with reddish tints to bright green with bluish tints, or dark green.

Distribution. This species has been collected in **Costa Rica, El Salvador, Guatemala, Honduras, Mexico, and Nicaragua**. State and county records include the following: in El Salvador: Quezaltepeque. In Guatemala: Escuintla; Quetzaltenango: Hacienda El Reposo; Suchitepequez: Los Patos River, 14mi up; Jutiapa: Cañón de Monjoy. In Honduras: Comayagua: Siguatepeque; Santa Bárbara: 4mi SW Quimistan; Zacapa, La Hacienda; El Zamorano, Tegucigalpa, Dormitorio

Cabañas; El Zamorano, 30km NE Tegucigalpa, El Ciruelo; El Paraiso vic. Yuscaran; Francisco Morazán: Cedros; La Paz. In Mexico: Chiapas: Ocosingo; 17mi W P.N. Montebello; 7mi SW Ocozocoautla; 20km NW Ocozocoautla; Hwy. 195, 15km S Jct 190; 26km E Cintalapa; Oaxaca: 10mi SE Tapanatepec; Tabasco: Cárdenas; Veracruz: Jalapa. NICARAGUA: Nueva Segovia, Dipilto.

Fenology. Collected from May to December.

Differential diagnosis. *Lampetis monilis* is similar to *L. granulifera* and *L. cyanitarsis* sp. n. *Lampetis granulifera* is moderately robust; dorsal surface bright green laterally, bright green with reddish and yellowish tints medially; ventral surface reddish-green medially, red-coppery with yellowish tints laterally; punctures bright green; impressions yellowish; pronotal lateral margins slightly concave at base, slightly expanded at middle, then obliquely converging to anterior angles; elytra disc with strongly impressed punctate striae and next the second striae with many finely punctate interstitial impressions. *Lampetis cyanitarsis* sp. n. dorsal surface is bright green with reddish tints medially and laterally, punctures bright green margined with blue or violet; ventral surface red-coppery medially, bright green with reddish and brassy tints laterally, punctures bright green; antennal first segment bright green with brassy tints, the rest black with greenish tints; pronotum lateral margins subparallel before base, slightly expanded at middle and obliquely converging to anterior angles; elytral surface slightly impressed punctate striae, with few impressions along base and many, small, finely punctate interstitial impressions; first ventrite slightly concave along midline; other ventrites convex.

***Lampetis (Spinthoptera) obscura* Thomson, 1879a (Figs. 26, 56, 74)**

Lampetis obscura Thomson, 1879a:11.

Psiloptera obscura; Kerremans, 1903:93; 1910:134 (syn. of *thomsoni*); Waterhouse, 1889:172; Obenberger, 1926:169; Blackwelder, 1944:311.

Psiloptera thomsoni Kerremans, 1910:134 (replacement name for *obscura* Thomson, 1879a); Obenberger, 1926:169; Blackwelder, 1944:311.

Lampetis (Spinthoptera) thomsoni; Kurosawa, 1993:580.

Lampetis (Spinthoptera) obscura; Bellamy, 2004:258 (new status).

Diagnosis. Dorsal surface bright black with brassy tints, punctures brassy with large, recumbent, white-yellowish setae; ventral surface bright black with purple tints, punctures brassy with abundant setae; antennal three first segments bright black with violet and blue tints, the rest bright black with brassy green and violet tints; pronotum constricted at posterior margin, surface with a weakly impressed median channel extending from posterior margin to near anterior margin; elytral disc with slightly impressed punctate striae, four striae visible; first abdominal ventrite slightly concave along midline.

Male redescription. Length 21.7 mm - 15.1 mm; width 7.6 mm - 4.9 mm. Head. Bright black with brassy tints, punctures brassy with abundant, large, semierect, white-yellowish setae; callosities with brassy and violet tints. Labrum with abundant, small, shallow, confluent punctures; clypeus with group of small, shallow punctures, with impunctate areas; front sinuate, with numerous, large, punctures, and numerous, slight callosities, along margin of eyes with numerous, small, deep, brassy punctures with abundant setae; vertex with few, large, deep punctures; bases of mandibles bright black with violet or blue tints, with numerous, small, deep, not confluent punctures. Pronotum: 1.5 times wider than long; widest at middle; lateral margins concave at base, expanded and rounded at middle and converging to anterior angles; narrowest anteriorly; lateral margins slightly carinate at middle; anterior and posterior margins bisinuate, each with weak median lobe; posterior angles slightly acute; disc convex, with a weakly impressed median channel extending from posterior margin to near anterior margin, this impression finely punctate; surface with few, large, shallow punctures medially; laterally with abundant, larger, deep, more confluent punctures and few callosities. Scutellum: bright black with brassy green and violet tints; slightly

expanded transversally. Elytra: apices obliquely and slightly emarginate, outer and sutural angles slightly dentiform, outer angle more dentiform than sutural angle; disc convex, with slightly impressed punctate striae, four striae visible; surface transversely impressed basally, with numerous, small, deep, confluent punctures with abundant setae; next the second striae with many, small, finely punctate, brassy interstitial impressions, these commonly confluent in transverse and oblique groupings, toward lateral margins with more confluent impressions and numerous callosities. Prosternum: disc moderately convex, densely punctate laterally, with large, deep and confluent punctures and few callosities; scarce punctures medially; prosternal process: weakly convex; sulci with large, deep, confluent punctures, with abundant setae; apex bluntly rounded. Mesosternum: bright black, without punctures medially, but with abundant, large, deep, confluent punctures laterally. Metasternum: bright black with purple tints; surface flattened, finely punctate with fine setae medially; numerous, large, deep, confluent punctures laterally. Metacoxae: along posterior margin at middle with numerous, small, deep, confluent punctures; along anterior margin with numerous, small, not confluent punctures; toward internal lateral margin with numerous, small, confluent punctures; at middle with numerous, large, not confluent punctures with callosities. Femora: surface bright black with purple and green tints; with numerous, large punctures, with abundant setae. Tibiae: surface black with violet tints; with abundant setae. Tarsi: black with blue and violet tints; with abundant, large setae. Abdomen: first ventrite concave along midline, concavity narrow with scarce, fine punctures, and abundant, fine setae, and bordered by impunctate carinae forming a channel; ventrites 2-5 convex; apex of last visible ventrite truncate with weak emargination at middle; abdominal surface with abundant, large, confluent, irregular punctures. Male genitalia as in figure 56.

Female. Length 27.9 mm - 15.6 mm; width 10.0 mm - 5.3 mm.

Type material studied. Female Holotype: [Th./ Type] [Obscura/ (FF. Deyr. M.SS)./ Thoms. Type/ Ap. I. II. Mex.] [Ex Musaeo/ JAMES THOMSON] (MNHN).

Variation. This species (29 males and 31 females examined) varies in the coloration, dorsal and ventral surfaces bright black to bright greenish black; and scutellum shape, some specimens with rounded or oval scutellum.

Distribution. This species has been collected only in **Mexico**, state and county records include the following: Oaxaca: 7km NNW, Díaz Ordaz, 17°00 N, 96°26 W; N of Hwy. 190, 7km N Diaz Ordaz; Hwy. 175, 10km NE Oaxaca; km 40 Oaxaca-Guelatao, vic. Oaxaca; 8km NE Oaxaca, Hwy. 175; Ruins of Monte Alban; 4km NE Teotitlán del Valle; 9km NE Teotitlán del Valle; Puebla: vic. Coxcatlán; Veracruz: Tecolutla.

Adult host plants. On *Mimosa* sp., and *Quercus* sp. (Fagaceae).

Phenology. Collected from June to September.

Differential diagnosis. *Lampetis obscura* is similar to *L. cupreopunctata*. *Lampetis cupreopunctata* dorsal surface is black with impressions and punctures cupreous, ventral surface cupreous; pronotum with a weak midline impression extending from posterior margin almost to anterior margin; elytral disc with moderately impressed punctate striae.

***Lampetis (Spinthoptera) simplex* (Waterhouse, 1882) (Figs. 23, 53, 72)**

Psiloptera simplex Waterhouse, 1882:9; Kerremans, 1885:134; 1892:66; 1903:102; 1910:143; Dugés, 1891:4.

Psiloptera (Lampetis) simplex; Obenberger, 1926:168; Blackwelder, 1944:311.

Lampetis (Spinthoptera) simplex; Kurosawa, 1993:580.

Diagnosis. Dorsal surface black; ventral surface bright red medially, black with reddish tints laterally; punctures cupreous margined with red, with short, recumbent, white setae; antennae first segment red, the rest black with reddish tints; pronotal surface with numerous, small, deep, not confluent punctures medially; elytral surface

strongly impressed punctate striae, after fifth interval with few, small punctures; first ventrite feebly concave along midline, other ventrites convex.

Male redescription. Length 24.1 mm - 16.1 mm; width 8.1 mm - 5.4 mm. Head. Labrum bright red, with small, shallow, not confluent punctures; clypeus bright red with cupreous tints, anterior margin concave, with numerous, small punctures at margins, larger toward front, without punctures at middle; front flattened, black, callosities with reddish tints, with small, deep, confluent punctures and few, slight callosities; vertex black with reddish tints; bases of mandibles red, rugosely punctate, with small, deep, confluent punctures. Pronotum: 1.7 times wider than long, widest at middle; lateral margins subparallel at base, weakly expanded at middle, then slightly and obliquely converging to anterior angles; narrowest anteriorly; lateral margins carinate on middle to posterior margin; anterior and posterior margins slightly bisinuate with weak, broad median lobe; disc moderately convex, flattened in midline toward base; surface with numerous, small, deep, not confluent punctures medially; laterally with more confluent punctures and few, slight callosities. Scutellum: black with reddish tints; small, punctiform. Elytra: apices weakly, obliquely emarginate, outer and sutural angles not dentiform; disc moderately convex, with strongly impressed punctate striae; surface with scarce impressions along base, and after fifth interval with few, small punctures, these are deeper and numerous laterally, with few, slight callosities toward lateral margins, some punctures with fine setae. Prosternum: disc moderately convex; surface with scarce, small, deep, confluent punctures medially, more abundant and confluent laterally; prosternal process: flattened; sulci with small, deep, confluent punctures, with abundant setae; apex bluntly rounded. Mesosternum: surface with few, small, shallow punctures laterally, without punctures medially; punctures with few setae. Mesepisternum and mesepimeron: with few, small, not confluent punctures. Metasternum: flattened; with scarce, fine punctures medially; numerous, small, deep, not confluent punctures laterally. Metacoxae: surface with abundant, small, deep, confluent punctures medially; toward external

lateral margin with few, small, sparse punctures; toward internal lateral margin with scarce, fine punctures; along posterior margin with fine, confluent punctures. Femora: black, with reddish tints; with numerous, small, deep, not confluent punctures. Tibiae: black; densely punctate, with small, shallow, confluent punctures. Tarsi: black with bronze tints. Abdomen: first ventrite feebly concave along midline, this concavity narrow with few, fine punctures and bordered by weak, impunctate carina; other ventrites convex; apex of last visible ventrite feebly rounded with weak emargination at middle; abdominal surface densely and irregularly punctate. Male genitalia as in figure 53.

Female. Length 25.4 mm - 17.9 mm; width 8.9 mm - 6.3 mm. Differs from male as follows: more robust in body shape.

Type material studied. Female Lectotype: [Chontales,/ Nicaragua,/ T. Belt.] [*Psilopteral simplex*,/ (Type) Waterh.] [LECTOTYPE *Psiloptera simplex* Waterh. ♀/ Det. G. H. Nelson 1980] (BMNH). Female Paralectotype: [Chontales,/ Nicaragua,/ T. Belt.] [Paralectotype] (BMNH).

Variation. This species (16 males and 16 females examined) varies in coloration; dorsal surface black to black with red and bronze or blue tints; punctures cupreous margined with red to red.

Distribution. This species has been collected in **Costa Rica, El Salvador, Honduras, Mexico, and Nicaragua.** State and county records include the following: in Costa Rica: Port Parker; Guanacaste: Cañas; 20km SW Cañas; 14km S Cañas; La Pacífica, 7km N Cañas; 4km NW Cañas; 4km W Cañas; 10km N Brasilito; 8km NW Bagaces; 15km SW Bagaces; 24mi NW Liberia; 3km NO Nacaome, 100m, P.N. Barra Honda; Sta. Cruz, Lagunilla; 5km N Tlaran Ridge, above lag. Arenal. In El Salvador: La Unión: Cutuco. In Honduras: Choluteca: 19.5km E Choluteca; Francisco Morazán: Tegucigalpa; Comayagua. In Mexico: Chiapas: 9mi NW El Ocotál; Veracruz: Actopan. In Nicaragua: León; Managua: Lake Xiloá.

Adult host plants. On *Cordia inermis* (Boraginaceae), and *Byrsonima* sp. (Malpighiaceae).

Phenology. Collected from January to December.

Differential diagnosis. *Lampetis simplex* is similar to *L. christophi* and *L. hondurensis* sp. n. *Lampetis christophi* dorsal and ventral surfaces are dark brown with olive-green and purple tints; dorsal surface with punctures olive green margined with purple; ventral surface with punctures purple; pronotal lateral margins slightly concave at base, slightly expanded at middle, then obliquely converging to anterior angles; elytra with purple tints laterally, apices purple, disc with slightly impressed punctate striae, first three striae clearly visible. *Lampetis hondurensis* sp. n. is moderately robust; surface dark brown with bronze and purplish tints, punctures brassy margined with purple; antennae black with bronze tints; pronotal lateral margins subparallel at base, slightly expanded and rounded before middle and then slightly obliquely converging to anterior angles; elytral surface with moderately impressed punctate striae, and few punctate interstitial impressions; first ventrite slightly concave along midline, ventrite 2 flattened.

***Lampetis (Spinthoptera) srdinkoana* (Obenberger, 1924a) (Figs. 24, 54)**

Psiloptera (Lampetis) srdinkoana Obenberger, 1924a:101; 1926:169; Blackwelder, 1944:311.

Lampetis (Spinthoptera) srdinkoana; Kurosawa, 1993:580.

Diagnosis. Robust; dorsal and ventral surfaces reddish brown with golden green tints; punctures bright green margined with golden green; head reddish brown with golden green tints; antennae dark brown with golden green tints; pronotum slightly flattened in midline toward base, along lateral margins with a small depression; along elytral lateral margins with a depression formed by abundant, fine, confluent punctures; first and second ventrites slightly concave along midline.

Male redescription. Length 24.8 mm - 21.9 mm; width 9.2 mm - 7.9 mm. Head.

Labrum with few, shallow, punctures, with few setae; clypeus with few, small, deep punctures, punctures larger and deeper near front; front sinuate, with numerous, small, deep, confluent punctures, and numerous, slight callosities, with few setae; along border of the eyes with abundant, small, confluent punctures, with abundant setae; vertex with few, large, deep, not confluent punctures, with scarce setae; bases of mandibles with numerous, small, deep, confluent punctures. Pronotum: 1.5 times wider than long; widest at middle; lateral margins subparallel near base, slightly expanded at middle, then obliquely converging to anterior angles, narrowest anteriorly; lateral margins discontinuously carinate at middle toward base; anterior and posterior margins slightly bisinuate, anterior margin with weak median lobe, posterior margin with weak, broad lobe; posterior angles slightly acute; disc slightly convex, flattened in midline toward base; surface with numerous, small, deep, confluent punctures medially and laterally, along lateral margins with a depression formed by abundant, small, confluent punctures. Scutellum: reddish brown with golden green tints; small, oval. Elytra: apices obliquely emarginate; outer angle more dentiform than sutural angle; disc moderately convex, with strongly impressed punctate striae formed by small, deep punctures toward apices, and larger, deeper punctures at anterior margin; eight striae visible; surface with scarce impressions along base, and intervals with scarce, small punctures, these clothed with fine setae; along lateral margins with a depression formed by abundant, small, deep, confluent punctures, with fine setae, this depression with bright or golden green and reddish tints. Prosternum: disc convex, with numerous, small, deep, confluent punctures laterally; few, less confluent medially; prosternal process: flattened; sulci with small, deep, confluent punctures; apex bluntly rounded. Mesosternum: without punctures medially, but with few, small, deep punctures laterally. Mesepisternum and mesepimeron: with few, small, deep, not confluent punctures. Metasternum: flattened medially, finely punctate and clothed with fine setae medially; laterally with numerous, small, deep, not confluent punctures. Metacoxae: along posterior margin with small,

shallow punctures; few, small, deep, confluent punctures medially; with scarce punctures laterally. Femora: reddish brown with golden green tints, with few, small, shallow, not confluent punctures. Tibiae: reddish brown with golden green tints; with numerous, small, shallow punctures. Tarsi: black with bluish green tints, punctures red. Abdomen: first ventrite slightly concave along midline, concavity narrow and finely punctate, with fine setae and bordered weakly by impunctate carina; ventrite 2 slightly flattened along midline; ventrites 3-5 convex; apex of last visible ventrite feebly rounded with weak emargination at middle; abdominal surface with abundant, small, shallow, confluent punctures. Male genitalia as in figure 54.

Female. Length 27.6 mm - 21.8 mm; width 10.8 mm - 7.8 mm.

Type material studied. Male Lectotype designated here: [Costa Rica/ Turrialba] [Typus] [Psiloptera srdinkoana/ Type/ Det. Dr. Obenberger] [Mus. Nat. Pragae/ Inv. 20683] [Lectotype/ A.M. Corona des./ 2004] (NMPC). Male Paralectotype: [Coll.I.R.Sc.N.B./ Costa Rica/ Koll.DrA.Frh.v.Hoschek/ Turrialba,/ C.Rica] [Syntype] [Paralectotype/ A.M. Corona des./ 2004] (ISNB).

Variation. This species (2 males and 3 females examined) varies in the coloration; ventral surface reddish brown with golden green tints to reddish brown with reddish and bluish tints; setae from white to yellowish-white.

Distribution. This species is known only in **Costa Rica**: Cártago: Turrialba; Guanacaste: 3km SE Río Naranjo; Estación Las Pailas, P.N. Rincón de la Vieja.

Fenology. Collected from June to November.

Differential diagnosis. *Lampetis srdinkoana* looks like to *L. hirtomaculata*. *Lampetis hirtomaculata* is metallic red with dark bronze tints below; punctures and impressions bright green; metasternum and metacoxae with reddish tints laterally; pronotum dark bronze with metallic reddish tints, surface along anterior margin to midline with a slight line of abundant, small, confluent punctures; elytra dark bronze with purplish

and brassy-green tints, with four transversal impressions from lateral margins to middle, the last one is smaller than the rest.

***Lampetis (Spinthoptera) straba* (Chevrolat, 1867) (Figs. 25, 55, 65)**

Psiloptera straba Chevrolat, 1867:575; Gemminger & Harold, 1869:1369; Saunders, 1871:24; Gundlach, 1891:158; Kerremans, 1892:66; 1903:102; 1910:58.

Psiloptera (Lampetis) straba; Fisher, 1925:58; Obenberger, 1926:169; Blackwelder, 1944:311.

Lampetis (Spinthoptera) straba; Kurosawa, 1993:580.

Diagnosis. Ventral surface red-coppery at middle, dark brown with red-coppery tints laterally; punctures red-coppery margined with brassy-green or brassy, with short, semierect, white setae; impressions red-coppery with cupreous tints; antennal first segment red-coppery, the rest dark brown with cupreous and red-coppery tints; pronotum dark brown with cupreous tints, surface sinuate at sides of midline near basal margin; elytra dark brown with cupreous tints, reliefs reddish, surface with strongly impressed punctate striae, and with many interstitial impressions; first ventrite weakly concave along midline, ventrite 2 flattened along midline.

Female Holotype redescription. Total body length 31.2 mm; width 10.6 mm. Head. Labrum red coppery, with cupreous tints, with numerous, small, shallow, confluent punctures, with few setae; clypeus red-coppery, anterior margin concave without punctures, toward posterior margin with numerous, small, deep, not confluent punctures; front sinuate, dark brown, callosities cupreous and red-coppery, punctures cupreous margined with brassy or golden-green, coarsely and rugosely punctate with numerous, large, deep, confluent punctures and some large, strong callosities; vertex dark brown with cupreous and reddish-coppery tints, punctures cupreous margined with brassy or golden-green; bases of mandibles dark brown with cupreous tints, punctures cupreous margined with brassy-green, rugosely punctate with small, deep, confluent punctures; maxillary palps red-coppery with purple tints. Pronotum: 1.6 times

wider than long, widest at middle; lateral margins slightly concave before base, expanded at middle and obliquely converging to anterior angles, narrowest anteriorly; lateral margins carinate; anterior and posterior margins slightly bisinuate with slight broad median lobe; posterior angles slightly acute; disc moderately convex, slightly flattened in midline toward base, surface sinuate at sides of midline near posterior margin; along lateral margins, and anterior and posterior margins with a weak depression, but on anterior margin this depression is interrupted at middle; at sides of midline with two weak longitudinal impressions from anterior to posterior margins, these impressions formed by numerous, small, shallow, confluent punctures, and usually clothed with white pulverulence; the rest of surface without punctures. Scutellum: dark brown with red coppery tints; transversely oval. Elytra: apices obliquely emarginate, outer and sutural angles dentiform; disc moderately convex with slightly impressed punctate striae, these formed by fine, shallow punctures; surface with few, small impressions along anterior margin and many, large, finely punctate interstitial impressions, usually isolated from each other, and clothed with short setae, and covered with white pulverulence; laterally with deep, confluent punctures, and slight callosities. Prosternum: disc slightly convex; surface with abundant, small, deep, confluent punctures laterally, with scarce punctures medially, punctures with few setae; prosternal process: slightly convex; sulci with fine, confluent punctures, with few setae; apex bluntly rounded. Mesosternum: surface with numerous, small, shallow, confluent punctures laterally, without punctures medially. Mesepisternum: with few, small, shallow, not confluent punctures. Mesepimeron: without punctures. Metasternum: flattened, with scarce, fine punctures medially, with fine setae; abundant, small, deep, very confluent punctures laterally. Metacoxae: surface with abundant, small, deep, confluent punctures at middle to external lateral margin; scarce, fine punctures toward internal lateral margin. Femora: red-coppery with brassy tints at light; with numerous, small, deep, punctures, these confluent in groups. Tibiae: red-coppery, punctures cupreous; surface with few, fine, not confluent

punctures. Tarsi: dark brown with cupreous, reddish and bluish tints. Abdomen: with first ventrite weakly concave along midline, this concavity with scarce, fine punctures and not bordered by carina; ventrite 2 slightly flattened along midline; ventrites 3-5 convex; apex of last visible ventrite rounded; abdominal surface sparsely and irregularly punctate medially, coarsely and irregularly punctate laterally.

Male. Length 25.4 mm - 20.9 mm; width 8.8 mm - 6.9 mm. Differs from male as follows: apex of last visible abdominal ventrite weakly rounded with slight emargination at middle. Male genitalia as in figure 55.

Type material studied. Female Holotype: [Holo-/ type] [straba/ Chevr.] (BMNH).

Variation. Female: length 29.2 mm - 21.9 mm; width 9.9 mm - 8.1 mm. This species (six males and four females examined) varies in the coloration; dorsal surface dark brown to dark brown with strong reddish tints; elytra with bluish tints at apices; labrum red-coppery with cupreous tints to brassy-green; ventral surface red-coppery at middle, dark brown with red-coppery tints laterally to cupreous with purple and bluish tints; femora red-coppery to cupreous; tibiae red-coppery to cupreous with strong purple tints.

Distribution. This species has been found only from **Cuba**: Isla de la Juventud: Santa Fé; Columbia; Sabanilla: N Sabanilla, Oriente Prov.; Holguín: Woodfred; Sierra de Mayari; 14km N Viñales.

Adult host plant. On *Ficus elastica* (Moraceae) (Fisher 1925).

Phenology. Collected from March to September.

Differential diagnosis. *Lampetis straba* is similar to *L. bahamica*. *Lampetis bahamica* ventral surface is dark brown with cupreous and blue tints, punctures olive-green; head dark brown with cupreous tints; pronotum and elytra with shining, bluish, purplish, cupreous tints; pronotum with two slight transverse arcuate impressions; elytra with many large interstitial impressions.

***Lampetis (Spinthoptera) tigrina*, sp. n. (Figs. 27, 57, 71)**

Diagnosis. Slender; ventral surface purple with greenish tints; punctures dark green margined with bright green; punctures with short, semierect, white setae; labrum and clypeus purple with greenish tints, punctures bright green; antennal five first segments purple, the rest black with purplish and greenish tints; pronotum purple with greenish tints, with strong and broad depression at middle of base; elytra bright green with reliefs purple medially, bright green with reliefs purple and bluish-green laterally, apices purple, disc convex with slightly impressed punctate striae, these striae with fine punctures, three striae difficultly visible; first ventrite slightly concave along midline, ventrite 2 slightly flattened.

Male description. Head. Labrum granulose, with few, small, shallow punctures; clypeus anterior margin slightly concave, without punctures medially, with few, small, deep punctures near front; front purple, punctures bright green, slightly sinuate, coarsely and rugosely punctate with abundant, small, deep, confluent punctures and numerous, slight callosities, punctures with abundant setae; vertex purple, with few, small, shallow punctures; bases of mandibles purple with bluish tints, with few, small, deep, not confluent punctures, more confluent near apices; maxillary palps purple with greenish tints at bases. Pronotum: 1.7 times wider than long, widest at middle; lateral margins moderately concave at base, expanded and rounded before middle and obliquely converging to anterior angles; narrowest anteriorly; lateral margins carinate; along anterior margin to middle with a slight line of fine, deep, confluent punctures; anterior margin weakly bisinuate with weak median lobe; posterior margin slightly bisinuate with slight, broad median lobe; posterior angles slightly acute; disc convex, flattened in midline toward base and with strong, broad depression at midline near base; surface with few, small, confluent punctures, with impunctate areas medially; laterally with numerous, small, deep, confluent punctures and few callosities. Scutellum: purple with greenish tints, small, punctiform. Elytra: apices slightly, obliquely emarginate, outer and sutural angles slightly dentiform; disc convex

with slightly impressed punctate striae, these striae with fine punctures, three striae difficultly visible; surface with few impressions along anterior margin and many, small, finely punctate, interstitial impressions, and the intervals with numerous, small, shallow punctures; these commonly confluent in transverse and oblique groupings, with abundant callosities laterally. Prosternum: disc moderately convex; surface with abundant, small, deep, confluent punctures laterally, and slight callosities; without punctures medially, punctures with abundant setae; prosternal process: slightly convex; sulci with small, shallow, confluent punctures with numerous setae; apex bluntly rounded. Mesosternum: surface with numerous, small, shallow, confluent punctures laterally, without punctures medially; with abundant, setae. Mesepisternum and mesepimeron: purple with greenish and yellowish tints; with few, small, shallow, not confluent punctures. Metasternum: flattened and with numerous, fine punctures medially, with numerous, fine setae; abundant, small, deep, confluent punctures laterally. Metacoxae: with few, small, shallow, not confluent punctures toward external and internal lateral margins; abundant, confluent punctures at middle. Femora: purple with greenish tints; with numerous, small, deep, confluent punctures. Tibiae: purple with greenish tints; densely punctate. Tarsi: purple with greenish tints. Abdomen: first ventrite slightly concave along midline, this concavity is narrow and bordered with slight, impunctate carina, and with numerous, small, shallow punctures; ventrite 2 slightly flattened; other ventrites convex; apex of last visible ventrite feebly rounded with weak emargination at middle; abdominal surface with abundant, small, shallow, confluent, irregular punctures with abundant setae. Length 20.3 mm - 16.8 mm; width 6.8 mm - 5.5 mm. Male genitalia as in figure 57.

Female. Unknown.

Type material. Male Holotype: [MEXICO: Oaxaca/ 3 mi. se. Matatlan/ (Microondas road)/ elev. 6650 ft.] [July 17, 1987/ Kovarik, Schaffner] (GHNC). Males Paratypes: [MEXICO, Oaxaca/ 7-8 mi. E Mnlá./ 6200' Jul 3-9, '94/ E. Giesbert, coll.] (1, EMEC);

[Mex: Oaxaca,/ Totolapan, 18mi./ NW. VIII-29-63] [J. Doyen/ Collector] (1, EMEC); [MEX., Oaxaca/ km. 79, Carretera/ Pto. Angel/ 10-IX-1979/ E. Mariño] (1, RLWE).

Etymology. The name of this species is derived from the Latin substantive *tigris* (tiger) referring to the disposition of the coloration similar to a tiger.

Variation. This species varies in the coloration: dorsal and ventral surfaces purple with green tints to purple with greenish, yellowish and bluish tints; punctures from dark green margined with bright green to golden green; tarsi from purple with greenish tints to purple with greenish and bluish tints.

Distribution. Kwon only from **Mexico**: Oaxaca, 3mi SE Matatlan; 7-8mi E Matatlan; 18mi NW Totolapan; km 79, Carretera Pto. Angel.

Differential diagnosis. *Lampetis tigrina* sp. n. is similar to *L. monilis* and *L. chamela* sp. n. *Lampetis monilis* ventral surface is reddish-green medially, red-coppery laterally; punctures and impressions bright green; pronotum bright green, lateral margins subparallel at base, slightly expanded and rounded at middle, then obliquely converging to anterior angles; elytral surface bright green with reddish tints at middle, reliefs reddish and greenish, with strongly impressed punctate striae, generally next the four striae toward lateral margins with few finely punctate, interstitial impressions; and second ventrite flattened along midline. *Lampetis chamela* sp. n. dorsal surface is red-coppery medially, bright green laterally; ventral surface bright red-coppery; antennal first segment bright green, the rest dark brown with bright green and violet or blue tints; pronotal lateral margins slightly concave at base, expanded at middle, then obliquely converging to anterior angles; elytra color as far as the fourth striae red-coppery, toward lateral margins bright green, apices bright green with blue tints, disc with feebly impressed punctate striae and with finely punctate, interstitial impressions, usually isolated from each other.

***Lampetis (Spinthoptera) torquata* (Dalman, 1823) (Figs. 28, 58, 66)**

Buprestis torquata Dalman, 1823:54; Laporte & Gory, 1836:36; Jacquelin du Val, 1857:59.

Psiloptera torquata Chevrolat, 1867:576; Gemminger & Harold, 1869:1369; Saunders, 1871:23; Gundlach, 1891:159; Kerremans, 1892:66; 1903:93; 1910:55.

Psiloptera (Lampetis) torquata Fisher, 1925:51; Obenberger, 1926:169; 1934:54; Blackwelder, 1944:311.

Psiloptera (Lampetis) torquata var. *jamaicensis* Fisher, 1925:53; Théry, 1927:254; Obenberger, 1926:169; Blackwelder, 1944:311.

Lampetis (Spinthoptera) torquata; Kurosawa, 1993:580.

Diagnosis. Dorsal surface dark green, punctures and impressions golden-green margined with purple; ventral surface olive-green medially, becoming purple laterally, punctures golden-green; punctures with short, recumbent, white setae; antennal first segment golden-green, the rest segments dark brown with golden-green tints; pronotal surface with two transverse arcuate impressions; along elytral lateral margin with a longitudinal depression; first ventrite slightly concave along midline.

Male redescription. Length 21.5 mm - 15.7 mm; width 8.6 mm - 5.9 mm. Head. Punctures golden-green. Labrum golden-green, with numerous, small, shallow, confluent punctures; clypeus dark green, with numerous, larger than those of the labrum, deep, confluent punctures; front dark green, flattened with numerous, large, deep, confluent punctures and numerous callosities; along margin of eyes with abundant setae; vertex dark green, with few, not confluent punctures; bases of mandibles golden-green with dark green tints, punctures dark green, with numerous, small, deep, confluent punctures and slight callosities; maxillary palps golden-green with reddish tints. Pronotum: 1.6 times wider than long; widest at middle and base; lateral margins slightly concave at base, expanded at middle and rounded to anterior angles, slightly narrowest apically; lateral margins discontinuously carinate on middle toward base; anterior margin bisinuate, with weak median lobe; basal margin bisinuate with large rounded median lobe; posterior angles slightly acute; disc

convex, slightly flattened along midline toward base; surface with two transverse arcuate impressions, which are densely covered with a golden-yellow pulverulence, one along anterior margin rather broadly interrupted at the middle, the other near posterior margin; these impressions with numerous, fine, confluent punctures, with abundant setae; the rest of surface with impunctate areas extensive, these areas with granulose texture, becoming more granulose toward lateral margins. Scutellum: bronzy-green, transversely oval, slightly granulose. Elytra: apices weakly and obliquely emarginate; outer angle dentiform, sutural angle not dentiform; disc moderately convex, with slightly impressed punctate striae; surface with few transverse impressions basally, and many groups of few, small, deep punctures between striae, punctures coarse and irregularly placed, with fine setae; along lateral margin with a longitudinal depression, which is covered with golden-yellow pulverulence similar to that on the pronotum. Prosternum: disc moderately convex, with numerous, small, deep, confluent punctures, and slightly callosities laterally; without punctures at midline; prosternal process: convex, sulci with abundant setae, apex bluntly rounded. Mesosternum: olive-green with dark green tints, surface without punctures medially, but with abundant, small, deep, confluent punctures laterally. Mesepimeron and mesepisternum: with abundant, small, shallow, not confluent punctures, with abundant setae. Metasternum: surface flattened, with few, fine, not confluent punctures and clothed with fine setae medially; laterally with numerous, small, shallow, not confluent punctures, with some impunctate areas. Metacoxae: with numerous, large, deep, confluent punctures, and slight callosities medially; abundant, small, shallow punctures, with abundant setae toward external lateral margin to middle; toward internal lateral margin with scarce, small, shallow punctures. Femora: surface dark green, punctures golden-green with few, small, shallow, not confluent punctures. Tibiae: surface dark green, punctures golden-green; with numerous, small, shallow, not confluent punctures. Tarsi: dark green with some cupreous and golden-green areas. Abdomen: first ventrite slightly concave along midline, with few, fine

punctures, this concavity bordered by impunctate carinae; ventrites 2-5 convex; apex of last visible ventrite feebly rounded with weak emargination at middle; abdominal surface densely punctate, with abundant, small, shallow, not confluent punctures. Male genitalia as in figure 58.

Female. Length 30.9 mm - 17.9 mm; width 12.1 mm - 6.9 mm. Differs from male as follows: more robust in body shape.

Type material. Not studied here.

Variation. This species (50 males and 59 females examined) varies in the coloration; head from dark green to olive green; pronotum dark green to dark green with bronzy green tints; scutellum dark green to bronzy green; ventrites olive-green to dark green on the median parts. The specimens from Jamaica are similar in shape with another localities, but they differ from the rest in color: head reddish black, punctures red-coppery margined with olive tints; antennal first segment red-coppery, the rest black; maxillary palps red-coppery; pronotum, elytra and femur reddish black, punctures and impressions olive-green; scutellum red-coppery; ventral surface olive-green; tibiae red-coppery, punctures olivaceous.

Distribution. This species has been collected in **Cuba**, **Haiti**, and **Jamaica**. State and county records include the following: in Cuba: Sabana, La Mar, Oriente; Ciego de Ávila: Baraguá; Cienfuegos: Cayamas; La Milpa; N Cien Fuegos; Granma: Río Cauto; Guantánamo; Habana: Habana; Güines; Marianao H.; Holguín: Holguín; Isla de la Juventud: Punta del Gate; Las Tunas: Central Jaromú; Pasa Cavado; Pinar del Rio: Punta San Juan; Santa Clara; Santiago de Cuba: Aguadores, on the coast near Santiago de Cuba; Ciudadamar, nr. Santiago. In Haiti: Nord-Ouest: Cayenne (1M, MNHN).

Adult host plants. On *Acacia farnesiana* (Fabaceae), and *Saccharum officinalis* (Gramineae).

Fenology. Collected from February to December.

Differential diagnosis. Similar to *Lampetis aurifera*. *L. aurifera* dorsal surface is strong purple with dark-green and golden-green tints; head golden green; pronotal impressions as follows: a longitudinal median one, broader posteriorly and feebly interrupted in front of middle; a rather broad one on each side along anterior margin; a narrow one along lateral margins but not reaching to the posterior angles; and a transversely oblique one behind the middle; elytra without marginal impressions.

***Lampetis (Spinthoptera) viridicolor*, sp. n. (Figs. 29, 59)**

Diagnosis. Dorsal surface dark green with bluish and violet tints, impressions bright green, punctures bright green margined with blue; ventral surface bright green medially and bright green with brassy-green and reddish tints laterally, punctures bright green; punctures with short, recumbent, white setae; antennal first segment dark green, the rest dark green with bluish tints; pronotum dark green with bluish tints; elytral surface with slightly impressed punctate striae, with few, small, finely punctate, interstitial impressions, these isolated from each other; first ventrite slightly concave along midline, other ventrites convex.

Male description. Length 21.5 mm - 17.6 mm; width 7.6 mm - 6.0 mm. Head. Labrum dark green with brassy-green tints, with few, small, shallow punctures; clypeus dark green with brassy-green tints, punctures bright green, anterior margin concave, with scarce punctures medially, with few, small, deep punctures toward margins; front dark green, callosities with brassy-green tints, punctures dark green, slightly sinuate, coarsely and rugosely punctate with abundant, small, deep, confluent punctures and numerous, strong callosities; vertex dark green with brassy-green tints; bases of mandibles dark green, with numerous, small, deep, confluent punctures; maxillary palps dark green. Pronotum: 1.6 times wider than long, widest at middle; lateral margins subparallel at base, slightly expanded and rounded at middle and then slightly obliquely converging to anterior angles; narrowest anteriorly; lateral margins slightly carinate at middle to posterior margin; along anterior margin to midline with a

slight line of fine, confluent punctures; anterior and posterior margins weakly bisinuate with weak median lobe; posterior angles slightly acute; disc convex, flattened in midline toward base; surface with few, small, deep, sparse punctures near base, confluent near anterior margin medially; larger, abundant, confluent punctures laterally, with few, strong callosities. Scutelum: black with greenish and reddish tints, small, punctiform. Elytra: apices obliquely emarginate, outer and sutural angles dentiform; disc moderately convex, with slightly impressed punctate striae, the striae with small, shallow, confluent punctures; surface with few impressions along base and few, small, finely punctate, interstitial impressions, isolated from each other, laterally these impressions are more numerous, confluent, larger, and with strong callosities; impressions with few setae. Prosternum: disc moderately convex; surface with abundant, small, deep, confluent punctures, and slight callosities laterally; with few punctures medially; prosternal process: flattened; sulci with small, deep, confluent punctures; apex bluntly rounded. Mesosternum: surface with numerous, small, deep, confluent punctures laterally, without punctures medially. Mesepisternum and mesepimeron: with numerous, small, shallow, not confluent punctures. Metasternum: flattened, with few, fine punctures medially, with fine setae; abundant, small, deep, confluent punctures laterally. Metacoxae: with scarce, small, shallow, sparse punctures at internal lateral margin; numerous and confluent at middle; toward external lateral margin with few, small, deep punctures; along posterior margin to middle with numerous, small, deep, confluent punctures. Femora: bright green, dark green at bases; with few, small, deep punctures medially, numerous punctures laterally. Tibiae: bright green; densely punctate, with abundant, small, shallow, confluent punctures. Tarsi: dark green with bluish and purplish tints. Abdomen: first ventrite slightly concave along midline, this concavity is narrow and bordered with impunctate carina, and with numerous, fine punctures; other ventrites convex; apex of last visible ventrite feebly rounded with emargination at middle; abdominal surface

with abundant, small, shallow, confluent, irregular punctures with abundant setae. Male genitalia as in figure 59.

Female. Length 28.3 mm - 15.7 mm; width 10.6 mm - 5.7 mm. Differs from male as follows: more robust on body shape.

Type material. Male Holotype: [MEXICO: Chiapas, Mu-/nicipio La Trinita-/ ria, Lagunas de Mon-/ tebello, alt. 1371m/ 2-XI-1976/ D.E. & J.A. Breedlove/ Cal. Acad.Sci. Coll.] (CASC). 11(3M, 8F) Paratypes: [MEXICO: Chiapas, Mu-/nicipio La Trinita-/ ria, Lagunas de Mon-/ tebello, alt. 1371m/ 2-XI-1976/ D.E. & J.A. Breedlove/ Cal. Acad.Sci. Coll.] (2M, 6F, CASC); [MEXICO, CHIAPAS/ "EL AGUACERO"/ 16km W OCOZOCOAUTLA/ OCT 16-23, 1988/ E. GIESBERT, COLL.] (1M, 1F, EMEC); [HONDURAS: Morazan/ Dept., San Francisco/ 2.7km S Olancho line/ 3-III-1990, S.W.Dunkle] (1F, FSCA).

Etymology. The name of this species is derived from the Latin adjective *viridis* (green) and substantive *color* (colour) referring to the green coloration of the body of this species.

Variation. This species varies in the coloration: ventral surface bright green medially to reddish-green.

Distribution. This species has been collected only in **Honduras** and **Mexico**. State and county records include the following: in Honduras: Francisco Morazán: San Francisco, 2.7km S Olanchito. In Mexico: Chiapas: La Trinitaria, Lagunas de Montebello; "El Aguacero", 16km W Ocozocoautla.

Differential diagnosis. *Lampetis viridicolor* sp. n. is similar to *L. mexicana* and *L. monilis*. *Lampetis mexicana* ventral surface has punctures metallic green; punctures bright green; pronotum dark bluish-green, lateral margins slightly concave before base, expanded at middle and rounded to anterior angles; elytra dark bluish-green with violet tints; disc with slightly impressed punctate striae, first three striae clearly visible, surface with many, large, finely punctate, interstitial impressions. *Lampetis*

monilis is slender, dorsal surface reddish-green medially, red-coppery laterally; punctures and impressions bright green; pronotum bright green, lateral margins subparallel at base, slightly expanded and rounded at middle, then obliquely converging to anterior angles; elytral surface bright green with reddish tints at middle, reliefs reddish and greenish, with strongly impressed punctate striae, generally next four striae toward lateral margins with few finely punctate, interstitial impressions; first ventrite slightly concave along midline, ventrite 2 flattened along midline.

***Lampetis (Spinthoptera) viridimarginalis*, sp. n. (Figs. 30, 60)**

Diagnosis. Ventral surface metallic red with greenish and brassy tints, punctures bright green; dorsal surface with punctures bright green margined with dark green; punctures with short, recumbent, white setae; antennae first segment metallic red with greenish tints, the rest black with reddish and greenish or bluish tints; pronotum metallic red medially, metallic red with green tints laterally; elytra metallic red medially, bright green laterally, apices reddish; abdomen first ventrite slightly concave along midline, other ventrites convex.

Male description. Length 22.7 mm - 17.9 mm; width 7.9 mm - 6.1 mm. Head. Punctures bright green. Labrum metallic red with green and brassy tints, with numerous, small, shallow punctures; clypeus metallic red with green and brassy tints, anterior margin concave, without punctures medially, with few, small, deep punctures; front metallic red with brassy tints, sinuate, with numerous, small, deep, confluent punctures and strong callosities; vertex metallic red; bases of mandibles metallic red with brassy tints, with numerous, small, deep punctures, confluent near apices; maxillary palps metallic red. Pronotum: 1.5 times wider than long, widest at middle; lateral margins slightly subparallel at base, weakly expanded at middle and obliquely converging to anterior angles; narrowest anteriorly; lateral margins carinate at middle to base; along anterior margin to middle with a slight, shallow line of fine, shallow, confluent punctures; anterior margin weakly bisinuate with weak median lobe;

posterior margin slightly bisinuate with slight, broad median lobe; posterior angles slightly acute; disc moderately convex, flattened in midline toward base; surface with few, small, deep punctures, with impunctate areas medially; laterally with numerous, small, deep confluent punctures, and few callosities. Scutellum: metallic red, small, punctiform. Elytra: apices slightly and obliquely emarginate, outer and sutural angles slightly dentiform; disc convex with slightly impressed punctate striae, the striae with small, shallow punctures; surface with scarce impressions along base and scarce, small, finely punctate, interstrial impressions, and intervals with few, fine, shallow, confluent punctures medially, and numerous punctures and numerous, small, slight callosities laterally. Prosternum: disc moderately convex; surface with numerous, small, deep, confluent punctures laterally, forming slight callosities; without punctures medially; prosternal process: flattened; sulci with small, shallow, confluent punctures; apex bluntly rounded. Mesosternum: surface with few, small, shallow, confluent punctures laterally; without punctures medially. Mesepisternum and mesepimeron: metallic red with brassy tints; with few, small, shallow, sparse punctures. Metasternum: flattened, with few, fine punctures medially, with fine setae; numerous, small, deep, confluent punctures laterally. Metacoxae: with few, small, shallow, sparse punctures toward external lateral margin; abundant, confluent punctures at middle; scarce, fine punctures toward internal lateral margin. Femora: metallic red with greenish and brassy tints; with numerous punctures. Tibiae: metallic red with brassy and greenish tints; densely punctate. Tarsi: metallic red with purple and green tints. Abdomen: first ventrite slightly concave along midline, this concavity is narrow and bordered with broad, impunctate carina, and with numerous, fine punctures, with numerous, fine setae; other ventrites convex; apex of last visible ventrite feebly rounded with weak emargination at middle; abdominal surface with abundant, small, shallow, confluent, irregular punctures with abundant setae. Male genitalia as in figure 60.

Female. Length 24.3 mm - 20.4 mm; width 8.6 mm - 7.0 mm. Differs from male as follows: more robust; apex of last visible abdominal ventrite slightly rounded.

Type material. Male Holotype: [HOND: Francisco Morazan/ 15.0km NW Tegucigalpa/ 4-VIII-79 1342m/ 14088717 ELSleeper] (CLBC). 5(3M, 2F) Paratypes: [HONDURAS: D.C./ 8km SE Tegucigalpa/ 27.VII.1977/ CW&L/ O'Brien & GBMarshall] (1M, CLBC); [HOND: Francisco Morazan/ 15.0km NW Tegucigalpa/ 4-VIII-79 1342m/ 14088717 ELSleeper] (1M, CLBC); [GUATML. Zacapa 12-14/ km S Sn Lorenzo 1-2000'/ June 3-6.1989/ J. E. Wappes] (1F, JEWC); [GUATML. Zacapa 12-14/ km S Sn Lorenzo 1-2000'/ June 3-6 1989/ J. E. Wappes] (1F, GHNC); [La Paz, Hond/ 10-6-81] [9864/ clase81] (1M, USNM).

Etymology. The name of this species is derived from the Latin adjective *viridis* (green) and substantive *margo* (margin), referring to the green coloration along of the lateral margins of the elytra.

Variation. This species varies in the coloration: dorsal surface metallic red to reddish black with purple and cupreous tints medially, and bright green to bluish green laterally; ventral surface metallic red to red-coppery.

Distribution. This species has been collected only in **Guatemala** and **Honduras**. State and county records include the following: in Guatemala: Zacapa: Zacapa 12-14km S San Lorenzo. In Honduras: La Paz; Francisco Morazán: 15km NW Tegucigalpa; 8km SE Tegucigalpa.

Differential diagnosis. *Lampetis viridimarginalis* sp. n. is similar to *L. chalconota*. *Lampetis chalconota* dorsal surface is red-coppery medially, bright green laterally; ventral surface bright red-coppery; antennal first segment bright green, the rest dark brown with bright green and violet or blue tints; pronotal lateral margins slightly concave, expanded at middle, then obliquely converging to anterior angles; elytra color as far as the fourth striae red-coppery, toward lateral margin bright green, apices bright green with blue tints, disc with feebly impressed punctate striae and with

finely punctate interstitial impressions, usually isolated from each other; first ventrite slightly concave along midline, ventrite 2 slightly flattened along midline.

***Lampetis (Spinthoptera) webbii* (LeConte, 1858b) (Figs. 31, 61, 81)**

Psiloptera webbii LeConte, 1858b:66, 1860:193; Waterhouse, 1882:10; Kerremans, 1910:132.

Spinthoptera webbii Casey, 1909:95.

Spinthoptera arizonica Kerremans, 1910:133.

Psiloptera (Lampetis) webbii Nelson, 1986:281.

Diagnosis. Head, bases of antennae and mandibles blue, apices of antennae black; dorsal surface dark bluish-black; ventral surface dark blue; punctures and impressions brassy-green; elytral apices generally dark blue; front flattened; pronotal lateral margins obliquely converging anteriorly, disc moderately convex, flattened along midline to posterior margin; elytral disc with many punctate interstitial impressions, usually isolated from each other, striae feebly impressed, apices not dentiform; first ventrite with midline concavity usually bordered by smooth broad carina and ventrite 2 slightly flattened in midline. Male genitalia as in figure 61.

Distribution. From 125 males and 174 females examined, this species has been collected in **northern Mexico** and **U.S.A.** State and county records include the following: in Mexico: Chihuahua: Santa Bárbara; Km 36; Santa Bárbara-Ojito; Santa Clara Canyon, 5mi W Parrita; Hidalgo de Parral; 33mi S Parral; 32mi S Hidalgo de Parral; Durango: 24mi N La Zarca; Sonora: 9mi NNE Imuris; 11mi N Imuris. In U.S.A.: Arizona: Bisbee; Graham; Cochise; Santa Cruz; Pima; Pinal; New Mexico: Hidalgo; Texas: Cochise; Brewster.

Adult host plants. *Acacia greggii*, *Prosopis juliflora* (Fabaceae), *Bumelia lanuginosa* (Sapotaceae), *Larria mexicana*, *Quercus arizonica*, *Q. oblongifolia*, and *Q. sp.* (Fagaceae).

Fenology. Collected from January to December.

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REFERENCES

- Akiyama, K. & Ohmomo S. 1994: Notes on the genus *Lampetis* Spinola from Indochina (Coleoptera, Buprestidae). *Entomol. Rev. Jpn.* **49**: 17-24.
- Arnett, R. H., Samuelson G. A., Heppner J. B., Nishida G. M., Watt J. C. & Woodruff R. E. 1993: *The insect and spider collections of the World*. Second Edition. Flora & Fauna Handbook, No. 11. Gainesville, Florida: Sandhill Crane Press, Inc. 310 pp.

- Bellamy, C. L. 1985: A catalogue of the higher taxa of the family Buprestidae (Coleoptera). *Navors. Nas. Mus., Bloemfontein* **4**: 405-472.
- Bellamy, C. L. 1998a: A clarification of authorship of buprestid genera originally defined in the catalogues of P. F. M. A. Dejean (Coleoptera, Buprestidae). *Fragm. Entomol.* **29**(1997): 365-382.
- Bellamy, C. L. 1998b: Type species designations in the family Buprestidae (Coleoptera). *Deutsche Entomol. Zeitschr.* **45**:9-15.
- Bellamy, C. L. 2003: An illustrated summary of the higher classification of the superfamily Buprestoidea (Coleoptera). *Folia Heyrovskyana*, Supplementum **10**: 1-197.
- Bellamy, C. L. 2004: Nomenclatural reversals in Buprestidae (Coleoptera). *Pan-Pacific Entomol.* **79**: 258-259.
- Bellamy, C. L. & Peterson M. 2000: Contributions to the Taxonomy of Australian Buprestidae (Coleoptera). Part I: New synonymy, combinations, and names. *Fol. Heyrovskyana* **8**: 73-100.
- Blackwelder R. E. 1944: Checklist of the coleopterous insects of Mexico, Central America, The West Indies, and South America. Parts 1-6. *Bull. Smithsonian Inst. U. S. Nat. Mus. No. 185*, 1492 pp.
- Carter, H. J. 1924: Australian Coleoptera - notes and new species No. III. *Proc. Linn. Soc. New South Wales* **49**: 19-45.
- Carter, H. J. 1929: A check list of the Australian Buprestidae. With tables and keys to sub-families, tribes, and genera (by A. Théry). *Australian Zool.* **5**: 265-304.
- Casey, T. L. 1909: Studies in the American Buprestidae. *Proc. Wash. Acad. Sci.* **11**: 47-78.
- Cazier, M. A. 1951a: The Buprestidae of the Bahama Islands, British West Indies (Coleoptera, Buprestidae). *American Mus. Nov.* **1517**: 1-9.
- Cazier, M. A. 1951b: The Buprestidae of North Central Mexico (Coleoptera). *American Mus. Nov.* **1526**: 1-56.

- Chevrolat, L. A. A. 1834: *Coléoptères du Mexique*, Fasc. 1, Gustave Silberman, Strasbourg, 25 pp.
- Chevrolat, L. A. A. 1838: Centurie de Buprestides. *Rev. Entomol.* **5**: 41-110.
- Chevrolat, L. A. A. 1867: Coléoptères de l'île de Cuba. (Suite) Notes, synonymies et descriptions d'espèces nouvelles. Septième mémoire. Famille des Buprestides, Throscides, Eucnémides et Élaterides. *An. Soc. Entomol. Fr. ser. 4*, **7**: 571-616.
- Corona, A. M. 2004: A new species of *Lampetis* Dejean from Chiapas, Mexico (Coleoptera: Buprestidae). *Coleopt. Bull.* **58**: 159–162.
- Dalman, J. W. 1823: *Analecta entomologica*. Holmiae, Lindh 4, 104 pp.
- Dejean, P. F. M. A. 1833: *Catalogue des Coléoptères de la collection de M. le comte Dejean*. Méquignon-Marvis, Father & Sons, Paris, livraison 1, 96 pp.
- Dejean, P. F. M. A. 1836: *Catalogue des Coléoptères de la collection de M. le comte Dejean*. Troisième édition, revue, corrigée, et augmentée. Méquignon-Marvis, Father & Sons, Paris, livraisons 1-4, 384 pp.
- Dugés, D. E. 1891: Descripción de coléopteros indígenas de la familia de los Buprestidos. *Naturaleza*, ser. 2, vol. 2, pp. 1-38, plates 1 & 2.
- Fabricius, J. C. 1801: *Systema Eleutheratorum, ordines, genera, species: adiectis synonymis, locis, observationibus, descriptionibus*. Vol. 2, Bibliopolii Academici Novi, Kiliae. 687 pp.
- Fisher, W. S. 1925: A revision of the West Indian Coleoptera of the family Buprestidae. *Proc. U. S. Nat. Mus.* No. 2522, **65**: 1-207.
- Fisher, W. S. 1930: New West Indian Buprestidae (Coleoptera). *Proc. Entomol. Soc. Wash.* **32**: 125-129.
- Gemminger, M. & Harold E. von 1869: Buprestidae, Trixagidae, Monommidae, Eucnemidae, Elateridae, Cebrionidae. Pp. 1347-1608. *In Catalogus coleopterorum hucusque descriptorum synonymicus et systematicus*. Vol. 5, Monachii, London.

- Gistel, J. N. F. X. 1834: *Die Insecten-Doubletten aus der Sammlung des Herrn. Grafen Rudolph von Jenison Walworth zu Regensburg, welche sowohl im Kauf als im Tausche abgegeben werden I. Käfer*. George Jaquet, München, 36 pp.
- Gistel, J. N. F. X. 1848: *Naturgeschichte des Thierreichs für höhere Schulen*. Stuttgart, 216 pp. 32 pls.
- Gundlach, J. 1891: Contribucion á la entomologia Cubana. Vol. 3, Habana, 494 pp.
- Herbst, J. F. W. 1801: *Natursystem aller bekánnten in-und áuslandischen Insecten, als eine Fortsetzung der Bússonschen Naturgeschichte. Der Käfer neunter Theil 9*: 1-344.
- Holynski, R. 1988: Remarks on the general classification of Buprestidae Leach as applied to Maoraxiina Hol. *Fol. Entomol. Hungarica* **49**: 49-54.
- Jacquelin du Val, P. N. C. 1857: Insectes. Ordre des coléoptères. *In: Ramon de la Sagra, Histoire fisica, politica y natural de la Isla de Cuba* **7**: 1-136.
- Kempers, K. J. W. 1923: Abbildungen von Flügelgeáder der Coleopteren. *Entomol. Mitt.* **12**: 71-115.
- Kerremans, C. 1885: Enumeration des Buprestides decrits posterieurement au Catalogue de MM. Gemminger & de Harold. *Ann. Soc. Entomol. Belgique* **29**: 119-157.
- Kerremans, C. 1892: Catalogue synonymique des Buprestides decrits de 1758 à 1890. *Mém. Soc. Entomol. Belgique* **1**: 1-304.
- Kerremans, C. 1893: Essai de groupement des Buprestides. *Ann. Soc. Entomol. Belgique* **37**: 94-122.
- Kerremans, C. 1896: Voyage de M. E. Simon au Venezuela. Buprestides. *Ann. Soc. Entomol. Belgique* **65**: 23-29.
- Kerremans, C. 1900: Buprestides nouveaux et remarques synonymiques. *Ann. Soc. Entomol. Belgique* **44**: 282-351.
- Kerremans, C. 1903: *Genera Insectorum, Coleoptera, fam. Buprestidae*. Fasc. 12b;

- 12c; 12d. Verteneuil and Desmet, Bruxelles, 49-338 pp.
- Kerremans, C. 1910: *Monographie des buprestides*, Dulau & Co., London; Author, Bruxelles; R. Friedländer & Son, Berlin, Vol. 4, livraison 6, pp. 161-192; livraison 7, pp. 193-224; livraison 8, pp. 225-256; livraison 9, pp. 257-284; color plates 23-26. Vol. 5, livraison 1, pp. 1-32; livraison 5, pp. 129-160; livraison 7, pp. 193-224; livraison 8, pp. 225-256; color plates 27-32.
- Kurosawa, Y. 1993: Reorganization of the genus *Psiloptera* (Coleoptera, Buprestidae). *Jpn. J. Entomol.* **61**: 577-583.
- Lacordaire, J. T. 1857: *Histoire Naturelle des insectes. Genera des coléoptères ou exposé méthodique de critique de tous les genres proposés jusquici dans cet ordre d'insectes*, vol. 4, Roret, Paris, 554 pp. (Contenant les familles des buprestides, throscides, euchémides, élaterides, cébrionides, cérophytides, riphicérides, dascyllides, malacodermes, clérides, lymexylones, cupéscides, ptiniores, bostrichides et cissides).
- Laporte de Castelnau, F. L. & Gory H. L. 1836: *Histoire naturelle de iconographie des insectes coléoptères. Monographie des buprestides*. P. Duménil, Paris. Vol. 1, livraisons 8-11, genera: Bubastes, Aurigena, Capnodis, Buprestis (pp 1-64). [genera paged separately]
- Laporte de Castelnau, F. L. & Gory H. L. 1837: *Histoire naturelle de iconographie des insectes coléoptères. Monographie des buprestides*. P. Duménil, Paris. Vol. 1, livraisons 12-16, genera: Buprestis (pp. 65-160), Nascio, Archerusia, Asthraeus, Bulis, Acantha, Apatura. [genera paged separately]
- LeConte, J. L. 1852: Remarks on some Coleopterous Insects collected by S. H. Woodhouse in Missouri Territory and New Mexico. *Proc. Acad. Nat. Sci. Philadelphia* **6**: 65-68.
- LeConte, J. L. 1858a: Catalogue of Coleoptera of the regions adjacent to the Boundary line between the United States and Mexico. *J. Acad. Nat. Sci. Philadelphia* **4**: 9-42, 4 plates.

- LeConte J. L. 1858b: Description of new species of Coleoptera, chiefly collected by the United States and Mexican Boundary commission; under Major W. H. Emory, U. S. A. *J. Acad. Nat. Sci. Philadelphia* **10**: 59-89.
- LeConte, J. L. 1860: Revision of the Buprestidae of the United States. *Trans. American Philos. Soc. ser. 2*, **11**(1859): 187-258.
- Mannerheim, C. G. von. 1837: Enumération des Buprestides, et description de quelques nouvelles espèces de cette tribu de la famille des Sternoxes, de la collection de M. Le Comte Mannerheim. *Bull. Soc. Imp. Nat. Moscou* **8**: 1-126.
- Nelson, G. H. 1976: Lectotype designations in the Mannerheim Collection of Buprestidae at the Universitetets Zoologiska Museum, Helsingfors, Finland. *Coleopt. Bull.* **30**:167-168.
- Nelson, G. H. 1982: A new tribe, genus and species of North American Buprestidae with consideration of subfamilial and tribal categories. *Coleopt. Bull.* **35**(1981): 431-450.
- Nelson G. H. 1986: A review of the genus *Psiloptera* subgenus *Lampetis* Solier in the United States (Coleoptera: Buprestidae). *Coleopt. Bull.* **40**: 272-284.
- Nelson, G. H., Westcott R. L. & MacRae T. C. 1996: Miscellaneous notes on Buprestidae and Schizopodidae occurring in the United States and Canada, including descriptions of previously unknown sexes of six *Agrilus* Curtis. *Coleopt. Bull.* **50**:183-191.
- Obenberger, J. 1924a: De buprestidarum speciebus novis (diagnoses praeliminares) (Col.). Nové druhy celedi Krascú. *Sborn. Entomol. Odd. Nár. Mus., Praze*, vol. 2, pp. 93-115.
- Obenberger, J. 1924b: Kritische studien über die Buprestiden (Col.). *Arch. Naturg.* Vol. 90 Abt. A, Heft 3, pp. 1-171.
- Obenberger, J. 1926: Buprestidae I. *In*: Junk W. & Schlenking S. (eds.): *Coleopterorum catalogus*. Vol. 12, pars 84, Berlin, 212 pp.

- Obenberger, J. 1930: Buprestidae II. *In*: Junk W. & Schlenking S. (eds.): *Coleopterorum Catalogus*. Vol. 12, pars 111, Berlin, pp. 213-568.
- Obenberger, J. 1934: Sur les Buprestides du Musée de Milano (Col. Bupr.). *Att. Soc. Italiana Sci. Nat.* **73**: 49-56.
- Obenberger, J. 1937: Spedizione del Prof. Nello Beccari nella Guiana Inglese 1931-32. Buprestidae. *Boll. Soc. Entomol. Italiana* **69**: 99-101.
- Obenberger, J. 1958: Buprestides, trouvés par l'expédition chino-soviétique 1955 en Chine méridionale (Col. Buprestidae). *Act. Soc. Entomol. Cechosloveniae* **55**: 223-243.
- Olivier, A. G. 1790: *Entomologie, ou histoire naturelle des insectes, avec leurs caractères génériques et spécifiques, leur description, leur synonymie, et leur figure enluminée*. Coléoptères, genera 9-34, vol. 2, no. 32, Baudouin, Paris, 63 plates, 485 pp.
- Rikhter, A. A. 1952: *Fauna of the USSR, n.s. No. 51, Coleoptera (Buprestidae)*, vol. 13, no. 4. Moscow-Leningrad, 234 pp.
- Saunders, E. 1871: *Catalogous buprestidarum synonymicus et systematicus*. J. Janson, London, 171 pp.
- Schaeffer, C. F. A. 1905: Some additional new genera and species of Coleoptera found within the limit of the United States. *Sci. Bull. Mus. Brooklyn Inst. Arts Sci.* **1**: 141-179.
- Schönherr, C. J. 1817: *Synonymia Insectorum, oder Versuch einer Synonymiealler aller bisher bekannten Insecten nach Fabricii Systema Eleutheratorum geordnet, mit Berichtigungen und Anmerkungen wie auch Beschreibungen neuer Arten und illuminirten Kupfern*. Vol. 1 (3), *Hispa - Molorchus*, Skara, Lewerentz. xi + 506 pp. (Appendix ad C. J. Schönherr *Synonymia Insectorum*, tom. 1, part 3, sistens descriptiones novarum specierum, illus. Scaris, 266 pp.)
- Spinola, M. 1837: Lettre adressé à la Société Entomologique de France, sur un groupe de Buprestides. *Ann. Soc. Entomol. France* **6**:101-122.

- Théry, A. 1905: *Revision des Buprestides de Madagascar*. Emile Deyrolle, Paris, pp. 1-186.
- Théry, A. 1923: Etudes sur les Buprestides. (Troisième partie). *Ann. Soc. Entomol. Belgique* **62**(1922): 193-270.
- Théry, A. 1927: Etude sur les Coléoptères Buprestides appartenant aux collections des grands musées (1re note: British Museum.). *Ann. Soc. Entomol. France* **96**(3-4): 247-261.
- Théry, A. 1946: Buprestides d'Angola. *Arqu. Mus. Boçage* **17**: 1-132. [continued 1947c]
- Théry, A. 1948: Buprestidae (Coleoptera Sternoxia). *Exploration du Parc National Albert, Mission G. F. de Witte (1933-1935), Fasc. 54*, 85 pp.
- Thomson, J. 1878: *Typi Buprestidarum Musaei Thomsoniani*. E. Deyrolle, Paris, 103 pp.
- Thomson, J. 1879a: *Typi Buprestidarum Musaei Thomsoniani*, Appendix 1a. E. Deyrolle, Paris, 87 pp.
- Thomson, J. 1879b: Revue du groupe des Psiloptérites; Description d'espèces nouvelles de Psiloptérites. *Rev. Mag. Zool.* **7**: 161-177.
- Vogt, G. B. 1949: A biologically annotated list of the Buprestidae of the Lower Rio Grande Valley, Texas. *Ann. Entomol. Soc. America* **42**: 191-202.
- Waterhouse, C. O. 1882: *Biologia Centrali-Americana*, Insecta, Coleoptera, Buprestidae, Vol. 3, part 1, F. D. Godman & O. Salvin, pp. 1-32, plates 1-2.
- Waterhouse, C. O. 1889: *Biologia Centrali-Americana*, Insecta, Coleoptera, Buprestidae, Vol. 3, part 1, F. D. Godman & O. Salvin, pp. 49-193, plates 4-8.
- Waterhouse, C. O. 1896: Observations on some Buprestidae from West Indies and other localities. *Ann. Mag. Nat. Hist.*, ser. 6, Vol. 18, pp. 104-107.
- Westcott, R. L., Atkinson T., Hespenheide H. A. & Nelson G. H. 1990: New country and state records, and other notes for Mexican Buprestidae (Coleoptera). *Insecta Mundi* **3**: 217-232.

Wickham, H. F. 1895: Note on a trip to the Bahama Islands. *Canadian Entomol.* **27**: 291-296.

Legends to the figures

Figs. 1-16: Male dorsal habitus: 1, *Lampetis (Spinthoptera) aurata* (Saunders, 1871); 2, *L. aurifera* (Olivier, 1790); 3, *L. auropunctata* (Kerremans, 1893); 4, *L. bahamica* (Fisher, 1925); 5, *L. chalconota* (Waterhouse, 1882); 6, *L. chamela* sp. n.; 7, *L. chiapaneca* Corona, 2004; 8, *L. christophi* Théry, 1923; 9, *L. colima* sp. n.; 10, *L. cortesi* (Laporte & Gory, 1837); 11, *L. cupreopunctata* (Schaeffer, 1905); 12, *L. cyanitarsis* sp. n.; 13, *L. dilaticollis* (Waterhouse, 1882); 14, *L. drummondi* (Laporte & Gory, 1836); 15, *L. geniculata* (Waterhouse, 1889); 16, *L. granulifera* (Laporte & Gory, 1837).

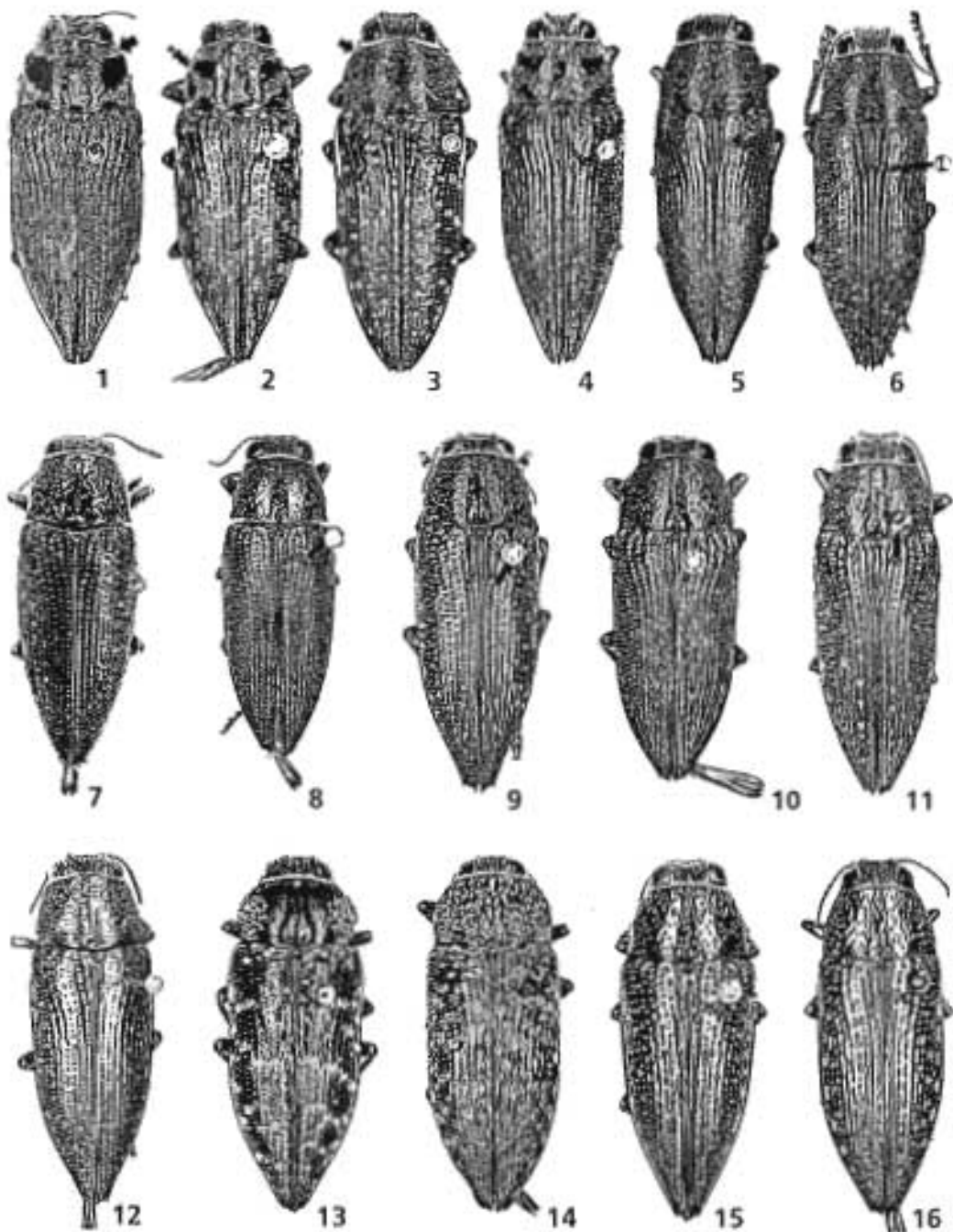
Figs. 17-31: Male dorsal habitus: 17, *Lampetis (Spinthoptera) guildini* (Laporte & Gory, 1836); Female dorsal habitus: 18, *L. lesnei* (Kerremans, 1910); Male dorsal habitus: 19, *L. hondurensis* sp. n.; 20, *L. hirtomaculata* (Herbst, 1801); Female dorsal habitus: 21, *L. mexicana* Théry, 1923; Male dorsal habitus: 22, *L. monilis* (Chevrolat, 1834); 23, *L. simplex* (Waterhouse, 1882); 24, *L. srdinkoana* (Obenberger, 1924); 25, *L. straba* (Chevrolat, 1867); 26, *L. obscura* Thomson, 1879; 27, *L. tigrina* sp. n.; 28, *L. torquata* (Dalman, 1823); 29, *L. viridicolor* sp. n.; 30, *L. viridimarginalis* sp. n.; 31, *L. webbii* (LeConte, 1858b).

Figs. 32-49: Male genitalia, dorsal aspect: 32, *Lampetis (Spinthoptera) aurata* (Saunders, 1871); 33, *L. aurifera* (Olivier, 1790); 34, *L. auropunctata* (Kerremans, 1893); 35, *L. bahamica* (Fisher, 1925); 36, *L. chalconota* (Waterhouse, 1882); 37, *L. chamela* sp.n.; 38, *L. chiapaneca* Corona, 2004; 39, *L. christophi* Théry, 1923; 40, *L. colima* sp. n.; 41, *L. cortesi* (Laporte & Gory, 1837); 42, *L. cupreopunctata* (Schaeffer, 1905); 43, *L. cyanitarsis* sp. n.; 44, *L. dilaticollis* (Waterhouse, 1882); 45, *L. drummondi* (Laporte & Gory, 1836); 46, *L. geniculata* (Waterhouse, 1889); 47, *L. granulifera* (Laporte & Gory, 1837); 48, *L.*

guildini (Laporte & Gory, 1836); 49, *L. hirtomaculata* (Herbst, 1801).

Figs. 50-61: Male genitalia, dorsal aspect: 50, *Lampetis (Spinthoptera) hondurensis* sp. n.; 51, *L. mexicana* Théry, 1923; 52, *L. monilis* (Chevrolat, 1834); 53, *L. simplex* (Waterhouse, 1882); 54, *L. srdinkoana* (Obenberger, 1924); 55, *L. straba* (Chevrolat, 1867); 56, *L. obscura* Thomson, 1879; 57, *L. tigrina* sp. n.; 58, *L. torquata* (Dalman, 1823); 59, *L. viridicolor* sp. n.; 60, *L. viridimarginalis* sp. n.; 61, *L. webbii* (LeConte, 1858b).

Figs. 62-81: Pronotum: 62, *Lampetis (Spinthoptera) aurata* (Saunders, 1871); 63, *L. aurifera* (Olivier, 1790); 64, *L. bahamica* (Fisher, 1925); 65, *L. straba* (Chevrolat, 1867); 66, *L. torquata* (Dalman, 1823); 67, *L. guildini* (Laporte & Gory, 1836); 68, *L. cupreopunctata* (Schaeffer, 1905); 69, *L. auropunctata* (Kerremans, 1893); 70, *L. drummondi* (Laporte & Gory, 1836); Head, anterior view: 71, *L. tigrina* sp. n.; 72, *L. simplex* (Waterhouse, 1882); Prosternal process: 73, *L. guildini* (Laporte & Gory, 1836); Processus intercoxalis of the first ventrite: 74, *L. obscura* Thomson, 1879; 75, *L. drummondi* (Laporte & Gory, 1836); Elytral apex: 76, *L. christophi* Théry, 1923; 77, *L. chamela* sp. n.; Elytra: 78, *L. auropunctata* (Kerremans, 1893); 79, *L. hirtomaculata* (Herbst, 1801); 80, *L. drummondi* (Laporte & Gory, 1836); 81, *L. webbii* (LeConte, 1858b).





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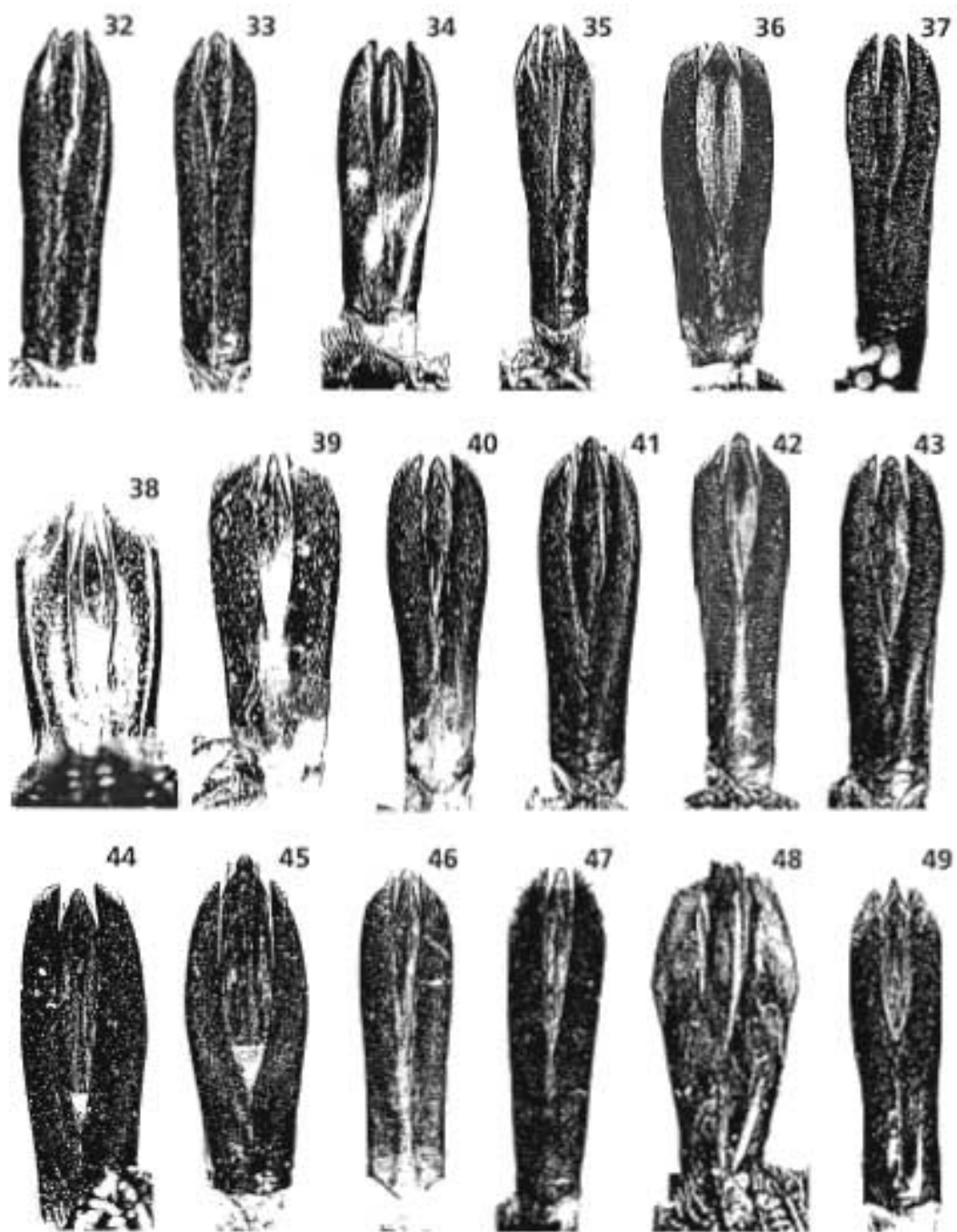
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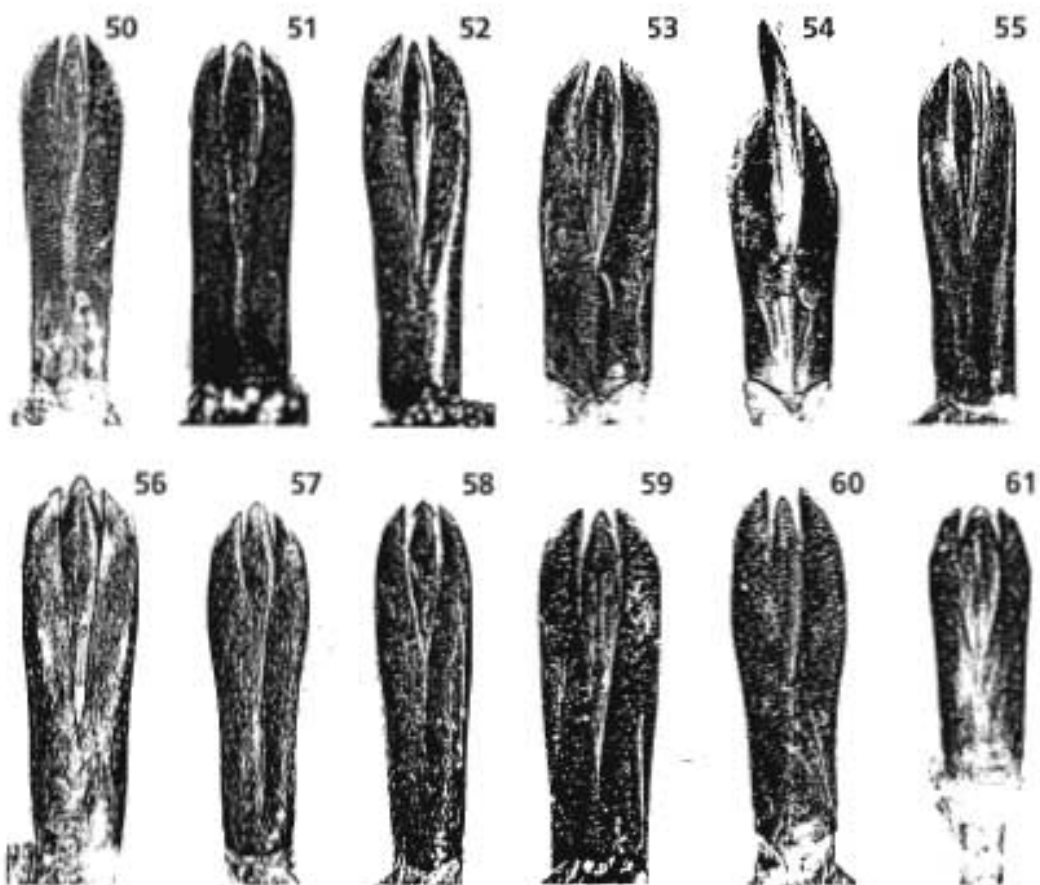


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CAPÍTULO II. ANÁLISIS FILOGENÉTICO

Corona, A. M. & J. J. Morrone. Enviado. Phylogeny of the subgenus *Lampetis* (*Spinthoptera*) Casey, 1909 (Coleoptera: Buprestidae) of North and Central America, and the West Indies. *Journal of Natural History*.

**Phylogeny of the subgenus *Lampetis* (*Spinthoptera*) (Coleoptera: Buprestidae)
of North and Central America, and the West Indies**

ANGÉLICA MA. CORONA¹ & JUAN J. MORRONE²

Museo de Zoología "Alfonso L. Herrera", Departamento de Biología Evolutiva,
Facultad de Ciencias, UNAM, Apartado Postal 70-399, 04510 México, D. F., México

1 E-mail: amcl@minervaux2.fciencias.unam.mx

2 E-mail: jjm@hp.fciencias.unam.mx

Abstract

Phylogenetics of the species of *Lampetis* (*Spinthoptera*) of North and Central America and the West Indies was analyzed by cladistic methods based on 65 characters from the external morphology and male genitalia. Eleven species of different generic groups of Dicercina were considered as outgroups, including also species of *L.* (*Lampetis*) and one South American species of *L.* (*Spinthoptera*). The monophyly of the *Lampetis* (*Spinthoptera*) is supported by two synapomorphies, but it resulted to be more closely related to species of *Psiloptera* than to Old World species of *Lampetis* (*Lampetis*), suggesting that it represents a different genus. The species of the subgenus of North and Central America and the West Indies do not represent a monophyletic taxon, because *Lampetis* (*Spinthoptera*) *tucumana* (South American outgroup) is related to *L. srdinkoana* (Central American ingroup). Comparison of these results with a previous panbiogeographic analysis indicate that several generalized tracks possess species from different clades, thus suggesting an ancient radiation of this taxon in the area.

Keywords: Cladistics, evolution, biogeography, Nearctic, Neotropical.

Introduction

The buprestid genus *Lampetis* Dejean 1833 is placed in the subtribe Dicercina (Chrysochroinae: Dicercini), according to Bellamy (2003). *Lampetis* comprises two subgenera, *Lampetis* Dejean 1833 and *Spinthoptera* Casey 1909, and approximately 251 species distributed in the Afrotropical, Andean, Nearctic, Neotropical, Oriental, and Palearctic regions. *Lampetis* (*Spinthoptera*) was recognized for more than 100 species from the New World (Kurosawa 1993). The systematics of some species of *Lampetis* (*Spinthoptera*) has been reviewed by Nelson (1986) and Corona (2004, 2005), who recognized 31 species in Central America, North America and the West Indies. Corona and Morrone (2005) analyzed their biogeographic patterns, but there are no hypotheses regarding their phylogenetic relationships.

Our objective is to present a cladistic analysis of the species of *Lampetis* (*Spinthoptera*) of North and Central America, and the West Indies, using characters from the external morphology and male genitalia. We suspect that the studied group is paraphyletic, because we did not include all the South American species, but the analysis may provide a phylogenetic framework for further studies.

Material and methods

We examined 2433 specimens of the 31 species of *Lampetis* (*Spinthoptera*) of North and Central America, and the West Indies: *L. aurata* (Saunders 1871), *L. aurifera* (Olivier 1790), *L. auropunctata* (Kerremans 1893), *L. bahamica* (Fisher 1925), *L. chalconota* (Waterhouse 1882), *L. chamela* Corona 2005, *L. chiapaneca* Corona 2004, *L. christophi* Théry 1923, *L. colima* Corona 2005, *L. cortesi* (Laporte and Gory 1837), *L. cupreopunctata* (Schaeffer 1905), *L. cyanitarsis* Corona 2005, *L. dilaticollis* (Waterhouse 1882), *L. drummondi* (Laporte and Gory 1836), *L. geniculata* (Waterhouse 1889), *L. granulifera* (Laporte and Gory 1837), *L. guildini* (Laporte and Gory 1836), *L. hirtomaculata* (Herbst 1801), *L. hondurensis* Corona 2005, *L. iesnei* (Kerremans 1910), *L. mexicana* Théry 1923, *L. monilis* (Chevrolat 1834), *L. obscura*

Thomson 1879, *L. simplex* (Waterhouse 1882), *L. srdinkoana* (Obenberger 1924), *L. straba* (Chevrolat 1867), *L. tigrina* Corona 2005, *L. torquata* (Dalman 1823), *L. viridicolor* Corona 2005, *L. viridimarginalis* Corona 2005, and *L. webbii* (LeConte 1858). The following 11 species, which correspond to different generic groups, were considered as outgroups: *Perotis unicolor* (Olivier 1790), *Ectinogonia pulverea* Kerremans 1919, *Capnodis tenebrionis* (Linnaeus 1758), *Oedisterna bisulcata* (Laporte and Gory 1836), *Polybothris (Polybothris) sumptuosa* (Klug 1833), *Psiloptera bicarinata* (Thunberg 1789), *Lampetis (Lampetis) amaurotica* (Klug 1855), *L. (L.) viridimarginata* (Boheman 1851), *L. (L.) fastuosa* (Fabricius 1774), *L. (L.) rugosa* (Palisot de Beauvois 1807), and *Lampetis (Spinthoptera) tucumana* (Guérin-Méneville and Percheron 1835).

The following 65 characters and character states were derived from the external morphology: head (nine), pronotum (16), elytra (11), prosternum (four), prosternal process (three), mesepisternum and mesepimeron (one), metasternum (one), legs (six), abdomen (eight), and male genitalia (seven).

Head

0. Frons sinuate: (0) absent; (1) present.
1. Confluent punctures on frons: (0) scarce (Figure 1); (1) abundant (Figure 2).
2. Strong callosities on frons: (0) absent; (1) present.
3. Frons: (0) as wide as long; (1) 1.6 - 2.0 times wider than long.
4. Depression behind eyes: (0) absent; (1) present.
5. Punctures on base of mandibles : (0) scarce (Figure 3); (1) abundant (Figure 4).
6. Clypeus margin: (0) emarginate at midline; (1) concave.
7. 3rd antennal segment: (0) subrectangular; (1) subtriangular.
8. Antennal segments 6th-11st: (0) longer than wide; (1) wider than long.

Pronotum

9. Pronotum: (0) wider than long; (1) longer than wide.
10. Concavity along middle and lateral margin: (0) absent; (1) present.
11. Confluent punctures on lateral margins: (0) absent; (1) present.
12. Lateral margins: (0) not parallel; (1) parallel.
13. Lateral margins near anterior margin: (0) not projected outwards; (1) projected outwards.
14. Shape of lateral margin from middle to anterior margin: (0) rounded; (1) convergent.
15. Shape of lateral margin from middle to posterior margin: (0) subparallel; (1) concave.
16. Shape of lobe of posterior margin: (0) rounded; (1) acute.
17. Punctures at middle: (0) absent; (1) present.
18. Circular callosities on surface: (0) absent; (1) present.
19. Sulcus on surface: (0) absent; (1) present.
20. Sulcus and pulverulence along lateral margins: (0) absent; (1) present.
21. Sulcus (sometimes interrupted at middle) along anterior margin: (0) absent; (1) present.
22. Longitudinal median sulci (sometimes interrupted at middle): (0) absent; (1) one; (2) two.
23. Depression like a line along anterior margin from lateral margin to midline: (0) absent; (1) present.
24. Irregular callosities on surface: (0) absent; (1) present.

Elytra

25. Elytral shape: (0) not wider at base than pronotum; (1) wider at base than pronotum.
26. Humeral angles: (0) rounded; (1) slightly acute.
27. Transversal depressions on basal surface: (0) scarce (Figure 7); (1) abundant (Figure 8).

- 28. Lateral margins: (0) not expanded; (1) expanded.
- 29. Callosities at lateral margin near anterior margin: (0) absent; (1) present.
- 30. Strongly impressed longitudinal, punctate striae: (0) absent; (1) present.
- 31. Striae: (0) separated; (1) close.
- 32. Several irregular interstrial depressions surrounding callosities laterally: (0) absent; (1) present.
- 33. Apex: (0) not oblique; (1) oblique.
- 34. Apex: (0) not dentiform; (1) dentiform.
- 35. Sutural angles of apex: (0) separated; (1) joined.

Prosternum

- 36. Shape of anterior margin at middle: (0) flattened; (1) concave; (2) convex (like a lobe).
- 37. Lateral lobe of anterior margin: (0) absent; (1) present.
- 38. Punctures confluent laterally: (0) scarce (Figure 5); (1) abundant (Figure 6).
- 39. Punctures confluent anteriorly: (0) absent; (1) present.

Prosternal process apex

- 40. Strongly concave behind procoxae: (0) absent; (1) present.
- 41. Prosternal process: (0) flat; (1) convex.
- 42. Punctures at middle: (0) absent; (1) present.

Mesepisternum and mesepimeron

- 43. Confluent punctures on surface: (0) absent; (1) present.

Metasternum

- 44. Concave medially: (0) absent; (1) present.

Legs

- 45. Metacoxae with three lobes: (0) absent; (1) present.

46. Second lobe of posterior margin of metacoxae: (0) absent; (1) rounded; (2) acute.
47. Pubescence on lateral and posterior margins of metacoxae: (0) scarce; (1) abundant.
48. Confluent punctures forming callosities on metacoxae: (0) absent; (1) present.
49. Apices of metatibiae: (0) rounded; (1) flattened.
50. Pulvillus on third tarsomere: (0) with setae at margin; (1) with teeth at margin.

Abdomen

51. First ventrite: (0) flat; (1) concave.
52. Carina on first ventrite: (0) absent; (1) present.
53. Second ventrite: (0) concave or flattened; (1) convex.
54. Third ventrite: (0) concave; (1) convex.
55. Last male ventrite: (0) rounded; (1) truncate.
56. Lateral circular callosities on surface: (0) absent; (1) present.
57. Punctures on a line on surface: (0) absent; (1) present.

Male genitalia

58. Aedeagus shape: (0) slender, large; (1) wide, small.
59. Median lobe apex: (0) entire; (1) subtriangular; (2) semicircular.
60. Median lobe shape: (0) slender; (1) wide.
61. Parameres of aedeagus from base to middle: (0) parallel; (1) subparallel.
62. Apices of parameres and median lobe: (0) no parallel; (1) parallel.
63. Apices of parameres of aedeagus: (0) rounded; (1) oblique; (2) truncate.
64. Parameres expanded from middle to apices: (0) absent; (1) present.

Multistate characters were treated as non-additive, and characters not observed were coded as "?". Cladograms were rooted with *Perotís unicolor*. The data matrix (Table 1) was analysed with Nona version 2.0 (Goloboff 1993) and WinClada version 1.00.08 (Nixon 2002). The search strategy used was heuristic search,

multiple TBR +TBR, maximum trees to keep (hold) = 100, number of replications (mult =N) = 20, and starting trees per rep (hold *t*) = 15.

Results and discussion

The analysis of the data matrix (Table 1) produced two equally parsimonious cladograms, with 250 steps, a consistency index of 0.28, and a retention index of 0.64 (Figure 9). The strict consensus cladogram is steps longer than them, with only two nodes collapsed (Figure 9, Table 2). The cladistic sequence is as follows: *Perotis unicolor* (Palearctic region), *Oedisterna bisulcata* (Afrotropical region), *Capnodis tenebrionis* (Palearctic region), *Ectinogonia pulverea* (South American) plus *Polybothris sumptuosa* (Madagascar), *Lampetis rugosa* (Afrotropical region), *L. amaurotica* (Afrotropical region) plus *L. viridimarginata* (Afrotropical region), *L. fastuosa* (Oriental region), *Psiloptera bicarinata* (South American), and the remaining species, all assigned to *Lampetis* (*Lampetis*) arranged in three clades (A, B, and C). Clade A comprises the species *L. christophi* (southeastern Mexican), *L. guildini* (Antillean), *L. tucumana* (South American) plus *L. srdinkoana* (Central American), *L. webbii*, *L. dilaticollis* and *L. drummondi* (North American). Clade B comprises the species *L. geniculata*, *L. simplex* (Central American), *L. cyanitarsis*, *L. chamela*, *L. colima* (Mexican), and *L. bahamica*, *L. torquata*, *L. aurifera*, *L. aurata* plus *L. straba* (Antillean). Clade C comprises the species *L. monilis* (Central American), and two smaller clades: the first one comprises *L. tigrina* (southern Mexico) plus *L. viridimarginalis* (Central American), *L. cupreopunctata* (North American), *L. cortesi* (Central American) and *L. obscura* (Central Mexico); and the other comprises *L. viridicolor*, *L. hondurensis* (Central American), *L. granulifera* plus *L. hirtomaculata* (Central American), *L. mexicana* (Central Mexico), *L. auropunctata* (Northern and Central Mexico), *L. chalconofa* (Central American), *L. chiapaneca* (southern Mexico) and *L. lesnei* (Central American).

Psiloptera and *Lampetis* are related according to one synapomorphy, the last male abdominal ventrite truncate. *Lampetis* appears to be paraphyletic, because *Lampetis* (*Spinthoptera*) is more closely related to *Psiloptera* than to *Lampetis* (*Lampetis*), by two synapomorphies: the elytral apex dentiform and the second lobe of posterior margin of metacoxae rounded. In *Lampetis* (*Lampetis*), the elytral apex is not dentiform and the second lobe of the posterior margin of metacoxae is acute.

The subgenus *Lampetis* (*Spinthoptera*) is monophyletic according to two synapomorphies, several irregular interstitial depressions surrounding callosities laterally present in elytra and the anterior margin of prosternum flattened at middle. The majority of the outgroups present the latter concave, but in *Psiloptera* and one species of *Lampetis* (*Lampetis*) (*L. fastuosa*) it is convex (like a lobe), and evolved to flattened in *Lampetis* (*Spinthoptera*) and reverted to concave in the Antillean species of *Lampetis* (*Spinthoptera*). This feature would be a good diagnostic character if *Lampetis* (*Spinthoptera*) is segregated as a distinct genus.

Within the subgenus three clades can be identified (Figure 9, Table 2). The first clade (A) is characterized by the median lobe of male genitalia wide. This character is also present in four species of clade C (*L. auropunctata*, *L. chalconota*, *L. chiapaneca* and *L. lesnei*). The rest of the species of the subgenus have median lobe of male genitalia slender. Clades B and C are supported by one synapomorphy, the median lobe apex of male genitalia subtriangular. The median lobe apex is entire in all the outgroups, which evolved to semicircular in the clade A in the North American species (*L. webbia*, *L. dillaticollis* and *L. drummondii*), in all the clade B, and in clade C in *L. mexicana*; and reverted to the plesiomorphic state in the clade C in *L. auropunctata*, *L. chalconota*, *L. chiapaneca* and *L. lesnei*. In clade B, the Antillean species present one synapomorphy, the pronotum with callosities at lateral margin near anterior margin; this condition is present only in the Antillean species but not in *L. guildini*. Characters within clade C are conflicting, because two nodes (25 and 26) are collapsed in the strict consensus cladogram and present several homoplastic changes. Clade C

comprises two smaller clades, in each one, there is one North American species among several Central American species.

Results show that *Lampetis* (*Spinthoptera*) is more closely related to *Psiloptera* than to the species of *Lampetis* (*Lampetis*) (node 9, Table 2, Figure 9), suggesting that *Lampetis* (*Spinthoptera*) should be recognized as a different genus than *Psiloptera* and *Lampetis*. We still need detailed supraspecific analyses, including more evidence, such as internal features, larval and molecular characters, to corroborate this preliminary hypothesis. Furthermore, the analysis revealed that North and Central American and Antillean *Lampetis* (*Spinthoptera*) do not constitute a monophyletic group, because *L. (S.) tucumana*, from South America (outgroup), is related to *L. (S.) srdinkoana* from Central America (ingroup).

From a biogeographic viewpoint, the species of *Lampetis* (*Spinthoptera*) analyzed herein correspond to the Paleoamerican distributional pattern (Halffter, 2003), which includes Neotropical taxa that underwent diversification prior to the Pliocene closure of the Isthmus of Tehuantepec. They are restricted to Mexican mountain areas, with ecological preferences for deserts, grasslands, and rain forests; and may also have some species in Central America. Their closest relatives are Old World temperate and tropical taxa (Liebherr 1991, 1994)

If we compare our phylogenetic results with the panbiogeographic analysis of Corona and Morrone (2005), we recognize that nine of the 15 generalized tracks appear once in the cladogram (Figure 9, Table 3). The Nearctic generalized track 2 includes *Lampetis* (*Spinthoptera*) *dilatocollis* and *L. webbij*, assigned to clade A. Two generalized tracks from the Mexican transition zone, 4 and 5, include *L. chalconota* and *L. cortesi*, and *L. chalconota*, *L. cortesi* and *L. obscura*, respectively (clade C). Generalized track 6, from the Mexican transition zone and the Mesoamerican dominion, includes *L. cortesi*, *L. cupreopunctata*, *L. granulifera*, *L. monilis*, *L. simplex* and *L. obscura* (clade C). Antillean generalized tracks 9 and 10 include *L. straba* and *L. torquata*, and *L. aurata* and *L. aurifera*, respectively (clade B). Mesoamerican

generalized tracks 12, 14 and 15 include *L. chalconota*, *L. granulifera*, *L. monilis* and *L. obscura*; *L. monilis* and *L. simplex*; and *L. cortesi* and *L. granulifera*, respectively (clade C). The remaining six generalized tracks appear twice in the cladogram (clades A and C, and B and C), suggesting an ancient radiation of this taxon in the area.

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References

- Bellamy CL. 2003. An illustrated summary of the higher classification of the superfamily Buprestoidea (Coleoptera). *FoI Heyrovskyana, Supplementum* 10:1-197.
- Corona AM. 2004. A new species of *Lampetis* Dejean from Chiapas, Mexico (Coleoptera: Buprestidae). *Coleopt Bull* 58:159–162.
- Corona AM. 2005. A revision of the subgenus *Lampetis* (*Spinthoptera*) Casey 1909 (Coleoptera, Buprestidae) of North and Central America, and the West Indies. *Eur J Entomol* (in press)
- Corona AM, Morrone JJ. 2005. Patterns of diversification in North America, Central America, and the West Indies of the species of *Lampetis* (*Spinthoptera*) Dejean, 1833 (Coleoptera: Buprestidae). *Caribbean J Sci* 41(1):37–41.
- Goloboff P. 1999. NONA ver. 2.0. Published by the author. Tucumán. <http://www.cladistics.com>
- Halffter G. 2003. Biogeografía de la entomofauna de montaña de México y América Central. In Morrone JJ, Llorente Bousquets J, editors. Una perspectiva

- latinoamericana de la biogeografía. Las Prensas de Ciencias, Facultad de Ciencias, UNAM: México. p 87-97
- Kurosawa Y. 1993. Reorganization of the genus *Psiloptera* (Coleoptera, Buprestidae). *Jpn J Entomol* 61(3):577-583.
- Liebherr JK. 1991. A general area cladogram for montane Mexico based on distributions in the Platynine genera *Elliptoleus* and *Calathus* (Coleoptera: Carabidae). *Proc Entomol Soc Washington* 93:390-406.
- Liebherr JK. 1994. Biogeographic patterns of montane Mexican and Central American Carabidae (Coleoptera) *Can Entomol* 126:841-860.
- Nelson GH. 1986. A review of the genus *Psiloptera* subgenus *Lampetis* Solier in the United States (Coleoptera: Buprestidae). *Coleopt Bull* 40(3):272-284.
- Nixon KC. 2002. WinClada ver. 1.00.08. Published by the author. Ithaca, N.Y. <http://www.cladistics.com>

Tables

Table 1. Data matrix.

Species	Characters						
	0123456789	1111111111	2222222222	3333333333	4444444444	5555555555	66666
<i>Perotis unicolor</i>	0001001100	0001000100	0001001000	0100011010	0011012001	0001110010	11001
<i>Ectinogonia pulverea</i>	1010001000	1110000100	0000001000	0100001100	0010000001	0110010000	00120
<i>Cadnodis tenebrionis</i>	0000002110	0001000100	0000100000	0000011100	0110012001	1001110010	11101
<i>Oedisterna bisulcata</i>	0010000100	0101000100	1001000000	0100011100	0100002001	0001110010	11021
<i>Polybothris sumptuosa</i>	1000002001	0010101101	0000010010	0000011100	0010000001	0110000110	00100
<i>Psiloptera bicarinata</i>	0101012100	0200100001	0100001000	1000112010	0000101001	0110010010	01121
<i>Lampetis amaurotica</i>	0101012000	0000100110	0000001000	1000011110	1000012001	0111111010	01021
<i>L. viridimarginata</i>	0101001100	0000100110	0000001000	1000011110	1000012001	0111111010	01021
<i>L. fastuosa</i>	0101001100	0000100100	0000001000	1001002011	1001002101	0101110010	01121
<i>L. rugosa</i>	0101001100	0100100100	0000001000	1000001110	0001002001	0111110010	11101
<i>L. tucumana</i>	0011101100	0000100100	0001000000	1001101110	1001001001	0110110010	11101
<i>L. aurata</i>	0011100100	0000100001	1110000101	1011011111	1100001011	0111110002	01100
<i>L. aurifera</i>	0011100100	0000110001	1110000101	1011101110	1100001011	0110110012	01100
<i>L. auropunctata</i>	1101010100	0100100100	0001001000	1101110010	1001001011	0111110012	11111
<i>L. bahamica</i>	1011101100	0000100001	0100000101	1011101111	1001001011	0111110002	01100
<i>L. chalconota</i>	1101000100	0100100100	0001001000	1011100011	1001001011	0110110010	11111
<i>L. chamela</i>	0101012100	0000100100	0000000100	1011100010	1001001010	0110110012	01100
<i>L. chiapaneca</i>	0101000100	0000100100	0001000000	1001100011	1101001010	0110110010	11111
<i>L. christophi</i>	0101012100	0000100100	0000001000	1011100010	1000001001	0110110010	11101
<i>L. colima</i>	0101012100	0000100100	0000000100	1011110010	1001001011	0111110002	01100
<i>L. cortesi</i>	1101010100	0100100100	0000001100	1011010011	1100001011	0110110001	01111

<i>L. cupreopunctata</i>	1101010100	0100110100	0001001100	1011100011	1100001011	0110110001	01100
<i>L. cyanitarsis</i>	0101012100	0000100100	0001000000	1011110010	1000001001	0110110002	01100
<i>L. dilaticollis</i>	0011000100	0100010000	0001000100	1011010010	1100001100	0100110012	11101
<i>L. drummondii</i>	0011000100	0100010100	0001001100	1011010010	1100001100	0100110012	11101
<i>L. geniculata</i>	0001011100	0100100100	0000001000	1011100010	1000001001	0110110011	01110
<i>L. granulifera</i>	0011010100	0000100100	0000001000	1011100010	1001001011	0110110001	01100
<i>L. guildini</i>	0011000100	0100100100	0000001100	1011100010	1011001001	0111110010	11101
<i>L. hirtomaculata</i>	0001100100	0000100100	0001001000	1001100010	1001001011	0110110001	01100
<i>L. hondurensis</i>	0101011100	0000100100	0001001000	1011100011	1001001011	0110110011	01100
<i>L. lesnei</i>	1101001100	0100100100	0000001000	1011100011	1000001010	01111100??	?????
<i>L. mexicana</i>	0111011100	0100100100	0001001100	1011100010	1101001011	0110110012	01110
<i>L. monilis</i>	0101000100	0000100100	0001001000	1001100011	1000001001	0110110001	01100
<i>L. obscura</i>	1101000100	0100110100	0001001100	1011100011	1100001011	0111110001	01101
<i>L. simplex</i>	0101010100	0000100100	0000001000	1011100010	1000001001	0110110001	01110
<i>L. srdinkoana</i>	1011101100	0000100100	0001000000	1001110010	1000001001	0111110010	11101
<i>L. straba</i>	0011011100	0000100001	1120000101	1001111111	1100001011	0001110002	01100
<i>L. tigrina</i>	0101001100	0000110100	0001000000	1011100011	1100001011	0111110011	01110
<i>L. torquata</i>	0011100100	0000110001	0100000101	1011101111	1101001011	0111110002	01100
<i>L. viridicolor</i>	0101010100	0000100100	0001001000	1011100011	1000001011	0111110011	01100
<i>L. viridimarginalis</i>	1101011100	0000110100	0001000000	1011100011	1101001010	0011110001	01100
<i>L. webbii</i>	0011010100	0000110100	0001000000	1011010010	1100001000	0100110012	11101

Table 2. Synapomorphies and homoplastic changes listed by nodes.

Nodes	Synapomorphies	Homoplastic changes
1	-	37(1), 41(1)
2	31(0), 62(1)	23(0)
3	13(0), 14(1), 51(1), 52(1), 60(0)	26(1), 35(0), 41(0)
4	12(1), 46(0), 61(0)	0(1), 7(0), 53(0), 54(0), 64(0)
5	1(1), 30(1)	3(1), 38(1), 42(0)
6	40(1)	63(2)
7	18(1), 56(1)	35(1), 45(1), 62(0)
8	33(1), 36(2)	37(0)
9	34(1), 46(1)	5(1), 6(0), 53(0)
10	32(1), 36(0)	63(0)
11	-	60(1)
12	-	1(0), 2(1), 5(0)
13	-	23(1), 26(0), 35(1)
14	-	4(1), 6(1), 31(0)
15	-	15(1), 34(0), 41(1), 49(0), 52(0), 59(2)
16	-	11(1), 14(0), 27(1), 47(1).
17	59(1)	58(0), 64(0)
18	-	26(0), 59(2)
19	-	27(1), 43(1), 48(1)
20	-	53(1)
21	29(1)	1(0), 2(1), 4(1), 5(0), 6(0), 17(0), 19(1), 21(1), 36(1), 37(1), 39(1)
22	-	15(1), 41(1)
23	22(1)	20(1), 43(0)
24	-	15(0), 35(1)
25*	-	6(0)
26*	-	63(1)
27	-	23(1), 39(1)
28	-	48(1)
29	-	0(1), 15(1), 41(1)
30	-	6(1), 26(0), 53(1)
31	-	11(1), 27(1)
32	-	64(1)
33	-	58(1)

34	-	43(1)
35	-	39(0)
36	-	1(0), 58(0)
37	-	11(1), 59(2), 63(1)
38	-	0(1), 60(1), 64(1)
39	-	5(0), 39(1), 59(0)
40	-	49(0)

Table 3. Generalized tracks, clades and species.

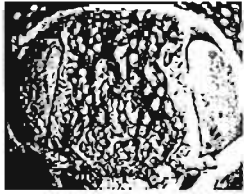
Generalized tracks	Clades	Species	Biogeographic regions, transition zones, and dominions
1	A and C	<i>L. auropunctata</i> , <i>L. drummondi</i> , and <i>L. webbii</i>	Mexican transition zone
2	A	<i>L. dilaticollis</i> and <i>L. webbii</i>	Nearctic region (Continental dominion)
3	A and C	<i>L. cupreopunctata</i> and <i>L. drummondi</i>	Nearctic region (Continental dominion)
4	C	<i>L. chalconota</i> and <i>L. cortesi</i>	Mexican transition zone
5	C	<i>L. chalconota</i> , <i>L. cortesi</i> , and <i>L. obscura</i>	Mexican transition zone
6	C	<i>L. cortesi</i> , <i>L. cupreopunctata</i> , <i>L. granulifera</i> , <i>L. monilis</i> , <i>L. simplex</i> , and <i>L. obscura</i>	Mexican transition zone and Neotropical region (Mesoamerican dominion)
7	B and C	<i>L. chalconota</i> and <i>L. cyanitarsis</i>	Mexican transition zone
8	A and C	<i>L. dilaticollis</i> and <i>L. hondurensis</i>	Mexican transition zone
9	B	<i>L. straba</i> and <i>L. torquata</i>	Neotropical region (Antillean dominion)
10	B	<i>L. aurata</i> and <i>L. aurifera</i>	Neotropical region (Antillean dominion)
11	B and C	<i>L. auropunctata</i> , <i>L. chamela</i> , <i>L. colima</i> , <i>L. cortesi</i> , and <i>L. cyanitarsis</i>	Neotropical region (Mesoamerican dominion)
12	C	<i>L. chalconota</i> , <i>L. granulifera</i> , <i>L. monilis</i> , and <i>L. obscura</i>	Neotropical region (Mesoamerican dominion)
13	A and C	<i>L. chalconota</i> , <i>L. chiapaneca</i> , <i>L. geniculata</i> , <i>L. monilis</i> , <i>L. simplex</i> , <i>L. srdinkoana</i> , <i>L. tigrina</i> , and <i>L. viridicolor</i>	Neotropical region (Mesoamerican dominion)

14	C	<i>L. monilis</i> and <i>L. simplex</i>	Neotropical region (Mesoamerican dominion)
15	C	<i>L. cortesi</i> and <i>L. granulifera</i>	Neotropical region (Mesoamerican dominion)

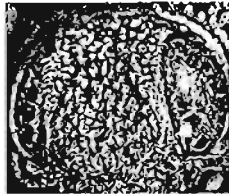
Figure caption

Figures 1-8. Illustration of some characters and character states. Punctures on frons: 1, *Lampetis (Spinthoptera) simplex* (Waterhouse, 1882) (scarce); 2, *L. sp E* (abundant); punctures on base of mandibles: 3, *L. aurata* (Saunders, 1871) (scarce); 4, *Lampetis (Lampetis) amaurotica* (Klug 1855) (abundant); prosternum with punctures confluent laterally: 5, *Oedisterna bisulcata* (Laporte and Gory 1836) (scarce); 6, *Perotis unicolor* (Olivier 1790) (abundant); elytra with transversal depressions on basal surface: 7, *L. auropunctata* (Kerremans, 1893) (scarce); 8, *L. drummondi* (Laporte & Gory, 1836) (abundant).

Figure 9. One of the two equally parsimonious cladograms of *Lampetis (Spinthoptera)* of North and Central America and the West Indies, and 11 species of different generic groups of the subtribe Dicercina (outgroups). Synapomorphies and homoplastic changes of nodes are listed in Table 2. Asterisks indicate the nodes collapsed in the strict consensus cladogram.



1



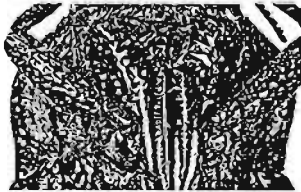
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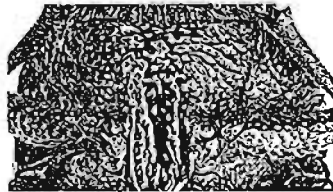
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4



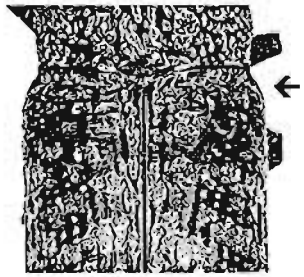
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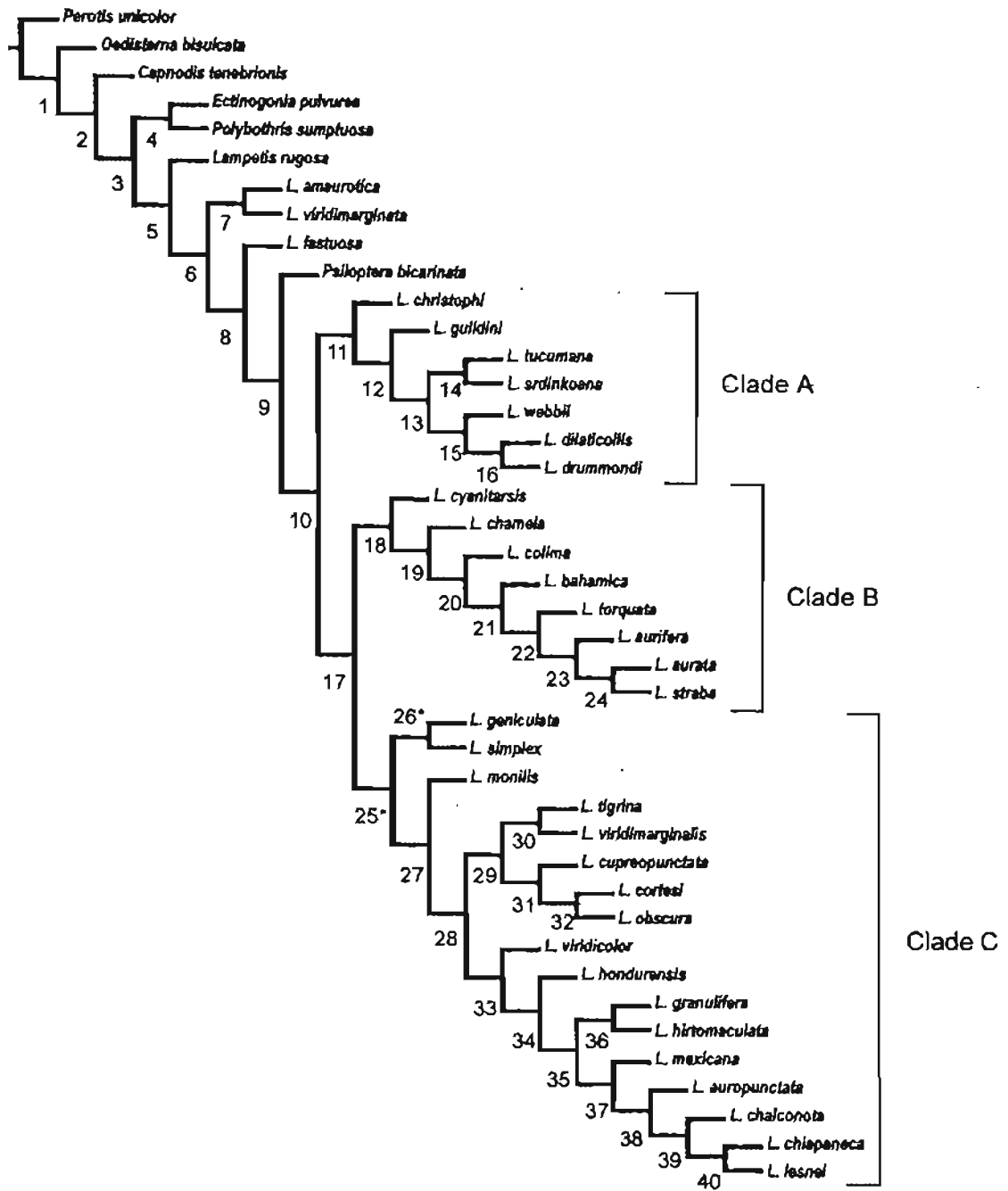
6



7



8



CAPÍTULO III. ANÁLISIS BIOGEOGRÁFICO

Corona, A. M. & J. J. Morrone. 2005. A track analysis of *Lampetis* (Spinthoptera) Casey, 1909 (Coleoptera: Buprestidae) in North America, Central America, and the West Indies. *Caribbean Journal of Science* 41(1):37-41.

**TRACK ANALYSIS OF THE SPECIES OF *LAMPETIS (SPINTHOPTERA)* CASEY,
1909 (COLEOPTERA: BUPRESTIDAE) IN NORTH AMERICA, CENTRAL
AMERICA, AND THE WEST INDIES**

ANGÉLICA MA. CORONA AND JUAN J. MORRONE*

Museo de Zoología "Alfonso L. Herrera", Departamento de Biología Evolutiva,
Facultad de Ciencias, UNAM, Apartado Postal 70-399, 04510 México, D. F., México

*Corresponding author: jjm@hp.fciencias.unam.mx

ABSTRACT. Based on the comparison of 29 individual tracks, distributional patterns of species of *Lampetis (Spinthoptera)* in North and Central America, and the West Indies were analyzed by a track analysis. Fifteen generalized tracks and six nodes were found. Three generalized tracks were found in the Nearctic region, six in the Mexican transition zone, and eight in the Neotropical region (two in the Antillean dominion and six in the Mesoamerican dominion). Nodes were located in the Mexican transition zone (Sierra Madre del Sur and Transmexican Volcanic Belt biogeographic provinces) and the Neotropical region (Mexican Gulf and Mexican Pacific Coast biogeographic provinces). Two nodes were located in the Isthmus of Tehuantepec, which represents a key area to the understanding of the biotic evolution of Mesoamerica.

KEYWORDS. Biogeography, evolution, Neotropics, Mexican transition zone, Isthmus of Tehuantepec.

INTRODUCTION

The genus *Lampetis* Dejean, 1833 is one of the most speciose genera in the subtribe Dicercina Bellamy, 2003, with approximately 251 species widely distributed in the Afrotropical, Tropical and Temperate Australian, Nearctic, Neotropical, Oriental, and Palaeartic regions. According to Kurosawa (1993), all New World species belong to the subgenus *Spinthoptera* Casey, 1909. Corona (in press) has recently recognized 31 species in North America, Central America and the West Indies: 12 are endemic to Mexico, four to Central America, five are shared between Mexico and Central America, four are shared between Mexico and the United States, and six are endemic to the West Indies. Based on this wide distribution in the Nearctic and Neotropical regions, as well as the Mexican transition zone (*sensu* Morrone 2004a), it seems that distributional patterns of the species of *Lampetis* (*Spinthoptera*) may help elucidate some aspects of the biotic evolution of this area.

Our objective is to analyze the geographical distribution of the North and Central American, and West Indian species of *Lampetis* (*Spinthoptera*) applying a track analysis, to contribute to the knowledge of their biotic diversification.

MATERIALS AND METHODS

We obtained 555 records from labels of 2433 specimens of *Lampetis* (*Spinthoptera*) borrowed from 44 collections. Two species were excluded from the analysis, because they are not well collected or have few localities (one or two): *L. lesnei* (Kerremans, 1910) and *L. christophi* (Théry, 1923) (1 and 4 specimens respectively).

The track analysis consists of plotting localities of different taxa on maps, and connecting them together with lines termed "individual tracks". When different individual tracks are superimposed, the resulting summary lines are considered "generalized" or "standard tracks", which indicate the preexistence of ancestral biotas subsequently fragmented by tectonic and/or climatic changes. If two or more generalized tracks intersect in a given area, they determine a node, which indicates that different ancestral biotic and geological fragments interrelate in space/time

(Morrone and Crisci 1995, *Craw et al.* 1999, Morrone 2004b). Localities, individual and generalized tracks, and nodes were represented on maps using ArcView 3.2 (ESRI 1998). Localities were connected according to their geographical proximity. When two or more individual tracks coincided, generalized tracks were delimited. Nodes were drawn where two or more generalized tracks intersected.

The areas used in this study correspond to the following regions, subregions, dominions, and biogeographic provinces (Morrone 2001a,b, 2004a; Morrone and Márquez 2003):

Neotropical region

Caribbean subregion

Mesoamerican dominion

Mexican Gulf province: coast of the Mexican Gulf, in eastern Mexico, Belize, and northern Guatemala.

Mexican Pacific Coast province: western Mexico, in the Pacific coast of the states of Sinaloa, Nayarit, Colima, Jalisco, Michoacán, Guerrero, Oaxaca, and Chiapas.

Western Panamanian Isthmus province: western Central America, from Costa Rica to western Panama.

Antillean dominion

Cuba province: Island of Cuba.

Hispaniola province: Island of Hispaniola (Dominican Republic and Haiti).

Nearctic region

Mexican Plateau province: central Mexico, in the states of Chihuahua, Coahuila, Durango, Zacatecas, San Luis Potosí, Guanajuato, and parts of Nuevo León and Sonora, and New Mexico (U.S.A).

Tamaulipas province: basically includes the coastal areas in the northern part of the Mexican Gulf.

Mexican Transition zone

Sierra Madre Occidental province: western Mexico, in the states of Chihuahua,

Durango, Zacatecas, Sonora, Sinaloa, Nayarit, and Jalisco, above 1,000 m altitude.

Sierra Madre Oriental province: eastern Mexico, in the states of San Luis Potosí, Coahuila, Hidalgo, Nuevo León, Veracruz, Puebla, and Querétaro, above 1,500 m altitude.

Transmexican Volcanic Belt province: central Mexico, in the states of Guanajuato, México, Distrito Federal, Jalisco, Michoacán, Puebla, Oaxaca, Tlaxcala, and Veracruz.

Balsas Basin province: central Mexico, in the states of Guerrero, México, Jalisco, Michoacán, Morelos, Oaxaca, and Puebla, below 2,000 m altitude, situated between the Transmexican Volcanic Belt and the Sierra Madre del Sur provinces.

Sierra Madre del Sur province: south central Mexico, from southern Michoacán to Guerrero, Oaxaca, and part of Puebla, above 1,000 m altitude.

RESULTS

Individual tracks were drawn for the following species (number of specimens in parentheses): *Lampetis aurata* (Saunders, 1871) (67), *L. aurifera* (Olivier, 1790) (71), *L. auropunctata* (Kerremans, 1893) (66), *L. bahamica* (Fisher, 1925) (71), *L. chalconota* (Waterhouse, 1882) (89), *L. chiapaneca* Corona, 2004 (23), *L. cortesi* (Laporte and Gory, 1837) (92), *L. cupreopunctata* (Schaeffer, 1905) (61), *L. dilaticollis* (Waterhouse, 1882) (102), *L. drummondi* (Laporte and Gory, 1836) (786), *L. geniculata* (Waterhouse, 1889) (94), *L. granulifera* (Laporte and Gory, 1837) (87), *L. guildini* (Laporte and Gory, 1836) (21), *L. hirtomaculata* (Herbst, 1801) (36), *L. mexicana* Théry, 1923 (8), *L. monilis* (Chevrolat, 1834) (122), *L. obscura* Thomson, 1879 (61), *L. simplex* (Waterhouse, 1882) (36), *L. srdinkoana* (Obenberger, 1924) (9), *L. straba* (Chevrolat, 1867) (10), *L. torquata* (Dalman, 1823) (110), *L. webbii* (LeConte, 1858) (303), and seven new species (103).

Based on their comparison, we obtained 15 generalized tracks (Fig. 1, Table 1). Three are found in the Nearctic region, six in the Mexican transition zone, and eight in the Neotropical region. Two of the latter are found in the Antillean dominion and six in the Mesoamerican dominion (Morrone 2001a, b, 2004a; Morrone and Márquez 2003).

Generalized track 1: western Arizona, USA to southwestern Chihuahua, Mexico. Mexican transition zone (Sierra Madre Occidental biogeographic province).

Generalized track 2: northeastern Chihuahua to northern Durango. Nearctic region (Mexican Plateau biogeographic province).

Generalized track 3: northeastern Texas, USA to northeastern Tamaulipas, Mexico. Nearctic region (Tamaulipas biogeographic province).

Generalized track 4: northern Guerrero to northern Oaxaca. Mexican transition zone (Sierra Madre del Sur biogeographic province).

Generalized track 5: central Oaxaca. Mexican transition zone (Sierra Madre del Sur biogeographic province).

Generalized track 6: southern San Luis Potosí to southeastern Veracruz. Mesoamerican dominion (Mexican Gulf biogeographic province) and Mexican transition zone (Sierra Madre Oriental biogeographic province).

Generalized track 7: central Guerrero to northern Morelos. Mexican transition zone (Transmexican Volcanic Belt, Balsas Basin, and Sierra Madre del Sur biogeographic provinces).

Generalized track 8: northern Morelos to western Oaxaca. Mexican transition zone (Transmexican Volcanic Belt, Balsas Basin, and Sierra Madre del Sur biogeographic provinces).

Generalized track 9: Cuba and Isla de la Juventud. Antillean dominion (Cuba province).

Generalized track 10: Dominican Republic and Haiti. Antillean dominion (Hispaniola province).

Generalized track 11: southern Nayarit to northern Guerrero. Mesoamerican

dominion (Mexican Pacific Coast biogeographic province) and Mexican transition zone (Transmexican Volcanic Belt, Balsas Basin, and Sierra Madre del Sur biogeographic provinces).

Generalized track 12: Isthmus of Tehuantepec to Central Chiapas. Mesoamerican dominion (Mexican Pacific Coast biogeographic province).

Generalized track 13: Central Chiapas, Mexico to Costa Rica. Mesoamerican dominion (Mexican Pacific Coast and Western Panamanian Isthmus biogeographic province).

Generalized track 14: southeastern Veracruz to Central Chiapas. Mesoamerican dominion (Mexican Gulf and Mexican Pacific Coast biogeographic provinces).

Generalized track 15: southeastern Veracruz to southern Oaxaca. Mesoamerican dominion (Mexican Gulf and Mexican Pacific Coast biogeographic provinces).

We found six nodes in the areas where these generalized tracks overlapped: three are located in the Mexican transition zone and three in the Neotropical region (Fig. 1, Table 1):

Node A: northern Morelos. Mexican transition zone (Transmexican Volcanic Belt biogeographic province).

Node B: northwestern Guerrero. Mexican transition zone (Sierra Madre del Sur biogeographic province).

Node C: northwestern Oaxaca Mexican transition zone (Sierra Madre del Sur biogeographic province).

Node D: southeastern Veracruz. Mesoamerican dominion (Mexican Gulf biogeographic province).

Node E: eastern Oaxaca. Mesoamerican dominion (Mexican Pacific Coast biogeographic province).

Node F: central Chiapas. Mesoamerican dominion (Mexican Pacific Coast biogeographic province).

DISCUSSION

Generalized track 13 is similar to the Northern and Southern Mesoamerican generalized tracks from Márquez and Morrone (2003) and Abrahamovich *et al.* (2004). Generalized track 7 is similar to generalized track 28 from Morrone and Gutiérrez (in press), which includes the Transmexican Volcanic Belt, Balsas Basin, and Sierra Madre del Sur biogeographic provinces.

Fifty percent of the nodes are in the Mexican transition zone (Sierra Madre del Sur and Transmexican Volcanic Belt biogeographic provinces) and the remaining are in the Mesoamerican dominion (Mexican Gulf and Mexican Pacific Coast biogeographic province). Node B is similar to node 25 from Morrone and Gutiérrez (in press) and node A is similar to node 3 from Escalante *et al.* (2004).

Three nodes (D, E, and F) are located in the area of the Isthmus of Tehuantepec, where a node was also found by previous analyses (Morrone and Márquez 2001, Márquez and Morrone 2003, Abrahamovich *et al.* 2004). These results corroborate Halffter's (2003) hypothesis, which highlighted the relevance of the Isthmus of Tehuantepec. For that coincidence we consider the Isthmus of Tehuantepec as a boundary between different biotic components. Ruggiero and Ezcurra (2003) and Morrone (2004a) recently discussed the evolutionary relevance of these areas, which are characterized by biotic interactions more than representing static lines. In spite of being classified in the Neotropical region, the Caribbean subregion exhibits such interactions and complexities, as indicated in the previous analyses.

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LITERATURE CITED

- Abrahamovich, A. H., N. B. Díaz, and J. J. Morrone. 2004. Distributional patterns of the Neotropical and Andean species of the genus *Bombus* (Hymenoptera: Apidae). *Acta Zool. Mex. (n.s.)* 20(1):99-117.
- Corona, A. Ma. In press. A revision of the subgenus *Lampetis* (*Spinthoptera*) Casey, 1909 (Coleoptera, Buprestidae) of North and Central America, and the West Indies. *Eur. J. Entomol.*
- Craw, R. C., J. R. Grehan, and M. J. Heads. 1999. *Panbiogeography: Tracking the history of life*. Oxford University Press, New York.
- Escalante, T., G. Rodríguez, and J. J. Morrone. 2004. The diversification of Nearctic mammals in the Mexican transition Zone: A track analysis. *Biol. J. Linn. Soc.* 83: 327-339.
- ESRI (Environmental Systems Research Institute). 1998. *ArcView GIS 3.2*.
- Halffter, G. 2003. Biogeografía de la entomofauna de montaña de México y América Central. In *Una perspectiva latinoamericana de la biogeografía*, ed. J. J. Morrone and J. Llorente Bousquets, 87-97. Las Prensas de Ciencias, Facultad de Ciencias, UNAM, México, D. F.
- Kurosawa, Y. 1993. Reorganization of the genus *Psiloptera* (Coleoptera, Buprestidae). *Jpn. J. Entomol.* 61(3):577-583.
- Márquez, J., and J. J. Morrone. 2003 Análisis panbiogeográfico de las especies de

- Heterolinus* y *Homalolinus* (Coleoptera: Staphylinidae: Xantholinini). *Acta Zool. Mex. (n. s.)* 90:15-25.
- Morrone, J. J. 2001a. Toward a cladistic model of the Caribbean: Delimitation of areas of endemism. *Caldasia* 23(1):43-76.
- Morrone, J. J. 2001b. *Biogeografía de América Latina y el Caribe*. M & T-Manuales y Tesis SEA, vol. 3, Sociedad Entomológica Aragonesa, Zaragoza.
- Morrone, J. J. 2004a. Panbiogeografía, componentes bióticos y zonas de transición. *Rev. Bras. Entomol.* 48:149-162.
- Morrone, J. J. 2004b. *Homología biogeográfica: Las coordenadas espaciales de la vida*. Cuadernos del Instituto de Biología 37, UNAM, México D.F.
- Morrone, J. J., and J. V. Crisci. 1995. Historical biogeography: Introduction to methods. *Annu. Rev. Ecol. Syst.* 26:373-401.
- Morrone, J. J., and J. Márquez. 2001. Halffter's Mexican Transition Zone, beetle generalized tracks, and geographical homology. *J. Biogeogr.* 28:635-650.
- Morrone, J. J., and J. Márquez. 2003. Aproximación a un Atlas Biogeográfico de México: Componentes bióticos principales y provincias biogeográficas. In *Una perspectiva latinoamericana de la biogeografía*, ed. J. J. Morrone and J. Llorente Bousquets, 217-220. Las Prensas de Ciencias, UNAM, México, D. F.
- Morrone, J. J., and A. Gutiérrez. In press. Do fleas (Insecta: Siphonaptera) parallel their mammal host diversification in the Mexican transition zone? *J. Biogeogr.*
- Ruggiero, A., and C. Ezcurra. 2003. Regiones y transiciones biogeográficas: Complementariedad de los análisis en biogeografía histórica y ecológica. In *Una perspectiva latinoamericana de la biogeografía*, ed. J. J. Morrone and J. Llorente Bousquets, 141-154. Las Prensas de Ciencias, UNAM, México, D. F.

TABLE

Table 1. Generalized tracks arranged in regions and dominions, with the species

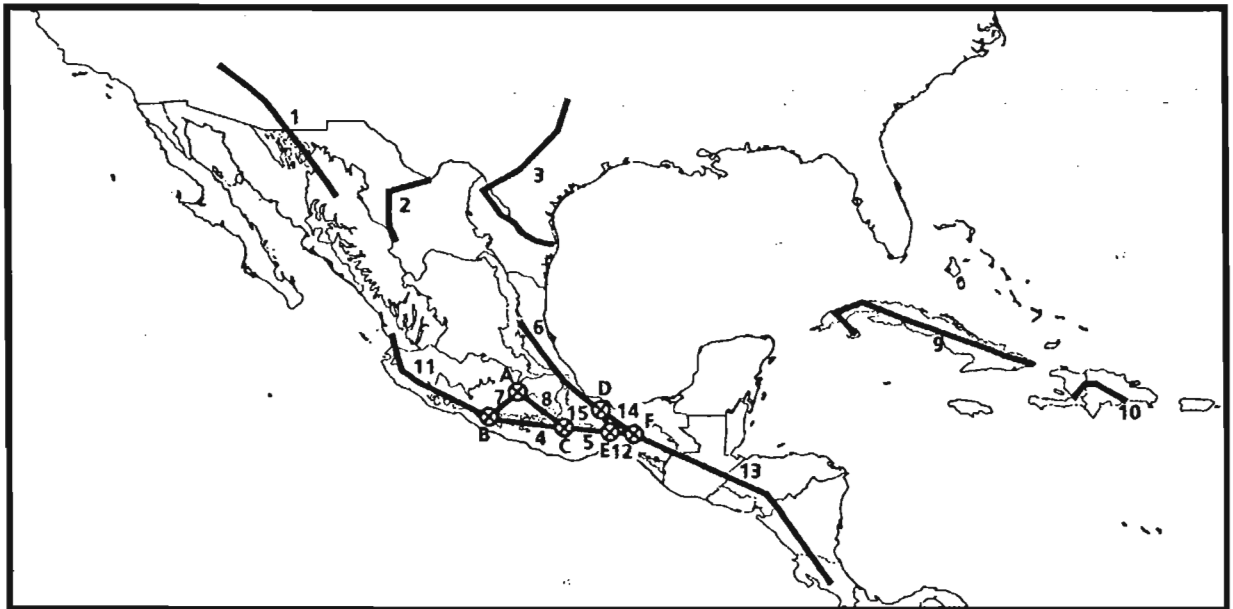
defining them, and nodes interception.

Regions	Dominions	Generalized Tracks	Species	Nodes
Nearctic	Continental Nearctic	2	<i>L. dilaticollis</i> and <i>L. webbii</i>	-
		3	<i>L. cupreopunctata</i> and <i>L. drummondi</i>	-
Mexican transition zone		1	<i>L. auropunctata</i> , <i>L.</i> <i>drummondi</i> , and <i>L. webbii</i>	-
		4	<i>L. chalconota</i> and <i>L. cortesi</i>	B and C
		5	<i>L. chalconota</i> , <i>L. cortesi</i> , and <i>L. obscura</i>	C and E
		6	<i>L. cortesi</i> , <i>L. cupreopunctata</i> , <i>L. granulifera</i> , <i>L. monilis</i> , <i>L. simplex</i> , and <i>L. obscura</i>	D
		7	<i>L. chalconota</i> and <i>L. sp. C</i>	A and B
		8	<i>L. dilaticollis</i> and <i>L. sp. D</i>	A and C
Neotropical	Antillean	9	<i>L. straba</i> and <i>L. torquata</i>	-
		10	<i>L. aurata</i> and <i>L. aurifera</i>	-
	Mesoamerican	6	<i>L. cortesi</i> , <i>L. cupreopunctata</i> , <i>L. granulifera</i> , <i>L. monilis</i> , <i>L. simplex</i> , and <i>L. obscura</i>	D
		11	<i>L. auropunctata</i> , <i>L. sp. A</i> , <i>L. sp. B</i> , <i>L. cortesi</i> , and <i>L.</i> <i>sp. C</i>	B
		12	<i>L. chalconota</i> , <i>L. granulifera</i> , <i>L. monilis</i> , and <i>L. obscura</i>	E and F

13	<i>L. chalconota</i> , <i>L. chiapaneca</i> , <i>L. geniculata</i> , <i>L. monilis</i> , <i>L. simplex</i> , <i>L. srdinkoana</i> , <i>L. sp. E</i> , and <i>L. sp. F</i>	F
14	<i>L. monilis</i> and <i>L. simplex</i>	D and F
15	<i>L. cortesi</i> and <i>L. granulifera</i>	D and E

FIGURE CAPTION

Fig. 1. Generalized tracks and nodes found in the analysis of 29 species of *Lampetis*.



CONCLUSIONES

Se llevó a cabo análisis sistemático de las especies del subgénero *Lampetis* (*Spinthoptera*) para América del Norte, Central y las Antillas, que incluye una revisión taxonómica de las especies, un análisis filogenético y un análisis biogeográfico, los cuales fueron desarrollados en tres artículos sometidos para su publicación en revistas indizadas, de los cuales, el primero está en prensa, el segundo ya fue enviado y el tercero se encuentra publicado en la revista *Caribbean Journal of Science*.

Se revisó y actualizó la taxonomía del subgénero *Lampetis* (*Spinthoptera*) para América del Norte, Central y las Antillas y se elaboró una clave dicotómica que permite la identificación de las especies. Se reconoció un total de 31 especies, de las cuales, se redescubrieron 20 especies y se describieron siete especies nuevas para la ciencia (*L. chamela*, *L. colima*, *L. cyanitarsis*, *L. hondurensis*, *L. tigrina*, *L. viridicolor* y *L. viridimarginalis*). Del resto de las especies (*L. chiapaneca* Corona, 2004, *L. cupreopunctata* [Schaeffer, 1905], *L. drummondii* [Laporte & Gory, 1836] y *L. webbii* [LeConte, 1858]) sólo se incluyeron las diagnosis, distribución y plantas huéspedes, debido a que fueron estudiadas con anterioridad. *Lampetis* (*Spinthoptera*) *famula* Chevrolat, 1838 y *L. variolosa* (Fabricius, 1801) no fueron incluidas en el estudio debido a que su distribución es sudamericana. *Lampetis* (*Spinthoptera*) *insularis* (Casey, 1909) fue sinonimizada con *L. hirtomaculata* (Herbst, 1801) y se reconoce por primera vez para los EEUU a *L. auropunctata* (Kerremans, 1893).

Se dio a conocer información más precisa sobre la distribución, las plantas huéspedes y la fenología de la mayoría de las especies estudiadas. No obstante, se sugiere realizar más trabajo de campo con el fin de complementar los datos de

distribución, así como también realizar recolectas de larvas y conocer sus plantas huéspedes. Con esto se podrían enriquecer los análisis biogeográficos y cladísticos, al obtener más registros y caracteres larvales.

Los resultados del análisis filogenético apoyan la monofilia de *Lampetis* (*Spinthoptera*), la cual está sustentada por dos sinapomorfías (élitros con varias depresiones interestriales irregulares rodeando callosidades lateralmente y margen anterior del prosterno aplanado en la parte media). También indicaron que dicho subgénero está más cercanamente relacionado con las especies de *Psiloptera* (sudamericanas) que con las especies de (*Lampetis* (*Lampetis*]) (Viejo Mundo), por lo que se propone que *Lampetis* (*Spinthoptera*) no forma parte de *Lampetis* y se sugiere tratarlo como un género independiente. Por último, el análisis cladístico muestra que el grupo de las especies de *Lampetis* (*Spinthoptera*) de América del Norte, Central y las Antillas es parafilético, ya que *Lampetis* (*Spinthoptera*) *tucumana* (grupo externo sudamericano) quedó incluida en el grupo interno. Sería interesante elaborar el análisis filogenético a nivel de subgénero para contrastar dicha hipótesis.

En el análisis filogenético se pudo observar que la mayoría de las especies antillanas forman un subgrupo más restringido dentro del grupo en estudio. De acuerdo con su distribución geográfica también se formó un subgrupo mesoamericano, para un gran número de especies centroamericanas y mexicanas.

Se encontraron 15 trazos generalizados y seis nodos, al comparar 29 trazos individuales, por medio de un análisis de trazos. Tres trazos generalizados fueron encontrados en la región Neártica, seis en la zona de transición Mexicana y ocho en la región Neotropical (dos en el dominio Antillano y seis en el dominio Mesoamericano). Dos trazos generalizados coincidieron con la distribución de otra familia de coleópteros (*Staphylinidae*), de ápidos y de sifonápteros; ellos abarcaron

tres provincias biogeográficas (Eje Volcánico Transmexicano, Cuenca del Balsas y Sierra Madre del Sur). Los nodos fueron localizados en la zona de transición Mexicana y la región Neotropical. Dos de éstos fueron encontrados en el Istmo de Tehuantepec, lo cual coincide con otros trabajos previos, por lo que es considerado como una importante barrera geográfica y un área clave para el entendimiento de la evolución biótica de Mesoamérica.

LITERATURA CITADA

- Bellamy, C. L. 1985. A catalogue of the higher taxa of the family Buprestidae (Coleoptera). *Navors. Nas. Mus., Bloemfontein* 4:405-472.
- Bellamy, C. L. 2003. An illustrated summary of the higher classification of the superfamily Buprestoidea (Coleoptera). *Folia Heyrovskyana, Supplementum* 10:1-197.
- Blackwelder R. E. 1944. Checklist of the coleopterous insects of Mexico, Central America, The West Indies, and South America. Parts 1-6. *Bull. Smithsonian Inst. U. S. Nat. Mus.* No. 185, 1492 pp.
- Casey, T. L. 1909. Studies in the American Buprestidae. *Proc. Wash. Acad. Sci.* 11:47-78.
- Chevrolat, L. A. A. 1834. *Coléoptères du Mexique*, Fasc. 1, Gustave Silbermann, Strasbourg, 25 pp.
- Chevrolat, L. A. A. 1838. Centurie de Buprestides. *Rev. Entomol.* 5:41-110.
- Chevrolat, L. A. A. 1867. Coléoptères de l'île de Cuba. (Suite) Notes, synonymies et descriptions d'espèces nouvelles. Septième mémoire. Famille des Buprestides, Throscides, Eucnémides et Élaterides. *An. Soc. Entomol. Fr. ser. 4*, 7:571-616.
- Corona, A. M. 2004. A new species of *Lampetis* Dejean from Chiapas, Mexico (Coleoptera: Buprestidae). *Coleopt. Bull.* 58:159-162.
- Costa, C. 2000. Estado del conocimiento de los Coleoptera neotropicales. Pp. 99-114. En: F. Martín Piera, J. J. Morrone & A. Melic (eds.). *Hacia un proyecto CYTED para el inventario y estimación de la diversidad entomológica en Iberoamérica: PrIBes 2000*. Sociedad Entomológica Aragonesa. Vol. I. Monografías tercer milenio. España.
- Dalman, J. W. 1823. *Analecta entomologica*. Holmiae, Lindh 4, 104 pp.
- Dejean, P. F. M. A. 1833. *Catalogue des Coléoptères de la collection de M. le comte Dejean*. Méquignon-Marvis, Father & Sons, Paris, livraison 1, 96 pp.

- Fabricius, J. C. 1801. *Systema Eleutheratorum, ordines, genera, species: adiectis synonymis, locis, observationibus, descriptionibus*. Vol. 2, Bibliopolii Academici Novi, Kiliae. 687 pp.
- Fisher, W. S. 1925. A revision of the West Indian Coleoptera of the family Buprestidae. *Proc. U. S. Nat. Mus.* 65(2522):1-207.
- Hespenheide, H. A. 2002. A review of North and Central American *Paragrilus* Saunders, 1871 (Coleoptera: Buprestidae: Agrilinae). *Zootaxa* 43:1-28.
- Herbst, J. F. W. 1801. Natursystem aller bekännnten in-und ausländischen Insecten, als eine Fortsetzung der Büssonschen Naturgeschichte. *Der Käfer neunter Theil* 9:1-344.
- Kerremans, C. 1893. Essai de groupement des Buprestides. *Ann. Soc. Entomol. Belgique* 37:94-122.
- Kerremans, C. 1910. *Monographie des buprestides*, Dulau & Co., London; Author, Bruxelles; R. Friedländer & Son, Berlin, Vol. 4, livraison 6, pp. 161-192; livraison 7, pp. 193-224; livraison 8, pp. 225-256; livraison 9, pp. 257-284; color plates 23-26. Vol. 5, livraison 1, pp.
- Kurosawa, Y. 1993. Reorganization of the genus *Psiloptera* (Coleoptera, Buprestidae). *Jpn. J. Entomol.* 61:577-583.
- Laporte de Castelnau, F. L. & Gory H. L. 1836. *Histoire naturelle de iconographie des insectes coléoptères. Monographie des buprestides*. P. Duménil, Paris. Vol. 1, livraisons 8-11, genera: *Bubastes*, *Aurigena*, *Capnodis*, *Buprestis* (pp 1-64). [genera paged separately]
- Laporte de Castelnau, F. L. & Gory H. L. 1837. *Histoire naturelle de iconographie des insectes coléoptères. Monographie des buprestides*. P. Duménil, Paris. Vol. 1, livraisons 12-16, genera: *Buprestis* (pp. 65-160), *Nascio*, *Archerusia*, *Asthraeus*, *Bulis*, *Acantha*, *Apatura*. [genera paged separately]

- LeConte J. L. 1858. Description of new species of Coleoptera, chiefly collected by the United States and Mexican Boundary commission; under Major W. H. Emory, U. S. A. *J. Acad. Nat. Sci. Philadelphia* 10:59-89.
- Nelson G. H. 1986. A review of the genus *Psiloptera* subgenus *Lampetis* Solier in the United States (Coleoptera: Buprestidae). *Coleopt. Bull.* 40:272-284.
- Obenberger, J. 1924: De buprestidarum speciebus novis (diagnoses praeliminares) (Col.). Nové druhy celedi Krascú. *Sborn. Entomol. Odd. Nár. Mus., Praze* 2:93-115.
- Olivier, A. G. 1790. *Entomologie, ou histoire naturelle des insectes, avec leurs caractères génériques et spécifiques, leur description, leur synonymie, et leur figure enluminée*. Coléoptères, genera 9-34, vol. 2, no. 32, Baudouin, Paris, 63 plates, 485 pp.
- Saunders, E. 1871. *Catalogous buprestidarum synonymicus et systematicus*. J. Janson, London, 171 pp.
- Théry, A. 1923. Etudes sur les Buprestides. (Troisième partie). *Ann. Soc. Entomol. Belgique* 62(1922):193-270.
- Thomson, J. 1879. Revue du groupe des Psiloptérites; Description d'espèces nouvelles de Psiloptérites. *Rev. Mag. Zool.* 7:161-177.
- Triplehorn, C. A. & N. F. Johnson. 2005. *Borror and DeLong's Introduction to the study of insects*. 7a. ed. Thomson Brooks/Cole Editorial. EE.UU.
- Waterhouse, C. O. 1882. *Biologia Centrali-Americana*, Insecta, Coleoptera, Buprestidae, Vol. 3, part 1, F. D. Godman & O. Salvin, pp. 1-32, plates 1-2.
- Waterhouse, C. O. 1889. *Biologia Centrali-Americana*, Insecta, Coleoptera, Buprestidae, Vol. 3, part 1, F. D. Godman & O. Salvin, pp. 49-193, plates 4-8.