Zootaxa 1021: 29–36 (2005)
www.mapress.com/zootaxa/

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

1021

Notes on the genus *Lagocheirus* Dejean: records and descriptions (Coleoptera: Cerambycidae: Lamiinae: Acanthocinini)

VÍCTOR H. TOLEDO[1] & FRANK T. HOVORE[2]

[1] *CEAMISH, Universidad Autónoma del Estado de Morelos, Av. Universidad 1001, Col. Chamilpa, Cuernavaca, Morelos 62210, MÉXICO. Email: victor_toledohdz@yahoo.com.mx*
[2] *14734 Sundance Place, Santa Clarita, CA 91387, USA. Email: fthovore@thevine.net*

Abstract

Lagocheirus jamaicensis is described as new from Jamaica. *Lagocheirus araneiformis flavolineatus* Aurivillius is proposed as a new status. Taxonomic notes and characterizations are provided for *L. foveolatus* and *L. giesberti*; species discussed are illustrated in color.

Key words: *Lagocheirus*, Cerambycidae, Lamiinae, Jamaica, Costa Rica, Panama, Ecuador

Introduction

The genus *Lagocheirus* contains 20 described species, distributed from the southern United States through Mexico, Central America, the Caribbean and into northern South America. Adults usually are found on dead or dying trees at night, and the larvae feed within the cambium layer, cutting distinctive, round "cookies" in the outer bark prior to retreating into the sapwood to pupate. Several species are very abundant on "living fencepost" tree genera (*Bursera*, *Spondias*) in Central America, where they often occur in large numbers on individual dying or dead trees. Adults feed on sap and fermenting fruit, and may survive and mate for six months or more.

Dillon (1957) provided a revision of the genus, but did not see specimens of all of the species treated therein. Toledo (1998) provided a partial revision of the genus, for Mexico and Central America. Hovore (1998) added two new species from Costa Rica. The following new species and taxonomic notes supplement the previous papers.

Material were deposited in the following collections:

CNIN — Coleccion Nacional de Insectos, Instituto de Biologia, UNAM, México.

Accepted by Q. Wang: 6 Jul. 2005; published: 22 Jul. 2005

FSCA — Florida State Collection of Arthropods, Florida, Gainesville, USA.
FTHC — Frank T. Hovore Collection, California, USA.
INBC — Instituto Nacional de Biodiversidad, Costa Rica.
USNM — National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA.

***Lagocheirus jamaicensis* Toledo & Hovore, new species**
(Figures 1a, b)

Type material. Holotype: **JAMAICA**: Green Hills, 13-20-IX-66, A. B. Gurney (USNM). Paratypes. One male (CNIN) and one female (USNM), same data as holotype; one female: **JAMAICA**: Mandeville, Aug 2, 1902, W. Robinson bequest 1929 (CNIN).

Diagnosis. This species would key to *L. foveolatus* Dillon in Toledo (1997), but the coloration and pattern are completely unlike that large Panamanian species, which is wholly dark red-brown with a white post-median elytral fascia. The dorsal coloration of *L. jamaicensis* most closely resembles that of *L. araneiformis* (Linnaeus), *L. o. obsoletus* (Thomson) [formerly *L. undatus* (Voet)], and *L. integer* Bates, but it may be easily distinguished from these and all other described species in the genus by the long spines at the apex of elytra. The combination of acute lateral pronotal tubercles, with yellow pubescent areas on the pronotum, and long, unarmed, unicolorous antennae also is distinctive.

Description. Male. Length: 20 mm; humeral width: 8.7 mm. Form robust, elongated, slightly subdepressed; integument reddish-brown; pubescence dense, very short, appressed, brown, grayish, yellowish, and white. Head with regularly scattered yellowish pubescence and short yellow setae, an oval black brown macula near the clypeal suture on each side of median line; yellowish pubescence around margins of eyes; antennae with sparse, short, appressed yellowish pubescence, segments 3–11 feebly dark biannulate basally and apically. Pronotum with an apical short vitta onto lateral margin of anterior tubercles, not reaching anterior margin, basal vitta angulated, extending from margin anteriorly onto lateral sides of discal tubercles, median lateral vitta extending from basal margin onto ventral side of lateral tubercles; dense yellow pubescence between basal vitta of discal tubercles and lateral tubercles. Scutellum evenly clothed with yellowish brown pubescence. Elytra with mixed brown, grayish and white pubescence, appearing light brown over most of disk; a postscutelar small macula of white pubescence, near suture; a large, semi-circular dark brown lateral macula at basal 2/3; numerous small dark brown spots scattered onto suture, principally over apical one-half; a pair of dark brown, angulated maculate medially at either side of suture; the apical 1/3 with darker brown pubescence extending across disk in a zig-zag pattern, pro-, meso- and metasternum mottled with yellowish-brown pubescence. Abdomen irregularly clothed with yellowish pubescence. Legs irregularly clothed with pale yellowish pubescence; tibiae annulate basally with brown pubescence.

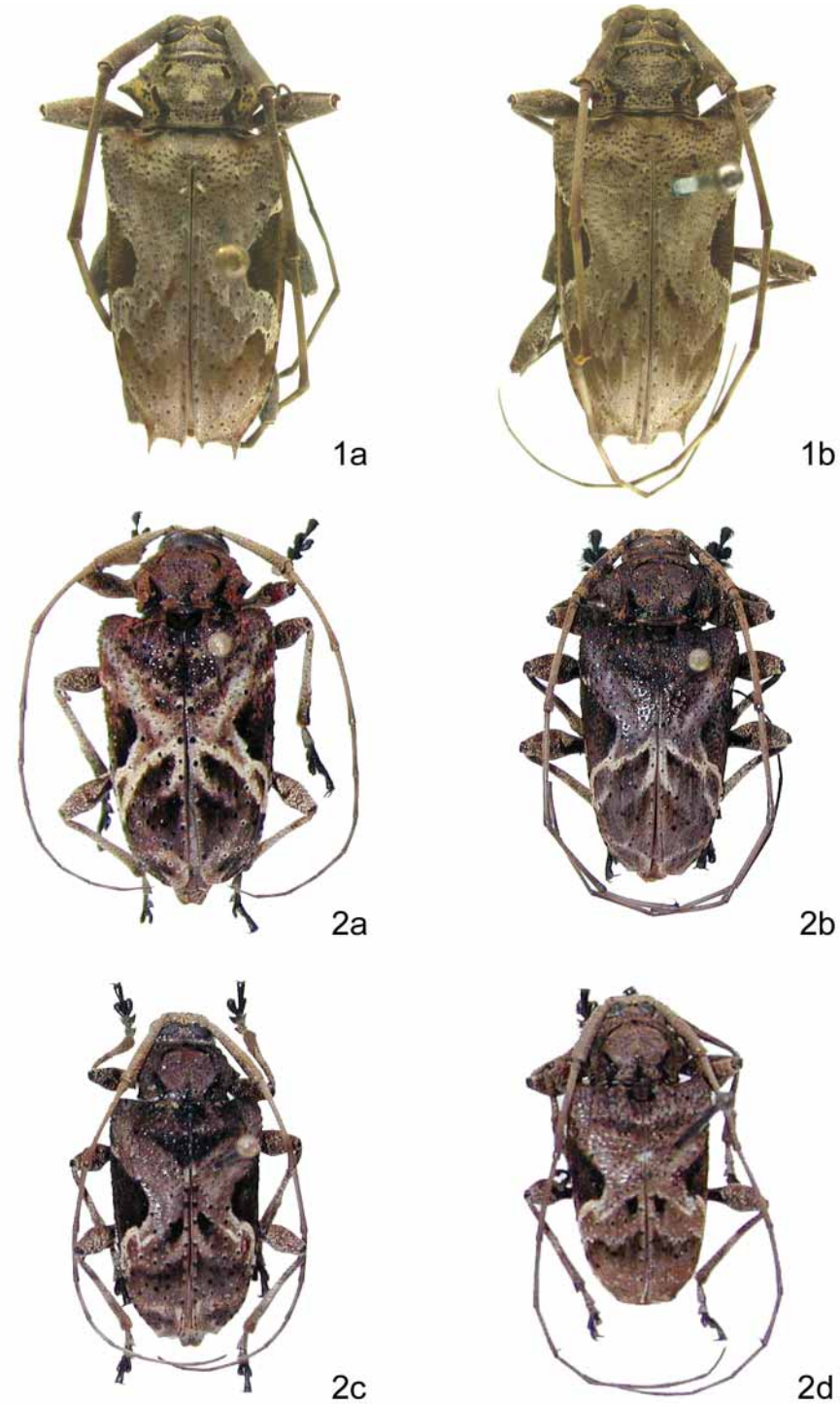

FIGURE 1.*Lagocheirus jamaicensis*; a: male holotype; b: female paratype.
FIGURE 2. *Lagocheirus araneiformis;* a: *L. a. flavolineatus*, male, Loreto Road, Ecuador; b: male, Lago Agrio, Ecuador; c:male, Atahualpa, Ecuador; d: male, French Guiana.

Head. Front feebly convex, slightly wider than long; longitudinal median line extending from epistoma to occiput; antennal tubercles very prominent and divergent, with abundant, small setigerous punctures; eyes with lower lobe transverse, wider than long, as tall as genae below; upper eyes lobes broader than interocular space; antennae simple, unmodified, twice as long as body, apical two-thirds of segment five extending beyond elytral apices, scape with dense, scattered punctures, segment three distinctly longer than scape, segment four longer than scape, slightly shorter than three, segments five to eleven gradually decreasing in length, segment eight subequal in length to scape, segments nine to eleven shorter than scape. Pronotum 1.6 times broader than long, base broader than apex; disk with small tubercles, not prominent, apical tubercles subconical, basal tubercles low, lateral tubercles broad, prominent, conical, unarmed at apex; disk with abundant small punctures around tubercles, basal and apical depressions with scattered coarse punctures; basal one-half with abundant setigerous punctures, principally on lateral tubercles. Scutellum subtriangular, apically rounded and regularly punctate. Elytra 1.7 times longer than broad; basal gibbosity scarcely evident, with a single small basal tubercle; humeral angles coarsely granulate; disk densely, coarsely granulate-punctate on basal one-third, punctures bigger than granules, punctures becoming simple, finer, and less dense over apical two-thirds; costae feebly elevated at basal one-fifth; apices emarginate, sutural angle strongly dentiform, external angle elongate, spiniform. Prosternal process one-half the width of a coxal cavity; mesosternal process four-fifths the width of a coxal cavity, sparsely, coarsely punctate laterally; metasternum regularly, finely punctate. Abdomen sparsely, finely punctate; visible sternites subequal in length, fifth sternite tapered, emarginate at apex. Legs finely, regularly punctate.

Female. Length: 24.5 mm; humeral width: 10.7 mm. Form slightly more robust than that of male. Antennae shorter, with segment five extending beyond elytral apices; scape and segment three subequal in length, longer than any of the following segments, distal segments gradually decreasing in length. Fifth sternite elongated, tapered, emarginate at apex.

Etymology. This species is named for the type locality.

Lagocheirus araneiformis flavolineatus Aurivillius, 1921, new status
(Figure 2a)

Lagocheirus flavolineatus Aurivillius, 1921: 52, pl. 2, fig. 10

Remarks. When Aurivillius described this species from Colombia, he noted that it differed only slightly from *Lagocheirus araneiformis*, the primary distinguishing characteristics being the distinctive dorsal pattern of pale yellowish vittae, forming an X-shaped marking across the elytral disk, and by the larger blackish tubercles of the elytra. Dillon (1957) summarily — and incorrectly — synonymized *flavolineatus* with *L. rosaceus*

Bates, without comment as to how he arrived at that determination. Dillon may not have seen either the type specimen of *flavolineatus* nor the original description and illustration, as *flavolineatus* clearly does not fit within Dillon's characterization of *rosaceus*, nor would it key to that species in his revision, having the median portions of the pro-, meso- and metasterna, and abdominal sternites densely pubescent (a "group" character that it shares with *araneiformis*). Also, *Lagocheirus rosaceus* has a very different dorsal pattern (Figure 5), primarily formed by reddish-orange vittae, a much broader, more inflated-appearing pronotum, and much shorter antennae, with annulate distal segments. Toledo (1997) did not review South American taxa in his regional study of the genus, and so did not comment upon the synonymy of *flavolineatus* with *rosaceus*, but the two taxa clearly differ from one another, and *flavolineatus* is hereby removed from synonymy with *rosaceus*.

The relationship of *flavolineatus* to *araneiformis* is more difficult to resolve, however, as the two taxa appear to intergrade within northern Amazonian Ecuador. A series of specimens from Napo Province ("km 11, Loreto Road, 1,200 m" E.F. Giesbert) (Figure 2a) (FSCA), exactly match the type specimen of *flavolineatus* in coloration and the extent of the elytral pattern, and are readily distinguishable from *araneiformis ypsilon* (Voet) (from Central America) and *araneiformis fulvescens* Dillon (from northern South America) both of which lack the distinctive dorsal pattern, yellow pubescent antennae, and coarser, basal elytral sculpturation. Three specimens from Sucumbios Province: "5 km W Nueva Loja" [= Lago Agrio], T.C. MacRae (FTHC) (Figure 2b) (approximately 120 km E of the Loreto Road locality, and several hundred meters lower elevation), possess the apical portions of the *flavolineatus* elytral pattern, but on the basal portion of the elytra the pattern ranges from indistinct to absent, and the antennae are less-brightly yellow-colored. Specimens from a lower elevation site in Napo Province: 21–25 km W Atahualpa, F.T. Hovore (FTHC) (Figure 2c) (approximately 40 km south, and 900 m down-slope from the Loreto Road locality) have typical *araneiformis* dorsal patterns, but with elytral sculpturation and antennal coloration closer to that of *flavolineatus*. Specimens of *araneiformis* examined from further south in Ecuadorian Amazonia, and from mid-elevation sites in French Guiana (± 300m) (Figure 2d) exhibit no intermediacy with the *flavolineatus* phenotype.

The distinctive *flavolineatus* pattern apparently occurs populationally in montane Amazonian Ecuador, and presumably also in Colombia, where it may represent a discrete taxon within the *araneiformis* species group. Because material from nearby lower elevation sites in Ecuador exhibits phenotype intermediacy with *araneiformis*, it seems prudent at present to regard *flavolineatus* as a subspecies of *Lagocheirus araneiformis*.

The type of *L. flavolineatus* is in the Entomology Collection of the Swedish Museum of Natural History.

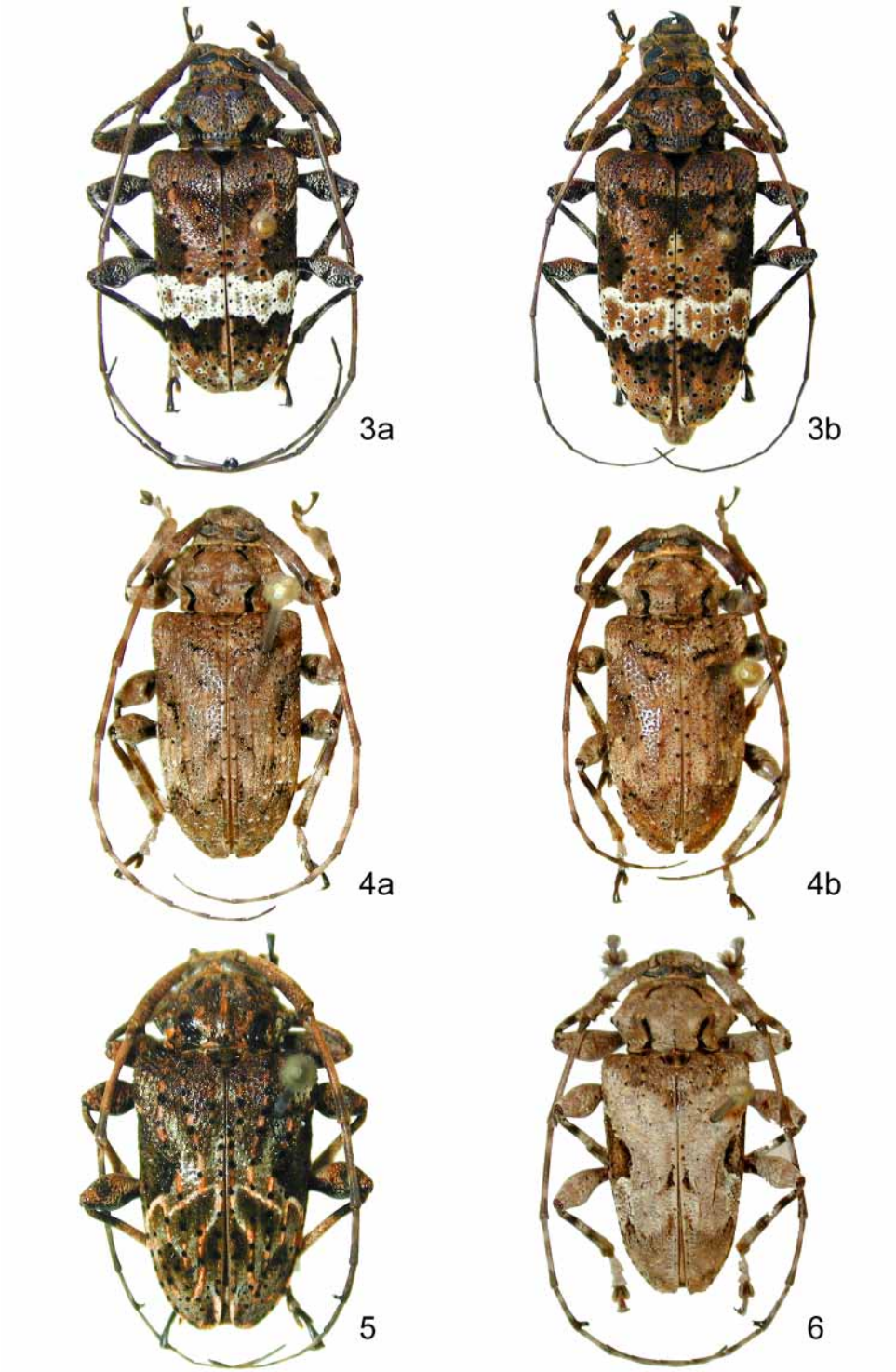

FIGURE 3. *Lagocheirus foveolatus*; a: male, Panama; b: female, Panama
FIGURE 4. *Lagocheirus giesberti*; a: male, Costa Rica; b: female, Costa Rica
FIGURE 5. *Lagocheirus rosaceus*, male, Costa Rica
FIGURE 6. *Lagocheirus obsoletus obsoletus*, male, Costa Rica

***Lagocheirus foveolatus* Dillon & Dillon**
(Figures 3a, b)

Material examined: **PANAMA**, Panama Province: one male, Cerro Azul, 26 May 1989, F.T. Hovore (FTHC); "10 – 15 km N El Llano" 09 May 1985, F.T. Hovore (FTHC); one female, "11 km N El Llano" 3–5 June 1984, F.T. Hovore (FTHC); Cocle Province: "El Valle, la mesa" 17 May 1994, F.T. Hovore (FTHC).

Remarks. This large, boldly patterned species was described (Dillon, 1957) from a single 32 mm female specimen from "Chiriquí, Panama". The following characterization of the male, and additional notes on the female, are drawn from a series of specimens from central Panama.

The male is very similar in coloration and form to the female, but with typical generic differences in the foretarsi and antennae. Males exhibit the following character states: Vertex of head with interocular space narrower than upper eye lobes, lower lobes taller than the gena below; antennal scape mottled brown and tan, remaining segments brown, unmarked; segment four attaining elytral apices, segment six with apical appendix stout, incurved, shining, with an apical penicilla of black setae; the two basal pro-tarsal segments densely clothed with pale yellow-brown, silky pubescence; femora and underside mottled light-gray and dark brown, apex of terminal abdominal segment feebly emarginate, setose. Length: 21–25 mm.

The dorsal coloration and pattern are remarkably consistent within both sexes in the series at hand, with the transverse pale elytral fascia being densely white-pubescent in some specimens, less-so in others. Females examined are smaller than the holotype, at 27 and 30 mm. Most of the specimens were taken on fallen trees, but one male was attracted to light.

***Lagocheirus giesberti* Hovore**
(Figures 4a, b)

Material examined: **COSTA RICA**, Guanacaste Province: one male, "Est. Los Almendros, 300 m, 26 - 30 ABR 1995, E.E. Lopez" (INBio); one female, Santa Rosa National Park, Guanacaste Prov., 9–11 May 1980, D.H. Janzen, W. Hallwachs (INBio).

Remarks. This species was originally described from a unique male specimen from Monteverde, Puntarenas Province, Costa Rica. Two additional specimens provisionally assigned to this species have been seen, including a female, permitting characterization of that sex and discussion of additional characters for species recognition. These specimens are from lower elevation sites, and both are much less distinctly marked than the holotype, but the male shares the specific diagnostic characters of the type, and there is little doubt as to its identity. *Lagocheirus giesberti* superficially resembles very-lightly marked specimens of *L. o. obsoletus* (Figure 6), with which it may be sympatric in Costa Rica; however,

it differs from that species immediately by the simple sixth antennal segment (*o. obsoletus* has a thumb-like apical appendix internally), much smaller upper and lower eye lobes, and slightly more distinctly penicillate elytral disk.

The specimen determined to be a female *giesberti* is marked as in the male, and further differs by the usual generic characters: unmodified fore tarsi, shorter antennae, stouter body form, slightly elongated terminal abdominal sternite. It differs only slightly from female *o. obsoletus*, however, and lacking association with a male from the same site, the following comparison should be regarded as tentative, pending further specimens. From typical *o. obsoletus* females it differs by the almost wholly pale dorsal coloration, without darker lateral maculae or distinct discal fasciae, less-distinctly maculate antennal segments, broader, shorter, unmarked scutellum (narrowly ligulate, and usually dark-maculate in *o. obsoletus*), and less-distinctly emarginate apical sternite; length: 16 mm; humeral width: 6 mm. The male specimen examined is considerably smaller than the holotype (22 mm), at 16.5 mm.

Most *Lagocheirus* species exhibit variation in dorsal coloration and pattern extent within and between samples, but the evanescent dorsal pattern and broader scutellum should distinguish female *L. giesberti* from those of *L. o. obsoletus*. Female *L. simplicicornis* Bates have much larger lower eye lobes, distinctly costate elytra, usually clearly dark-maculated laterally, and the femora whitish pubescent, finely, evenly maculate with black (unmarked in *giesberti*); female *L. araneiformis ypsilon* have stouter, longer, evenly yellow-brown pubescent antennae, boldly patterned elytra, and finely black-maculate femora.

Acknowledgments

The authors thank S. Lingafelter, Smithsonian Institution (USNM), Washington, DC; M. Thomas, Florida State Collection of Arthropods (FSCA), Gainesville, Florida; A. Solis, Instituto Nacional de Biodiversidad (INBio), Santo Domingo de Heredia, Costa Rica; and T. McRae for the loan or donation of specimens; and B. Viklund, Swedish Museum of Natural History, Stockholm, for type photos of *L. flavolineatus*; and Angelica M. Corona for helping us to arrange the plates.

Literature cited

Aurivillius, C. (1921) Neue Cerambyciden aus der Sammlung G. van Roon. *Entomologisk Tidskrift*, 64, 46–53.

Dillon, L.S. (1957) Revision of the neotropical Acanthocinini (Coleoptera: Cerambycidae) II. The genus *Lagocheirus*. *Bulletin of the British Museum (Nat. Hist.), Entomology*, 6(6), 139–166.

Hovore, F.T. (1998) Two new species of Central American *Lagocheirus* Dejean (Coleoptera: Cerambycidae: Lamiinae). *Occasional Papers of the Consortium Coleopterorum*, Vol. 2(1), 1–5.

Toledo, V.H. (1997) Revision taxonomica del genero *Lagocheirus* Dejean para Mexico y Centroamerica (Coleoptera: Cerambycidae). *Folia Entomologica Mexicana*, 101, 1–58.

